



Adani Mining Pty Ltd

NORTH GALILEE BASIN RAIL PROJECT

Additional information to the Environmental Impact Statement

Appendix A Submissions register

April 2014

NGBR - EIS Submission Issues Register								
Sub. No.	Submitter	Submitter Type	Issue No.		Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response
1	Submitter 1	Individual	1 a	MNES	Great Barrier Reef	The beauty of the Great Barrier Reef should be preserved.	Send coal and other products south below the Great Sandy Island (below Rainbow Beach) to act as a buffer to save the Great Barrier Reef. The rail feed could start from Maryborough and run south via Tuan.	Noted.
1	Submitter 1	Individual	1 b	MNES	Great Barrier Reef	Reference to spoils - from dredging?	Dump dredging material on land in leach proof area until the sun does its job.	Noted.
2	Powerlink Queensland	Organisation	2 a	Land use and tenure	Existing and proposed infrastructure	Protection of Powerlink's rights under the easement terms and conditions.	Any development activity within the corridor would need to be undertaken in accordance with the terms and conditions of the easement dealing (registered in DERM) relevant to each of the subject properties. Copies of these dealings can be obtained from DERM. Powerlink requires ongoing and unfettered access to its easements during the development, operational and decommissioning phases of the railroad. This aspect needs to be addressed during the planning for all of these phases to avoid the need for lengthy inductions to gain access, e.g. placement of security gates, secure work areas etc. so as not to restrict Powerlink access. These access requirements can be found in the attached annotated drawings 301001-01735-CI-DSK-0119 & 0120.	The NGBR Project final rail corridor is planned to intersect two Powerlink Assets. Please refer attachments: - Submission 2a response attachment_301001-01735-CI-DSK-0119_B - Powerlink Crossing - CH 89.126 - Submission 2a response attachment_301001-01735-CI-DSK-0120_B - Powerlink Crossing - CH 94.765 During detail design, interface agreements shall be negotiated between Adani and Powerlink in light of Powerlink's co-use guidelines. Such interface agreements will ensure the required accessibility to Powerlink's existing assets is appropriately provided for and maintained. In the interim, the following findings are to be noted: Rail Easement @ 94.765 km is more than 20m from the Powerlink HV Tower. Therefore, no change is required. Rail Easement @ 89.126km is within 20m of Powerlink HV Tower. This however, is based on a 100m wide corridor. Since the railway is in a shallow cutting @ 89.126km, as well as tower is on east side of corridor (where less clearance is required), the corridor can be narrowed to meet Powerlink's 20m minimum clearance. This should not impact current rail centreline which is still approximately 49m from the HV Tower. Refinement of corridor over Powerlink easements shall be undertaken in next stage of design.
2	Powerlink Queensland	Organisation	2 b	Legislation and approvals	Other applicable legislation	The applicant will need to ensure compliance with the Electrical Safety Act 2002 (including any Code of Practice under the Act) and the Electrical Safety Guideline 2002 (including any safety exclusion zones defined in the Regulation).		Noted. Adani will continue consultations with Powerlink during the design and development of the Project to ensure appropriate legislative compliance.
2	Powerlink Queensland	Organisation	2 c	Land use and tenure		Working on and around Powerlink easements is subject to Powerlink Guidelines. Specific activities and/or installations would be subject to formal application, assessment and approval (or otherwise) prior to commencement of any works within the corridor.	Powerlink's Annexure A of the Management of Co-Use Requests Guideline is enclosed. Your company will need to provide the necessary spatial engineering design documentation in hardcopy and electronic format (3D DXF or equivalent of final design RL's AHD and MGA GDA94 in applicable zone) where applicable.	Noted. Adani will continue consultations with Powerlink during the design and development of the Project.
2	Powerlink Queensland	Organisation	2 d	Land use and tenure	Existing and proposed infrastructure	The catenary of high-voltage transmission lines have "sag and swing" characteristics - the nature and extent of which can vary significantly depending upon load and climatic factors. In certain cases it may be necessary for the applicant to survey the conductors to confirm that statutory clearances to any proposed works would be achieved under all operating conditions. General issues with the co-existence of railroad within a corridor include: vertical clearances from rail and other structures (e.g. gantries, signals and overhead wires); horizontal off-set from Powerlink structures of the closest railway corridor boundary, rail line and associated trackside services; electrical induction potential and mitigation thereof; and access to Powerlink structures.	Powerlink has enclosed a copy of the Conductor Survey Guidelines to provide guidance on the manner in which conductor surveys should be completed. Powerlink will need to work with the proponent to ensure all the potential issues are addressed in the design.	Noted. Adani will continue consultations with Powerlink during the design and development of the Project.
2	Powerlink Queensland	Organisation	2 e	Land use and tenure	Existing and proposed infrastructure	Rail easement is within 20m of outside of tower footings. Powerlink requires the rail easement to be 20m outside the tower footing, as outlined in the attached management of co-use guidelines.	Re-design rail easement per attached, annotated drawings (301001-01735-CI-DSK-0119 & 0120).	The NGBR Project final rail corridor is planned to intersect two Powerlink Assets. Please refer attachments: - Submission 2a response attachment_301001-01735-CI-DSK-0119_B - Powerlink Crossing - CH 89.126 - Submission 2a response attachment_301001-01735-CI-DSK-0120_B - Powerlink Crossing - CH 94.765 During detail design, interface agreement shall be negotiated in light of Powerlink co-use guidelines. See also response to submission item 2a.
3	DSDIP	Agency	3 a	Legislation and approvals	Regional planning	This project (NGBR) is located within the Central West and MIW regions and does not appear to present any regional planning issues other than the need to recognise the potential impact of the Regional Planning Interests Bill on the project.	No further action required	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
3	DSDIP	Agency	3 a	Legislation and approvals	Strategic Cropping Land	The Regional Planning Interests Bill (RPI Bill) proposes to repeal the Strategic Cropping Land Act 2011 and require resource activities authorised under resource Acts to align with the regional land use policies of regional plans as well as other areas of regional interest prescribed in the Bill, including SCL. As the NGBR is not a resource activity authorised under resource Acts it will be subject to approvals under the Sustainable Planning Act 2009 (SPA) (amongst other Acts) and State Planning Policy which provides for protection of Class A and B agricultural land.	The project may need to consider assessment against these provisions rather than the existing SCL Act 2011 (as discussed in the EIS) which is to be repealed by the RPI Bill.	The assessment against SCL Act 2011 was current at the time of publishing the EIS.
4	DSDIP	Agency	4 a	Legislation and approvals	Legislation reference	The draft EIS makes reference to lapsed State Planning Policies. The single State Planning Policy came into effect on 2 December 2013.	Update to reflect single State Planning Policy.	The EIS referenced policies which were in effect at the time of writing. It is noted that some changes have come into effect since publication. These changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
4	DSDIP	Agency	4 a	Legislation and approvals	Legislation reference	This section makes reference to the Coastal SPRP which lapsed when the single State Planning Policy came into effect on 2 December 2013.	Remove reference to lapsed Coastal SPRP and refer to coastal provisions of the single State Planning Policy.	The EIS referenced policies which were in effect at the time of writing. It is noted that some changes have come into effect since publication. These changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
4	DSDIP	Agency	4 a	Legislation and approvals	Legislation reference	The Regional Planning Interests Bill 2013 was introduced in Parliament on 20 November 2013. The bill integrates the policy objectives of the Strategic Cropping Land Act 2011 by identifying strategic cropping land as areas of regional interest. The commencement of the bill will repeal of the Strategic Cropping Land Act 2011.	Refer to the Regional Planning Interests Bill 2013.	The assessment against SCL Act 2011 was current at the time of publishing the EIS. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
5	Submitter 5	Individual	5 a	Cultural heritage	Dust and vibration impacts	There is a Registered Rock art site near Mt Roundback within the 1 km corridor. The section of rail in this area if built will greatly impact on this sacred ground and subject the rock art to acidic sulphurs in coal dust that will blow off the trains moving past. Ground vibrations will exacerbate the cracking of natural fissures found in granite boulders that the art is painted on. Individual could not find enough information on studies for these issues that would satisfy the minimisation of effects of coal dust and vibration toward rock art sites. Maps provided indicated trains will be moving past these sites within around 300 m.	Realign rail corridor from current position from Splitters Creek through to Battery Creek to new location that avoids this area. Option 1: Realignment of rail corridor to cross the highway and north coast rail line near the Wilmington siding on the north coast line, then follow north coast rail corridor turning to follow existing Abbot Point rail corridor. This avoids the Mt Roundback sacred area and minimises impact on cultural heritage in the area and runs adjacent to previously disturbed ground. Option 2: Realignment of rail corridor from Mt Aberdeen around to south side of Mt Greentop and continuing through Mischief Plains, then through the gap between Mt Roundback and Mt Pring, crossing the highway and north coast rail line at Goodbye Creek and following Abbot Point rail corridor to Abbot Point. This would give better access to quarry materials needed for construction of rail line, avoids sacred area at Mt Roundback and doesn't restrict access to cultural sites within Mt Roundback and Mt Pring areas.	In accordance with the provisions of the Juru - Adani NGBR Cultural Heritage Management Plan (CHMP), a survey was undertaken from Abbot Point to Splitters Creek, including Mt Roundback. Following that survey, the Juru-appointed Archaeologist provided Adani with the a survey report entitled Cultural Heritage Progress Report - Adani North Galilee Basin Rail Project Juru Section - Stage 1 of Cultural Heritage Investigation - Splitters Creek to Abbot Point - September 2013. A key recommendation of that report was realignment of the rail corridor away from the DATSMA registered Aboriginal cultural heritage site (rock art and shelter site) GJ.A31, with a recommended minimum 300m buffer around that site. Adani accepted this recommendation and then commissioned a further survey of the Mt Roundback Realignment between the Bruce Highway and Splitters Creek. A subsequent survey report for the Mt Roundback Realignment was received by Adani in February 2014, entitled Cultural Heritage Progress Report #2 - Adani North Galilee Basin Rail (NGBR) Project Juru Sector - Stage 2 of Cultural Heritage Investigations, Mount Roundback Realignment Sector - January 2014. That report confirmed that from an archaeological point of view, the results of the cultural heritage survey and assessment of the proposed realignment determined that there were no significant archaeological constraints or issues identified within the confines of the proposed realignment rail corridor.
5	Submitter 5	Individual	5 a	Cultural heritage	Dust and vibration impacts	Continued		The CHMP mandated process from this point is that a Juru - Adani Cultural Heritage Committee (CHC) meeting will now be held to discuss and finalise the Cultural Heritage Progress Report #2 - Adani North Galilee Basin Rail (NGBR) Project Juru Sector - Stage 2 of Cultural Heritage Investigations, Mount Roundback Realignment Sector - January 2014 report and to agree Aboriginal cultural heritage arrangements for the Mt Roundback Realignment. The CHC is the decision making body under the terms of the CHMP for deciding on Aboriginal cultural heritage management arrangements.
5	Submitter 5	Individual	5 b	Cultural heritage	Indigenous cultural heritage impacts	Section of rail in Mt Roundback area passes through sacred ochre ground, which is the only location where ochre is found within a 100 km radius of this site.		In accordance with the provisions of the Juru - Adani NGBR CHMP, a Survey was undertaken from Abbot Point to Splitters Creek, including Mt Roundback. Following that Survey, the Juru appointed Archaeologist provided Adani with the a Survey report entitled Cultural Heritage Progress Report - Adani North Galilee Basin Rail Project Juru Section - Stage 1 of Cultural Heritage Investigation - Splitters Creek to Abbot Point - September 2013. The report noted that although exposures of whitish clay were observed, there was no definitive archaeological evidence for Aboriginal quarrying of the reported ochre within the project corridor. No recommendation was made by the report in relation to this item.

Sub. No.	Submitter	Submitter Type	Issue No.	Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response
5	Submitter 5	Individual	5 c	Cultural heritage	Flora and fauna The area of rail corridor from Saltwater Creek to Abbot Point terminal traverses ancient sand dunes covered with undisturbed native bush and cultural sites. Environmental values in this area include natural native scrub, nesting areas for the Wedge Tailed Eagle, and nesting and hibernation area for freshwater turtles. The coastal dune system to the east of Abbot Point Road also holds cultural heritage importance and is known to the Individual's family to contain the burials of ancestors.	Realignment of the rail corridor to between the existing road and railed for one line and the other line to be adjacent to the western side of the existing rail so as to minimise destruction of these areas that are needed for this project. The area east of Abbot Point Road should be avoided completely to allow access to the beach and dune system.	In accordance with the provisions of the Juru – Adani NGBR Cultural Heritage Management Plan (CHMP), a Survey was undertaken from Abbot Point to Splitters Creek, including Mt Roundback. Following that Survey, the Juru appointed Archaeologist provided Adani with the a Survey report entitled Cultural Heritage Progress Report - Adani North Galilee Basin Rail Project Juru Section – Stage 1 of Cultural Heritage Investigation – Splitters Creek to Abbot Point – September 2013. The report noted that Saltwater Creek is a significant cultural landscape that was traditionally used for fishing, gathering, hunting and living/camping. The report contained a recommendation that the width of the rail corridor at the Saltwater Creek crossing, and clearing of riparian vegetation be minimised as much as possible, and monitoring be carried out for initial ground disturbance works at the crossing. Adani proposed at the subsequent CHC meeting held on 9 December 2013 that Adani will seek to minimise its project footprint in this area, and monitoring will be undertaken in relation to Initial Ground Disturbance Activities. The CHC accepted the Adani response. There are no project activities planned for the coastal dune system east of the Abbot Point Road.
6	Asia Pacific Strategy Pty Ltd (Qld)	Organisation	6 a	Greenhouse gas	Failure to consider GHG The proponent's reliance on the Greenhouse Gas Protocol will not advance purposes of the Sustainable Planning Act 2009 with regard to abatement of global warming, climate change, ocean acidification and rising sea levels stemming from approval of this Project.	Adopt Asia Pacific Strategy public comment suggestions relating to the project's TOR and require holistic assessment of Scope 2 and 3 emissions not presently considered in the EIS.	Greenhouse gas assessment was undertaken in accordance with the terms of reference for the project.
6	Asia Pacific Strategy Pty Ltd (Qld)	Organisation	6 b	Legislation and approvals	Legislation reference Reliance on the National Greenhouse & Energy Reporting Act is inappropriate because some 95% of climate damaging greenhouse gas emissions will take place in foreign locations. Global environmental impacts of these emissions, that are not assessed, will exacerbate global warming, climate change, ocean acidification, rising sea levels and hinder future ecological sustainability of the Great Barrier Reef, Commonwealth Marine Reserves, and hinder the wellbeing of coastal communities throughout Australia. These are matters of national ecological significance requiring comprehensive assessment under provisions of the Commonwealth EPBC Act.	Adopt public comment suggestions dated 11 June 2013 that are attached to ensure holistic assessment of Scope 2 and 3 greenhouse gas emissions associated with development of the North Galilee Basin Rail Project and all proposed Galilee Basin sub-bituminous coal export mine projects to enable appropriate conditions to be set to ameliorate externality costs and achieve ecological sustainability.	Greenhouse gas assessment was undertaken in accordance with the terms of reference for the project.
7	DSDIP	Agency	7	Legislation and approvals	Other applicable legislation The proponent should note the recent release of the draft Queensland Ports Strategy which proposes the introduction of Priority Port Development Areas (PPDAs) at the long-established ports of Brisbane, Gladstone, Hay Point/Mackay, Abbot Point and Townsville. The proposed legislation will accelerate development within the PPDAs by requiring ports to prepare a port master plan including an environmental management framework, encouraging strategic, holistic consideration of port development and positioning ports for regulatory streamlining benefits with the Australian Government.	The proponent should note the draft Queensland Ports Strategy and consider how this may impact its proposal.	Noted.
8	Submitter 8	Individual	8 a	MNES	Dust impacts Coal dust proponents need to guarantee measures are in place to control coal dust both on rail and port stockpiles before any approval is given to perform mining activity.		Port stockpiles and mining activity are beyond the scope of the NGBR Project. NGBR Project EIS Volume 1 Chapter 10.4 provides an assessment of coal dust impacts. The assessment concluded that emissions from loaded and unloaded coal wagons are within the relevant criteria even before controls are implemented in accordance with the proposed Coal Dust Management Plan (consistent with the Aurizon CDMP).
8	Submitter 8	Individual	8 b	MNES	Regional and cumulative impacts The proposed rail corridor should act as a common corridor for all proponents anticipating development in the Galilee Basin, to avoid destruction of the environment, grazing, cropping and grasslands and impacts on land owners from too many corridors. The corridor needs to be equipped with dual tracks and dual gauge to service the Galilee Basin. This North Galilee Basin Rail Project should not be approved.		The NGBR is designed to cater for up to 100 Mtpa coal, including from third parties, to serve the Galilee Basin and avoid/minimise multiple rail corridors being established by different proponents. This is in line with Queensland Government policy of June 2012 on Preferred Rail Corridors for the Galilee Basin and the Queensland Government's Galilee Basin Development Strategy November 2013. The submitter is not a landholder. Consultation with directly affected landholders regarding the movement of stock and occupational crossings generally is ongoing and is not expected to be resolved until the land acquisition and compensation processes are finalised - outside of the EIS process. Total area of impact to good quality agricultural land has been calculated for the NGBR Project, including the NGBR Project realignment, other minor realignments and associated changes (refer Volume 1 Section 6 Topography, geology, soils and land contamination).
9	NPRSR	Agency	9	No comment	Alignment does not impact upon QPWS estate	No further action required	Noted.
10	DSDIP	Agency	10 a	Social and economics	Local benefits The LIP no longer applies to private sector resources and energy projects.	No further action required	Noted.
10	DSDIP	Agency	10 b	Social and economics	Local benefits The EIS sufficiently addresses the issue of local content in accordance with the Queensland Resources and Energy Sector Code of Practice for Local Content, an industry led and owned self-regulated initiative.	No further action required	Noted.
11	Queensland Police Service	Agency	11 a	Social and economics	Construction workforce The proponent advises that construction will commence in late 2014 with 775 workers, before ramping up to reach a peak workforce of 1,700 workers in 2015 and concluding in 2016. It is expected that a percentage of the workforce will be sourced from regional townships in the vicinity of the NGBR Project.	The QPS requests that the proponent provides further information in relation to how the camps will operate, for example, the provision of alcohol and recommends that the proponent considers a behavioural management plan to ensure standards of behaviour of employees living and socialising within the local environs are maintained.	Adani will undertake ongoing engagement with QPS for advice to manage security, behaviour and offending issues at the workers camps. A Workforce Management Plan incorporating a Code of Conduct will be developed in consultation with the Queensland Police Service. Volume 2 Appendix G Revised commitments includes this commitment; Additional detail is provided in Section 16.6.2 of NGBR Project EIS Volume 1 Chapter 16 Social and economic impacts.
11	Queensland Police Service	Agency	11 b	Transport	Traffic Management and Road Use The proponent has outlined the development of a Road Use Management Plan (RUMP) that will guide the further development of a Traffic Management Plan (TMP).	The QPS thanks the proponent for the response. The QPS requests to be identified as a 'Government Entity' as defined in Schedule 4, page 515 of the Transport Operation (Road Use Management) Act 1995 and requests to be consulted in relation to the identification of impacts and the mitigation strategies to be implemented.	Noted. Adani will consult with QPS in the development of the traffic management plan and Road Use Management Plan for the project and ensure this includes specific requirements in regards to the role of QPS. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency response. Consultation with QPS during the development of a Road Use Management Plan is reflected in Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP framework.
11	Queensland Police Service	Agency	11 c	Cumulative Impacts	Heavy vehicle movements The proponent has identified that there are a number of significant projects being undertaken in the Bowen Basin and that there will be an increase in heavy vehicle movements.	The movement of Wide Loads is a significant issue in the Central Region and the QPS requests the proponent provide detail as to how many wide load movements will be required for the construction and operational phases of the project.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani will consult with QPS in the development of the traffic management plan and road use management plan for the project including specific requirements in relation to the quantity, notification and timing of oversize vehicle movements during development of the project.
12	Queensland Fire & Emergency Services	Agency	12 a	Transport	Emergency response Due to the increased road traffic, both heavy and light vehicles, there is potential for increased road traffic crashes. QFES response to the isolated areas where the rail line is to be located will increase the response times of personnel and equipment to any emergency requiring QFES attendance. Rural Fire Brigades will be the first responding brigades but they do not have the resources to deal with major incidents or traffic crashes requiring extrication.	It is identified that there will be a Project Emergency Response Team (ERT) established and stationed at Abbot Point. One of their response capabilities has been identified as vehicular accidents. QFES notes that practical and desktop exercises are to be conducted with the ERT with QFES participation along with other emergency services. QFES will provide education and advice during these planned sessions and determine the extent of support and response capabilities that will be able to be provided by the ERT to assist QFES at incidents.	Noted. Adani will continue to consult and liaise with QFES as part of the planning and development for the Project Emergency Response Team and Emergency Management Plan. Volume 2 Appendix G Revised commitments includes this commitment and a cross-reference to the relevant section of NGBR Project EIS Volume 1 Chapter 18 Hazard and risk.
12	Queensland Fire & Emergency Services	Agency	12 b	Transport	Construction workforce It is identified that there will be DIDO personnel who will return to their home bases after completing their rostered shifts.	A Traffic Management Plan is identified to be implemented which should also include a comprehensive Driver Fatigue Management Plan to assist in the education and management of DIDO workers driving whilst fatigued.	Volume 2 Appendix G Revised commitments includes a commitment to include within the traffic management plan "measures to manage driver fatigue in accordance with DTMR strategies and any obligations under the Heavy Vehicle National Law Act 2012." This commitment is reflected in Volume 2 Appendix H Revised EMP framework.
12	Queensland Fire & Emergency Services	Agency	12 c	Social and economics	Construction camps QFES acknowledges the planned workers accommodation camps to be established at locations along the rail corridor. The accommodation camps will need to comply with all Codes, Acts and Regulations pertaining to such camps and the maintenance required under these Codes, Acts, Regulations and Queensland Development Code.	The proponent should be required to provide QFES information on these camps/villages. QFES will be required to be involved in the approval process as a referral agency under the Sustainable Planning Act 2009 and Sustainable Planning Regulations 2009, Schedule 7.	Noted. All camps will be developed in accordance with relevant legislative requirements. Volume 2 Appendix G Revised commitments identifies QFES and QPS as emergency service providers to be consulted during the development of the Emergency Management Plan.
12	Queensland Fire & Emergency Services	Agency	12 d	Appendix P - EMP Framework	Emergency response Due to the distance from QFES urban support, the emergency response team (ERT) must be sufficiently trained and be equipped with adequate PPE and equipment to be self-sufficient to manage and control any emergency until QFES response arrives, which could be several hours due to the isolated locations of several areas of the project. The accommodation camps are required to have Emergency Management Plans to deal with any incident or hazardous situation that may occur.	QFES acknowledges that the proponent has been provided with information identifying that the first QFES response will be the Rural Fire Services. When the proponent is in the process of establishing the ERT, QFES recommends consultation is undertaken to form a collaborative agreement where both the proponent and the QFES work together in a unified approach to deal with emergency incidents, both on and off the mining lease or rail corridor. This will also enable terminology and equipment to be compatible with QFES and meet operational capabilities.	Noted. Adani will continue to consult and liaise with QFES as part of the planning and development for the Project Emergency Response Team and Emergency Management Plan. Volume 2 Appendix G Revised commitments includes this commitment and a cross-reference to the relevant section of NGBR Project EIS Volume 1 Chapter 18 Hazard and risk.

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15	DATSIMA	Agency	15	Social and economics	Indigenous employment and opportunities Adani's commitment to working with DATSIMA in developing an Aboriginal and Torres Strait Islander Participation Plan is welcome. In order to provide sufficient time for the implementation of employment, training and business engagement strategies, the Aboriginal and Torres Strait Islander Participation Plan should be completed prior to final investment decision.		Noted. Adani will continue to consult with DATSIMA during the project design phase.	
16	DTEBS	Agency	16 a	Social and economics	Tourism Specific tourism values and interests do not seem to have been identified in the EIS (other than the Bicentennial National Trail).	It is recommended the project proponent refer to relevant local Tourism Opportunity Plans/Destination Tourism Plans or Strategies for opportunities that may be affected by the project, and advise Whitsunday Marketing and Development Ltd and Tourism Bowen accordingly.	Potential impacts to environmental values have been considered as part of the EIS and appropriate mitigation and management measures included to minimise potential impacts. The Project is considered unlikely to have any impact on the tourism values of the region. Adani will continue to consult with relevant tourism organisations in the region during the project design phase.	
16	DTEBS	Agency	16 b	Social and economics	Tourism The project proponent is to maintain communication with Whitsunday Marketing and Development Ltd and Tourism Bowen on matters identified in the EIS. The submission refers to social impacts such as indirect benefits to the Whitsunday Regional Council region, management strategies to address increased demand for short term accommodation, and management strategies to address increased demand on regional services and facilities from increased non-resident (FTE) population (Workforce Integration and Cohesion Program).		Noted.	
16	DTEBS	Agency	16 c	Social and economics	Tourism The construction and operation of the rail project will result in disruptions to road traffic, affecting the drive tourism market in the region, and potentially affect air traffic through congestion and delays if flight schedules are disrupted.	The project proponent is to consider the effect of road and air transport disruptions to tourism and consult the relevant tourism organisations in the region on this matter.	Traffic management will be undertaken through the development and implementation of a Road Use Management Plan and Traffic Management Plan. Adani will continue to consult with relevant tourism organisations in the region during the project design phase.	
16	DTEBS	Agency	16 d	Social and economics	Tourism Indirect impacts from construction and operation activities such as increased sediment load of runoff into watercourses or accidental spillages of contaminants have the potential to degrade downstream water quality and subsequently affect relevant coastal habitats and World Heritage / National Heritage values. Relevant management plans are to be implemented to limit degradation of downstream water quality. The NGBR Project is not anticipated to have a significant residual impact on the GBRMP and therefore offsets are not required for this value.	The project proponent is to consider the effect of construction and operational activities to the tourism values of the environment (upon which many tourism products and attractions are based), and maintain communication with the relevant tourism organisations in the region on this matter.	Potential impacts to environmental values have been considered as part of the EIS and appropriate mitigation and management measures included to minimise potential impacts. The Project is considered unlikely to have any impact on the tourism values of the region. Adani will continue to consult with relevant tourism organisations in the region during the project design phase.	
17	Department of Housing & Public Works	Agency	17	No comment		The Department of Housing & Public Works has reviewed the EIS for the North Galilee Basin Rail Project and does not wish to raise any comment.	No further action required	Noted.
18	Department of Agriculture, Fisheries and Forestry	Agency	18 a	Project Description	Quarries and borrow areas Impact to State-owned quarry material administered under the Forestry Act 1959.	The Proponent liaises with DAFF to avoid or minimise adverse impacts to currently exploited or other commercial deposits of quarry material under the Forestry Act 1959, in particular in relation to: a) any realignments to the proposed rail line to avoid coal deposits and/or other constraints b) the location and timing of rail passing loops or lines that are not built at the same time as the main line c) the design and location of other infrastructure and proposed offset areas.	Noted. Adani will continue to consult with DAFF during the project design phase.	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 b	Project Description	Quarries and borrow areas There are significant discrepancies in the draft EIS from the original estimates in May 2013 regarding quarry material quantity requirements for the project and associated projects.	The Proponent should ensure: a) liaise with DAFF to confirm quarry material locations and quantify requirements for the project, in particular for 'embankment/fill' and 'capping' quantities, including organising the applicable sales permits under the Forestry Act 1959 consistent with the approved areas contained in a Permit to Search held by the Proponent b) that if quarry material required, is to be supplied from a quarry located on land outside the project area where the ownership of the quarry material is owned by the State and administered under the Forestry Act 1959, the proponent must ensure that the quarry operator holds: - a current Sales Permit under the Forestry Act 1959; and - the applicable authorities and approvals, including development approval under the Sustainable Planning Act 2009 and relevant environmental authorities under the Environmental Protection Act 1994.	Noted. Adani will continue to consult with DAFF during the project design phase.	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 c	Land use and tenure	Stock routes Impacts to designated stock routes.	Should the rail transgress across a designated stock route then a crossing either under it or over it needs to be built. Where properties are split, sufficient fencing must be erected to stop cattle and native wildlife being able to access the rail line.	Treatment criteria for stock route crossings are provided in Table 2-8 of Volume 2 Appendix B Revised project description. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP framework include the commitment that consultation with "the Department of Natural Resources and Mines (DNRM), the Department of Agriculture, Fisheries and Forestry, local government authorities and landholders will continue regarding existing stock routes to be traversed by the NGBR Project and appropriate crossing treatments."	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 d	Nature Conservation	Sustainable Grazing Program Under the Sustainable Grazing program through Agri-Science Qld, long term woodland monitoring and vegetation change sites were established to provide a continuous record of woodland ecology across Queensland.	In order to maintain these valuable records, it is suggested that the Proponent investigate the exact locations and ongoing use of these sites. A map of sites within the proposed Galilee Basin State Development Area is enclosed in the submission.	A GIS assessment of the existing monitoring locations based on coordinate data for these sites supplied by DAFF suggests that they will not be directly impacted by the NGBR project. The nearest monitoring location is GA 30, which is in excess of 1km away from the rail alignment (including the AEIS final rail corridor).	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 e	Water Resources	Fish passage structures Potential impacts and mitigation measures for fish species.	Although it has been touched on throughout the EIS, this particular section only addresses temporary structures needing assessment by DAFF. The Proponent should clarify that all waterway crossing infrastructure (both temporary and permanent structure) that are outside of the mining lease will need some form of assessment (DA or Self assessable code).	Noted. Necessary development applications will be lodged as part of the development of the Project. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 e	Nature Conservation	Weed and pest management Potential impact of weeds on agriculture and alignment of the Weed and Pest Management Plan with local government priorities.	The Proponent should provide a statement to acknowledge the potential risk to agriculture if weeds are spread to new areas via construction and associated activities and also an action to ensure the Weed and Pest Management Plan ensures awareness of, and compliance with, the requirements of the Plant and Protection act 1989 and aligns with Whitsunday and Isaac Regional councils priorities for weeds and pest animals through liaison with these councils and reference to their pest management plans.	Volume 1 Chapter 6 of the EIS provides details in regard to existing weed threats within the Project area and also impact and management measures for weed and pest management for the project. Volume 2 Appendix P details the commitment preparation of a Weed and Pest Management Plan. The comments are noted and will be included in the Management Plan. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflect the commitment that the Construction/Operation Weed and Pest Management Plan will "align with Adani's obligations under the Plant Protection Act 1989 and the priorities of Isaac Regional Council and Whitsunday Regional Council with regards to weed and pest species."	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 e	Nature Conservation	Weed and pest management Management of food and other organic waste that could attract pest animals.	The Proponent should provide information about how food and other organic waste that could attract pest animals will be managed (i.e. removed from site, secure bins, exclusion fencing).	Volume 1 Chapter 13 (13.5.2) of the EIS provides details of specific waste management strategies including those relevant to food. Proposals include implementation of waste minimisation practices, the bins being fitted with lids, to prevent attraction of vermin, insects and pests and pooling of water, and removal of waste from site through approved contractors.	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 e	Nature Conservation	Weed and pest management Application of chemical legislation where chemical control is the proposed mitigation measure for weeds.	Ensure the Weed and Pest Management Plan addresses compliance with both the Chemical Usage (Agricultural and Veterinary) Control Act 1988 (use controls) and Agricultural Chemicals Distribution Controls Act 1966 (licensing controls) to ensure that use of agricultural chemicals or other industrial chemicals does not have an adverse impact on human health, trade or the environment through contamination of agricultural produce. NOTE: it is essential that landholders are involved in consultation on uses of herbicides regardless of whether the operation is organic or biodynamic to ensure that appropriate risk management actions can be implemented where stock could be exposed.	Volume 1 Chapter 6 of the EIS provides details in regard to existing weed threats within the Project area and also impact and management measures for weed and pest management for the project. Volume 2 Appendix P details the commitment preparation of a Weed and Pest Management Plan. The comments are noted and will be included in the Management Plan. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflect the commitment that the Construction/Operation Weed and Pest Management Plan will "align with Adani's obligations under the Plant Protection Act 1989 and the priorities of Isaac Regional Council and Whitsunday Regional Council with regards to weed and pest species."	
18	Department of Agriculture, Fisheries and Forestry	Agency	18 f	Legislation and approvals	Other applicable legislation Need reference to Plant Protection Act 1989.	The Proponent should ensure this reference is included in this Section.	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals	

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18	Department of Agriculture, Fisheries and Forestry	Agency	18 g	Legislation and approvals	Legislation reference	Reword paragraph under "Relevance to NGBR Project - Forestry Act".	The Proponent should reword this paragraph to: A sales permit will be required to take and use State owned quarry material as defined in the Forestry Act 1959 on the Project. On some tenures native title will need to be adequately addressed prior to the issue of a sales permit.	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
18	Department of Agriculture, Fisheries and Forestry	Agency	18 h	Legislation and approvals	Legislation reference	Incorrect reference to Fisheries Regulations 1995. This Regulation is out of date.	This Regulation should be referenced as Fisheries Regulations 2008.	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
18	Department of Agriculture, Fisheries and Forestry	Agency	18 i	No comment		Adani should be commended on their efforts in undertaking a comprehensive assessment of the aquatic environment within (and surrounding) the rail line footprint. They have presented within the EIS a clear understanding of what is required from a Fisheries legislative point of view and their level of detail covered will ensure the impacts upon Fisheries Resources is minimal.	No further action required	Noted.
19	DSDIP	Agency	19 a	Land use and tenure	Approvals	Development applications for uses or works within the rail corridor will be managed through DSDIP, in liaison with Mackay Isaac Whitsunday Regional Office and Isaac Regional Council.	To maintain a proficient assessment and assist with achieving operational timeframes, it is suggested that Adani request pre-lodgement meetings prior to any development application to enable DSDIP and Council to provide relevant information on technical aspects required for the assessment.	Noted.
19	DSDIP	Agency	19 b	Social and economics	Construction camps	Reference to the hall on the Port of Abbot Point.	Suggest amending to reflect that approval for the Port of Abbot Point expansion was given on 10 December 2013.	Noted.
19	DSDIP	Agency	19 c	Social and economics	Initiatives to build capacity for local and regional business	Initiatives to build capacity for local and regional business	Suggest that Adani work with Mackay Isaac Whitsunday Regional Office and DSDIP to access supply chain development programs.	Noted.
20	DEHP	Agency	20 a	Topography, geology and soils	Acid sulfate soils	The proposed pre-construction survey for acid sulfate soils (consistent with Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland 1998) and development of an acid sulfate soil management plan is appropriate. However, EHP recommends that the acid sulfate soil management plan, if required by the results of the survey, be consistent with the latest version of the Queensland Acid Sulfate Soil Technical Manual Soil Management Guidelines.	Amend the commitment: "Where avoidance of acid sulfate soils disturbance is not possible, soils will be managed in accordance with the State Planning Policy 2/02 (SPP 2/02)" to "Where avoidance of acid sulfate soils disturbance (potential for oxidation) is not possible, the soils will be managed in accordance with the latest version of the Queensland Acid Sulfate Soil Technical Manual Soil Management Guidelines"	Commitment has been made within the EIS to undertake soil surveys and sampling in areas identified to be potential ASS prior to commencement of construction. ASS Management Plans will be developed in accordance with State legislation and policy requirements (including the latest version of the Queensland ASS Technical Manual Soil Management Guidelines) where necessary to prevent impacts associated with ASS disturbance during construction.
20	DEHP	Agency	20 b	Topography, geology and soils	Contaminated land	The commitment to conduct additional investigations on all land within the final rail corridor in order to assess the potential contamination status, to develop appropriate procedures to manage identified potential or actual contamination, to conduct site inspection by a 'suitably qualified person' as a minimum, and where required develop and implement a site specific Sampling and Analysis Plan, is appropriate. EHP recommends communication with the EHP Contaminated Land Unit in relation to any potential contaminated sites prior to detailed sampling and analysis. The latest version of the National Environmental Protection (Assessment of Site Contamination) Measure should be considered in assessing potential contamination.	For noting only.	Noted.
20	DEHP	Agency	20 c	Nature Conservation	Ecological surveys	Field surveys for terrestrial and aquatic ecology were undertaken during May and June 2013. Long sections of the proposed rail corridor were not surveyed and survey effort was focused on confirmation of regional ecosystems and habitat for threatened species within the corridor. EHP accepts that limited survey effort in favour of ecosystem and habitat mapping is appropriate for linear projects. However, determination of the magnitude and extent of ecological values within the corridor that may require an offset requires a comprehensive assessment, especially where no site specific surveys have been conducted. A condition assessment of the identified values would also be required before an offset plan could be presented. In section 6.2.6 it is stated that further survey work would be carried out to verify the findings of the impact assessment and survey effort to date. The survey work proposed would include surveys during the dry season and would extend to detailed surveys prior to construction. In section 6.4.3, a commitment is made to undertake baseline field surveys of identified hotspots within and near construction areas prior to commencement of construction. Additional survey effort required to support offset requirements is likely to extend beyond 'identified hotspots'.	It is recommended that the proponent commit to a comprehensive survey of the ecological values of the final rail corridor to: • confirm the extent of State Significant Biodiversity Values (SSBV) as defined by the Queensland Biodiversity Offset Policy (but excluding regrowth vegetation, grassland ecosystems not regulated under the Vegetation Management Act 1999, and threshold regional ecosystems to reflect proposed changes to Queensland offset requirements); • confirm the extent of Matters of National Environmental Significance (MNES); threatened ecological communities (TECs) and the habitat of threatened species listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act); • complete an ecological equivalence condition assessment (Ecological Equivalence Methodology, DERM 2011) of the areas confirmed as containing SSBV and MNES. The results of this survey should be provided to EHP and DoE. Findings should be used in the preparation of a biodiversity management plan that incorporates commitments regarding the avoidance, management and offsetting of impacts.	Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Quality scores incorporated in Volume 1 Chapter 7 (7.15) of the EIS represent "indicative" scores for offsets. Further equivalence assessment will be undertaken by Adani to inform the finalisation of the Biodiversity Offsets Strategy for the Project. Additional surveys will be undertaken to assess the condition of biodiversity values requiring offsetting, as outlined in the commitments already made in the EIS. A comprehensive survey of the ecological values of the final rail corridor will be undertaken to: - Confirm state significant biodiversity values under the relevant offset policies - Confirm the extent of matters of national environmental significance, including threatened ecological communities and potential habitat for species listed under the Environment Protection and Biodiversity Conservation Act 1999 - Confirm the extent and condition of regional biodiversity corridors within the final rail corridors - Confirm the extent of watercourse vegetation - Complete biocondition assessment of confirmed state significant biodiversity values or matters of national environmental significance - Determine likely extent of potential groundwater dependent ecosystems. The findings of the comprehensive survey of ecological values will be provided to the Department of Environment and Heritage Protection and the Department of the Environment. The comprehensive survey of ecological values will inform the development of the environmental management plan, the final offset package, subsequent vegetation clearing applications and associated property maps of assessable vegetation. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP framework reflects the commitment for a comprehensive survey of ecological values.
20	DEHP	Agency	20 d	Nature Conservation	Ecological surveys	The condition notes state that the natural grasslands have been almost entirely replaced by exotic pasture grasses. However, the photo included in Table 6-3 indicates coverage of more than 50% Flinders grass which does not support this conclusion. The natural grassland south of Pelican Creek covers a large area and appears to have been well surveyed for the EIS.	The proponent should provide more evidence to support the stated condition of natural grasslands within the study area in the form of survey site locations, flora survey sheets, and photos. Alternatively, the proponent should revise the condition statement and map the grassland as the threatened grassland ecological community listed under the EPBC Act.	The species, <i>Isolema vaginiflorum</i> is not an indicator species for Natural Grassland TEC, as per the Commonwealth Listing Advice on Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin (Threatened Species Scientific Committee). The community depicted in the photo for grassland community (Table 6-3) is an example of the best quality habitat observed. Although the site has been classed as a native pasture/natural grassland vegetation community, it does not meet the condition threshold for the Natural Grassland TEC because it doesn't contain at least three of the indicator species. The condition of these communities will be further assessed prior to offsetting. See also response to submission item 20 m.
20	DEHP	Agency	20 e	Nature Conservation	Offsets	The estimated areas of residual impact to watercourse ecological values that require an offset stated in the EIS differ from EHP estimates as follows: Stream Order Area* EHP (ha) Area* EIS (ha) 1 197 115 2 67 34 3 55 31 4 30 14 5 27 15 6 15 15 * areas in hectares are rounded The EHP estimates were derived by intersection of the final proposed rail corridor with VMA remnant watercourse mapping (Vegetation Management Act Remnant Watercourses Version 2.1, Queensland Government Information Service).	It is recommended that the proponent justify the reduced area estimates for watercourse vegetation impacts or adopt the EHP estimates of impact areas.	The estimated area of impact to watercourses is based on the mapped extent of associated regional ecosystems within a specified buffer distance of a watercourse. The buffer distance employed in the preparation of the offsets strategy is as follows: - Stream orders 1 and 2 – 50 m - Stream orders 3 and 4 – 100 m - Stream orders 5 and up – 200 m. The calculation is based on the Regional Ecosystem mapping version 6, applicable at the time of preparation of the EIS. It is noted that substantial changes to the the Vegetation Management Act have been implemented since publication of the EIS. These changes will be reflected in the final Offsets Strategy to be prepared for the Project. As committed in the NGBR Project EIS and NGBR Project AEIS, a property map of assessable vegetation (PMAV) will be prepared for the NGBR Project footprint. The impact areas identified in the PMAV will be incorporated into the offsets package. Impact areas for watercourse vegetation will likewise be refined in the offsets package.

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20	DEHP	Agency	20 f	Nature conservation	Connectivity	The EIS states that the final rail corridor would be fenced along its length to exclude wildlife and livestock, and fauna-friendly infrastructure would be incorporated where required within the design of bridges and culverts to allow fauna passage at designated crossing locations. The EIS does not indicate the species of wildlife proposed to be excluded by fencing. Traditional fences composed of strands of barbed and/or plain wire would deter macropods and emus without preventing passage. If it is proposed to install a high mesh fence, this would create a significant barrier to wildlife and would facilitate predation by cats, foxes and dogs. Table 6-11 states that the final rail corridor would be fenced giving consideration to the movement of fauna through the fence except where fenced areas seek to protect fauna from threats such as trenches and human contact. This appears to be in conflict with the proposal to exclude wildlife as well as livestock. Measures stated in Table 6-11 relating to safe passage of fauna across the rail corridor (culverts with ledges that facilitate fauna movement, grids that allow natural lighting, protecting and enhancing entries and exits, not using barbed wire on the top strand of fences) are not supported by objective design criteria or auditable commitments to adoption of such measures in the design of the infrastructure, including criteria for spacing of such measures relevant to habitat and species requiring safe passage. The EIS states that consideration would be given to not using barbed wire on the top strand of wire fences to reduce the risk of fauna entanglement (e.g. bats) resulting in injury or mortality. EHP recommends that plain wire only, or at least a plain wire top strand, be used at waterways/wetlands and in suitable glider habitat to limit bat, bird and glider capture by barbed wire. Requirements for the location and design of structures needed to minimise fauna impact with trains and to support the passage of fauna species, or suites of fauna species, will become much more important if rail infrastructure linking the Galilee Basin to Abbot Point is consolidated in a single corridor.	It is recommended that the proponent clarify the design of the fencing to be erected along the final rail corridor, particularly as it relates to measures to provide for native fauna passage across the corridor and minimise potential harm to native fauna. An auditable commitment should be made to the design criteria to be adopted for the fence to the extent relevant to fauna passage and minimisation of harm to native fauna. It is recommended that the proponent provide objective design criteria relevant to fauna passage through, over, or under the rail corridor, including species specific design features for fauna passage structures (including fauna specific culverts and bridges), and auditable commitments to adoption of such design criteria and the location of fauna passage structures along the corridor. Fencing and fauna passage design criteria should be relevant to the habitat, species and movement requirements of species likely to be encountered along the corridor. Note that this means that fencing and fauna passage requirements would vary along the corridor. The location of fauna passage structures should be based on mitigation of fragmentation of fauna habitat having regard to the requirements of specific species (especially threatened species), or suites of species. As the rail project is likely to require land use approval under the development scheme for the proposed Galilee Basin State Development Area, detailed information on the actual location of such measures (as opposed to the design criteria) could be provided with an application for land use approval.	Adani Mining is developing a Fauna Crossing Strategy intended to mitigate negative impacts potentially imposed on fauna communities utilising habitat which will be traversed by the NGBR. Adani intends to finalise the Fauna Crossing Strategy for approval prior to construction. The strategy is synergistic with the rail design process with the objective to formulate practical design solutions that maximise permeability for the suite of fauna species known or expected to occur. This includes consideration of Threatened Species and their habitats. The analyses have identified Key Wildlife Corridors, Local Ecological Corridors and various fragmented corridors that will be subject to specific mitigation measures to promote fauna passage. At each fauna crossing location, rehabilitation strategies and embellishments to promote and facilitate safe fauna passage will be recommended subject to faunal diversity. A fencing strategy forms an important part of the Strategy. To install a high mesh fence is not intended, rather a standard four-strand barbed wire fence is proposed to restrict stock encroachment along the majority of the NGBR alignment. As noted, fencing can impose negative impacts on wildlife, such as feeding, migration and breeding inhibition, especially where fauna passage is a priority. To provide a balance between the safety requirements of excluding cattle from the alignment and protection of native fauna, a plain top wire, with barbed wire used on the other strands will be used within sensitive areas. It is noted that applications for land use approval could include detailed information on the types and actual location of fauna-friendly infrastructure.
20	DEHP	Agency	20 g	Nature conservation	Monitoring	A commitment is given to development of a monitoring program to assess the success of the pre-construction and construction mitigation and management measures for flora and fauna. However, no auditable commitments are provided for such mitigation and management measures (relocation of habitat features, creation of artificial habitat, fauna-friendly design features incorporated into watercourse structures, rehabilitation success criteria) to provide an objective basis for monitoring of success	Objective and auditable commitments to mitigation and management measures for flora and fauna (especially in relation to fencing, fauna passage, and special habitat features) should be stated to allow reflection in conditions of approval and monitoring of implementation. Rehabilitation success criteria for non-operational (temporary disturbance) areas should be stated. The EHP guideline EM1122: Rehabilitation requirements for mining resource activities, may be useful in developing such criteria.	Noted. The comments are noted and will be considered in the development of the final EMP for the project. The final EMP will include rehabilitation success criteria for non-operational (temporary disturbance) areas. DEHP guideline EM1122: Rehabilitation requirements for mining resource activities, will be referenced (where relevant) in developing such criteria. Volume 2 Appendix G Revised commitments reflects the commitment to develop rehabilitation success criteria in line with relevant legislation and guidelines. Volume 2 Appendix H Revised EMP documents rehabilitation success criteria, in accordance with the Carmichael Coal Mine and Rail Project EMP - Rail.
20	DEHP	Agency	20 h	Nature Conservation	Monitoring	The proposal to consult with the Department of National Parks, Recreation, Sport and Racing to obtain historical data on turtle nesting surveys in the Abbot Point area should be reconsidered. The relevant information is available from EHP (Col Limpus, Chief Scientist, EHP) or from the Abbot Point Cumulative Impact Assessment (Ecological Australia and Open Lines, 2012)	For noting only	Noted.
20	DEHP	Agency	20 i	Nature conservation	Connectivity	The EIS states that the operation of the NGBR Project has the potential to create long-term habitat fragmentation. However, it is further stated that the impacts of fragmentation attributed to operation of the NGBR Project are considered to be relatively minor, within a regional context, as it is located in a landscape that has been extensively fragmented by historical broad scale vegetation clearing. The existing level of fragmentation of habitat makes further fragmentation of greater concern for the long term viability of remaining fauna species populations, especially threatened species. The fragmentation resulting from an extensive new rail corridor, for which there is uncertainty of the spacing, effectiveness and implementation of proposed measures to allow for fauna passage across or under the corridor, is of particular concern.	It is recommended that the proponent justify the argument that fragmentation of the habitat of threatened species would be minor based on mapping of modelled habitat within and adjacent to the rail corridor, commitments to implementation of specific design criteria to provide for fauna passage across the corridor, and an assessment of the likely effectiveness of such measures for each species.	Impacts relating to fragmentation at a localised and regional scales have been justified within Volume 1 Chapter 6 (Section 6.4) and Volume 1 Chapter 6 (Section 7.8) of the EIS. Areas of importance with relation to modelled potential habitat for threatened species and known wildlife corridors have also been highlighted as being more susceptible to fragmentation from the project within these chapters of the EIS. As stated in the abovementioned sections of the EIS, mitigation measures proposed relating to fauna passage across the corridor will be incorporated in to the final detailed design process. The project Species Management Plan will provide further detail regarding the design and implementation of appropriate management measures for the passage of fauna species, including those of relevance to each threatened species. During the development of the Species Management Plan, species specific design measures will be researched for effectiveness from similar projects within the region and in consultation with species specialists. Proposed measures will be located in suitable habitat areas based on outcomes of targeted population surveys for each species confirmed present or considered likely to occur within the Project area. Targeted population surveys are also proposed as a management outcome from the abovementioned sections of the EIS, which are to be undertaken prior to the detailed design phase of the project. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflects the commitment to prepare a Fauna Crossing Strategy, including design criteria.
20	DEHP	Agency	20 j	Nature conservation	Species impacts	EHP has estimated the potential direct impact of the project on habitat of the vulnerable species ornamental snake, based on habitat distribution modelling developed by the Department of Science, Information Technology, Innovation and the Arts (DSITIA), as 456 ha rather than 247 ha as stated in this section of the EIS. The DSITIA habitat modelling includes all vegetation types containing gilgais where they are known to exist. The EIS states that significant residual impact of the project on the ornamental snake is unlikely based on the Commonwealth significance criteria (NES Guidelines). This conclusion relies on the statement that the "final rail corridor is not considered to support an important population of ornamental snake". The project is likely to have significant impact as it would result in the long-term decrease in the size of an important population which is not confined to the footprint of the final rail corridor by isolating parts of the existing population and limiting access to habitat across the known distribution of the species.	The proponent, in consultation with the Commonwealth Department of the Environment (DoE), should revise the ornamental snake impact area to reflect all suitable habitat within the rail corridor. The proponent, in consultation with DoE, should revise the assessment of the significance of residual impact to the ornamental snake having regard to habitat within the rail corridor, and habitat adjacent to and connected with habitat in the rail corridor.	The 247 ha of potential habitat for the ornamental snake in the EIS was mapped based on the presence of a range of brigalow community REs known to support the species, including REs identified by the DoE where the species has been previously recorded. DSITIA habitat modelling for this species was not known of or publically available at time of EIS writing. Volume 2 Appendix D of the AEIS provides a revised estimate of potential suitable habitat for the ornamental snake occurring within the NGBR corridor.
20	DEHP	Agency	20 k	Nature conservation	Offsets	While no records of sighting exist for this vulnerable species within the project area, suitable habitat for the yakka skink does exist within the rail corridor. The fauna surveys conducted for the EIS were not of sufficient effort or extent to substantiate the conclusion that the species is not likely to occur within the final rail corridor. Additionally, the rail corridor is likely to severely curtail dispersal of this species in the northern extent of its distribution.	It is recommended that the proponent revise the statements in section 7.8.5.4 to state that the yakka skink is likely to occur within and adjacent to the final corridor area and that offsetting of 292 ha of yakka skink habitat (based on habitat modelling carried by DSITIA) is required.	Volume 1 Chapter 7 (Section 7.4.4) of the EIS states the criteria for determining the likelihood of occurrence for listed species including the yakka skink. According to this criteria, the yakka skink is listed as 'may occur' as there are no historic records for this species within the project area and the species was not recorded during field surveys even though potential suitable habitat is likely to be present within the corridor. The absence of publically available previous records for this species within the project area does not warrant this species being classified as likely to occur for the project. The draft referral guidelines for the nationally listed Brigalow Belt reptiles and outcomes of the Brigalow Belt Reptiles Workshop 2010 recommends to undertake habitat assessments and targeted surveys for colony sites (burrow systems and communal defecation sites) and individuals through diurnal searches (1.5 hours per ha for minimum of three days) and spotlighting (1.5 hours per ha for minimum of three days/nights) in suitable habitat. Trapping using one large Elliott-style trap (15.5 cm x 15 cm x 46 cm) and one cage trap placed as close as possible to burrow entrances, checked twice daily over four days is also recommended. Field survey methods undertaken are in accordance with these methods. However, the recommended survey efforts are not met. A total of 36 and 104 person hours were dedicated to spotlighting and diurnal active searches for defecation sites, respectively, for the species during the May/June 2013 and subsequent October 2013 (reported within the AEIS) field surveys within the preliminary investigation corridor. Habitat assessments undertaken to describe habitat attributes and context were undertaken at 103 habitat assessment sites. No evidence of the species was recorded during these field surveys or during field surveys conducted for the Alpha Coal Project EIS or Drake Coal Project EIS, however suitable habitat may occur within the preliminary investigation corridor in rocky outcrop areas or where eucalypt woodland with suitable timber microhabitat is present. Using the proposed 292 ha of potential habitat identified from the DSITIA habitat modelling for the yakka skink, the recommended survey effort would be 438 survey hours. This survey effort does not include the survey effort for the recommended replicate survey if the species has not already been detected, nor the provision for undertaking targeted trapping at potential colony sites.
20	DEHP	Agency	20 l	Nature Conservation	Offsets	EHP has estimated the potential impact area for the EPBC Act listed brigalow communities as 117 ha rather than 100 ha as stated in the EIS. The EHP estimate is based on intersection of the final rail corridor with current Queensland Herbarium mapping of remnant regional ecosystems which correlate with the EPBC Act listed brigalow communities.	It is recommended that the proponent either justify the lower estimate of potential impact on the EPBC Act listed brigalow communities, or amend the stated potential impact area to 117 ha as calculated by EHP.	The extent of brigalow likely to be impacted by the project has been recalculated based on the updated Project Description (AEIS Volume 2 Appendix B).

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20	DEHP	Agency	20 m	Nature Conservation	Species impacts	EHP has estimated the potential impact area for the EPBC Act listed natural grassland community as 149 ha. While the EIS states that some of the grassland community has been surveyed and does not meet the TEC criteria (condition thresholds, particularly non-woody introduced species less than 30%), the EIS provides no supporting evidence in the form of survey details, site data and site photographs. The site photograph included in Table 6-3 of Chapter 6 Nature Conservation suggests that the condition of the grassland at this site may achieve the condition threshold. The EIS states that private property access limitations meant that not all areas of potential natural grassland TEC were able to be surveyed and that further field surveys are required during or immediately post-wet season, to allow flowering grasses to be identified to confirm whether this TEC is present within the final rail corridor. Site specific information on the condition of the grassland communities is needed to support the condition assessment and determine whether or not the condition threshold for the Natural Grassland TEC has been exceeded.	It is recommended that the proponent provide adequate information to support the assertion that the natural grasslands surveyed within the final rail corridor do not meet the criteria for TEC designation. In the absence of adequate supporting information for surveyed sites, and pending adequate survey of mapped grassland regional ecosystems within the rail corridor, the estimate of potential impact on natural grassland TEC should be revised based on the assumption that the communities meet the condition threshold for EBPC Act listing.	The flora species observed at assessment sites within mapped REs that comprise the Natural Grasslands TEC lacked the key indicator species listed in the Commonwealth Listing Advice on Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin (Threatened Species Scientific Committee). The key indicator species include: <i>Aristida latifolia</i> , <i>Aristida leptopoda</i> , <i>Astrelbia elymoides</i> , <i>Astrelbia lappacea</i> , <i>Bothriochloa erianthoides</i> , <i>Panicum decompositum</i> , <i>Dichanthium queenslandicum</i> , <i>Dichanthium sericeum</i> , <i>Eriochloa crebra</i> , <i>Panicum queenslandicum</i> , <i>Paspalum glabroideum</i> and <i>Theilungia advena</i> . There must be at least three of these species present within the ground layer to constitute the TEC. For a native grassland to be considered part of the TEC the ground layer needs to be dominated by native species and contain at least 4 ('best quality' grassland) or at least 3 ('good quality' grassland) of the native indicator species. Species composition at sites within mapped natural grassland communities are as follows (* indicates exotic species): 1) <i>Parthenium hysterophorus</i> *, <i>Neptunia gracilis</i> , <i>Urochloa mosambiensis</i> *, <i>Sida rhombifolia</i> *, <i>Bidens pilosa</i> *, <i>Alternanthera sp.</i> , <i>Vachellia farnesiana</i> *, <i>Eremochloa</i> , <i>Mormordia sp.</i> , <i>Cyperus tuberosa</i> * 2) <i>Panicum decompositum</i> , <i>Aristida lazardes</i> , <i>Paspalum glabroideum</i> , <i>Flaveria sp.</i> , <i>Digitaria divaricatissima</i> , <i>Wedelia splanthoides</i> , <i>Iseilema vaginiflorum</i> , <i>Eremophila moor</i> , <i>Dichanthium sp.</i> 3) <i>Dichanthium aristatum</i> *, w/ <i>Bothriochloa pertusa</i> *, <i>Parthenium hysterophorus</i> , <i>Citroia sp.</i> *, <i>Melinis repens</i> *, <i>Corymbia erythrophloia E</i> ; in small patches <i>Iseilema vaginiflorum</i> w/ <i>Aristida lazardes</i> , <i>Dichanthium sericeum</i> , <i>Crotalaria juncea</i> , <i>Cyperus tuberosa</i> , <i>Mnesithea rotboellioides</i> , <i>Trichodesma zeylanicum</i>
20	DEHP	Agency	20 n	Legislation and approvals	Approvals	The EIS indicates that the NGBR Project would trigger the requirement for assessment of operational works under the Sustainable Planning Act 2009 against provisions of the Coastal Protection and Management Act 1995. The EIS also states that all filling and excavation associated with the construction of the rail formation, bridges and/or culvert structures or other ancillary infrastructure within the declared erosion prone area is operational works and must be assessed under the Coastal Act. The land tenure for the part of the rail corridor located within the Coastal Management District is freehold or leasehold, except for the crossing of Saltwater Creek which is unallocated State land (USL). Only the crossing of Saltwater Creek would trigger the need for an operational works approval.	For noting only	Noted.
20	DEHP	Agency	20 o	Legislation and approvals	Approvals	The EIS provides an assessment against the Coastal Protection State Planning Regulatory Provision which has been withdrawn. The State Development Assessment Provisions (Module 10: Coastal protection) guide the information required to support an application under the SP Act involving a coastal management trigger.	For noting only	Updated approvals material is provided in Volume 2 App J Revised legislation and approvals.
20	DEHP	Agency	20 p	Nature Conservation	Offsets	The "Quality" score given in Table 3-13 needs to be based on an ecological equivalence condition score for the average condition across all representation of the MNES value in the rail corridor. Table 3-13 included a note stating that habitat quality had not been formally assessed.	It is recommended that the proponent complete ecological equivalence condition assessments at representative sites along the final rail impact area to inform the final offset area requirements (State and Commonwealth). This should be submitted, together with a revised Biodiversity Offset Strategy, to the administering authority prior to issue of necessary approvals for project construction.	Noted. Volume 1 Chapter 7 (7.15) of the EIS identifies 'indicative' quality scores for offsets and notes that further equivalence assessment will be undertaken by Adani (which is an Adani commitment stated within the EIS) to inform the finalisation of the Biodiversity Offsets Strategy for the Project.
20	DEHP	Agency	20 q	Air quality	Coal dust management	The proponent has committed to the preparation of a Coal Dust Management Plan generally consistent with the Aurizon Coal Dust Management Plan (February 2010). The commitment to coal dust management provided in the EIS is not sufficiently objective to form the basis for assessment of compliance and should be supported by auditable commitments to minimum management measures such as dust profile, venturing, and moisture content. The effect of coal dust emissions would be subject to the general environmental harm and nuisance provisions of the EP Act. However, the adequacy of a coal dust management plan could be assessed against current known best practice. Conditions of approval (Coordinator-General's evaluation report) should require the implementation and audit of an acceptable plan. The Coal Dust Management Plan should address dust emissions from both loaded and empty rail wagons and should also consider any potential for the project to contribute to cumulative impacts at Abbot Point. According to the EIS, the operation of the North Galilee Basin Rail Project (NGBRP) is not likely to cause unacceptable impacts to air quality under the scenario modelled. However, significantly increased use of the rail corridor could result in higher cumulative emissions than those modelled. This could occur if other major coal haulage proposals that are subject to existing approvals were to relocate to the NGBRP rail corridor.	The EIS should be amended to include auditable commitments to limiting and managing coal dust emissions from loaded and empty rail wagons sufficient to provide a basis for conditions of approval in the Coordinator-General's evaluation report and/or approval of land use within the Galilee Basin State Development Area (if gazetted), and to allow monitoring of the effectiveness of the implementation of management measures.	Adani has committed to development of a Coal Dust Management Plan consistent with the Aurizon Coal Dust Management Plan. It is anticipated that this will be a condition of approval for the project and will include audit and reporting requirements. Volume 2 Appendix G Revised commitments reflects a commitment to "consult with the Department of Environment and Heritage Protection during preparation of the Dust Management Plan and Coal Dust Management Plan".
20	DEHP	Agency	20 r	Noise and vibration	Noise monitoring	The modelling of noise levels during operation of the rail predicted that night time noise levels at two homesteads would exceed the NSW EPA Rail Infrastructure Noise Guideline 2013 maximum by less than 1 dB for the assumptions used (speed of train, sound power level of train at given speed, number of train per day, modelling parameters). The NSW Rail Infrastructure Noise Guideline 2013 proposes noise criteria for both day time and night time with a single event drive by L _{max} of 80dBA for both day time and night time but with cumulative levels of 60dBA over 15 hours of day time and 55dBA over the 9 hours corresponding to night time. The NSW EPA Rail Infrastructure Noise Guideline 2013, as used in the North Galilee Basin Rail EIS, is considered to be more appropriate than the QR Code of Practice for Railway Noise Management for the establishment of a new rail line. The more stringent noise criteria in the NSW guideline reflect the higher potential for nuisance resulting from the establishment of a new rail line. The EIS concluded that noise and vibration caused by the construction and operation of the project would be appropriately managed through the implementation of the stated mitigation and management measures and that residual noise impacts would be insignificant. Specific mitigation measures for homesteads potentially affected by operational noise are not stated. It is proposed (Table 12-13 Summary of mitigation measures) to monitor actual operational noise levels and implement additional mitigation measures if required such as: • Construction of screening and barriers or bunds • Noise mitigating building works at sensitive receptors, such as double glazing. Approval of the project will need to include appropriate conditions to ensure that monitoring of noise levels, and implementation of additional mitigation measures, are implemented and effective from the commencement of construction through to full development (as defined by the EIS). The means by which cumulative noise impacts resulting from possible additional rail haulage (above 100 million tonnes per annum) will be managed and mitigated will require further consideration.	Conditions of approval should constrain the maximum capacity and operational use of the rail corridor by the NGBRP consistent with the assumptions used in modelling the maximum noise levels at sensitive receptors in the EIS. Approval of the NGBRP should require monitoring of noise levels at potentially affected noise sensitive places, from the commencement of construction through to full development, and the implementation of additional mitigation measures where noise levels exceed the criteria stated in the NSW Rail Infrastructure Noise Guideline 2013.	Noted. Operational capacity beyond 100 mtpa would require additional assessment, monitoring and approval and is not sought at this time. Volume 2 Appendix G Revised commitments reflects a commitment to "consult with the Department of Environment and Heritage Protection during the planning stage of operational noise monitoring regarding applied noise standards."
20	DEHP	Agency	20 s	Cultural heritage	Non-indigenous cultural heritage impacts	The terms of reference for the EIS require a "study/survey" for non-Indigenous cultural heritage. The EIS includes only a desktop study. Consultation with community interest groups, landholders and Local Governments appears to have been limited indicating that local heritage values may have been overlooked. The heritage listed Strathmore Homestead is located approximately 5.5 km from the proposed rail corridor but is unlikely to be affected by construction or operation. Other listed sites are located more than 11 km from corridor.	Table 15-3 should be amended to include: • a requirement for pre-construction surveys consistent with the EHP guideline for carrying out a heritage survey; and • mitigation and management measures which reflect the requirements of section 89 of the Queensland Heritage Act 1992.	Volume 2 Appendix H Revised EMP framework includes the following measures: *in accordance with the CHMP impacts to previously unregistered and unassessed items or places of non-Indigenous cultural heritage significance will be mitigated by: — Undertaking comprehensive archaeological survey in accordance with the Department of Environment and Heritage Protection Guideline 'Carrying out a heritage survey' — Generating survey reports to provide detailed assessment and management recommendations — Assessing significance of any cultural heritage Management of cultural heritage will be undertaken in accordance with Adani's duty of care under the Queensland Cultural Heritage Act 1992.*

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20	DEHP	Agency	20 t	Legislation and approvals	Approvals	The proponent has indicated that ERA 16 (extraction, crushing and screening) would be undertaken at locations along the rail corridor for construction purposes. (Note that a separate environmental authority is not required for ERA 33 (crushing, milling, grinding or screening) where this activity forms part of ERA 16). No specific detail in relation to these activities has been provided in the EIS although Figure 2-5 indicates approximate locations. The project approvals register (Table 20-7) indicates that the assessment of proposed environmental relevant activities would be deferred to after the EIS process is complete. Discussion with the EIS Project Manager – North Galilee Basin Rail Project has confirmed that recommended conditions of approval for the environmentally relevant activities associated with construction of the rail are not required for inclusion in the Coordinator-General's Evaluation Report. Subsequent approval requirements under the SP Act and SDPW Act are uncertain. Land use approval (material change of use) for development within the proposed Galilee Basin State Development Area (GBSDA) may be required under provisions of the GBSDA development scheme. EHP would provide advice to the Office of Coordinator-General in relation to this approval, particularly in relation to location and offset requirements. If the activity is assessable under a local government planning scheme, the State government may not be able to condition an approval under the SP Act unless relevant conditions are included in the CG report. Operation of an ERA requires the issue of an environmental authority under the EP Act (EHP administered) which must include and be consistent with any relevant conditions of the CG report.	For noting	Noted.
20	DEHP	Agency	20 u	Legislation and approvals	Approvals	The proponent has indicated that five proposed construction camps along the rail corridor would be serviced by sewage treatment plants consistent with the definition of ERA 63. Detailed information in relation to the location, scale and intensity of sewage treatment activities would need to be provided to allow assessment and development of conditions for a development approval under the Sustainable Planning Act 2009 (if required) and an environmental authority under the Environmental Protection Act 1994.	For noting	Noted.
20	DEHP	Agency	20 v	Legislation and approvals	Approvals	ERA 64 Water treatment is unlikely to be carried out during construction and operation of the project. However, if relevant, the general comments for ERA 16 and ERA 63 are applicable	For noting	Noted.
20	DEHP	Agency	20 w	Nature Conservation	Approvals	The draft strategy states that a property map of assessable vegetation would be prepared and certified by the Queensland Herbarium, to confirm potential impact areas. It is further stated that a bio-condition assessment of potential impact areas and potential offset sites would be undertaken to determine their ecological equivalence. A property map of assessable vegetation is not subject to certification by the Queensland Herbarium but, if required, is subject to approval by the Department of Natural Resources and Mines (DNRM). Offsets required by an approval under the Sustainable Planning Act 2009 (SP Act) to clear woody vegetation would be subject to provisions of the Vegetation Management Act 1999 (VM Act). Assessment of clearing under the SP Act against provisions of the VM Act may be affected by the tenure of the rail corridor. If the clearing is not assessable against provisions of the VM Act, the ability of the Queensland Herbarium to review any proposed variation of regional ecosystem mapping from publicly available mapping for the purpose of determining offset requirements would need to be determined.	The relevance of provisions of the Sustainable Planning Act 2009 and Vegetation Management Act 1999 to clearing of vegetation for the project should be clarified having regard to the tenure and designation of the project development area at time of application for approval.	Updated approvals material is provided in Volume 2 App J Revised legislation and approvals Necessary development applications will be lodged as part of the development of the Project.
20	DEHP	Agency	20 x	Nature Conservation	EMP	The environmental management plan framework proposes consultation with DNRM prior to construction to determine 'allowable threshold levels' for downstream water quality. The document indicates an expectation that conditions of approval would include a maximum acceptable per cent increase above upstream background levels as well as an acceptable maximum duration for changes to any water quality parameter. EHP has administrative responsibility for water quality under the Environmental Protection Act 1994 and Environmental Protection (Water) Policy 2009. Threshold levels for downstream water quality are not able to be appropriately determined in the absence of adequate water quality data for each watercourse. A differential water quality approach (upstream compared with downstream) could be adopted for flowing watercourses but watercourses in the corridor are typically ephemeral and/or non-flowing for much of the year. Management of water quality must focus on design (scour potential under a range of flow events), and erosion and sediment control measures during construction and operation.	Measures to manage the sediment and other contaminant load in stormwater runoff from construction and operational sites should be sufficient to prevent environmental harm and should be defined in environmental management plans prepared by qualified persons. Effective implementation of the management plans should be confirmed by the proponent through internal and external audit programs.	Noted. As stated in the project EMP erosion and sediment control measures will be implemented to manage potential impacts to water quality. These will be developed in consultation with DEHP.
13	Ergon Energy	Organisation	13 a			Ergon Energy in principle has no objection to the proposed rail line, and offers the following information as advice to the proponent.	No further action required	Noted.
13	Ergon Energy	Organisation	13 b	Land use and tenure	Existing and proposed infrastructure	Establish the relationship between the proposed finished level of the rail line/yard (and associated infrastructure) and exact location of poles and wires to identify where (if anywhere) the relocation, replacement or heightening of electricity infrastructure is required. Infrastructure redesign must consider servicing and maintenance access requirements for personnel and equipment.	Undertake detailed survey of each point of encroachment or conflict. Identified changes to Ergon Energy infrastructure are made with Ergon Energy's consent and at proponent's expense (unless otherwise agreed to by Ergon Energy).	Noted. Adani will continue to consult and liaise with Ergon Energy during the design and construction phase of the Project.
13	Ergon Energy	Organisation	13 c	Land use and tenure	Energy connection requirements	The EIS does not outline ongoing energy requirements for ancillary infrastructure (i.e., signalling equipment, boom gates, water supply, maintenance depot, staff accommodation etc.).	The proponent should negotiate electricity supply arrangements by applying in writing to Ergon Energy. Early contact is recommended to ensure requirements for any permanent electrical distribution infrastructure are accounted for in a timely and efficient manner.	Noted. Adani will continue to consult and liaise with Ergon Energy during the design phase of the Project to ensure the securing of operation power requirements.
13	Ergon Energy	Organisation	13 d	Legislation and approvals	Safety during Construction	Legislation regarding electrical safety should be adhered to when working in the vicinity of electricity infrastructure. Exclusion zones stipulated in the Code of Practice - Working Near Exposed Live Parts are to be maintained when working near exposed overhead electrical wires.	It is recommended the proponent contact Ergon Energy prior to construction to obtain safety advice where construction activities may encroach exclusion zones or to arrange the fitting of visual safety indicators such as tiger tails or aerial markers to the exposed overhead wires.	Noted. Adani will continue to consult and liaise with Ergon Energy during the design and construction phase of the Project.
14	DSDIP	Agency	14 a	Project alternatives		The EIS must clearly demonstrate the assertion that a separate standalone railway delivers the best net benefit for Queensland (EIS consideration of alternatives).		While lodging the NGBR Project IAS with the Coordinator-General and DSDIP, Adani submitted a prefeasibility assessment duly enclosing a Strategic Rail Infrastructure Planning Review, Dec 2012 (Commercial in confidence). This document emphasised to develop a standard gauge railway accommodating use by both Adani and third-party users from within the Galilee Basin, and in accordance with State and Federal Government Policy documents. Other standalone rail projects have been proposed (and approved) to service the Galilee Basin, however none of those rail projects has yet achieved financial investment close or commenced construction. As such, Adani's standalone greenfield standard gauge NGBR Project is justified in its intention to open up the Galilee Basin to mining and the associated flow on benefits to the region and State with respect to capital and operational expenditure and facilitation of royalty generation.
14	DSDIP	Agency	14 b	Legislation and approvals	Approvals	EIS must clearly demonstrate that the project meets CID criteria. It must also be noted that normally the decision to pursue CID would be made before preparing an EIS as a coordinated project. There may be some misunderstanding of the applicability of CID in this case.		Noted. CID was listed in the EIS as a potential opportunity for converting appropriate tenure and planning interests for the project should an SDA not be declared. Adani notes the requirement to clearly demonstrate that the project meets the CID criteria should that approval pathway be pursued.

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14	DSDIP	Agency	14 c	Legislation and approvals	Approvals	The EIS needs to ensure that references to regulatory instruments and Queensland Government policy is current (e.g. references to SPP 2/02 and references to the Queensland Regionalisation Strategy (2011)).	The EIS referenced policies which were in effect at the time of writing. It is noted that some changes have come into effect since publication. These changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals	
21	DSDIP	Agency	21 a	Legislation and approvals	Corridor acquisition	Adani indicates that their preferred approach for the corridor to be secured via a head of power in the SDPWO followed by acquisition of a contiguous corridor. Currently there is no power within the SDPWO Act to secure tenure over a non-tidal boundary water course. While Adani is free to express their preferences, it may be worth noting that a "contiguous" corridor is not currently possible to moderate expectations.	Noted. The specific mechanism for securing the rail corridor will be determined through ongoing consultation with all relevant parties and subject to relevant legislation constraints.	
21	DSDIP	Agency	21 b	Legislation and approvals	Strategic Cropping Land	Adani states mitigation fees will be paid for permanent damage associated with the rail infrastructure, with the amount to be set by consultation with NRM. It's not clear whether this refers to construction impacts on land generally or impacts on the corridor land. Please note that handback conditions for the rail corridor at the end of the lease period will be established under contractual terms (expected to be a sublease from DTMR).	Mitigation fees associated with permanent alienation of Strategic Cropping Land will be payable, in accordance with the Strategic Cropping Land Act 2011, should the current legislative regime continue to apply at the time development applications are lodged. Adani notes that hand back conditions are likely to be established under the contractual terms of a lease contract for the final rail corridor.	
22	Submitter 22	Individual	22 a	Air quality	Health impacts	I MUST ASK in this day and age why we still promote coal power !W H O and the UN condemn it Because mercury vapor of which 80 % is absorbed by the human body mercury is Toxic to the nervous system / immune system including reproductive and cardiovascular systems . when mercury enters the aquatic environment it can be transformed by micro - organisms into much more Toxic form METHYL-MERCURY, THIS ACCUMULATES IN FISH AND PEOPLE WHO EAT THE FISH . AND MOTHERS other passes on mercury that accumulated in here body to the developing fetus which is most sensitive to the toxic effects of Mercury . It affects the development of their central nervous system # robing our children of their full potential I ask have Australia signed toxicity of coal mercury control treaty 2013 In India 119,000 people die from premature death from coal toxins burnt at an even more alarming rate than ever and to think Mr ADANI WANTS AN EXTRA 60 / 100 MILLION TONS OF THIS COAL A YEAR IS BEYOND BELIEF.	Noted. The project Terms of Reference do not require an assessment of the Project in relation to health impacts.	
22	Submitter 22	Individual	22 b	Transport	Road crossings	Each train comprises of 4 x SD70 ACe locomotives =12,800 KW of power pulling 240 wagons with a pay load of 108 x 240 tonne = 25,920 TONN each and will block the Bruce high way and the Bowen development road every 58 mins the train is 3,974 meters long (4 kilometers long) and will lead to road rage because adani trans will be blocking the high ways day and night . adani must build flyovers to address this problem and not expect the TAXPAYER to front the bill \$35million for each bridge maybe , outrageous if we the TAXPAYERS foots this bill. and please advise the co 2 from 28 trains per a day x 321 days.	As detailed in the Project Description, Adani proposes the construction of grade separation (rail over road) at the Bruce Hwy and grade separation (rail under road) for the Bowen Developmental Road. As such, no delays to road transport will be experienced. Greenhouse gas emissions are assessed in Chapter 11 of the EIS, in accordance with the Terms of Reference for the project	
22	Submitter 22	Individual	22 c	Social and economics	Construction workforce	the majority of workers are strictly fly in fly out and people of Bowen and Collinsville will not be employed but will have to put up with the crime and dirt from this adani mine and other works ! i base this on past projects here that fly and transport there people and equipment up here from the south were big contractors are found i have rang the Bowen Tafe up and they don't now about any training for adani at all.	The EIS presents an estimated proportion of FIFO versus DIDO workforce requirements including the sourcing (and training) of approximately 20% of the peak workforce from the local region. Whilst this case is presented in the EIS as a best estimate of the likely proportion of local/regional employment, the assessment does not limit the potential for flexibility in relation to origins of the workforce. In addition, the EIS presents Adani's commitment to undertaking initiatives to build capacity for local and regional business.	
22	Submitter 22	Individual	22 d	Social and economics	Social infrastructure	adani are not supplying any fire engines ore staff no extra nurses ore doctors and are not paying for extra police staff , BUT we the TAXPAYER will be forking out for this outrageous cost of supporting 3,000 to 6,000 adani contractors please advise adani full costing please	Comments are in relation to the Carmichael Coal Mine Project and not relevant to the NGBR Project.	
22	Submitter 22	Individual	22 e	Nature Conservation		min of 60 billion tonn of coal to be extracted from an area exceeding 41 x 21 kl and billions of mega liters of water to be extracted over 60 / 99 years + and your water and wild life habitat figgers are wrong ore none existent ! the rare Queensland Kuala habitat seem to be not mapped ore over looked totally this mine will dry up most aquifers and the gum trees will die over the course of 60 + years the government must do better please advise	Comments are in relation to the Carmichael Coal Mine Project and not relevant to the NGBR Project.	
22	Submitter 22	Individual	22 f	Greenhouse gas	Health impacts	i yoused to life NR Newcastle N S W and from the 1980 i sore the amount of coal ships grow especially when we closed the local power station because of so2 / co2 now there seems to be about 1000 + a year now we are opening up coal mines here like Carmichael mine + others ? please advised the amount of toxic ballast that is release by each coal ship i am told under Australian LAW that TOXIC chemicals are used to kill all the creatures that were loaded up wile taking on ballast in china India etc. what are the total co2 and so2 figgers for this 100 year adani mine project including the shipping and burning of this coal by adani India the public should now this reminds me of the film avatar 2009 ore the lord of the ring were people suffer for greed .	Comments are in relation to the Carmichael Coal Mine and operations at the Port of Abbot Point and are not relevant to the NGBR Project. Impacts relating to the port operations have been assessment separately and approval given for the proposed development.	
23	WRC	Local Council	23 a	Social and economics	Construction camps	Camps are close to regional towns such as Collinsville and Bowen. Any new facility will require a planning approval and sufficient justification as to why an existing facility could not be utilised should other State legislation and policies not apply.	The proponent should provide options for employees and their families to be housed within Bowen, Collinsville and the greater Whitsunday Regional Council area. Commuting from these areas are within reasonable distances to identified camps. In addition, Bowen and Collinsville provide suitable and larger range facilities and services than would be provided in temporary camps. Existing township and camps should be utilised before creating a new facility. The proponent should provide details of expected demand for Council landfills including a breakdown of the types of waste to be disposed and potential locations.	Noted. The locations of rail construction camps is driven from various rail constructability factors and accordingly they have been planned. Construction Camps that are collocated along the railway are expected to minimise vehicular movements during construction and thus road and other social / community impacts (safety, dust, noise, etc.). Further consideration will be given to the use of existing accommodation infrastructure during detailed design. Adani will continue to consult with relevant State and Local government agencies in this regard.
23	WRC	Local Council	23 b	Waste	Construction camps	Camps 1-5 are within WRC boundaries.	Assessment of potential waste types, quantities and potentially suitable local government disposal facilities are included in Chapter 13 Waste of the EIS.	
23	WRC	Local Council	23 c	Legislation and approvals	Ancillary construction facilities	Concrete batch plants are included in the construction of the railway.	WRC will require full details and associated plans for identified concrete batch plants. This will trigger planning approvals should other State legislation and policies not apply.	Noted. Relevant details will be provided with development applications to the relevant administering authority at the time of lodgement.
23	WRC	Local Council	23 d	Legislation and approvals	Quarries and borrow areas	"Quarries and borrow areas will be required to support the construction of the NGBR Project."	WRC will require full details and associated plans for identified quarries. This will trigger planning approvals should other State legislation and policies not apply. In addition, the applicant will be required to identify existing quarries and extraction operations and the viability of sourcing aggregate from these operations. Should this not be viable, appropriate justification as to why Greenfield quarries are required will need to be submitted.	Noted. Relevant details will be provided with development applications to the relevant administering authority at the time of lodgement.

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23	WRC	Local Council	23 e	Water Resources	Water supply It is expected that water supply to support the NGBR project will be a combination of the following: • In stream water storages • Off stream water storage • Groundwater bores • River harvesting • Purchase of potable water from Isaac Regional Council Whitsunday Regional Council	The proponent is to provide details of proposed usage and uses for the water consumption. The proponent should undertake a supply and demand analysis to demonstrate adequate water supply from the various sources.	A construction water supply strategy was included in the EIS at Volume 2 Appendix H3. Potentially suitable water sources will continue to be refined during detailed design.
23	WRC	Local Council	23 f	Transport	Haul and access roads "Construction of the NGBR Project will be supported by a combination of upgrades to local roads and construction of new haul roads and access roads."	The proponent will be required to supply information demonstrating the use of haulage routes (i.e. local quarry materials) and assess roads to develop a thorough understanding of road degradation.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani had discussions with WRC on 9 August 2013 in regard to local roads and other matters relating to road transport. Adani will continue to consult with WRC in regard to transport. Adani has committed to the preparation of a road impact assessment and road use management plan which will include details of local roads that are directly affected during construction, including as a result of transport of quarry materials.
23	WRC	Local Council	23 g	Transport	Haul and access roads "Access roads utilised during construction will be variously rehabilitated or repurposed as maintenance access roads."	Sufficient detail as to how these access roads will be maintained and rehabilitated. The stakeholder responsible for conducting maintenance or rehabilitation should also be identified.	Adani will consult further with WRC to determine appropriate options for ongoing utilisation of Access Roads. Volume 2 Appendix G Revised commitments reflects the commitment for maintenance/rehabilitation of access roads to be undertaken in accordance with infrastructure agreements made between Adani and relevant holders.
23	WRC	Local Council	23 h	Transport	Road crossings "The NGBR Project includes 22 road crossings... The criteria are subject to further consultation with Department of Transport and Main Roads (DTMR) and local councils, and will undergo further review during subsequent design stages."	WRC will expect the Proponent to establish contact regarding the design stages for the Road crossings.	Adani had discussions with WRC on 9 August 2013 and provided a presentation about crossing requirements (local roads & stock routes) and proposed treatments within the WRC local government area. On 30 October 2013, WRC confirmed that the Adani basic design is consistent with Council's Development Manual. Adani will further do a road impact assessment and road use management plan and as a result any local roads that are directly affected will be discussed with council and maintenance upgrades agreed upon. There is no discussion on indirectly affected WRC roads.
23	WRC	Local Council	23 i	Transport	Road crossings Further severance of the Whitsunday Regional Council LGA by increasing the frequency of use of existing and proposed railway lines to deliver material from the mine to the Port of Abbot Point using existing and proposed rail lines in the Whitsunday Regional Council's Local Government Area.	The Proponent must submit detailed plans of works to be undertaken to Local Government and State Controlled Roads where increased severance will occur along the rail corridor to enhance awareness to motorists. These plans must include any proposed upgrades to lighting, signage and queuing of vehicles where required.	Adani had discussions with WRC on 9 August 2013 and provided a presentation about crossing requirements (local roads & stock routes) and proposed treatments within the WRC local government area. On 30 October 2013, WRC confirmed that the Adani basic design is consistent with Council's Development Manual. Adani will further do a road impact assessment and road use management plan and as a result any local roads that are directly affected will be discussed with council and maintenance upgrades agreed upon. There is no discussion on indirectly affected WRC roads.
23	WRC	Local Council	23 j	Transport	Road crossings Interruption of relatively well used State Controlled roads by increased frequency of trains from the Carmichael Coal Mine to Terminal) at Port of Abbot Point. This causes motorists to utilise alternative local roads to avoid interruption.	The Proponent should consider a contribution to the Local Government for the construction, upgrade and maintenance of any local roads which are indirectly affected as an offset to the effect on State Controlled Roads.	Adani had discussions with WRC on 9 August 2013 and provided a presentation about crossing requirements (local roads & stock routes) and proposed treatments within the WRC local government area. On 30 October 2013, WRC confirmed that the Adani basic design is consistent with Council's Development Manual. Adani will further do a road impact assessment and road use management plan and as a result any local roads that are directly affected will be discussed with council and maintenance upgrades agreed upon. There is no discussion on indirectly affected WRC roads.
23	WRC	Local Council	23 k	Transport	Occupational and stock crossing "The NGBR Project includes 54 occupational crossings and seven national stock route crossings."	WRC will expect the Proponent to establish contact regarding the design stages for the Occupational Crossings and Stock Route Crossings	Adani had discussions with WRC on 9 August 2013 and provided a presentation about crossing requirements (including stock routes) and proposed treatments within the WRC local government area. On 30 October 2013, WRC confirmed that the Adani basic design is consistent with Council's Development Manual. Consultation will continue to be undertaken with WRC with regard to local road and stock route crossings (in concert with DNRM).
23	WRC	Local Council	23 l	Transport	Construction traffic The construction schedule in Table 2-23 indicates that the schedule will commence in late 2014 through to the 4th quarter of 2016. Section 2.4.3 states that: "The majority of the construction workforce will fly-in fly-out from anywhere on the east coast of Australia, to regional airports in Townsville, Moranbah, Mackay, Emerald or Bowen. From these locations, the workforce will be transferred to any of the five construction camps by bus."	The proponent should provide options for employees and their families to be housed within Bowen, Collinsville and the greater Whitsunday Regional council area. Commuting from these areas (i.e. Bowen and Collinsville) are within reasonable distances to identified camps. In addition, Bowen and Collinsville provide a suitable and larger range of facilities and services than what would be provided in a temporary camp.	Volume 1 Chapter 16 of the EIS states that the majority of the construction workforce would be FIFO and that local workers may need to reside in workers camps during shift. As stated the requirement for the camp is to minimise transport requirements for workers while on shift, principally to manage safety. Adani will continue to work with WRC to address worker accommodation requirements during development of the project.
23	WRC	Local Council	23 m	Transport	Construction traffic "The construction of the NGBR Project will generate additional heavy and light vehicle traffic on the external road network."	The Proponent should consider a contribution to Local Government for the construction, upgrade and maintenance of any local roads which are indirectly affected as an offset to the effect on State Controlled Roads.	Adani had discussions with WRC on 9 August 2013 including a presentation about crossing requirements (local roads & stock routes) and proposed treatments within the WRC local government area. On 30 October 2013, WRC confirmed that the Adani basic design is consistent with Council's Development Manual. Adani will further do a road impact assessment and road use management plan and as a result any local roads that are directly affected will be discussed with council and maintenance upgrades agreed upon. There is no discussion on indirectly affected WRC roads.
24	Peregian Beach Community Association	Organisation	24 a	Greenhouse gas	Failure to consider GHG The proponent's reliance on the Greenhouse Gas Protocol will not advance purposes of the Sustainable Planning Act (2009) with regard to abatement of global warming, climate change, ocean acidification and rising sea levels stemming from approval of this Project.	Adopt public comment suggestions relating to this project's TOR and require holistic assessment of Scope 2 and 3 emissions not presently considered in the EIS. Attachment provided.	Greenhouse gas assessment was undertaken in accordance with the terms of reference for the project.
24	Peregian Beach Community Association	Organisation	24 b	Greenhouse gas	Failure to consider GHG Reliance on the National Greenhouse & Energy Reporting Act is inappropriate because some 95% of climate damaging greenhouse gas emissions will take place in foreign locations. Global environmental impacts of these emissions, that are not assessed, will exacerbate global warming climate change, extreme weather events, ocean acidification, rising sea levels and hinder future ecological sustainability of the Great Barrier Reef, Commonwealth Marine Reserves, and the wellbeing of coastal communities throughout Australia such as Peregian Beach. These are matters of national ecological significance requiring comprehensive assessment under provisions of the Commonwealth EPBC Act.	Peregian Beach Community Association Inc supports the attached recommendations to adopt the public comment suggestions dated, 11 June 2013, ensuring the holistic assessment of Scope 2 and 3 greenhouse gas emissions associated with development of the North Galilee Basin Rail Project and associated Galilee Basin sub-bituminous coal export mine projects & enabling appropriate abatement conditions, to be set, to ameliorate externality costs associated with project approval.	Greenhouse gas assessment was undertaken in accordance with the terms of reference for the project.
25	Submitter 25	Landholder	25 a	Social and economics	Landholder consultations From the ongoing consultation with Adani in regards to the potential layout of the rail line we have been advised that a giant wall of up to ten metres high will cut our property. This wall like construction will be designed with what we believe to be land fill and has been laid out on maps generated by Adani's engineers. During consultations we have felt that the engineers have shown very poor communication skills especially when we have addressed this issue. Our questions specifically directed towards the engineer have been left unanswered and we feel that Adani is not going to work with us to minimise the height of the rail line.		The assessment of an appropriate embankment profile is based on wide ranging constraints including geotechnical data for existing ground conditions, LIDAR for topography, hydrology for flood immunity, and rail geometry for ensuring the safe and reliable performance of trains. Following consultation with the landholder, the vertical alignment (VAL) has been optimised further and achieved significant reduction in the embankment profile across Thurso Station. For example, at the Thurso/ Nevada boundary, the VAL has been reduced from 14m fill, to near ground level. There are numerous gullies and creeks crossed by the railway in Thurso. Landowner has requested natural drainage pathways be maintained, which requires embankments high enough to accommodate the cross drainage. Further refinement of the VAL and embankment profile will be undertaken at detailed design.

Sub. No.	Submitter	Submitter Type	Issue No.	Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response
25	Submitter 25	Landholder	25 b	Social and economics	Landholder consultations	We are concerned about the ability of Adani Mining to conform with landholder engagement standards expected of a company in Australia. This deeply concerns us as the push for us to work our business through tunnels has been forced upon us and we have told Adani from the very start that we would not be working with tunnels. We would only negotiate with level crossings or overpasses.	Two Occupational Crossings (OCC) are proposed on Thurso Station: CH 42.5km (0.5m Fill, Level) and CH 45.5km (7m Fill, Underpass). The locations of OCCs are in line with landowner advice and have been captured on site with handheld GPS under the direction of the landowner. Initially both OCCs were proposed (by Adani) as 'underpass crossings' based on risk assessment, safety, ease of use, and suitability of the VAL. Subsequently, the landowner requested a 'level crossing' near Nevada Boundary, which was accommodated in the recent design stage. In line with current industry practice, underpass structures are typically used (preferred for safety reasons) for the movement of cattle under railways. Proposed sizing of the underpass (3.6m x 3.6m reinforced concrete box culvert) will allow for the safe passage of cattle and farm vehicles such as four-wheel drives. Opportunity for unconventional overpasses shall be considered further in detailed design and as part of ongoing landowner consultation.
25	Submitter 25	Landholder	25 c	Transport	Safety	The uses of level crossings pose their own set of problems. As the proposed rail line is going to be raised so high we are under the impression that our crossings are going to be much higher than standard level crossings on a highway. We feel that the intensity of the height will obstruct our view causing grave concerns when we wish to cross by vehicle and with stock. We feel as though many safety issues will arise due to the rail line and it is issues like this that we have not had to deal with before. As a large mining company wishing to promote a safe working environment we feel that Adani should be more concerned about the safety of landholders as no amount of compensation can cover the cost of safety if someone was to be hurt crossing the line. If the rail line is to be approved by the State Government our ideal crossings would be overpasses. We feel this is the safest option to run our business. However, Adani has failed to communicate and negotiate this requirement with us and whenever the question is address by ourselves it is quickly passed off by Adani employees.	The design of level crossings incorporates multiple design features to ensure the highest level of safety and practicality. The proposed Level Crossing on Thurso Station @ CH 42.5km is in shallow filling (0.5m). The VAL is consistent with standard railway level crossings and is not expected to obstruct views for vehicles / stock. Level crossings may include provision of a telephone connected to the rail operator in order that the user utilised the crossing at the safest time and with full understanding of when the next train is expected. Level crossings will be fully fenced and gated to ensure stock do not use the crossing in an uncontrolled fashion. The gates provide a physical barrier which requires manual operation to use the crossing. This ensures that the user is fully aware as they prepare to cross the railway. Level crossings may include provision for a 'holding yard', which provides a safe facility to use for the controlled movement of stock across the railway, subject to consultation and negotiation with the landholder.
25	Submitter 25	Landholder	25 d	Hydrology	Flooding	We are worried that the proposed line built up on such a high scale is going to bank and dam water that has previously flowed with the natural contours of the land. This has the potential to cause unwanted erosion and flash flooding on our property. Erosion is something that we have been working towards preventing under the State Government Scheme 'Environmental Risk Management Plan'. We feel that unnecessary damage from the rail line is going to be caused due to run off and sediment that we may not be able to manage under the ERMP requirements.	Cross drainage will be installed under the rail alignment to ensure natural drainage pathways are maintained and do not flood upstream of the railway. Detailed hydrology and hydraulic assessments of the required cross-drainage has been undertaken for the creeks intersected across Thurso. LIDAR data has been used to capture the natural contours of the land and associated catchments and creeks, to ensure accuracy in the results. Peak discharges and peak flow runoff hydrographs were estimated for the 20, 50 and 100 year Average Recurrence Interval (ARI) events. One dimensional hydraulic modelling was used to determine the existing (i.e. pre-development) and future (i.e. post development) behaviour of the waterways to ensure compliance with afflux limits and flood immunity. Proposed cross drainage structures were included in post development scenario and found to have satisfactory results with respect to afflux limits and flood immunity design criteria. Longitudinal drains will be installed along the railway to capture any runoff from the rail corridor that could otherwise contribute to erosion on landholder property. Implementation of construction and operation erosion and sediment control plans (as part of the NGBR Project EMP) will also assist to ensure the minimisation and management of resulting runoff, erosion and sedimentation during the life of the NGBR Project. Appropriate scour protection around waterway openings to reduce erosion are also proposed and will be considered further during detailed design and based on site geotechnical data.
25	Submitter 25	Landholder	25 e	Social and economics	Severance	The proposed rail corridor will affect our main breeding paddock. It has the potential to cut off dams, wind mills and several tanks. We are extremely afraid that our cattle will run out of water during both the wet and dry seasons of the year. We sense that Adani's approach to the sustainability of our business is taken upon lightly as we are just a very small stepping stone to a very large project. Adani are under the impression that they can throw money around the table to build a dam here, place a yard in this corner and drill a bore there. However, Thurso is not known for having a replenishing underground water system and we have spent a lot of money over the years drilling for bores with no success. At the end of day no amount of money is going to increase our underground water supply, prevent new dams from leaking or ensure that we have better than average rainfall.	The first Adani meeting with the Thurso Station landholders occurred on 11 July 2013. The purpose of this meeting was to negotiate a mutually acceptable land access agreement that allowed Adani to effectively commence its corridor investigation program "on the ground" under strict agreed land access protocols. This agreement was obtained that day following detailed discussions on the terms and conditions of entry. A number of meetings with the landholders have been held over this intervening period, during which the majority of concerns and issues raised in their submission to the Coordinator General were tabled with Adani. As a result of these meetings various refinements to the initial design have been undertaken. It needs to be appreciated that the preliminary design work carried out to date has been prepared for the basis of carrying out formal compensation assessments and negotiations, the requirements for which are set down under The Coordinator-General's Statutory Guidelines (Guidelines) dated 21 December 2012. Adani plans to commence this process by providing a formal notice to the landholders of Thurso Station and other landholders along the proposed rail corridor in early March 2014. Adani will be recommending in that notice that the landholder seek independent professional advice to protect their interests, the reasonable costs of which will be met by Adani. Importantly this stage of negotiations with landholders brings together for the first time the current design and the resultant assessment of compensation needed to cover the impacts that this design will have on the ongoing operations. Adani is absolutely committed to the well-established compensation principle of ensuring the landholder is in a no worse financial position after the construction of the proposed rail corridor compared to the position they currently enjoy. The concerns of the Thurso Station landholders questioning Adani's ability to conform to landholder engagement standards or having the necessary appreciation of a grazing business and importantly the resultant negative impacts on these operations, has been previously considered. To address this issue Adani has engaged a consultancy team to independently assess the level of compensation and enter into, on its behalf, a series of "without prejudice" negotiations with the landholders and their nominated experts, with the goal of reaching a mutually acceptable compensation agreement. This team will be required to progressively report on design issues for practical consideration, the outcome to which will have a direct impact on their assessment. The team Adani has chosen has a proven understanding of the daily operations and wider challenges faced within grazing enterprises and will be able to fully understand and appreciate the issues raised by the Thurso Station landholders. They will then be able to include these matters where agreed into their assessment. This team also has detailed understanding and working knowledge of the various heads of compensation to be included in the assessment and the requirements of rail safety under government accreditation programs. The practical issues raised by the Thurso Station landholders, including issues associated with crossings and associated safety, relocation and or additions to operational infrastructure, potential for erosion, impacts during construction, excessive dust and other related activities, will all form part of their initial assessment and subsequent negotiations. Adani can confirm that their nominated valuer visited Thurso Station on the 6 February 2014 and had detailed discussions with the landholders as well as physically inspecting the property. The information gathered through this exercise will form the basis of the consultant's report, a copy of which will be provided to the landholders when completed. This and a separate report produced by the landholder's own selected valuer will provide the basis for the negotiation process. In summary the compensation/negotiation program is yet to effectively commence for Adani's North Galilee Basin Rail (NGBR) project. As per the Guidelines, this program will need to run for a minimum of 6 months from the date of "Notice" to landholders. Adani is committed to this program and during this period is looking to investigate not only Thurso Station landholder's but all landholder concerns within the boundaries of practical rail design combined with established compensation precedent. Only at that point can these issues be addressed through either detailed design or compensation payment.
25	Submitter 25	Landholder	25 f	Air quality	Dust Impacts	In relation to the construction phase of the proposed project we are worried about the affects of the excessive amounts of dust ruining surrounding pastures. We also have concerns about running our business during this time. Along with the construction Adani have proposed a Quarry and Borrow pit on our property and we are anxious about the ongoing affects of the dust created as well as how big these pits will be.	Dust control during construction will be managed within acceptable levels per the NGBR Project EMP (Dust Management Plan). Fugitive dust control during construction will include frequent water applications, control of vehicle access, vehicle speed restrictions, site exit points to remove loose materials via washing of equipment and work stoppage under certain conditions (e.g. extreme wind gusts). Water will be applied by means such as trucks, water tanks, water wagons, water trailers hoses, or sprinklers at sufficient frequency and quantity during and after earthmoving operations. Exposed borrow pits and other excavated materials may be contained within perimeter silt fencing, watered, treated or covered as necessary.
25	Submitter 25	Landholder	25 g	Social and economics	Property operations	Adani believe that any of our cattle affected by the construction can be shifted to agistment. However, where do you find suitable agistment within our area that we can still manage and look after efficiently? We feel that Adani have left us with many unanswered questions due to their lack of knowledge of how a grazing business runs as well as their lack of understanding of our area.	Opinion noted. Adani seeks ongoing liaison with all affected parties to achieve mutually beneficial outcomes throughout the life of the NGBR Project. Consultation will continue to be undertaken with all landholders, including those of Thurso Station. See also response to submission 25e.
26	DTMR	Agency	26 a	Transport	Road crossings	Treatments are proposed for rail crossings of state-controlled roads. It is acknowledged that TMR have issued in-principal support for conceptual layouts of these crossings. Both at grade and grade separation layouts were provided for the Sutor Developmental Road crossing.	The AEIS/RIA will need to detail triggers agreed to by TMR for the grade separation of the Sutor Developmental Road. This will need to be detailed in an Infrastructure Agreement. Noted. Adani will continue to consult with TMR for the development of an Infrastructure Agreement which includes details in regard to future grade separation of the Sutor Developmental Road. As committed by Adani in the EIS, Adani undertakes to the development of RIA, TIA, PIA, RUMP and interface agreements in consultation with DTMR for State controlled roads and local governments for local controlled roads prior to commencement of construction.
26	DTMR	Agency	26 b	Transport	Construction traffic	Key intersections, service vehicles, fly-in/fly-out (FIFO) and drive-in/drive-out (DIDO) routes to the construction camps are listed. A construction camp is proposed on the junction of Strathalbyn Road and Bowen Developmental Road. TMR notes that this junction has insufficient site distance and Bowen Developmental Road which is in the vicinity of this intersection has an accident history.	The AEIS/RIA will need to include all intersections that are likely to be impacted by the development and assessed in accordance with the Road Planning and Design Manual. Noted. Construction camp 2 has subsequently been relocated to be adjacent to Strathalbyn Road (refer Section 1.5.1.2 of Volume 1 Additional information to the Environmental Impact Statement). Average annual daily traffic at the intersection of Strathalbyn Road and Bowen Developmental Road is estimated to be 1,329 vehicles per day during the peak construction year of the NGBR Project (2015). Construction traffic at this time is expected to add approximately 89 vehicles per day, or an increase of approximately 7 per cent. This additional volume of traffic is not expected to significantly impact on the level of service of Bowen Developmental Road, which is anticipated to remain operating at LOS A. Further site based information regarding the final intersection location and actual traffic counts (AM and PM) will be provided as part of the road impact assessment to be submitted for approval as part of the project detail design phase.
26	DTMR	Agency	26 c	Transport	Construction traffic	It is assumed that 80% of the construction workforce will be FIFO, and that all FIFO are proposed to use either Proserpine or Moranbah airports. TMR believes this may be an unreasonable assumption	The AEIS/RIA should include a worst case scenario analysis of 60% FIFO construction workforce as well as a justification of as to why the Mackay Airport has been excluded. As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Noted. Adani will consult with TMR regarding the required sensitivity analyses for inclusion in the RIA.

Sub. No.	Submitter	Submitter Type	Issue No.	Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response	
26	DTMR	Agency	26 d	Transport	Construction traffic	There is an assumption that all sleepers, rail, girders and culverts will be imported via the Port of Townsville. No explanation has been provided as to why no materials will be sourced from the Port of Mackay.	The AEIS/RIA will need to provide further basis for the assumption that materials are only being transported via the Port of Townsville, and not the Port of Mackay, or both.	Noted. Material sourcing and origins are subject to further refinement as part of constructability and logistics assessment during detailed design. The EIS presented a best estimate as available at that time with respect to material origins and the most appropriate delivery routes given the location of the NGBR Project. Adani will consult with TMR regarding the basis for assumptions to be reflected in the RIA.
26	DTMR	Agency	26 e	Transport	Construction traffic	The earthworks columns show all material being transported via the rail corridor access road. No information is provided regarding the expected flood immunity of this access road or if the state controlled road will be used for haulage during flood events.	The AEIS/RIA will need to detail the flood immunity of the rail access road and if it is likely that state-controlled roads (i.e. Bowen Development Road) will be used for haulage of material. Alternatively, the proponent must demonstrate how they will ensure public roads will not be used for this part of the transport task.	Noted. Flood immunity of the rail access road will vary across the NGBR Project final rail corridor and is subject to further refinement during detailed design. Adani will consult with TMR regarding potential construction and emergency access via the state-controlled road network during flood events for inclusion in the RIA.
26	DTMR	Agency	26 f	Transport	Traffic growth	A compound growth rate of 3% was applied to all roads.	The AEIS/RIA will need to use growth rates for each road segment. Please contact the TMR Mackay office for growth rates.	A background growth rate of 3% p.a. was adopted for all impacted SCR's based on the assessment of historical growth rates (last 10-years i.e. 2000-2010) sourced from the Department of Transport and Main Roads. Following further consultation, the Department of Transport and Main Roads have noted and accepted the growth rates applied in the NGBR Project EIS. Further site based information regarding the final intersection location and actual traffic counts (AM and PM) will be provided as part of the road impact assessment to be submitted for approval as part of the project detail design phase. The road impact assessment will include individual growth rates supplied by the Department of Transport and Main Roads.
26	DTMR	Agency	26 g	Transport	Road access	New accesses and upgraded intersections are proposed on various state-controlled roads. The only reference to location is a chainage that appears to relate to the rail alignment, not TMR road chainages	The AEIS/RIA must ensure that TMR road chainages are provided for proposed new accesses.	Noted. Further site based information regarding the final intersection location and actual on-site traffic counts (AM and PM) will be provided as part of the road impact assessment to be submitted for approval as part of the project detail design phase. The road impact assessment will describe final intersection locations using TMR road chainage to confirm the distance from other existing accesses/features, sight distance and background traffic volumes.
26	DTMR	Agency	26 h	Transport	Road access	New accesses and upgraded intersections are proposed on various state controlled roads. Some of these are construction accesses. No information is provided regarding the duration of the new accesses or to justify the generally 10 peak hour development turning movements shown for each junction	The AEIS/RIA should demonstrate how the turning movements are calculated. The assessment should cover the life of the access and include AM/PM peaks. The AEIS/RIA is to reflect that any temporary construction accesses are to be removed following construction of the rail line.	Turning movements for peak hours were calculated as the sum of two sources: - AM and PM peak forecast (assumed peak to AADT ratio of 15 per cent) - Estimated construction traffic due to the NGBR Project The AM and PM peak forecast (used in the intersection analysis) were estimated by assuming a peak to AADT ratio of 0.15 (15 per cent) for all selected road sections. A value of 0.15 (15 per cent) was adopted from the Austroads Guide to Traffic Engineering Practice Part 2 for rural situations where peak to AADT percentages are not available. AADT data for 2012 was sourced from the Department of Transport and Main Roads. The AADT data available at the closest location to the study area was used. For any road section with multiple count sites, the highest AADT volume on the road was used for a conservative assessment. Further site based information regarding the final intersection location, actual traffic counts (AM and PM) life span and removal (and rehabilitation) of temporary construction access treatments will be provided as part of the road impact assessment to be submitted for approval as part of the project detail design phase.
26	DTMR	Agency	26 i	Transport	Management plans	TMR acknowledges that the EIS provides commitment to develop and finalise Road Impact Assessment (RIA), Road-use Management Plan (RMP) and a Pavement Impact Assessment (PIA) prior to construction. TMR requires the proponent to provide and develop a draft RMP prior to the detailed design stage, and "close to finalised" RIA and PIA by the AEIS stage.	In the AEIS, provide a draft RMP that will help identify appropriate protection objectives and associated implementation strategies. TMR requires a finalised RMP and RIA to be approved in writing six months prior to the commencement of significant construction works.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction.
27	Energy World	Organisation	27 a	Overall project	Alignment	Energy World Corporation Limited (EWC) is an independent publicly listed company which is primarily engaged in the production and sale of power. EWC has interests in Lot 10 of SP253665 which lies within the proposed Adani North Galilee Basin Rail project development area. EWC is engaged in a land contract with the State of Queensland on Lot 10 of SP253665 and therefore EWC's interest was not initially identified by Adani.	Inclusion and recognition of EWC within the EIS. Additionally EWC and Adani have begun consultation to resolve issues.	Noted. Adani will continue to consult with Energy World in regard to the alignment of the NGBR Project final rail corridor. Adani has included EWC in stakeholder list and provided project updates. Further on 5 February 2014 Adani provided plan for NGBR alignment in relation to EWC. Following a meeting on 10 Feb, 2014 Adani executed Confidentiality Agreement with EWC and provided shp file to include layer of their project on Lot 10 of SP253665, which is under contract with EWC and the State of Queensland. Adani request the state of Queensland to recognise NGBR project and protect Adani's interest (as a declared coordinated project) on Lot 10 of SP253665 before taking final decision under contract with EWC.
28	Collinsville Business Women Inc	Organisation		Social and economics	Local benefits	The Abbot Point coastal area supports a variety of coastal fauna and flora. These include amphibians, aquatic and terrestrial reptiles, fish, crustaceans, avifauna, and terrestrial and aquatic mammals. Protected areas present within the coastal region of Abbot Point include the Caley Valley Wetland, Great Barrier Reef World Heritage Area, Great Barrier Reef Marine Park (Commonwealth) and the Great Barrier Reef Coast Marine Park (State). Developments undertaken in this environmentally sensitive area attracts rigorous assessment and scrutiny by government and environmental groups. This could potentially delay or derail the NGBR Project.	To prevent project delays it is proposed that the rolling stock maintenance facility near the Port of Abbot Point, including the provisioning line, train maintenance line, wagon and locomotive service sheds, wash bay and queuing line, be relocated to Collinsville. Collinsville is central to the NGBR Project and does not have the environmental sensitivity of the Abbot Point coastal area. Collinsville has the land and infrastructure required for ongoing railway operations such as rolling stock maintenance (provisioning, marshalling yards, fuel storage and refuelling, maintenance, etc.), and track and signalling maintenance facilities. Collinsville has a skilled workforce and a range of diverse business enterprises to support a maintenance facility. Collinsville has ample power, water and sewerage infrastructure. The town has all the amenities and essential services needed for the facility's workforce. Several possible areas for the rolling stock maintenance facility have been identified (Please refer to the map in appendix A).	Noted. Given that the cycle time of the train operation is slightly less than 24 hours, the ideal location for Provisioning / Fuelling / Crew change would be either at the Port end or Mine end. Stopping the train in the middle would not be efficient from a train operation point of view. Hence, the Salisbury Plains location was finalised. Please note Adani's proposed location is highly accessible considering its proximity to the Bruce Highway. Adani propose to have Camps / accommodation setup near the town of Collinsville. It is a strategic location from alignment perspective as major central portion can be catered. Potentially close to 500 plus workforce would work close to the alignment near the town. This would create jobs for local businesses and add to economic prosperity for the town.
28	Collinsville Business Women Inc	Organisation		Transport	Air transport	International and regional airports could potentially serve the fly-in fly-out (FIFO) workforce for the NGBR Project. The nearest international airport is Townsville and a number of mining charter flights also currently operate from Townsville. The closest regional airports to the NGBR Project are Proserpine (Whitsunday Coast) Airport and Moranbah Airports. The issue is Proserpine will require a DIDO connection, the Bruce Highway is a notorious traffic black spot and is regularly cut-off during the wet season. Moranbah is at the far end of the NGBR Project also requiring significant DIDO ground transport.	Collinsville Airport offers an alternative airport for charter flights from Townsville and other regional airports. Collinsville Airport (KCE) is owned by the Whitsunday Regional Council and has a 1,400m unsealed runway. Collinsville is central to the NGBR Project, minimizing the overall ground transport requirements. Air transport services direct to Collinsville will negate the impact of the Bruce Highway closures during flood and improve ground transport FIFO/DIDO workforce safety. Vacant industrial land in the Collinsville airport precinct is also compatible with other activities associated with the NGBR Project.	Noted. However it is also noted that significant upgrades and additional planning would be required for such proposed development, which is presently beyond the scope of the NGBR Project.
28	Collinsville Business Women Inc	Organisation		Social and economics		Modelling estimates that construction of the NGBR Project will generate up to 6,150 direct and indirect jobs in the MIW region in the peak construction year and create 66 operational jobs ramping to 369 in 2026. Adani is committed to achieving the right balance of local, regional, state and national recruitment for direct, as well as contractor employment opportunities. But the trend towards FIFO and the plan to centralize the workforce in Bowen may make achieving the right balance difficult in practice.	Consideration needs to be given to making Collinsville a hub for employment and services. Collinsville is central to the NGBR Project. Collinsville has a skilled workforce and a range of diverse business enterprises. The town has all the amenities and essential services needed for construction and operational workforces including a hospital, schools, fire dept, new ambulance station, police, govt agencies, airport, etc. An employment strategy that leverages Collinsville as a hub is aligned to the Queensland Regionalisation Strategy and will help Adani achieve the right workforce balance. Adani is welcome in Collinsville.	Noted. Given that the cycle time of the train operation is slightly less than 24 hours, the ideal location for Provisioning / Fuelling / Crew change would be either at the Port end or Mine end. Stopping the train in the middle would not be efficient from a train operation point of view. Hence, the Salisbury Plains location was finalised. Please note Adani's proposed location is highly accessible considering its proximity to the Bruce Highway. Adani propose to have Camps / accommodation setup near the town of Collinsville. It is a strategic location from alignment perspective as major central portion can be catered. Potentially close to 500 plus workforce would work close to the alignment near the town. This would create jobs for local businesses and add to economic prosperity for the town.
28	Collinsville Business Women Inc	Organisation		Social and economics		The proposed housing and accommodation strategy for the operational workforce is centred on Bowen. However Bowen is at the "end-of-the-line" and is facing water and sewerage infrastructure constraints. An alternate solution needs to be assessed.	To avoid potential mental health issues for workforce due to isolation and separation from families and friends, it makes economic and social sense to collocate families within the local vicinity of their employment. Collinsville offers a choice of affordable and available short-term and long-term accommodation for both construction and operational phases. Collinsville has land availability with Whitsunday Regional Council planning to release a new residential estate and industrial land in 2014. Collinsville's water and sewerage infrastructure is currently sized for a township of 5,000 residents when the existing population is approximately 2,000. With the Collinsville power station transformation and refurbishment project, Collinsville has ample power for residential and industrial expansion. Collinsville is only 1 hour from the coast, offering Adani working families a fantastic rural and coastal lifestyle choice.	Noted.

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28	Collinsville Business Women Inc	Organisation			Social and economics	To ensure integration of the workforce that will relocate to Bowen Adani will offer induction to their workforce. Adani seeks to partner with WRC and local community organisations to offer appropriate support to new residents, including cultural support services for those relocating from overseas.	These services and programs are already available in Collinsville. The communities and businesses in Collinsville are familiar with induction programs for the existing coalmines and we have the community facilities needed to support both induction and integration. Collinsville has many community support groups and Adani's workforce are very welcome in Collinsville. Collinsville has the full suite of emergency services including fire, medical and police.	Noted.	
28	Collinsville Business Women Inc	Organisation			Social and economics	Engagement with stakeholders is an important component to managing and monitoring the potential social impacts and opportunities of the NGBR Project.	The Collinsville Business Women's group, representing 36 local Collinsville businesses with many years of local knowledge, would be delighted to assist Adani with advice on potential social impact from the NGBR Project. We would also like to be part of Adani's stakeholder engagement team.	Noted.	
28	Collinsville Business Women Inc	Organisation			Transport	Increased traffic	Construction of the NGBR Project is anticipated to generate significant traffic over a two-year period. Traffic will be both within the final rail corridor and on the external road network by Material supply vehicles. Service vehicles and FIFO/BIBO Construction workforce. Significant increases in traffic to the external road network greatly increase the risk of injury and death through accident.	Reducing traffic during construction should be a key risk mitigation strategy to prevent injury and death through road accidents. Leveraging the Collinsville Airport will result in reduced traffic from the FIFO/BIBO Construction workforce (per section 14.3.3 comments above). A reduction in Material supply vehicles may be achieved by locating a concrete batching plant in Collinsville, leveraging local quarries for raw materials and the manufacture of sleepers onsite. Collinsville has 3 sand quarries and 2 rock quarries local to the town, and Collinsville is approximately central to the NGBR Project. Manufacturing sleepers onsite will potentially reduce road traffic by more than 500 trucks per month and deliver an economic and environmental benefit.	Noted. Traffic and transport impacts are assessed in the EIS at Volume 1 Chapter 14. The traffic assessment identified that an acceptable level of service for all key transport routes will be maintained during construction and operation of the NGBR Project.
29	GVK Hancock Coal Infrastructure	Organisation	29a		Hydrology	Existing and proposed infrastructure	It is stated that "Adani has also previously considered co-utilising a consolidated corridor with Hancock Coal Infrastructure's proposed Alpha Coal Project (Alpha) however, with the railway's 60 Mtpa capacity already fully allocated, uncertain development timeframes and a route that traverses large flood plains, the potential for co-use of the railway is limited."	The Alpha Coal Project railway has been repeatedly stated in the public domain to be expandable beyond 60 Mtpa, to in excess of 240 Mtpa. The need for a second railway requires better justification. The Alpha Project hydrological flood standard is more sustainable and has lower long term environmental and operational risks when compared to that proposed by Adani in their EIS. Hancock Coal Infrastructure has submitted plans to the CG which outline a dual flood standard of ARI 50 with 300 mm freeboard to the top of formation, and ARI 100 with 100 mm freeboard to the top of formation. This means that the top of rail for the Alpha railway will be approximately 800mm above a 100 year flood level. This exceeds the proposed Adani standard of ARI 50 with 300 mm freeboard to top of formation, and ARI 100 to top of rail. (Adani EIS Chapter 2, Table 2-20. This is a significant issue particularly when the Adani railway must traverse most if not all the same river systems as the Alpha Rail. The CG should apply the same flood standards to all railway proposals.	Adani understands that the approvals gained to date for the Alpha Coal Project railway are only based on a capacity of 60 Mtpa over a 30 year duration, which will only meet the requirements of GVK for the Alpha and Kevin's Corner mines (30 Mtpa each). Whilst the proposed Alpha railway infrastructure may be proposed to be scalable, the associated approvals are not. Adani intends to ultimately cater for up to 100 Mtpa of coal, sourced from a combination of the Carmichael mine and other neighbouring third-party mines. In order to mitigate substantial risks for Adani associated with uncertainty; delivery timing; commercial conditions/viability, and available capacity to meet Adani's ultimate business requirements, the NGBR project is justified. Although Adani's NGBR Project final rail corridor crosses similar river systems to the proposed Alpha Coal Project, the NGBR Project attempts to avoid lengthy crossings through major floodplains, such as the Suttor River Floodplain, thereby reducing its environmental footprint and risk of impact from seasonal flooding. Based on the hydrological modelling carried out by Adani, the average depth difference between Q50 and Q100 for 569 waterways was 150 mm. Hence this results in the Q50 + 300 mm freeboard to top of formation being the governing criteria rendering both the Q100 requirements superfluous making the Alpha Project hydrological flood standard no different to the Adani flood standard. It should be noted that Adani has taken a more stringent approach to flood immunity on bridges by adopting Q50 + 600 mm to the underside of the soffit rather than the Q50 + 500 mm adopted for the Alpha Project. It should also be noted that the Waratah Coal EIS has adopted a flood immunity of Q50 + 300 mm to top of formation at major culvert locations but only Q20 + 300 mm to top of formation and Q50 to top of rail at minor culvert and non drainage locations. The flood immunity criteria adopted for the Northern Missing Link was Q50 at top of formation.
29	GVK Hancock Coal Infrastructure	Organisation	29b		Transport	Existing and proposed infrastructure	It is stated that "Aurizon is seeking to develop an integrated rail system to service existing and proposed coal mines in the Galilee Basin. The proposed Central Queensland Integrated Rail Project alignment is a narrow gauge solution connecting to already congested and less scalable network on the Newlands system. Moreover, the proposed Central Queensland Integrated Rail is a much longer, and therefore less cost-effective, route to the Port of Abbot Point, besides being an operationally less efficient narrow gauge system as compared to the heavy haul standard gauge proposed for the NGBR Project. Opportunities to consolidate the Aurizon and Adani alignments have been explored, however, due to uncertainty with regard to Aurizon's development timelines, in addition to the above technical aspects, Adani has decided to propose the much shorter, standard gauge, NGBR Project"	Statements about narrow gauge rail systems being less efficient and economical should be either substantiated or withdrawn. Statements about the CQIRP, and by inference all narrow gauge rail systems being less cost effective, should be either substantiated or withdrawn.	Among other constraints on the Newlands system due to challenging topography, narrow gauge railways have the following limitations over standard gauge railway systems: - Limited speed potential (maximum 80kmph) due to narrower wheel base. - Wagons have lower volumetric capacities, which is a significant disadvantage for light commodities such as thermal coal. - The wagon fleet size tends to be greater, which results in more frequent and longer train services and correspondingly greater traffic density. - Higher horse power and more fuel consumption to pull same amount of coal due to unfavourable tare; payload ratio of narrow gauge wagons. - Higher traffic volumes for the same tonnage increase the difficulty of accessing the infrastructure to undertake maintenance tasks and also impacts usage-based maintenance tasks. - The narrower gauge size increases the impact of differential settlement on cross levels, which affects riding quality and increases track maintenance intervention requirements. Similarly, the narrow gauge track structure provides less resistance to lateral displacement compared to the standard gauge track structure. This results in stricter tolerances and increased safe maintenance intervention requirements.
29	GVK Hancock Coal Infrastructure	Organisation	29c		Transport	Existing and proposed infrastructure	Fuel usage. Quoted as 2.5 litres per tonne delivered. This comes from the additional climbing for the loaded train and the amount of the route (32%) which is at or close to the ruling grade (quoted as 1 in 220) for the train.	The Alpha Railway in contrast has a relatively low amount of the route at the ruling grade (approximately 10%), as well as a lower ruling grade of 1 in 320 which leads to much higher efficiency.	The proposed Alpha Coal Railway route is a longer route to port (particularly for northern Galilee Basin developments) which would offset some of the operational gains from being a flatter route. Adani has selected a ruling gradient that provided a balance between capital expenditure and operational expenditure. The NGBR Project's ruling gradient (1:220) is still twice as flat as the current narrow gauge coal systems operating in Central Queensland (1:100). Incidentally, the steeper existing narrow gauge network ruling gradient of 1:100 will be the ruling gradient for the proposed "initial stage" of the proposed Alpha Coal Railway should the GVK-Hancock and Aurizon ASX and media statements of 25 November 2013 prove accurate.
29	GVK Hancock Coal Infrastructure	Organisation	29d		Project alternatives	Alignment	Note that the route chosen would require significant additional earthworks to ease the ruling grade. The proposed alignment crosses the Clarke ranges to the west of Collinsville. That section is noted to require significant earthworks, with substantial environmental impacts and ultimately higher long term operational costs. This matter was also noted in GVK's response to the EIS for the proposed Waratah Coal Rail Corridor which proposed a similar route through this area.	Other routes such as the Alpha Railway would provide for lower earthworks, reduced environmental impacts and lower long term operational impacts such as fuel usage and atmospheric emissions. Adani should consider a more environmentally sustainable route.	The proposed Alpha Coal Railway may avoid some of the Clarke Ranges, but its additional route length increases its environmental footprint and impacts on land sterilisation/severance. The longer GVK route and reduces . Adani's steeper ruling gradient allows it to navigate through the Clarke Ranges with manageable levels of earthworks. Several other proponents have explored rail corridors through the Clarke Ranges including Waratah Coal and BHP, indicating it is a feasible path for ruling gradients in the order of 1:220. The Waratah Coal EIS has received State approval for the associated rail corridor.
29	GVK Hancock Coal Infrastructure	Organisation	29e		Transport	Existing and proposed infrastructure - rail	There is no recognition in this section of the existence of the approved GVK Hancock Alpha rail project. The NGBR Project is shown to cross the Alpha Project alignment in at least one place. There are currently no arrangements in place, nor discussions on the appropriate protocol for ensuring that these crossings are grade separated.	Adani to amend the EIS description.	Adani is developing the NGBR Project final rail corridor in accordance with the Queensland Government's Galilee Basin Development Strategy and its inherent first mover advantage policy. Given the level of uncertainty with regard to the approved and proposed projects of other proponents (timing, financial close, etc.), Adani is proceeding on the basis that its railway will be built first, with any other subsequent railway developments to grade separate crossings over Adani. Similarly, should another proposed/approved railway be constructed prior to the NGBR Project construction commencing, Adani would commit to grade separation of its crossing/s of that/those railways, consistent with the NGBR Project design criteria for grade separation of existing operational railways.
29	GVK Hancock Coal Infrastructure	Organisation	29f		Land use and tenure	Tenure	This section describes the mining and petroleum tenure that is intersected by the proposed rail line. It is not clear how the Proponent will obtain the consent of the affected tenement holders.	Clarify how and when the consent of the affected tenement holders will be obtained.	All affected tenement holders have been notified by Adani duly providing layout plans showing the NGBR final rail corridor with respect to affected tenements. Adani will continue to consult with affected tenement holders and DNRM in regard how and when consent is required (if any) to be obtained.
29	GVK Hancock Coal Infrastructure	Organisation	29g		Land use and tenure	Tenure	This section describes the restricted areas that are intersected by the proposed rail line, in particular RA8 over the proposed Suttor North Dam site. It is not clear how the Proponent will avoid this restricted area.	Clarify how restricted area RA8 will be dealt with over the life of the project	The RA8 Suttor River Dam Site is unavoidable and Adani is in consultation with the concerned authorities. As outlined in the EIS at Chapter 3 Section 3.4.5 Restricted Areas, "The RA8 Dam has not yet been constructed and is currently considered a low risk site. The impacts of the NGBR Project to this area have been minimised by locating the final rail corridor as far from the (main body of the) dam site as practicable." Adani will consult with DEWS and DNRM (Water) in regard to RA8. At the outset Adani expects similar conditioning to be applied to the NGBR Project with respect to RA8 as applied to the Alpha Coal Project: "should the rail line need to be relocated at some time in the future as a result of construction of the RA8 Dam-the proponent will contribute to the full costs of relocation". Volume 2 Appendix G Revised commitments reflects this commitment.
29	GVK Hancock Coal Infrastructure	Organisation					It is stated: "Adani has separately considered developing and / or utilising a, consolidated corridor with Waratah Coal's proposed China First Project, or at a number of locations within the EIS. Hancock Coal Infrastructure's proposed Alpha Coal Project, both of which provide for standard gauge rail infrastructure. However, uncertain development timeframes and the identification of a more direct rail route has left Adani with limited potential for co-use of these railways."	See notes below [29a, 29b]. This statement and similar statements are repeated at a number of locations within the EIS.	Noted. Please refer to responses for item 29a and 29b.
29	GVK Hancock Coal Infrastructure	Organisation			Transport	Existing and proposed infrastructure	It is stated that: "Adani has also previously considered co-utilising a consolidated corridor with Hancock Coal Infrastructure's proposed Alpha Coal Project (Alpha) however, with the railway's 60 Mtpa capacity already fully allocated, uncertain development timeframes and a route that traverses large flood plains, the potential for co-use of the railway is limited."	See notes above [29a]. This statement and similar statements are repeated at a number of locations within the EIS.	Please refer to response for item 29a and 29b.

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29	GVK Hancock Coal Infrastructure	Organisation		Transport	Existing and proposed infrastructure It is stated that: "Adani has separately considered developing and/or utilising a consolidated corridor with Waratah Coal's proposed China First Project, or Hancock Coal Infrastructure's proposed Alpha Coal Project, both of which provide for standard gauge rail infrastructure. However, uncertain development time frames and the identification of a more direct rail route has left Adani with limited potential for co-use of these railways."	See notes above [29a, 29b]. This statement and similar statements are repeated at a number of locations within the EIS.	Please refer to response for item 29a and 29b.
30	The Australia Institute	Organisation	30a	Social and economics	Economic analysis Flawed economic analysis which does not follow Department guidelines. See attached submission for details.	Without adequate economic assessment that clearly shows this project and related mining and port projects are economically viable and in the best interests of the Queensland public, the project should be rejected.	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies.
30	The Australia Institute	Organisation	30b	Social and economics	Economic analysis The long term operation and viability of the NGBR project and its related coal mining projects are dependent on coal market conditions remaining sufficiently favourable over the life of the projects. However, there is no indication in the economic assessment of any of these projects as to what prices are required to ensure these projects are financially viable and able to generate returns for the state. This should be of concern to decision makers as coal prices have returned to historical levels following historic peaks in 2008 and 2011.	Given the isolation of coal reserves in the Galilee Basin there are significant costs associated with bringing coal to market. Therefore it is important to know: - if the project will remain viable if World Bank predictions prove accurate; - what price the proponent is anticipating; - the break even coal price, or market conditions required to maintain production.	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies.
30	The Australia Institute	Organisation	30c	Social and economics	Economic analysis The economic assessment of the NGBR project and related projects does not consider the costs of these projects to the Queensland and Australian governments through direct subsidy, provision of infrastructure, tax concessions or reduced royalty arrangements. The Queensland government has promised royalty 'ramp ups' as part of developing the Galilee Basin coal mines. These subsidies directly reduce the value of the mining projects to the Queensland public and reduce state government revenues. Without analysis of state and federal assistance in the economic assessment of projects, decision makers cannot accurately assess the benefits and costs of projects to the Queensland public.	Government assistance to the NGBR project and related mining and port projects should be a key part of their economic assessment.	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies.
30	The Australia Institute	Organisation	30d	Social and economics	Economic analysis In the EIS executive summary, the proponents claim to have considered several alternatives to developing the NGBR project. However, the economic assessment offers no consideration of these alternatives and whether they may have resulted in a greater economic benefit for Queensland. The current proposal represents the preferred option of the proponents, but not necessarily the option that provides the best outcome for the Queensland public. The type of economic modelling used in the EIS, IO modelling, is not able to consider the relative net benefits of different project alternatives.	If cost benefit analysis had been used, as recommended by Queensland departmental guidelines, these alternatives could have been considered and a decision made in line with departmental guidelines and the interests of the Queensland public.	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies. The input-output method is an economic impact assessment method, whereas cost-benefit analysis is an economic evaluation method. The objective of the economic assessment required by the Project ToR is to identify the potential economic impacts of the project, including the direct and indirect impacts. The input-output methodology is one method of estimating such impacts as it focuses on economic activity impacts and enables direct and indirect contributions to output and employment to be estimated from inputs in the form of spending during both the construction and operational periods. This method, therefore, is consistent with the outputs sought from the ToR. In contrast, cost-benefit analysis estimates cost and benefits (monetised and non-monetised) of a project using discounted cash flow analysis. Unlike the input-output method, the outputs from a cost-benefit analysis would be the net present value (NPV), internal rate of return (IRR) and benefit-cost ratio (BCR). These indicators are decision making indicators to determine whether a project should go ahead or not go ahead (e.g. if NPV is greater than zero, then it is prudent to invest) and to prioritise investment options. The cost-benefit analysis method essentially measures the net worth of a project, not its economic impacts. Cost benefit analysis is data intensive, requires forecast of revenues and benefits, and is generally done internally before the proponents of a project decide to proceed or not proceed.
30	The Australia Institute	Organisation	30e	Social and economics	Economic analysis The IO model used for the analysis of the NGBR project uses a modified approach to traditional models to account for some of this limitation in relation to employment: <i>"When new jobs are created, it should be determined where the people come from to fill those jobs. In some cases, these jobs will be taken by previously unemployed locals or by someone who is currently employed locally but whose own job is taken by a previously unemployed local. In both cases, the impact of the newly created job and associated income is partially offset by the fact that someone who was previously receiving unemployment benefits is no longer doing so. To calculate this effect requires estimates of the parameter rho (refer Appendix A). Rho represents the proportion of new jobs that are likely to be filled by previously unemployed locals. For the construction phase, it was estimated to be 50 per cent for the local area and 60 per cent for Queensland as a whole. (p6)"</i> Given the low unemployment in the region it seems unlikely that 50 per cent of jobs would be sourced locally. The modelling estimates that 6,150 jobs would be generated in the region, of which 50 per cent is 3,075. Given that there were only 3,157 unemployed people in the region in the 2011 census, the value for rho of 50 per cent assumes that every unemployed person in the region will be employed in the project. No details are provided to support the estimated value....	See 30g	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies. The input-output method is an economic impact assessment method, whereas cost-benefit analysis is an economic evaluation method. The objective of the economic assessment required by the Project ToR is to identify the potential economic impacts of the project, including the direct and indirect impacts. The input-output methodology is one method of estimating such impacts as it focuses on economic activity impacts and enables direct and indirect contributions to output and employment to be estimated from inputs in the form of spending during both the construction and operational periods. This method, therefore, is consistent with the outputs sought from the ToR. In contrast, cost-benefit analysis estimates cost and benefits (monetised and non-monetised) of a project using discounted cash flow analysis. Unlike the input-output method, the outputs from a cost-benefit analysis would be the net present value (NPV), internal rate of return (IRR) and benefit-cost ratio (BCR). These indicators are decision making indicators to determine whether a project should go ahead or not go ahead (e.g. if NPV is greater than zero, then it is prudent to invest) and to prioritise investment options. The cost-benefit analysis method essentially measures the net worth of a project, not its economic impacts. Cost benefit analysis is data intensive, requires forecast of revenues and benefits, and is generally done internally before the proponents of a project decide to proceed or not proceed.
30	The Australia Institute	Organisation	30f	Social and economics	Economic analysis While this modification to the traditional IO model [see issue 30e] is intended to overcome one of its major shortcomings, the EIS provides no discussion of the jobs that may be lost in other industries as a result of this project and related mining and port projects. This is despite figure 3-3 of the Economic Impact Assessment chapter showing that the rapid expansion of mining in the project area has accompanied declining agricultural employment levels. With reduced arable land and lighter competition for resources, such impacts are inevitable and should be discussed in the EIS. However, the assumptions inherent in IO models render them unable to calculate such impacts, ensuring any suggested economic impacts are overstated.	See 30g	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies. The input-output method is an economic impact assessment method, whereas cost-benefit analysis is an economic evaluation method. The objective of the economic assessment required by the Project ToR is to identify the potential economic impacts of the project, including the direct and indirect impacts. The input-output methodology is one method of estimating such impacts as it focuses on economic activity impacts and enables direct and indirect contributions to output and employment to be estimated from inputs in the form of spending during both the construction and operational periods. This method, therefore, is consistent with the outputs sought from the ToR. In contrast, cost-benefit analysis estimates cost and benefits (monetised and non-monetised) of a project using discounted cash flow analysis. Unlike the input-output method, the outputs from a cost-benefit analysis would be the net present value (NPV), internal rate of return (IRR) and benefit-cost ratio (BCR). These indicators are decision making indicators to determine whether a project should go ahead or not go ahead (e.g. if NPV is greater than zero, then it is prudent to invest) and to prioritise investment options. The cost-benefit analysis method essentially measures the net worth of a project, not its economic impacts. Cost benefit analysis is data intensive, requires forecast of revenues and benefits, and is generally done internally before the proponents of a project decide to proceed or not proceed.
30	The Australia Institute	Organisation	30g	Social and economics	Economic analysis Another shortcoming of IO models is that they are not suitable for assessing projects in smaller regional economies. Smaller regions often lack the resources that the model assumes it has, meaning that local impacts are lost to the wider area. As the ABS explains: <i>"Not applicable for small regions: Multipliers that have been calculated from the national I-O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter-industry linkages are normally relatively shallow. Inter-industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions"</i> Again, this is not acknowledged in the EIS of the NGBR project. Why this economic assessment is based on IO modelling and not cost benefit analysis is unclear	The Queensland Planning department should ensure its own guidelines are followed and insist on cost benefit analysis in the terms of reference (ToR).	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies. The input-output method is an economic impact assessment method, whereas cost-benefit analysis is an economic evaluation method. The objective of the economic assessment required by the Project ToR is to identify the potential economic impacts of the project, including the direct and indirect impacts. The input-output methodology is one method of estimating such impacts as it focuses on economic activity impacts and enables direct and indirect contributions to output and employment to be estimated from inputs in the form of spending during both the construction and operational periods. This method, therefore, is consistent with the outputs sought from the ToR. In contrast, cost-benefit analysis estimates cost and benefits (monetised and non-monetised) of a project using discounted cash flow analysis. Unlike the input-output method, the outputs from a cost-benefit analysis would be the net present value (NPV), internal rate of return (IRR) and benefit-cost ratio (BCR). These indicators are decision making indicators to determine whether a project should go ahead or not go ahead (e.g. if NPV is greater than zero, then it is prudent to invest) and to prioritise investment options. The cost-benefit analysis method essentially measures the net worth of a project, not its economic impacts. Cost benefit analysis is data intensive, requires forecast of revenues and benefits, and is generally done internally before the proponents of a project decide to proceed or not proceed.
30	The Australia Institute	Organisation	30h	Social and economics	Dust Impacts These high levels of particulate pollution are of concern primarily due to their impact on human health. Particulate pollution is linked to cardiovascular and respiratory diseases, types of cancer and premature death. For some particles there is no safe level of exposure, with even low levels of exposure leading to health problems. - Studies on the Appalachian mining region in the US estimate that the cost of health impacts and premature deaths in that region is US\$74.6 billion per year. While it is difficult to extrapolate the widespread health impacts of coal mining in the USA to the Australian setting due to different mining practices and different pollutant levels, health costs will be imposed on populations close to mining operations, the NGBR project and port facilities. The economic assessment presented in the EIS makes no consideration of these costs.		The economic assessment was undertaken in accordance with the ToR for the Project.
30	The Australia Institute	Organisation	30i	Greenhouse gas	Failure to consider GHG ...the indirect or downstream greenhouse gas emissions associated with burning the coal of the Galilee Basin have not been considered. This is inappropriate. If the EIS is to consider downstream economic impacts of using coal, it should also consider the downstream impacts on climate change. If the NGBR project goes ahead as suggested, the 100 Mtpa of coal it transports will create 240 million tonnes of carbon dioxide equivalent emissions each year. Coal industry proponents often adopt the defence that if we did not sell coal someone else would, and our actions therefore make no difference. This is true to a large extent – most coal that would be consumed in the world would be substituted from other mines, but not all of it. The expansion of the coal supply that the project represents will exert some downward pressure on prices which will result in an increase in the amount demanded. In the absence of the NGBR project and related mining and port projects, not all of the coal exported would be offset by production in other mines. To argue otherwise is to suggest that coal supply is perfectly elastic and therefore that coal price should not vary. This is clearly not the case. There is no discussion of this reality in either the Economics or Greenhouse Emissions chapters.		Noted. The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.

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30	The Australia Institute	Organisation	30j	Social and economics	Economic analysis The NGBR project will destroy around 250 hectares of threatened ecological communities. The economic costs of this loss are not considered in the economic assessment. The implicit assumption is that offset programs will be perfectly effective, an assumption disputed by ecologists. The related T3 coal loader project at the Abbot Point coal terminal will result in the dumping of three million cubic meters of dredge spoil in the Great Barrier Reef Marine Park. The economic assessment of that project also fails to consider the economic costs of impacts on the environment.		Environmental offsets are designed to provide offsets for impacts to matters of environmental value. The requirement for environmental offsets is based on equivalent environmental value not economic value. The reference to the T3 Coal Terminal at Abbot Point is not relevant to the NGBR Project.
31	DETE	Agency	31	No comment	No comment		Noted.
32	Barlyne Mining	Organisation	32 a	Land use and tenure	Resource deposits The rail corridor as currently proposed cuts across two significant mineral prospects on EPM 19087 - the Springs Prospect and Stockyard Creek Prospect. These two prospects (and a third prospect further east at Euri Creek) are porphyry copper/molybdenum/gold systems which lie 30 kms northeast along the strike trend of the recent Permian high sulphidation copper/gold/silver discovery at Mount Carlton (Evolution Mining). Moving the rail corridor to the west adjacent to the southern Springs Deposit and to the east adjacent to the northern Stockyard Creek Deposit should overcome the potential of the rail line effectively sterilising the future development of these deposits. That said, we don't presume to tell the proponent where it is best to route the railway. The only thing that is "fixed and immovable" from our situation is the location of the deposits (due to the geology), and therefore the possible final pit outline if the projects go to development		1. On 19 August 2013 as a part of stakeholder consultation within EIS development process, Adani notified Barlyne Mining about the NGBR project duly providing 1000 m investigative corridor map. 2. On 17 January 2014, Adani received representation from Barlyne Mining that the rail corridor as currently proposed cuts across two significant prospects on EPM 19087 - the Springs Prospect and Stockyard Creek Prospect. These two prospects (and a third prospect further east at Euri Creek) are porphyry copper / molybdenum /gold systems which lie 30 kms northeast along the strike trend of the recent Permian high sulphidation copper /gold /silver discovery at Mount Carlton (Evolution Mining). 3. Adani examined the NGBR alignment over EPM 19087 and the representation from Barlyne Mining. It is observed that NGBR project doesn't impact Spring prospect and the NGBR in its new location intersects the nominal pit outline for the Stockyard Creek prospect. 4. Consultation with DNRM on 10 February 2014 concluded that • DNRM would talk to Barlyne and hear what the level of resource definition they have. • DNRM will examine the EPM 19087 periodic exploration report and advise Barlyne mining appropriately. 5. Adani will continue to engage with Barlyne Mining and DNRM in regard to potential resource implications on EPM 19087 during detailed design. Any potential realignments to avoid potential resource sterilisation in this area are unlikely to significantly change the NGBR Project final rail corridor.
33	Submitter 33	Individual	33 a	Overall project	If I can make one comment at this point it is that I regret that the long term effects of environmental and habitat depletion are not taken seriously by governments across Australia and that this has profound intergenerational implications which are not currently calculated in monetary terms.		Noted.
34	Glencore Coal Australia	Organisation	34 b	Consultation	Land access Given that the NGBR alignment (both the original and the proposed revised re-alignment), effectively fragment the Havilah property, the project proponent should make provision on the eastern portion of the property for construction of appropriately sized infrastructure (i.e. provision of water supply, cattle yards and suitable road access) to facilitate the operability of the property, and to provide viable transport of cattle to and from the fragmented portion.		Pursuant to grant of land access by Glencore, impact mitigation and compensation assessment shall be undertaken by Adani through a professional consultant. Adani will also notify Glencore to seek independent professional advice on impact and compensation assessment to protect their interests and the reasonable cost of which will be met by Adani.
34	Glencore Coal Australia	Organisation	34 c	Consultation	Land access Details must be provided on the proponent's on-going access to the Colinta property/s associated with investigation, construction and operation of the NGBR, in particular how this may impact on existing grazing operations and future mining and mining related activities.		Land access requests for three properties have been sent to Glencore on 31 January 2014, duly providing investigation area plans, Adani access protocols & conditions along with Indemnity note.
34	Glencore Coal Australia	Organisation	34 d	Land use and tenure	The proposed alignment (EIS and proposed revised alignment) will impact on Glencore's future development options, and in particular will significantly increase the capital costs required to develop a viable means of access between Glencore's existing operations at Newlands and Collinsville: o Provision should be included in the NGBR project planning to ensure that the future interface between these two Glencore operations is not rendered unviable by the high capital cost of access. o We would be pleased to discuss this in more detail with the proponent, including options to minimise any future infrastructure cost		See response to submission item 34 b.
34	Glencore Coal Australia	Organisation	34 e	Water Resources	The EIS (Chapter 9) notes the construction and operation of the NGBR alignment will impact on surface water and changes to hydrology flows, leading to potential changes to the characteristics of the flooding regime. The EIS also notes the potential for water quality impacts associated with construction and operation. It is expected that appropriate mitigation and management measures to ensure that construction works and rail operations do not lead to flooding or drainage issues on Havilah will be developed by the proponent. Glencore would appreciate the opportunity to review the proponent's flood studies and proposed designs to verify that the proposed works will not impact on the operability of the Havilah property and associated infrastructure, as well as future mining and mining related activities. Glencore would appreciate more detail on the proposed mitigation measures for hydrology and water quality to ensure that they do not impact on Havilah's operations		Adani commits that a detailed hydrology study shall be undertaken to discuss & address the concern with Glencore, as with other landholders affected by the NGBR Project realignment.
34	Glencore Coal Australia	Organisation	34 f	Cumulative Impacts	While Chapter 19 (Cumulative impacts) takes into account the potential cumulative impacts associated with other rail and projects associated with the development in the Galilee Basin, as well as the proposed Byerwen Mine, no account appears to have been taken of the existing Newlands Mine, which itself was the subject of a recent approval to extend the life of that mine.		The recent approval to extend the life of mine for the Newlands Mine constitutes a component of the existing environment with respect to assessment of the NGBR Project's potential for cumulative impacts, as outlined in the methodology of the EIS Chapter 19 Cumulative impacts. As such, there is no requirement to consider those impacts as they are already taken into consideration for modelling of air and noise emissions (amongst other impacts) within the relevant sections of the NGBR EIS.
34	Glencore Coal Australia	Organisation	34 g	Consultation	From a commercial perspective, given its existing and significant long term coal mine development potential within the Newlands-Collinsville region (Glencore currently holds significant areas of exploration permits and mineral development licenses within the area), Glencore seeks advice from the proponent as to the timing, terms and conditions by which third party access may be facilitated for use of the NGBR to the Abbot Point Coal Export Terminal.		Adani appreciates the opportunity to commence discussions regarding the timing, terms and conditions by which third-party access may be facilitated for use of the NGBR Project to the Abbot Point Coal Export Terminal. Adani acknowledges that commercial discussions in relation to this matter, without prejudice, will be invited by Adani with Glencore and other third-parties at the appropriate time.
34	Glencore Coal Australia	Organisation	34 h	Consultation	Glencore assumes that the proponent will continue to consult with landowners about all construction, operational, hazards and design related issues where there is potential for interaction between existing (and as outlined above, future) land use activities. Glencore would welcome the commitment from the proponent to on-going dialogue and co-operation in relation to these matters.		Yes, Glencore in the capacity of land holders and tenement holders shall be consulted and interface agreements shall be executed, wherever necessary. Adani is committed to ongoing dialogue and consultation with relevant stakeholders in regard to these matters.
34	Glencore Coal Australia	Organisation	34a	Project Description	Alignment Of particular concern to Glencore is that the alignment of the NGBR, as exhibited in the EIS, has a significant impact on the Havilah property, to the extent that it threatens the operability and viability of the existing cattle operation.	Glencore therefore seeks an immediate and on-going dialogue with the NGBR project proponent to ensure that, if the project proceeds (i) the impact on the existing cattle business operation is sufficiently compensated; and (ii) a range of associated land use impacts/issues are appropriately dealt with by the proponent.	Adani agreed to the realignment suggested by Glencore through letter dated 21 August 2013 (submission to the investigator's authority) and 11 February 2014 (Submission to the EIS) to the office of Coordinator General. Adani agreed to the realignment and submitted pre-signed land access consent on 31 January 2014 for three properties affected by the NGBR Project realignment (Havilah, Eastern creek and Byerwen). Land access has been requested for properties on the realigned NGBR corridor to study impact /issues. NGBR realignment along with land access request was notified on 11 February 2014 through email and by Registered Australia Post (No. 514933159013) on 12 February 2014. An assessment of the NGBR Project realignment is presented in the AEIS at Volume 2 Appendix C - Realignment report.
35	Aurizon	Organisation	35 a		It is stated that "Aurizon's Goonyella and Newlands systems have capacity constraints and limited options for upgrade due to the existing low axle load narrow gauge rail infrastructure and the bottleneck that already exists at the Moranbah junction." The EIS disregards the brownfield extension of the Goonyella / Newlands systems which form part of the Central Queensland Integrated Project (refer: EPBC Ref 2012/6321 http://www.environmental.gov.au/cgi-bin/epbc) The brownfield component of CQIRP consists of a duplication of these systems (as outlined above). There is a clear opportunity for upgrade as part of this project. Adani does not have the appropriate access or exposure to Aurizon's infrastructure expansion major project planning to be in a position to make statements such as these. It is required that the EIS be amended such that it contains statement of known facts that can be verified through demonstrated evidence. The statements made by Adan are opinions made in the absence of information and should be presented as such.		The statement in EIS is based on facts, Newlands system of narrow gauge with 26 tonne axle load does not provide cost effective solution to Adani due to the inherent technical constraints on account of challenging topography, ruling grade of 1 in 100, maximum train length of 120 wagons with a payload load of 10,000 ton and approximately 480 kms long route from Carmichael mine to Abbot Point via Moranbah as compared to 380 km via NGBR. Adani and Aurizon together had undertaken 8 week intensive exercise from April – June 12 to explore options of utilizing Newlands system's brownfield network for evacuating Coal from Carmichael mine to Abbot Point. In the end of the engagement period Aurizon could not provide a time tested techno commercial solution to Adani, which Adani saw a major risk. Adani made another attempt in 2013 and sought a proposal on an Adani Galilee Basin rail solution, which Aurizon submitted on 12 April 2013. Adani again found the Aurizon's proposal unacceptable due to commercially unviability and there being many conditions and risks, which Aurizon was not prepared to exclude in their commercial offer. Hence Adani preferred to a much direct standard gauge rail line with 32.5 ton axle load. See also the below responses.

Sub. No.	Submitter	Submitter Type	Issue No.	Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response
35	Aurizon	Organisation	35 b		It is stated "The proposed Carmichael coal Mine and Rail Project, while enabling direct transportation of coal to the Port of Hay Point (Dudgeon Point expansion), only allows for indirect transportation to the Port of Abbot Point via the already constrained Goonyella rail system. As well as being indirect, the Goonyella system has a much lower axle load with very limited capacity for upgrade, all of which combined would act to increase coal prices and reduce the cost competitiveness of Galilee basin coal in the global market." And "Aurizon is seeking to develop an integrated rail system to service existing and proposed coal mines in the Galilee Basin. The proposed Central Queensland Integrated Rail Project alignment is a narrow gauge solution connecting to already congested and less scalable network on the Newlands system. Moreover, the proposed central Queensland integrated Rail is a much longer, and there less cost-effective, route to the Port of Abbot Point, besides being an operationally less effective narrow gauge system as compared to the heavy haul standard gauge proposed for the NGBR Project. Opportunities to consolidate the Aurizon and Adani alignments have been explored, however, due to uncertainty with regard to Aurizon's development timelines, in addition to the above technical aspects, Adani has decided to propose the much shorter, standard gauge, NGBR Project."	The EIS disregards the brownfield extension of the Goonyella / Newlands systems which form part of the Central Queensland Integrated Project (refer: EPBC Ref 2012/6321 http://www.environmental.gov.au/cgi-bin/epbc). The brownfield component of CQIRP consists of a duplication of these systems (as outlined above). There is a clear opportunity for upgrade as part of this project. Adani does not have the appropriate access or exposure to Aurizon's infrastructure expansion major project planning to be in a position to make statements such as these. It is required that the EIS be amended such that it contains statement of known facts that can be verified through demonstrated evidence. The statements made by Adani are opinions made in the absence of information and should be presented as such.	The statement in EIS is based on facts and after significant engagement with Aurizon. Adani engaged with Aurizon for 8 weeks in 2012 to work for a techno-commercial solution; however Aurizon could not demonstrate that Newlands system can provide cost effective and timely solution to provide 60 Mtpa upgrades to Adani. Aurizon's proposal of Central Queensland Integrated Rail Project submitted to Adani in August 2012 was not based on proven technology and there were big assumptions, such as increasing axle load to 30 Ton on Narrow gauge system, running of 2GLT trains, introduction of 120 Ton Narrow gauge hopper wagons, trains size of 4.1 km length, significant easing of ruling grades on the Newlands systems. Also Aurizon could not demonstrate any definitive timelines in their proposal. Adani made another attempt in 2013 and sought a proposal on an Adani Galilee Basin rail solution, which Aurizon submitted on 12 April 2013. Adani again found the Aurizon's proposal unacceptable due to commercially unviability and the inclusion of a significant number of unacceptable commercial conditions and risks. Among other constraints on the Newlands system due to challenging topography, narrow gauge railways have following limitations over the Standard Gauge railway systems: <ul style="list-style-type: none"> Limited speed potential (maximum 80 kmph) due to narrower wheel base, Wagons have lower volumetric capacities, which is a significant disadvantage for light commodities such as thermal coal. The wagon fleet size tends to be greater, which results in more frequent and longer train services and correspondingly greater traffic density, Higher horse power and more fuel consumption to pull same amount of coal due to unfavourable tare : payload ratio of narrow gauge wagons. Higher traffic volumes for the same tonnage increase the difficulty of accessing the infrastructure to undertake maintenance tasks and also impacts usage-based maintenance tasks. The narrower gauge size increases the impact of differential settlement on cross levels, which affects riding quality and increases track maintenance intervention requirements. Similarly, the narrow gauge track structure provides less resistance to lateral displacement compared to the standard gauge track structure. This results in stricter tolerances and increased safe maintenance intervention requirements.
35	Aurizon	Organisation	35 c		It is stated: "The development of the NGBR Project will provide a direct link between the Galilee Basin's vast thermal coal resources to the Port of Abbot Point. The 'do nothing' option will result in increased traffic on Aurizon's Goonyella and Newlands rail systems and thus increase the bottleneck situation currently being experienced on the existing rail system near Moranbah. This will subsequently result in the need for an upgrade to a much larger section of each rail line with associated social and environmental disturbances. The transportation of such a large quantity of coal over the much longer narrow gauge route would increase costs of producing the thermal coal, which in turn would reduce the cost-competitiveness of the Galilee Basin coal in the global market."	Adani's EIS disregards the brownfield extension of the Goonyella / Newlands systems which form part of the Central Queensland Integrated Project (refer: EPBC Ref 2012/6321 http://www.environmental.gov.au/cgi-bin/epbc). The brownfield component of CQIRP consists of a duplication of these systems (as outlined above). Adani should provide demonstrable evidence to support claims made in Section 1.5.3, or else remove this statement and ensure the EIS is focused on facts that can be verified. The statements made by Adani are opinions made in the absence of information and should be presented as such.	The statement in EIS is based on facts and after significant engagement with Aurizon. Adani engaged with Aurizon for 8 weeks in 2012 to work for a techno-commercial solution; however Aurizon could not demonstrate that Newlands system can provide cost effective and timely solution to provide 60 Mtpa upgrades to Adani. Aurizon's proposal of Central Queensland Integrated Rail Project submitted to Adani in August 2012 was not based on proven technology and there were big assumptions, such as increasing axle load to 30 Ton on Narrow gauge system, running of 2GLT trains, introduction of 120 Ton Narrow gauge hopper wagons, trains size of 4.1 km length, significant easing of ruling grades on the Newlands systems. Also Aurizon could not demonstrate any definitive timelines in their proposal. Adani made another attempt in 2013 and sought a proposal on an Adani Galilee Basin rail solution, which Aurizon submitted on 12 April 2013. Adani again found the Aurizon's proposal unacceptable due to commercially unviability and the inclusion of a significant number of unacceptable commercial conditions and risks. Among other constraints on the Newlands system due to challenging topography, narrow gauge railways have following limitations over the Standard Gauge railway systems: <ul style="list-style-type: none"> Limited speed potential (maximum 80 kmph) due to narrower wheel base, Wagons have lower volumetric capacities, which is a significant disadvantage for light commodities such as thermal coal. The wagon fleet size tends to be greater, which results in more frequent and longer train services and correspondingly greater traffic density, Higher horse power and more fuel consumption to pull same amount of coal due to unfavourable tare : payload ratio of narrow gauge wagons. Higher traffic volumes for the same tonnage increase the difficulty of accessing the infrastructure to undertake maintenance tasks and also impacts usage-based maintenance tasks. The narrower gauge size increases the impact of differential settlement on cross levels, which affects riding quality and increases track maintenance intervention requirements. Similarly, the narrow gauge track structure provides less resistance to lateral displacement compared to the standard gauge track structure. This results in stricter tolerances and increased safe maintenance intervention requirements.
35	Aurizon	Organisation	35 d		Figure 19-1 fails to include the brownfield component of the CQIRP which is publicly accessible (see links provided above) and should be included in the consideration of CQIRP. Section 19.3.3 vastly understates the CQIRP by referring only to the greenfield component and ignoring the brownfield component (which essentially consists of the duplication of the Newlands system).	Adani to amend Figure 19-1 so that it accurately reflects current (and related) projects in the region, such as the brownfield component of the CQIRP (which is the duplication of the Newlands System and the northern portions of the Goonyella System). Adani to expand cumulative impact assessment such that it also considers the larger brownfield component of the CQIRP and doesn't focus solely upon the greenfield.	It is an established fact for a given distance transportation of coal on narrow gauge rail systems is more costly as compared to standard gauge rail systems due to nature of the two different systems. This can be easily compared from the publicly available data on cost of transportation on various railroads in the world. So, transportation on the narrow gauge system will add extra cost to Galilee Basin coal in the international market. Also transportation of 60mtpa coal on Newlands systems over and above the 50 Mtpa already contracted capacity will require significant upgrades which Adani saw a major risk given the nature of terrain and complexity of brownfield infrastructure, not to mention the uncertainty associated with respect to Aurizon's planned development timeframes. Moreover running of different length of train consists from existing mines in Bowen Basin and greenfield mines in Galilee Basin shall be challenging. The NGBR Project is a standalone greenfield line and does not have any interface with Aurizon main line warranting cumulative impact assessment, particularly given the uncertainty with respect to the proposed CQIRP (which has not yet been investigated at the level of an EIS).
35	Aurizon	Organisation	35 e		It was requested during the ToR that Adani ensure it consulted with Aurizon in regard to the potential for there to be construction impacts on Aurizon's existing rail network between Kallil and Abbot Point. It does not appear that any such consultation took place, or at least, it is not addressed or discussed in the EIS.	Adani to undertake appropriate consultation and address.	A number of meetings have been held with Aurizon over last 2 years in connection with brownfield upgrades required to carry Adani's tonnage on their system as well as to interface with their infrastructure at Abbot Point. The minutes of all such meetings are available on record. Adani also engaged with Aurizon as part of the NGBP initiated consultation process to develop the rail infrastructure master plan at the Port of Abbot Point from which a report was circulated to all the participating organisations. Also note relevant response comments contained in relation to submission 35 f.
35	Aurizon	Organisation	35 f		It is noted in Sections 2.3.1 and 2/3/14 that the proposed NGBR will cross existing Aurizon Network Infrastructure (namely the North Coast Line and the Abbot Point branch of the Newlands system respectively) via grade separated crossing. There does not appear to be any evidence of consultation with Aurizon network in relation to whether this represents a feasible proposal and/or whether suitable alternatives were explored, nor is there any consideration of discussion of potential impacts/mitigation strategies in relation to this proposed interface between the two infrastructure corridors. In addition, there is not discussion of how construction will be managed to avoid impacts on the continued operation of Aurizon's rail corridor at these points nor how the operation of NGBR will be managed to avoid same.	Adani to address and advise.	Adani's NGBR Project final rail corridor includes planned grade separation from the Queensland Rail North Coast line and Aurizon Newlands system near Abbot point and does not have any at grade interface issues. A meeting specifically to look into Adani's proposed interface with Newlands Rail near Saltwater Creek was held on 8 November 2013 and the minutes of the meeting are available on record. Aurizon was provided with all the drawings of Adani's proposed grade separation on the Newlands line and feedback was sought so as to incorporate the same in the interface design. Aurizon provided their formal response on 6 January 2014 which has been taken into account and, wherever required, would be further incorporated during the detailed design of the grade separation. Similarly, a meeting specifically to look into Adani's proposed interface with the North Coast line near Abbot Point was held on 20 September 2013 and 17 November 2013 with Aurizon officials and the minutes of the meeting are available on record. Aurizon was provided with all relevant drawings of Adani's proposed grade separation on the North Coast line and feedback was sought so as to incorporate the same in the interface design. Aurizon provided some feedback which has been taken into account and, wherever required, would be further incorporated during the detailed design of the grade separation. Please note that further consultations will continue to be undertaken during the detailed design of the grade separation and potential construction and operational impacts on the Aurizon network.
35	Aurizon	Organisation	35 g		Preliminary analysis suggest that the stated quantity / location of passing loops (7) will be inadequate to facilitate the passage of the stated system throughput (100Mtpa), without reliance upon assumption of unprecedented levels of asset utilisation (>90%) particularly for a multiuser rail environment. The impact of an increase in the number / location of required passing loops is likely to impact key assumptions underpinning the EIS studies, including (but not limited to): <ul style="list-style-type: none"> bulk earthworks; train movements per day; and cumulative impact modelling (e.g. noise) Obviously, if substantiated, this could result in either lower system throughput than planned or increased time/cost factors, either of which may materially impact on the economic viability of this rail proposal, and hence the ability of this project to achieve its objective of providing as cost efficient rail solution for the northern Galilee Basin.	CoG to require independent confirmation of the veracity of key rail planning assumptions, and condition revised/updated modelling to reflect the likely rail infrastructure requirements.	The requirement of infrastructure including number of passing loops on any railway system is driven from various key parameters including below rail characteristics, above rail solutions and operations modelling. The design carried out by Adani has been RPEQ'd and validated by above rail modelling. It is noted that that Aurizon's observation is not based on facts and is unfounded. Moreover Aurizon does not have locus-stand on this matter.
35	Aurizon	Organisation	35 h		It is not clear whether there will be any adverse impact (as a consequence of construction activities and design of the NGBR corridor) on the downstream Aurizon rail corridor	Adani to advise.	Adani shall negotiate an interface agreement with Aurizon for construction and operation of the NGBR Project, which will reflect the ongoing requirements of both parties with respect to mitigation and management of any potentially adverse impacts during construction and/or operation. Given the nature of constructing grade separated crossings rail over rail, some impact to existing operations may be encountered, however it is anticipated that any such potential impacts will be minimised and managed in a mutually beneficial way. Adani will continue to consult with Aurizon during development of the NGBR Project.
35	Aurizon	Organisation	35 i		The EIS does not contain any assessment of potential impacts to Aurizon's existing rail corridor (namely the Newlands System) during any of the design, construction or operational phases despite the NGBR being proposed to cross the Newlands System at two points (by grade separation). Furthermore, there is no discussion of potential disruption to the continued operation of Aurizon's existing rail corridor as a consequence of increase traffic (including heavy machinery) on the road network.	Adani to complete assessment of impacts and advise.	The impact on the Aurizon's infrastructure (such as the proposed grade separation near Saltwater Creek with Newlands Line or that with Aurizon on the North Coast Line) has been discussed as elaborated in the response to item 35f. In addition, Adani also engaged with Aurizon as part of the NGBP initiated consultation process to develop the rail infrastructure master plan at the Port of Abbot Point. Further consultations to mitigate impacts, if any, would be undertaken during the detailed design stage of the project
35	Aurizon	Organisation	35 j		consideration has been given to impacts to the existing Aurizon rail corridors (either staff safety or impacts to continued operation) despite there being at least two proposed points of direct interface between the two infrastructure corridors.	Adani to suitably amend Table 18-5 and other relevant sections of Chapter 18 such that it addresses, considers and discusses potential hazards and risks to the safety of Aurizon personnel and operation of Aurizon assets.	Noted. A detailed risk assessment consistent with the requirements for the Interface Agreement with Aurizon assets shall be undertaken at the appropriate time.

Sub. No.	Submitter	Submitter Type	Issue No.		Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response
36	Department of Health	Agency	36 a	Air Quality	Dust impacts	The Department of Health (DoH) has identified a number of issues relating to air quality which the proponent needs to address to provide confidence that human health and well-being is adequately protected. These issues include: 1. The proponent identifies that the nearest sensitive receptor (other than the construction camps) will be approximately 1.1km from the rail corridor and over 2km from any associated quarrying activities and employs adequate mitigation based on these assumptions. The proponent however does not provide any commitments within Volume 2 Appendix S (Proponent Commitments), pg6 ensuring that these buffer distances will be achieved. 2. The proponent within Volume 1 Chapter 10 (pg10-16) that "Construction camp designs will meet the Air EPP criteria, by incorporating enclosed meals, living and sleeping quarters, which will be mechanically ventilated and insulated to protect residents. Given that the construction camps will predominantly be occupied outside of daytime construction hours, when emission sources will be minimal, in addition to the transient or fleeting nature of construction activities in sections of the final rail corridor adjacent to the construction camps, the potential impacts to occupants can be fully mitigated to avoid any potential health risks". The proponent however does not provide any such commitments within Volume 2 Appendix S, pg6 (Proponent Commitments) ensuring that potential health risks at the construction camps will be appropriately mitigated. 3. The proponent has not provided any details with regard to the Coal Dust or Dust Management Plan as described within Volume 2 Appendix P – Project EMP. It is not clear how the proponent will adequately address complaints in relation to human health caused by dust emissions.	To ensure that human health and well-being are adequately protected the proponent should: 1. Provide commitments within Volume 2 Appendix S, with regard to the mitigation aspects mentioned within, Chapter 10. This should include the buffer distances and accommodation construction and siting requirements. 2. The proponent should provide details with respect to the proposed Dust / Coal Dust Management Plan, highlighting how the proponent will adequately address any dust / coal complaints as to ensure human health is not adversely affected.	1. Adani is committed to providing the required mitigation and management measures for sensitive receptors which are impacted by the Project. However, a commitment cannot be provided at this stage in regard to separation distances between sensitive receptors and the proposed alignment as minor changes may occur during design phase for the Project. Volume 2 Appendix B of the SEIS provides details of the current separation distances. 2. Adani is committed to providing appropriate accommodation within the temporary workers camp including ensuring that accommodation is built to standards recommended in EPP Air. 3. Adani has committed to the preparation and implementation of a Coal Dust Management Plan reflecting the principles of the Aurizon Coal Dust Management Plan. The plan will include details in regard to the monitoring, management and response to any complaints in regard to dust. It is expected that preparation and implementation of the Plan will be a condition of approval for the project. Volume 2 Appendix G Revised commitments includes the commitment that "all complaints relating to air quality (including dust emissions) will be recorded and managed in accordance with the complaints management procedure, with additional mitigation undertaken if the complaint is validated."
36	Department of Health	Agency	36 b	Noise and Vibration	Sensitive Receptors	The DoH notes that the proponent has not assessed the accommodation camps as noise sensitive receptors and as such has not assessed the impact of noise on these camps. The Department of Health is particularly concerned that sleep disturbance criteria will be exceeded at the various accommodation villages adversely affecting the health and wellbeing of the people occupying these facilities.	The DoH recommends that the proponent assesses all accommodation villages as a sensitive receptor. The proponent must incorporate adequate mitigation measures within the commitments specified within Volume 2 Appendix S, to ensure the protection of human health and well. Particular attention must be paid demonstrating that sleep disturbance criteria identified within the Environmental Protection (Noise) Policy 2008, particularly the LA1,adj,1hr and LAeq,adj,1hr criterion, at all sensitive receivers.	Workers camps are not defined as sensitive receptors by the EPP(Noise) and as such were not included in the noise assessment. As described in Volume 1 Chapter 12 the EPP (Noise) does not apply to rail projects and as such assessment against the sleep disturbance criterion is not required. Assessment has been undertaken against the more stringent NSW Rail Infrastructure Noise Guideline criterion which also captures night time impacts. Volume 1 Chapter 12 of the EIS provides a commitment that construction camps will be positioned to minimise external impacts from the final rail corridor or associated construction laydown of turning areas, as well as any internal emission sources such as generators or parking areas. Construction camp designs will meet the construction noise criteria (refer Section 12.2.6) by incorporating enclosed meals, living and sleeping quarters which will be mechanically ventilated and insulated to protect residents. Given that the construction camps will predominantly be occupied outside of general building hours, when emission sources will be minimal, in addition to the transient or fleeting nature of construction activities in sections of the final rail corridor adjacent to the construction camps, the potential impacts to camp residents from noise will be insignificant.
36	Department of Health	Agency	36 c	Consultation		The DoH notes that the proponent has not: 1. 'include within the EIS the relevant consultation undertaken with the appropriate regional health service providers and emergency management authorities.' This was a requirement of S7.2 of the Terms of Reference. 2. Identified in Chapter 18 or in Chapter 2 how potable waters at the accommodation camp will be supplied, treated and protected. The proponent has identified the establishment of a water supply strategy within Chapter 2 (S2.3.9), there has been no reference made that the strategy will incorporate the requirements of potable waters complying with the Australian Drinking Water Guidelines (ADWG).	The DoH recommends that: 1. The proponent specifies what consultation (if any) has been undertaken with the relevant Hospital and Health Service to ensure that adequate commitments and management plans and are made to ensure any impact on health and emergency services within the region is minimal. 2. The proponent specifies within the water supply strategy how potable water will be supplied, treated and protected as to comply with the ADWG. The proponent should also provide adequate commitments within Appendix S, that the strategy will ensure all potable water will comply with ADWG.	1. Adani has held consultation with Queensland Fire and Emergency Services and the Queensland Police Service to establish emergency response requirements for the Project. Adani will continue to work with local service providers. 2. The water supply strategy for the project will be finalised during the design phase. A requirement of that strategy is that all potable water will comply with the ADWG. Section 2.3.4 and 2.19 of Volume 1 Chapter 2 Project description contain information regarding potable water storage and water treatment within camps and the rolling stock maintenance depot, respectively. The above commitments are incorporated in Volume 2 Appendix G Revised commitments.
37	Evolution Mining Ltd	Organisation	37 a	Land use and tenure	Tenure	The current proposed alignment traverses directly through the centre of EPM 11147, one of the tenements held by Evolution's Mt Carlton mine. The current proposed NGBR Project alignment will result in potentially significant sterilization of prospective zones within EPM 11147. This affects the development of the broader Mt Carlton project, which is critical for future continued operation and expansion of the mine. As such, the future economic development by Evolution of any expansion to the Mt Carlton mine will be severely compromised by construction of the NGBR Project within the current proposed alignment. Evolution has attached their 2013 Annual Report to the submission.		In a meeting on 15 October 2013 it was discussed between Adani, Evolution Mining Ltd, DNRM and DSDIP that NGBR Project will maintain the current alignment until further information is provided by Evolution Mining. It was noted that though the State Government is equally concerned about resource sterilisation, the Evolution tenements are still at exploration stage and Evolution Mining will need to develop timelines of its proposed Mining development over EPM 11147 and demonstrate resource definition prior to any change in the NGBR Project alignment. It was also discussed that should Evolution Mining be concerned with sharing confidential data with Adani, it can instead share commercial-in-confidence data with DNRM/DSDIP who can inform Adani at a high level of the outcomes whilst maintaining the commercially sensitive data in confidence.
37	Evolution Mining Ltd	Organisation	37 b	Land use and tenure	Economic and social benefits	Any compromise to this development will result in negative impacts to the community. It could also result in a loss of future royalties to the State.		The project has undergone social impact assessment to assess impacts on the community as included in the EIS at Volume 1 Chapter 16 Social and economic impacts. With regard to royalties, it is considered by Adani that the opening up of the vast Galilee Basin coal reserves to mining (via the NGBR Project rail infrastructure) is likely to be more economically significant than the potential royalties that may be generated via the limited purported (and as yet undefined) mineral resources within the Evolution Mining tenements.
37	Evolution Mining Ltd	Organisation	37 c	Overall project	Economic and social benefits	Evolution understands the importance of the NGBR Project to the State and broader community. As such, it is committed to working with the State and Adani to determine an alignment acceptable to all.	Evolution submits an alternative alignment to the east of the current proposed alignment (enclosed in the submission) would seemingly meet Adani's objectives and would not affect Mt Carlton's development. While the alternative route would still impact EPM 11147, it would result in significantly less impact on prospective mineralised zones and allow Evolution to develop its Mt Carlton project.	It was also discussed in the meeting (outlined at item 37a) that the NGBR corridor was developed using a multi-criteria analysis method by Worley Parson's. Adani has also undertaken a literature review and assessment of resource sterilization through Xenith Consulting which supports the NGBR alignment and asserts that potential resource sterilisation is minimised.
37	Evolution Mining Ltd	Organisation	37 d	Project Description	Alignment	Based on Evolution's knowledge of the area, the current proposed route appears to be geotechnically challenging for civil construction works.	The alternative alignment submitted by Evolution could also be beneficial for construction.	Opinion noted. It was also clarified in the meeting (outlined at item 37a) that Adani has undertaken Geotech investigations and is confident to undertake construction activities on NGBR alignment.
38	Lock the Gate Alliance	Organisation	38 a	Entire EIS	General comments	The EIS is extremely poor quality and requires significant revision and further work to meet statutory requirements. There are many incoherent sentences and incomplete analyses, some of which are not based on the information that is included in either the EIS itself or the relevant appendices and therefore appear to have been made up. It does not provide adequate information to the public about this project so as they can actually make an informed decision. As an example, under the project description, there is reference to both five and nine loaded trains a day but there is no indication as to what that actually means.	Review the EIS and correct all incorrect aspects so the Coordinator General and Federal Minister are provided with an accurate document.	Opinion noted. The total number of loaded trains in a 24 hour period is 14 - 9 during the day and 5 at night. This is corrected in Volume 2 Appendix B Revised project description.
38	Lock the Gate Alliance	Organisation	38 aa	Air Quality	Modelling	With regards to modelling, there are concerns as to the use of data from the Bureau of Meteorology within the model from a variety of years rather than one single year across the whole corridor. The EIS includes data for the five locations for 2004, 2007, 2008 and 2008/2009. The use of different years' raises significant concerns that the years could have been selected to provide the results desired. While no allegation is made, the EIS should use the same year's data when undertaking the modelling and assessment. Without doing so, it raises concerns that the Coordinator General and Federal Minister may not be being provided with accurate information within the EIS.	Use same year's data when undertaking modelling and assessment.	The EM960 Guidelines 'Application requirements for activities with impacts to air' are used and these define the 'air dispersion modelling' to be used (pp.13-14). The guideline references the NSW and Victorian guidance on dispersion modelling. Both of these require a year long dataset - 90% complete (NSW) and "ensure that seasonal variations are included" (Victoria). The emphasis is on a quality dataset "representative of meteorological conditions within the vicinity" (Vic EPA) so that all possible combinations of worst case meteorology are included. The variation from year to year is captured in the statistical approach of analysis of the modelling output – extremes are selected and any year will contain these. The reason for the different years above is due to the quality and completeness of the data (not always sourced from BoM). Further, if data spans over several years a screening methodology is used to select a year without extremes of too wet or too dry.
38	Lock the Gate Alliance	Organisation	38 b	Entire EIS	General comments	Many chapters of the EIS do not contain baseline data as is required and the consultant indicates that it has therefore taken a "conservative approach" when making statements on potential impacts. This is demonstrated by Adani's so called "commitments" to undertake actions post the granting of an approval that should be done during the EIS stage of the process. This approach is totally unacceptable particularly in greenfield locations where the project is proposed. For example, there is no "real" baseline data for the vast majority of nature conservation, air, water quality as they do not for example, adequately evaluate seasonal variations.	Full baseline data should be collected prior to any approval, whether conditional or full. Details as to the specifics of the baseline data are included in the relevant sections below.	The adequacy of the EIS for public notification was assessed by DSDIP and considered acceptable.
38	Lock the Gate Alliance	Organisation	38 bb	Air Quality	Coal wagon covering	Release of particulate matter from wagons that are not fully covered.	Further, within the air quality chapter, an assessment should be made of full covered wagons versus veneering. Covering of wagons is considered to be best practice and therefore should be considered as an appropriate mitigation to the potential release of particulate matter that the science and medical research says is dangerous to human and animal health.	Volume 1 Chapter 10 of the EIS concludes that no residual air quality impacts exists at sensitive receptors and as such that no specific mitigation measures are required. Adani do however commit to preparing a Coal Dust Management Plan consistent with that of Aurizon. Given that the modelled impacts are within assessment guidelines there is no requirement to model with additional mitigation such as covering wagons. It should be noted that additional modelling of the proposed Realignment is included in Volume 2 Appendix C of the AEIS.

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38	Lock the Gate Alliance	Organisation	38 c	Entire EIS	The EIS also references numerous documents and then does not provide accurate representations and data from those documents. This includes other EIS and papers such as the Abbot Point Cumulative Impact Assessment and associated reports.		Opinion noted.	
38	Lock the Gate Alliance	Organisation	38 cc	Cumulative impacts	Cumulative Impact Assessment (CIA) does not address the ToR. The consultants have referred to two papers that they suggest provide appropriate methodologies for undertaking a cumulative impact assessment. One is a 1999 paper and the other relates to coal mining rather than rail infrastructure. Adani was involved in the preparation of the Abbot Point CIA which is what the public expect now as the standard for this section of an EIS. Should this not be appropriate, the International Finance Corporation has recently released the "Good Practice Handbook: Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets" that could have been referred to when undertaking the CIA.	Adani must undertake an adequate cumulative impact assessment based on the work undertaken at Abbot Point. This should include at a minimum, the collection of baseline data as is required for the ToR and following this, appropriate modelling for flooding, air quality, climate change, noise, lighting, habitat removal with appropriate mapping showing how for example, the cumulative removal of specific (e.g. sensitive areas) and all habitats will impact on flora and fauna locally and at a regional scale. Further, the noise assessment appears to be predominantly related to Abbot Point only.	The ToR requires a 'summary of cumulative impacts'. It is not appropriate to compare the assessment of cumulative impacts conducted at Abbot Point to the NGBR project as these were undertaken under different legislative requirements and different terms of reference.	
38	Lock the Gate Alliance	Organisation	38 d	Intro/Project Description	Use of rail system	The EIS suggests that there are other 'third party mines' that may also use the rail system so as to demand that the project be designed for 100mtpa and/or that alternatives that are more appropriate be used. Who are the third parties? The EIS also states in Section 1.4 that the project could be extended south to accommodate other miners but again there is insufficient details contained within the EIS as to who these parties might be. Considering that Adani and Hancock GVK as an example, have already secured port capacity at the Port of Abbot Point, then what would happen if commercial arrangements were agreed with Hancock, despite their current agreement with Aurizon to utilise the rail line. What implications would that have for the ability of the project to manage this coal and what modifications/changes would be required to upgrade the project to carry for example, 130mtpa as is proposed by Adani's Terminal 0 and Hancock GVK's Terminal 3 at the Port of Abbot Point.	Adani should provide adequate justification as to why the project should be approved for 100mtpa through the release of agreements that have been made with other parties (financial and commercially sensitive information excluded). Adani should also demonstrate the need for this corridor when there has previously been approval for Hancock GVK and Waratah Coal's corridor alignments. Adani has failed to demonstrate why their alignment is preferred over those of other miners so as to maintain a single corridor, and this needs to be rectified.	1. Waratah Coal Pty Ltd's proposed China First Project - Adani has considered developing and/or utilising a consolidated corridor with Waratah Coal Pty Ltd's proposed China First Project. Due to long steep grades, serious contractibility challenges (such as very deep cut and fill earthworks) of this alignment through the middle of Leichardt range and uncertainty with respect to timeframes for commencement of development for the China First Project, in addition to a more favourable and technically better route option having been identified by Adani, opportunities for co-use and/or co-alignment with the China First Project are limited. 2. Hancock Coal Infrastructure Pty Ltd's proposed Alpha Coal Project - Adani has previously considered developing and/or utilising a consolidated corridor with Hancock Coal Infrastructure Pty Ltd's proposed Alpha Coal Project (Alpha). The Alpha Railway will be operating at capacity when Adani seeks access as the railway is to be constructed to facilitate a capacity of 60 Mtpa which is fully allocated to Alpha mine (30 Mtpa) and Kevin's Corner Mine (30 Mtpa) to the south. As such opportunities for co-use of the railway are limited. The Alpha Railway, besides being a much longer route to Abbot Point from the northern Galilee Basin, traverses through the large flood plains of the Suttor and Bogle Rivers, which pose serious challenges for construction and maintainability of a heavy haul rail operation. Further, uncertainty with regard to timeframes and commitments around construction of the Alpha Project are a constraint to adoption of this proposal. 3. Aurizon Central Queensland Integrated Rail Project- Aurizon is seeking to develop an integrated rail system to service existing and proposed coal mines in the Galilee Basin. The rail system seeks to design a supply chain solution to haul coal from the Galilee Basin to relevant export terminals as efficiently as possible. The proposed Central Queensland Integrated Rail Project alignment is a narrow gauge solution connecting to already congested and less scalable network on the Newlands system. Moreover, the proposed Central Queensland Integrated Rail is a much longer, and therefore less cost-effective, route to Abbot Point, besides being an operationally less efficient narrow gauge system as compared to the heavy haul standard gauge proposed for the NGBR Project. Opportunities to consolidate the Aurizon and Adani alignments have been explored; however, due to uncertainty with regard to Aurizon's development timelines, in addition to the above technical aspects, Adani has decided to propose the much shorter and standard gauge NGBR Project 4. Justification for the ultimate capacity sought for the NGBR Project of 100 Mtpa is adequately contained within the EIS. To briefly reiterate, the justification for this is to enable third-party users to obtain rail capacity (up to 40 Mtpa) without further upgrade of the NGBR Project or additional rail corridors to be developed for those users. This approach is consistent with the DSDIP policy of June 2012 for Preferred Rail Corridors to service the Galilee Basin and the subsequent Galilee Basin Development Strategy (DSDIP 2013) and draft Galilee Basin State Development Area Development Scheme (DSDIP 2014).
38	Lock the Gate Alliance	Organisation	38 dd	Cumulative impacts	The EIS includes projects in the cumulative impact assessment that are no longer relevant. There are various projects in the CIA section of the EIS that are not included in specific aspects of the assessment. As an example, Tables 19.1 and 19.2 do not contain the same projects. It could be suggested that this is a deliberate act to manipulate the results desired. In Table 19.3, the EIS suggests that the Australian Painted Snipe was not found which is inconsistent with both the Abbot Point CIA and more importantly, other sections of the EIS, thereby demonstrating the issues raised in the first section of this submission as to inconsistencies. Without undertaking this work effectively, the Coordinator General and Federal Minister can never be in a position to properly assess the project in combination with those already approved and/or proposed as is required by the ToR.		The ToR requires a 'summary of cumulative impacts'. It is not appropriate to compare the assessment of cumulative impacts conducted at Abbot Point to the NGBR project as these were undertaken under different legislative requirements and different terms of reference.	
38	Lock the Gate Alliance	Organisation	38 e	Project Description	Works at Port of Dudgeon Point	The EIS also suggests that Adani is also committed to undertaking works at the Port of Dudgeon Point under EPBC Referral 2012/6240. There is extremely limited information on the status of the EIS and what Adani intend to do re exporting coal from the Port of Dudgeon Point.	Full details as to Adani's commitment to a project at the Port of Dudgeon Point need to be included within the EIS and why they should be granted approval for a new greenfield rail alignment to the Port of Abbot Point when they have options to link with existing rail infrastructure and move their coal via the Port of Dudgeon Point under EPBC 2012/6240. Should Adani continue to propose to operate out of the Port of Dudgeon Point, then they should provide a full rationale as to why they require a new greenfield alignment to the Port of Abbot Point because at this stage, the EIS fails to adequately demonstrate this.	Noted. The Dudgeon Point Coal Terminals project is beyond the scope of the NGBR Project.
38	Lock the Gate Alliance	Organisation	38 ee	Cumulative impacts	The CIA cannot be completed consistent with the requirements of the ToR as Adani has not collected baseline data for flora and fauna, air and water quality. On this basis alone, a CIA cannot be completed. Secondly, for a cumulative impact to be effective, appropriate modelling needs to be undertaken to show what the impact will be of the various projects. No cumulative modelling is included in the EIS.		The ToR requires a 'summary of cumulative impacts'. It is not appropriate to compare the assessment of cumulative impacts conducted at Abbot Point to the NGBR project as these were undertaken under different legislative requirements and different terms of reference.	
38	Lock the Gate Alliance	Organisation	38 f	Project Description	Fauna movement	In Section 2.3.17, the EIS indicates that the entire alignment will be fenced with 4 stranded barbed wire. The erection of this type of fence will both significantly restrict the movement of native fauna across the landscape they have always used, but more importantly, could result in the direct mortality of native fauna. Research has suggested that barbed wire is not appropriate in a rural setting to restrict fauna movement.	Adani should demonstrate how they will not kill native fauna by having barbed wire fencing along the entire corridor. Further, should any approval be granted, Adani should be prosecuted for any native fauna death that would be as a direct result of the installation of a barbed wire fence as it would not be within their knowledge and therefore something they could be found liable and guilty of under the Environment Protection and Biodiversity Conservation Act and Nature Conservation Act 1992.	The project description identifies installation of livestock fencing which is typically comprised of four strand barbed wire (see AEIS Volume 2 Appendix A). The project description also identifies that fencing requirements will be property specific. The Nature Conservation assessment also identifies mitigation measures such as utilising a plain wire top strand on fencing to limit impacts to native fauna through entanglement (see EIS Volume 1 Chapter 06). These mitigation measures would be implemented where conditioned as part of the project approval or on an as required basis in consultation with landholders.
38	Lock the Gate Alliance	Organisation	38 g	Project Description	Construction camps	The project also proposes to have accommodation facilities at five construction camps. The water usage for potable water at those construction camps is extremely high in comparison to that available within the existing region. There is no real indication as to where that water may come from, particularly given that Queensland is currently experiencing and has experienced severe droughts over the last 10 years.	The EIS needs to explain fully where the all water will be sourced from and provide information as to possible agreements with relevant local authorities that will provide water for the project.	Volume 1 Chapter 02 (2.3.9) of the EIS states that water supply will be from a range of sources including the supply of potable water under agreement with Isaac and/or Whitsunday Regional Councils. It also states that the water supply strategy will be further refined during the design phase. This phase is ongoing.
38	Lock the Gate Alliance	Organisation	38 h	Climate and natural hazards	Climatic conditions	The ToR requires the EIS to describe the climatic conditions that may affect management of the project. This includes a description of the vulnerability of the project area to seasonal conditions, extremes of climate (for example, cyclones) and natural or induced hazards (including bushfire).	The EIS should be required to properly assess risks rather than the broad sweeping statements that are made throughout the document.	The ToR states "Undertake a preliminary risk assessment for all components of the project, as part of the EIS process in accordance with relevant standards". The assessment undertaken and reported in Volume 1 Chapter 17 and 18 of the EIS is consistent with the ToR requirements.
38	Lock the Gate Alliance	Organisation	38 i	Climate and natural hazards	Train derailment impacts	The EIS suggests Adani proposes to use trains longer than have ever been used on the east coast of Australia to transport their coal from the mine to the Port of Abbot Point. While the chapter on Hazards discusses the potential for derailment, nowhere in the EIS does it discuss the real potential impact the on the environment, including for example, water quality should a train derail on for example, a longer crossing over the Suttor River during a flood event.	As derailments have been considered a high risk, a full evaluation should be undertaken with appropriate modelling to demonstrate that should a derailment occur, the risk of impact to the environment is acceptable to allow the granting of an approval for the project.	Adani Mining Pty Ltd is an accredited rail manager with the Queensland Government and as such is committed to establishing a Rail Safety Management System before construction and operations.
38	Lock the Gate Alliance	Organisation	38 j	Climate and natural hazards	Climatic conditions	When considering the climatic and meteorological conditions for the chapter, it is of major concern that Adani have only used data from three locations within the chapter (including Clermont which is as the EIS states, over 100km away) when they have used five locations for the air quality chapter re climatic and meteorological data. The EIS should be consistent and use the same data for example, climatic and meteorological conditions throughout the entire EIS.	The EIS should use the same data as that used for example, the air quality chapter within the Hazards chapter.	Data used of each element of the EIS is considered in terms of suitability for specific analysis.

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38	Lock the Gate Alliance	Organisation	38 k	Climate and natural hazards	Climate change impacts When considering the above the EIS includes, within the Hazards chapter, a section on climate change. As climate change is likely to have significant impacts on our social, economic and ecological environment, particularly over the life of the project (90 years), a proper assessment of the likely impacts of climate change should be included and what are then the risks to the project. This would include increases in temperature and what impacts that may have on rail lines (e.g. it is noted that trains are unable to run on the Melbourne rail network on days where the temperature is over 35°C). It should also include an evaluation of the potential risks of an increased number and intensity of storm events (e.g. cyclones). The EIS in no way addresses these impacts and therefore this leaves significant gaps in the information for the public and decision makers to make an informed decision on the approval of the project.	The EIS should also include an adequate section on the impacts of climate change on the infrastructure itself and the potential impacts that flow from increased climatic events as highlighted immediately above (e.g. derailments as a result of flooding and/or debris on the tracks following a cyclone).	The ToR states "Undertake a preliminary risk assessment for all components of the project, as part of the EIS process in accordance with relevant standards". The assessment undertaken and reported in Volume 1 Chapter 17 and 18 of the EIS is consistent with the ToR requirements.
38	Lock the Gate Alliance	Organisation	38 l	Climate and natural hazards	Flooding The project description within the EIS suggests that bridge infrastructure as an example, will be designed to 100 year ARI. However, the modelling is only undertaken on 50 year ARI. This is a significant deficiency and must be rectified prior to the Coordinator General and Federal Minister granting an approval. All modelling should be undertaken as to the engineering design and then clearly demonstrated in the EIS.	Modelling must be undertaken to properly assess the hydrological impacts. If structures are to be built at ARI 100, then all modelling should be undertaken at the same level. Further, there is very little consideration of the potential impacts of climate change including for example, increased temperatures that could impact the lines and moreover, increased storm events both in number and magnitude. As the project is proposed to be used for 90 years, it would clearly be expected that adequate modelling based on a 100 year event (and more probably a 300 year event) should be conducted.	Modelling has been carried out to assess the relevant hydrological impacts for both Q50 and Q100 scenarios (refer to Volume 2 Appendix H2 Hydrology and Hydraulics) as they are both required to confirm that the formation and top of rail levels have the relevant flood immunity of Q50 + 300 and Q100 respectively. All bridges are designed for both Q100 and Q2000 scenarios as this is a specific requirement of the Australian Standard.
38	Lock the Gate Alliance	Organisation	38 m	Topography, geology and soils	Acid sulfate soils The EIS states that it has identified areas of actual or potential acid sulfate soils in the coastal areas of the corridor. However, no surveys or field investigations have been undertaken in accordance with state planning policies and accepted industry guidelines.	Adani must be required to adhere to the ToR and undertake field surveys within the areas identified in the desktop assessment for areas of actual or potential acid sulfate soils in the coastal areas. These surveys must be undertaken in accordance with state planning policies and accepted industry guidelines. Until these surveys have been undertaken, the EIS is not adequate for the assessment by both the Coordinator General and Federal Minister.	Volume 1 Chapter 5 (5.4.1) of the EIS includes a commitment to undertake pre-construction surveys and where necessary develop and implement an ASS Management plan (consistent with the latest version of the Queensland ASS Technical Manual Soil Management Guidelines). This approach is consistent with the ToR and has been accepted by DEHP. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflect the commitment that the ASS management plan, if required, will be developed "in accordance with the State Planning Policy and the latest version of the Queensland ASS Technical Manual Soil Management Guideline."
38	Lock the Gate Alliance	Organisation	38 n	Nature conservation	Ecological surveys The EIS requires Adani to undertake surveys in areas identified as key ecological areas during the desktop assessment. The EIS states that Adani makes a commitment to undertake baseline surveys (the minimum that would be expected in an EIS) post the granting of an approval and prior to construction. This is totally inadequate. Of greater concern is that surveys undertaken did not evaluate seasonal variation, were extremely short in relation to adequacy (e.g. surveys undertaken during May and June 2013 – only 165 hours for the entire corridor). More importantly, the surveys did not comply with Federal and State Government Guidelines (e.g. not compliant with EPBC Act Policy Statement 3.21 (Significant impact guidelines for 36 migratory shorebird species) or Survey guidelines for Australia's threatened reptiles: Guidelines for detecting reptiles listed as threatened under the EPBC Act (2011)). On this basis alone, the EIS cannot be accepted as being adequate.	Adani must provide full nature conservation surveys consistent with the Federal and State requirements prior to any approval being granted. The EIS also needs to include adequate seasonal surveys to demonstrate any differences across seasons. Nothing in the EIS currently does this and it is a very significant flaw in the EIS that cannot be rectified by merely changing words in the document. For example, this requires full compliance with the survey as stipulated in EPBC Act Policy Statement 3.2.1 rather than the three hours that were undertaken to complete this EIS. The undertaking of a three hour survey would not provide adequate data for the EIS.	Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.
38	Lock the Gate Alliance	Organisation	38 o	Nature conservation	Ecological surveys While it is noted that there has been extremely limited baseline surveys undertaken across the whole project, it is very concerning that significant areas of the rail corridor appear to have not been assessed at all.		Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.
38	Lock the Gate Alliance	Organisation	38 p	Nature conservation	Offsets In relation to proposed offsets, the EIS fails to consider the information that is available in the public domain and is then inconsistent and contradictory with itself as to the impacts and required offsets. As an example, section 7.15.2.4	Re offsets, Adani should be required to, following the baseline surveys, correctly calculate any required offset.	Noted. Volume 1 Chapter 7 (7.15) of the EIS identifies 'indicative' quality scores for offsets and commits that further equivalence assessment will be undertaken by Adani to inform the finalisation of the Offsets Strategy for the Project. A comprehensive survey of the ecological values of the final rail corridor will be undertaken to: – Confirm state significant biodiversity values under the relevant offset policies – Confirm the extent of matters of national environmental significance, including threatened ecological communities and potential habitat for species listed under the Environment Protection and Biodiversity Conservation Act 1999 – Confirm the extent and condition of regional biodiversity corridors within the final rail corridors – Confirm the extent of watercourse vegetation – Complete biocondition assessment of confirmed state significant biodiversity values or matters of national environmental significance – Determine likely extent of potential groundwater dependent ecosystems. The findings of the comprehensive survey of ecological values will be provided to the Department of Environment and Heritage Protection and the Department of the Environment. The comprehensive survey of ecological values will inform the development of the environmental management plan, the final offset package, subsequent vegetation clearing applications and associated property maps of assessable vegetation. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP framework reflects the commitment for a comprehensive survey of ecological values.
38	Lock the Gate Alliance	Organisation	38 q	Nature conservation	Offsets Of major concern is that the EIS relies on information related to the Australian Painted Snipe and throughout the EIS, it states that the project will have an impact on 46 hectares of Australian Painted Snipe habitat. However, in Table 7.64, it suggests that the project will only have an impact on 3 hectares of Australian Painted Snipe habitat and accordingly, based on the offset calculations, only 47 hectares of offset is required. This calculation is completely wrong as it is not based on the figure used throughout the whole EIS of 46 hectares.	Re offsets, Adani should be required to, following the baseline surveys, correctly calculate any required offset.	Noted. Volume 1 Chapter 7 (7.15) of the EIS identifies 'indicative' quality scores for offsets and commits that further equivalence assessment will be undertaken by Adani to inform the finalisation of the Biodiversity Offsets Strategy for the Project.
38	Lock the Gate Alliance	Organisation	38 r	Nature conservation	Ecological surveys It is clear from the information contained within the EIS that the ToR has not been complied with, regarding vegetation mapping and highlighting sensitive environmental areas. There are many significant areas of the corridor that have not been assessed despite the mapping showing important sensitive vegetation habitats. Of more concern, where habitat mapping and surveys, as limited as they have been undertaken, they have not, from the information contained within the EIS, been undertaken in compliance with the requirements of the ToR.	As with other aspects of nature conservation, Adani must undertake wet and dry season floristic surveys to provide a proper assessment of the rail corridor. This must include an evaluation of the entire corridor rather than parts of the corridor. For example, the areas between Collinsville and Splitters Creek must be assessed as must the areas within the upper reaches of the Suttor Catchment which has been almost totally missed in the EIS.	Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.
38	Lock the Gate Alliance	Organisation	38 s	Nature conservation	Ecological surveys Adani has failed to undertake work in fauna surveys in accordance with the ToR. The surveys that have been undertaken do not comply with Federal and State Government Guidelines. Further, there are significant areas of the corridor that have not been surveyed and on this basis alone, the EIS cannot be accepted as being adequate. Cumulatively, the failure to comply with the ToR makes the EIS inadequate.	As with other aspects of nature conservation, Adani must undertake wet and dry season fauna surveys to provide a proper assessment of the rail corridor. This must include an evaluation of the entire corridor rather than parts of the corridor. For example, the areas between Collinsville and Splitters Creek must be assessed as must the areas within the upper reaches of the Suttor Catchment which has been almost totally missed in the EIS. Additionally, Adani must comply with the requirements of the EPBC Act Guidelines and Policy Statements in undertaking those surveys including full and proper migratory bird and reptile surveys.	Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.
38	Lock the Gate Alliance	Organisation	38 t	Nature conservation	Ecological surveys The EIS further indicates that it undertook a single Striped and Collared Delma survey. It is however unsure as to whether this survey was undertaken consistent with the Federal Survey guidelines for Australia's threatened reptiles (the Striped and Collared Delma are listed within the EPBC Act). While there was one survey undertaken, there is no discussion throughout the remainder of the EIS as to whether the Striped and Collared Delma was observed and more so, whether the project would have a significant impact on the species. This is a very concerning failure in the EIS, particularly as the data would suggest that the Striped and Collared Delma may be found within the corridor from other EIS documents.		Although one diurnal active search (one person hour) was undertaken to target delma spp. within suitable habitat (eucalypt woodland on undulating hilly terrain), all diurnal active surveys undertaken during field surveys for the NGBR Project used methodologies consistent with the active hand searches of microhabitats outlined above. Diurnal searches were undertaken at 34 sites for a total of 37 person hours. No striped-tailed delma or collared delma were recorded during field survey for the NGBR Project. Through undertaking a likelihood of occurrence assessment, the striped-tailed delma was considered as may occur (consistent with the SEWPaC modelling distribution for this species) and the collared delma was excluded from further assessment as the Project did not occur with the SEWPaC modelled distribution of the species (the NGBR Project is located north of the modelled distribution). Due to this, the NGBR Project is considered unlikely to have a significant impact on either of these species.

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38	Lock the Gate Alliance	Organisation	38 u	Nature conservation	Fauna Habitat	The Abbot Point Cumulative Impact Assessment (CIA) and in particular, the Biodiversity Assessment and Management Pty Ltd, (BAAM) 2012, 'Coordinated Migratory Shorebird and Waterbird Surveys in the Caley Valley Wetland System, Abbot Point', demonstrate the importance of Caley Valley Wetland to migratory birds. The EIS provides almost no reference to this important habitat. While it is acknowledged that this is only a small section of the rail corridor, it is an extremely important habitat as shown by the Abbot Point CIA and BAAM report. The Abbot Point CIA provides information as to the numbers of Latham's Snipe and Australian Painted Snipe that are completely different to that recorded in the EIS. The numbers recorded in the EIS are substantially lower than those included in the Abbot Point CIA.	The preliminary investigation corridor, due to its 1,000 m width, crossed the western part of the DIWA listed Abbot Point – Caley Valley Wetland (Volume 1 Chapter 06 Figure 6-12); however, the final rail corridor does not enter any part of this wetland. Volume 1 Chapter 06 of the EIS references the BAAM2012 report quoted by the submission. The reference in the EIS is consistent with the findings of the BAAM report.
38	Lock the Gate Alliance	Organisation	38 v	Nature conservation	Species impacts	The mapping produced for the black-throated finch is incorrect, as are the estimates of important habitat present and, presumably, the area of important habitat proposed to be cleared. As just one example, the Water for Bowen EIS which is referred to in the EIS provides information on the location of Black Throated Finch near where Adani propose to construct their rail maintenance yards. Again, Adani state that the species is 'likely' to occur when the Water for Bowen EIS clearly demonstrated that is 'known' to occur. The same is true in relation to the Squatter Pigeon as to the failure to provide accurate surveys and mapping.	Volume 2 Appendix D of the AEIS includes mapping of available habitat for the black-throated finch. Mapping has been produced consistent with the requirement of the EPBC Act.
38	Lock the Gate Alliance	Organisation	38 w	Nature conservation	Caley valley wetland	The EIS does not include an accurate representation of the diversity and abundance of birds within the Caley Valley Wetland as identified in both the Abbot Point CIA and BAAM (2012). Both reports indicated the Caley Valley Wetland contained in excess of 50,000 birds and this figure has not been represented in the EIS.	As with other aspects of nature conservation, Adani must undertake migratory surveys that comply with the requirements of the EPBC Act Policy Statements. The utilisation of data from two years ago is not acceptable.
38	Lock the Gate Alliance	Organisation	38 x	Water Resources	Water sampling	The ToR requires the EIS to describe the existing resources and environmental values of surface water and groundwater across the project footprint. This would suggest that the proponent is required to, consistent with best practice, take water quality samples in both the wet and dry season and provide information on flow regimes etc. The EIS refers to other EIS that have undertaken surface and ground water sampling across the area. As an example, the rail corridor component of the Waratah Coal EIS included water quality sampling at numerous locations in both the wet and dry season. While it is acknowledged that taking water quality samples during both wet and dry seasons on two days only provides a snapshot of the environment spatially and temporally, it still gives the decision maker information on which to base relevant conditions on any approval. In considering this, the EIS has only taken water samples during one period of the year (May/June) and this is totally inadequate to allow a decision maker to stipulate water quality requirements both during an event and normal conditions.	Adani should be required to undertake water quality sampling across the entire corridor during both the wet and dry seasons.
38	Lock the Gate Alliance	Organisation	38 y	Water Resources	Modelling	The project description within the EIS suggests that bridge infrastructure as an example, will be designed to 100 year ARI. However, the modelling is only undertaken on 50 year ARI. This is a significant deficiency and must be rectified prior to the Coordinator General and Federal Minister grant an approval. All modelling should be undertaken as to the engineering design and then clearly demonstrated in the EIS.	Modelling must be undertaken to properly assess the hydrological impacts. If structures are to be built at ARI 100, then all modelling should be undertaken at the same level. Further, there is very little consideration of the potential impacts of climate change including for example, increased temperatures that could impact the lines and moreover, increased storm events both in number and magnitude. As the project is proposed to be used for 90 years, it would clearly be expected that adequate modelling based on a 100 year event (and more probably a 300 year event) should be conducted.
38	Lock the Gate Alliance	Organisation	38 z	Air Quality	Baseline data	The EIS has not collected any baseline local meteorological data, nor has it collected any data on the ambient levels of pollution. While it is acknowledged that the vast majority of the project is located within a rural setting where ambient conditions are likely to be within the specific guidelines, the ToR is still clear on the need to collect this baseline information and without it, the EIS is inadequate for approval.	Adani are required to collect air quality data consistent with the ToR across a year. This data can then be used along with 2014 climatic, air quality and meteorological data from the Bureau of Meteorology across a single year for the relevance of the modelling.
39	North Queensland Conservation Council	Organisation	39 a	Social and economics	Reliance on Input-Output (I-O) Modelling	NQCC comments that I-O modelling is an inappropriate tool for determining benefits. I-O modelling relies on an assumption that some industries generate greater benefits than others, despite a lack of evidence for this and despite the fact that the way this is measured is incomplete and therefore inaccurate. The ESI done for this project is unacceptable in that it relies on I-O modelling rather than on a complete CBA, which would take into account 'externalities' as well as non-monetary costs and benefits. Failure to account for opportunity costs to the community of subsidies to the coal industry and coal infrastructure development is a further cause for concern in this EIS.	A far more accurate means of comparing the use of resources is by way of cost benefit analysis (CBA). However, even CBAs need to be done in a complete and considered manner.
39	North Queensland Conservation Council	Organisation	39 b	Greenhouse Gas	Failure to consider GHG	It is incumbent upon the proponent to consider and discuss in detail and rigorously analyse the impact of transporting mined coal to the coast for export on climate change and, directly and indirectly, on the Great Barrier Reef World Heritage Area, through which the coal will be transported. These impacts need to be included in any assessment of the impact of the project. In a cumulative impact assessment, the ramifications of the project over time and space, as well as the synergistic and interactive impacts of all related projects need to be determined if the true impact of the project is to be known to decision-makers.	Noted. The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS. Direct and indirect impacts on the Great Barrier Reef World Heritage Area are assessed in Volume 1 Chapter 7 MNES of the EIS.
39	North Queensland Conservation Council	Organisation	39 c	Overall project	Medium-long term need for the project	In a world in which the demand for coal is decreasing, indeed forecast to fall away to little over the next ten years, the benefit of the project is diminished even further, while the costs increase proportionally.	Opinion noted. The proposed project is consistent with Government Policy for development of the Galilee Basin.
40	QCoal Group	Organisation	40 a	Land use and tenure	Tenure	QCoal and its subsidiaries are the registered holders of a number of mining tenements under the Mineral Resources Act 1989 (tenements listed in submission). QCoal's resource estimate provides that the areas of the affected tenements that are currently subject to the proposed rail corridor have potential in situ coal resources of between 80 - 250 million tonnes of raw coal, yielding between 50 - 150 million tonnes of mainly hard coking coal product. This coal occurs within the Moranbah Coal Measures which is the source of prime quality hard coking coal. This chapter of the EIS does not consider the sterilisation impacts on the in situ coal reserves and mitigation to registered tenement holders.	It is QCoal's preference that the rail corridor should avoid the Moranbah Coal Measures entirely but as an alternative proposes a lower impact option (map enclosed in the submission). If however the proposed rail corridor proceeds in its current form, provide a commitment in the SEIS for full compensation for: a) the value of the interests in the affected tenements that it has been deprived of as a result of the acquisition of the proposed rail; and b) the costs attributable to disturbance and severance that it incurs as a result of the acquisition of the proposed rail corridor, including those which arise as a consequence of the dissection of the affected tenements or the severance of QCoal's coal reserves from the existing Bowen Basin rail connections in the vicinity of the affected tenements.

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40	QCoal Group	Organisation	40 b	Social and economics	Review impact assessment Based on the proposed rail corridor, the social and economic impact assessment should be updated to reflect the following impacts resulting from the Project: a) sterilisation of a coal deposit valued at US\$10 - 30 billion at the current coking coal benchmark price; b) the State will lose approximately \$1 - 3 billion in royalties as a result of the sterilisation of the areas of the affected tenements impacted by the proposed rail corridor; c) the cost of compensation payable for sterilising the affected tenements; d) will render QCoal unable to carry out required work on the affected tenements within an area of 500 m of the proposed rail corridor, which will cause QCoal to incur significant costs in lost time and opportunity; e) isolation of QCoal and other Bowen Basin coal producers from the existing and proposed QR coal haulage services which run parallel with the Bowen Basin producers' tenements; f) impact on the efficient development of the Bowen Basin - a key part of Queensland's mineral resources. For these reasons, the proposed rail corridor would have a negative impact upon the community wellbeing, economic growth and employment levels of the affected regions and Queensland as a whole.	It is QCoal's preference that the rail corridor should avoid the Moranbah Coal Measures entirely but as an alternative proposes a lower impact option (map enclosed in the submission). If however the proposed rail corridor proceeds in its current form, update the social and economic impact assessment to include the factors listed in points (a) to (f).	Noted and realignment adopted in AEIS.
41	NQ Dry Tropics Ltd	Organisation	41 a	Entire EIS	General comments	The amount of EIS documentation provided for review is massive. As it is necessary to move from Volume 1 analyses to Appendices through assessment of the Draft EIS, we are of the view that clear direction should be provided in Volume 1 Chapters to where sections relevant to the matter appear in Appendix Chapters.	Opinion noted.
41	NQ Dry Tropics Ltd	Organisation	41 aa	Nature conservation	Connectivity	The impact of further fragmentation on an already fragmented landscape may well cause local extinctions, adding further to local extinctions identified in the study. The study has not investigated the potential for populations, and which populations or communities, to become isolated, what impact this might have on particular species' viability, or how isolation might be mitigated or avoided. The full impact cannot be estimated without this information.	Adani Mining is developing a Fauna Crossing Strategy intended to mitigate negative impacts potentially imposed on fauna communities utilising habitat which will be traversed by the NGBR. Adani intends to finalise the Fauna Crossing Strategy for approval prior to construction. The strategy is synergistic with the rail design process with the objective to formulate practical design solutions that maximise permeability for the suite of fauna species known or expected to occur. This includes consideration of Threatened Species and their habitats. The analyses have identified Key Wildlife Corridors, Local Ecological Corridors and various fragmented corridors that will be subject to specific mitigation measures to promote fauna passage. At each fauna crossing location, rehabilitation strategies and embellishments to promote and facilitate safe fauna passage will be recommended subject to faunal diversity.
41	NQ Dry Tropics Ltd	Organisation	41 ab	Nature conservation	Connectivity	Stock routes provide valuable connectivity and refuge for fauna. In addition, many species of flora now seldom found in grazed landscapes, flourish on stock routes because of the favourable pattern of grazing pressure. The study omits to mention impact on stock routes, other than that with respect to movement of livestock.	Adani acknowledges the importance of stock routes in regard to environmental values. The project will maintain stock routes with the exception of one unconstructed stock crossing and is therefore not considered to have an impact on the environmental values of this infrastructure network.
41	NQ Dry Tropics Ltd	Organisation	41 ac	Cumulative impacts	Connectivity	Treatment of cumulative impact of clearing and fragmentation of vegetation caused by projects listed in the cumulative impact study (Volume 1, Chapter 19) is inadequate. Cumulative areas of various affected REs and habitat loss is not provided in the EIS as the study states proponents have used different methodologies to calculate losses. This raises the significant question of how cumulative loss will be assessed? The segregation of data as it is presented diminishes its significance - for instance, loss of habitat of the Jabiru (Black Necked Stork) seems insignificant (66 ha, 6 ha, and 19 ha) but when totalled is nearly 100 ha.	Noted. The assessment of cumulative impacts is undertaken having regard to other projects and the potential impacts on like species. However it is not always possible to compare calculated areas of impact due to differing methodologies and lack of access to project specific information.
41	NQ Dry Tropics Ltd	Organisation	41 ad	Cumulative impacts	Connectivity	Area of REs to be cleared and area of habitat to be lost to the rail alignment is not displayed with those of other projects, further diminishing the significance of cumulative totals.	Impact to REs is calculated as a proportion of regional availability as such it is considered to represent an indicator of cumulative impact.
41	NQ Dry Tropics Ltd	Organisation	41 ae	Cumulative impacts	Connectivity	Cumulative impact does not investigate flow-on effects from direct impacts. That is, it does not investigate loss of connectivity or habitat loss caused by clearing.	Impact to connectivity associated with the project is described in Volume 1 Chapter 06 of the EIS.
41	NQ Dry Tropics Ltd	Organisation	41 af	Offsets		Notwithstanding uncertainties around the efficacy of offsets in replacing values destroyed during development, there will likely be a time lag between initiation of development and provision of benefit by the offset. With construction due to begin in the second half of 2014, and offsets not yet determined, benefits will not flow prior to loss of those values.	The provision of offsets will be undertaken in accordance with State and Federal policy, which do not require offsets to be provided until development is approved.
41	NQ Dry Tropics Ltd	Organisation	41 ai	Offsets		Given outstanding actions mentioned above, the study's assertion that their proposed strategy will result in no net loss of ecological values is yet to be substantiated. The same may be said more generally for assertions regarding likelihood of significant impacts on species or communities.	Adani has committed to undertaking additional survey work to inform the definition of offsets. This approach is consistent with State and Federal policy, which do not require offsets to be provided until development is approved.
41	NQ Dry Tropics Ltd	Organisation	41 aj	Offsets	Cumulative impacts	The study does not investigate cumulative impact of related projects on availability of offsets.	Volume 1 Chapter 07 (Table 7-64) of the EIS demonstrates the availability of offsets. The area available significantly exceeds the offset requirements. These areas are generally within the Galilee Basin Offset Strategy developed by DEHP to meet the needs of all Galilee Basin projects.
41	NQ Dry Tropics Ltd	Organisation	41 ak	Cultural Heritage	Cultural heritage management	The value of the natural environment and its relationship to Indigenous people is not recognised in the study as Indigenous Cultural Heritage. The study focuses on items and artefacts as being Cultural Heritage, whereas the natural environment and aspects within the natural environment are also recognised by Indigenous people as culturally important.	Cultural heritage assessment have been undertaken in accordance with the requirements of the ToR and having regard to Cultural Heritage Management Plans in place between Adani and each of the Native Title parties impacted by the NGBR Project.
41	NQ Dry Tropics Ltd	Organisation	41 al	Cultural Heritage	Cultural heritage management	The study considers that cumulative impact of this and other projects on Cultural Heritage will be to unregistered sites or artefacts and unexpected finds. It fails to recognise that unexpected or unregistered sites and artefacts are more likely with more disturbance.	Cultural heritage assessment have been undertaken in accordance with the requirements of the ToR and having regard to Cultural Heritage Management Plans in place between Adani and each of the Native Title parties impacted by the NGBR Project. Management of any archaeological finding will be in accordance with CHMPs
41	NQ Dry Tropics Ltd	Organisation	41 am	Transport	Increased traffic	Traffic associated with construction will have a significant impact on existing roads. The study notes the need for development of various plans and investigations prior to start of construction; however, it does not discuss the impact of additional usage on the surface of unsealed roads, one of which (Glenore Road) will endure an increase in traffic of more the 2200%.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani is in ongoing discussions with both the Isaac and Whitsunday regional councils in regard to local road infrastructure. Specific management measures for local roads will be subject to the RIA and RUMP and infrastructure agreements with relevant Councils.
41	NQ Dry Tropics Ltd	Organisation	41 an	Transport	Safety	The study does not identify any subject roads as being unsealed; however Glenore, Strathalbyn, and Stratford Roads are unsealed in their entirety (Isaac Regional Council advice); Bowen and Sutor Development Roads are unsealed for part of their length. The study has not identified any strategies or options to maintain these unsealed roads under the proposed volume of traffic in relatively safe, trafficable condition. This response questions the study's assertion that these roads, including the unsealed sections, will retain a Level of Service (LOS) limit acceptable to the project (LOS ≥ D [mostly stable flow; some delays]) without significant support or upgrade. In addition, rights of other road users to an acceptable level of service on a safe road must be respected.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani is in ongoing discussions with both the Isaac and Whitsunday regional councils in regard to local road infrastructure. Specific management measures for local roads will be subject to the RIA and RUMP and infrastructure agreements with relevant Councils.
41	NQ Dry Tropics Ltd	Organisation	41 ao	Transport	Safety	This response does not expect unsealed roads to maintain serviceability without support such as bitumen sealing or continuous watering for dust suppression and grading to maintain a surface relatively free from potholes.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani is in ongoing discussions with both the Isaac and Whitsunday regional councils in regard to local road infrastructure. Specific management measures for local roads will be subject to the RIA and RUMP and infrastructure agreements with relevant Councils.

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41	NQ Dry Tropics Ltd	Organisation	41 ap	Transport	Safety	The importance of these roads to current users (many of whom would live along these roads) is not discussed. Impacts of deteriorated roads on current users would include: <input type="checkbox"/> Possible loss or deterioration of access to and from home; <input type="checkbox"/> Reduction in social and business interactions because of unsafe and uncomfortable traffic conditions for frequent journeys – dust, potholes, increased traffic; <input type="checkbox"/> Increase in traffic accidents; <input type="checkbox"/> Higher costs of maintaining vehicles due to increased wear and tear from heavily impacted roads; and <input type="checkbox"/> Inability to transport livestock and other goods to and from properties if roads become unsafe for 4 and 6 deck livestock transports. Mitigation of the impact on roads is essential and with construction scheduled to begin in the latter half of 2014, requires early attention.		As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani is in ongoing discussions with both the Isaac and Whitsunday regional councils in regard to local road infrastructure. Specific management measures for local roads will be subject to the RIA and RUMP and infrastructure agreements with relevant Councils.
41	NQ Dry Tropics Ltd	Organisation	41 aq	Transport	Cumulative impacts	Consideration of cumulative traffic from this and other projects has been treated similarly to that of the main section – “can be adequately accommodated at acceptable levels of service”. Without support or upgrades to surfaces, roads cannot sustain the same level of safety under the expanded use.		As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani is in ongoing discussions with both the Isaac and Whitsunday regional councils in regard to local road infrastructure. Specific management measures for local roads will be subject to the RIA and RUMP and infrastructure agreements with relevant Councils.
41	NQ Dry Tropics Ltd	Organisation	41 ar	Hazard and Risk	Health and Safety	The study does not identify the impact of shift work on mental health of workers. While rosters are provided, shifts are not, so this response assumes two twelve-hour shifts will operate each day during construction. These arrangements have been found in other workplaces to be associated with elevated levels of mental health disorders among workers.		Volume 1 Chapter 16 (16.6.2) of the EIS describes Adani's commitment to developing a Workforce Management Plan. This plan will include measures for the management of the health and well being of workers.
41	NQ Dry Tropics Ltd	Organisation	41 as	Hazard and Risk	Health and Safety	The study does not identify measures to prevent/minimise deaths of DIDO workers in road accidents, particularly those returning home from night duty.		Volume 1 Chapter 16 (16.6.2) of the EIS describes Adani's commitment to developing a Workforce Management Plan. This plan will include measures for the management of the fatigue specifically for DIDO workers.
41	NQ Dry Tropics Ltd	Organisation	41 at	Land use and tenure	Operation of grazing businesses	Consideration of the impact on operating grazing businesses on properties affected by the NGBR is limited to the area of each property that will be lost to the rail line. Logistics of moving stock, maintaining infrastructure to property infrastructure, and provision of services (water, supplements, etc.) on properties will in most cases be considerably more affected than area available for grazing. (See Traffic above for further discussion on access).		Adani is in ongoing consultation with affected landholders to establish specific details in regard to property impacts, including operational impacts.
41	NQ Dry Tropics Ltd	Organisation	41 au	Land use and tenure	Operation of grazing businesses	The impact of afflux on property structures in riparian areas (e.g., fences, pumps, tanks, troughs) has not been considered.		Hydraulic modelling included in the EIS at Volume 2 Appendix H2 has been undertaken in accordance with relevant guidelines and standard industry practice. The modelling indicates that no significant change will occur to the extent of flooding (afflux, duration, area of inundation), but rather that the design criteria are met at all locations and therefore significant impacts are not predicted for the design flood events of Q20, Q50 and Q100. Any impacts to specific landholder infrastructure will be separately negotiated with the relevant parties.
41	NQ Dry Tropics Ltd	Organisation	41 av	Climate and natural hazards	Flooding	Rainfall in the region is characterised by episodic, high intensity events. By contrast, most of the discussion and analysis in the report focuses on longer (i.e. annual) timeframes. Unfortunately, this treatment masks the significance of event driven rainfall patters in flood generation (and pollutant generation and transport).		Flood modelling takes into account all of the actual historical data available at the time of modelling. Any specific phenomena is normally picked up as a result of discussions with landholders. Adani is more than happy to include any of these phenomena in their flood modelling provided they are made aware of it. Flood plans are produced for all of the major waterways and these are discussed with the relevant landholders prior to the treatments being fully adopted. Landholder consultation is an ongoing and iterative process, and as such Adani will continue to incorporate any substantiated landholder advice regarding flood phenomena in further flood modelling during development of the project design. As stated previously the drainage is designed to minimise any hydrological effect that it has on the existing waterways and groundwater resources. As committed in the EIS, additional hydrology and hydraulic modelling will be undertaken during detailed design to refine bridge design, culvert design and afflux values, and ensure the minimisation of hydraulic impacts.
41	NQ Dry Tropics Ltd	Organisation	41 aw	Climate and natural hazards	Flooding	Flood information is presented such that it is not possible to determine highest levels (one set from 04/1958 to 02/2009 in a table; 2010/2011 data in a map of inundation extents Vol 1, Chapter 9 Water Resources). The table and map are not accompanied by explanatory narrative in the text. It is not clear then which flooding had the greatest spatial or height impact. The impact of afflux resulting from crossing structures is not predicted, although an estimate of impact with respect to certain ARI heights is provided. However, the height of those particular ARIs is not provided.		Hydraulic modelling included in the EIS at Volume 2 Appendix H2 has been undertaken in accordance with relevant guidelines and standard industry practice. The modelling indicates that no significant change will occur to the extent of flooding (afflux, duration, area of inundation), but rather that the design criteria are met at all locations and therefore significant impacts are not predicted for the design flood events of Q20, Q50 and Q100.
41	NQ Dry Tropics Ltd	Organisation	41 ax	Water Resources	Water quality	In situ testing of the quality of surface water would be improved by analysing turbidity (TSS or NTU).		Noted.
41	NQ Dry Tropics Ltd	Organisation	41 ay	Water Resources	Construction water supply	Total water usage during construction is calculated from data in Section 3.1 of Appendix H3 as approximately 4,700 ML over two years. Potential supply from a number of sources (existing and new bores; new and existing offstream and in-stream reservoirs; coal seam gas waste water; supply from SunWater pipelines, etc.) is assessed, however the potential impact on existing water use (ecology of springs and waterholes; grazing production; people using bores and surface water for domestic supplies) by drawdown of aquifers under heavy demand, or exhaustion of supplies of surface water is considered negligible. The use of this volume of water during construction, primarily from bores and existing surface water reservoirs, is very likely to have a significant impact somewhere – impact and mitigation and management measures should be identified.		The water supply strategy is continuing to be refined as part of the design phase of the Project. Where Adani seeks to access existing water sources, the access arrangements will be negotiated with individual landholders or licensees of water sources. The volume of water required for construction is relatively small and unlikely to result in a significant impact to local and regional supplies. New water sources will be subject to development applications which will include an assessment of impact to other users. These development applications do not form part of the EIS.
41	NQ Dry Tropics Ltd	Organisation	41 az	Water Resources	Construction water supply	Should the seasons during construction be dryer than average, many of the existing surface water reservoirs to which the proponent hopes to secure access may be dry or become unviable during the period of construction. If livestock lose access to water in these reservoirs because of the take for construction, the grazier may have to sell or increase stocking rates in other paddocks. In addition to affecting business and grazing management, this could have a personal impact on affected graziers. This impact is not discussed.		The water supply strategy is continuing to be refined as part of the design phase of the Project. Where Adani seeks to access existing water sources, the access arrangements will be negotiated with individual landholders or licensees of water sources. The volume of water required for construction is relatively small and unlikely to result in a significant impact to local and regional supplies. New water sources will be subject to development applications which will include an assessment of impact to other users. These development applications do not form part of the EIS.
41	NQ Dry Tropics Ltd	Organisation	41 b	Entire EIS	General comments	Incorporation of many documents, coupled with inadequate editing, has left many in-text references to chapter, tables, figures, and sections incorrect. In some cases, layers purported to be on maps do not exist (e.g. maps in Volume 2, Appendix H3). This has rendered thorough examination of material difficult and, in some cases, impossible.		Opinion noted.
41	NQ Dry Tropics Ltd	Organisation	41 bb	Water Resources	Construction water supply	Access to most proposed and existing bores, surface water reservoirs, and hydrants will be via dirt roads through currently quiet vegetated areas. Within a short distance (200m to 2 km) of all hydrants, listed species, including Critically Endangered species and communities and Migratory species are considered in the EPBC database to be “likely to be found”. Noise, dust, truck strikes, clearing, and human and mechanical activity will affect fauna and flora to the extent of rendering those areas of habitat less habitable and in some cases uninhabitable. Although the study has not identified any particular measures for managing impacts to these areas, management of impacts should be planned and noted in the study.		Noted. The comments will be noted and included where relevant within the Construction EMP for the project.
41	NQ Dry Tropics Ltd	Organisation	41 bc	Water Resources	Construction water supply	In addition, some hydrants and water sources are within one km of homesteads. The impact of construction and operation of hydrants and water sources on residents of nearby homesteads and their operations is not discussed.		Where Adani seeks to access existing water sources, the access arrangements will be negotiated with individual landholders or licensees of water sources. This will include negotiation of arrangements to minimise any impacts to nearby homesteads.

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41	NQ Dry Tropics Ltd	Organisation	41 bd	Water Resources	Construction water supply Access to most hydrants and associated water sources will be needed only during construction; however, the study is silent on rehabilitation of these areas as part of decommissioning. Given the sensitive nature of the environment surrounding most of these, rehabilitation plans should be developed and implemented to assist in recovering environmental values lost.		Where Adani seeks to access existing water sources, the access arrangements will be negotiated with individual landholders or licensees of water sources. This will include negotiation of arrangements to for rehabilitation of access ways.
41	NQ Dry Tropics Ltd	Organisation	41 c	Entire EIS	General comments Maps are generally of a resolution too low to inform the reader regarding opinions and/or judgements made by the consultants. Maps could be provided in a layered pdf format so that respondents may turn on and off various layers as required for their analysis. These layers should incorporate a generic set of standard parameters such as towns, roads, geographical features, etc., in addition to issue-specific layers to assist analysis.		Opinion noted.
41	NQ Dry Tropics Ltd	Organisation	41 d	Entire EIS	General comments Much of the detail required to assess impact and the adequacy of avoidance and/or mitigating measures has not yet been developed. The study states that this level of detail will be developed as plans are finalised; however, we are unclear how these will be readily available for public scrutiny. Many of these involve the following matters: <input type="checkbox"/> Use of scarce resources; <input type="checkbox"/> Listed species and communities; <input type="checkbox"/> Connectivity; and <input type="checkbox"/> Matters of critical importance to current residents such as access to water and road use. The manner in which these plans will affect individuals, communities, and the environment, and proposed mitigation/management measures should be subject to further public analysis.		Opinion noted. The EIS was issued for public comment on the basis of adequacy review by the Office of the Coordinator General. Adani has committed to undertaking a number of additional assessment as part of the ongoing development of the Project to further inform the implementation of mitigation and management measures identified in the EIS.
41	NQ Dry Tropics Ltd	Organisation	41 e	Nature conservation	General comments In the same manner, discussion of plans to monitor impact of construction and operation does not include detail sufficient to analyse potential effectiveness. Such plans should be developed and implemented whether impact is considered likely or unlikely. For transparency, results of monitoring efforts should be made publicly available.		Volume 2 Appendix P of the EIS provides the framework for the further development of environmental management measures for the project. This will include monitoring and reporting requirements. It is anticipated that a condition of approval will be to finalise the EMP and submit it to the OCG prior to the commencement of construction works.
41	NQ Dry Tropics Ltd	Organisation	41 f	Nature conservation	General comments The study contains very little information or analysis regarding movement of fauna and genetic material through the area, and thus treatment of impact on movement is largely missing.		It is acknowledged that the construction of the NGBR Project may create a barrier to fauna movement within the vicinity of the Project. Adani is currently preparing a Fauna Crossing Strategy to inform the design phase of the Project. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflects the commitment to prepare a Fauna Crossing Strategy, including design criteria - in consultation with DEHP.
41	NQ Dry Tropics Ltd	Organisation	41 g	Nature conservation	General comments Treatment of coastal issues is restricted to a description of the coastal environment and regulatory requirements for development in that zone. The section provides no analysis or interpretation to illustrate impact.		Volume 1 Chapter 6 of the EIS includes an assessment of aquatic habitat impacts associated with the project, including an assessment of potential impacts associated with the Caley-Valley Wetland.
41	NQ Dry Tropics Ltd	Organisation	41 h	Nature conservation	General comments The study does not clearly state a compelling case for the proposed location of the rail alignment. The standard gauge rail line proposed takes advantage of a route for a narrow gauge line from the Carmichael Mine (project approved with Carmichael Mine as the Carmichael Mine and Rail Project) to a point just west of the Gregory Development Road, from where this Project begins. If the standard gauge line were to access Abbot Point via Aurizon's proposed Central Queensland Integrated Rail Project route, it would use existing easements and would be considerably less disruptive to people and the environment than 307 km of greenfield site. The study states that the narrow gauge route described above is congested; however, the congestion is on narrow gauge line. That congestion cannot affect a co-located standard gauge line.		Opinion noted. The alignment of the rail line has been revised since the publication of the EIS and the revised alignment is reported in detail in Volume 2 Appendix B and Appendix C of the AEIS. The ruling gradient (1:100) of the existing rail corridor is inconsistent with the intended ruling gradient (1:220) for the NGBR Project standard gauge corridor. Topographical constraints and existing easement widths preclude development of a standard gauge railway within the existing brownfield corridor.
41	NQ Dry Tropics Ltd	Organisation	41 i	Nature conservation	Ecological surveys To date, only one series of field fauna and flora surveys have been conducted, and then over only one season. The study notes that further surveys are to be conducted; however, it is unclear by what mechanism results can affect conditioning or implementation of the project more generally.	Further surveys, diurnal and nocturnal, across all seasons, should be conducted and analysed prior to finalisation of conditioning of the project and the start of construction.	Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.
41	NQ Dry Tropics Ltd	Organisation	41 j	Nature conservation	Ecological surveys While data and information from the monitoring program proposed for the operations period will be very useful, without good baseline data captured throughout seasons and over several years, post-construction data cannot be used to analyse impact by comparing with pre-construction populations and movement. Therefore, the data captured can only be analysed to determine trends post construction and cannot be used to determine impact of the construction.		Volume 2 Appendix P of the EIS provides the framework for the further development of environmental management measures for the project. This will include monitoring and reporting requirements, including pre-construction monitoring where appropriate.
41	NQ Dry Tropics Ltd	Organisation	41 k	Nature conservation	Natural environment Assessments of the likelihood of significant impact under the EPBC consider only impact on populations within the rail corridor (300 km by 100m corridor) and do not consider other impacts, such as isolation. For many species, individuals and genetic material are effectively prevented from moving from one side of the rail corridor to the other.		It is acknowledged that the construction of the NGBR Project may reduce fauna movement within the vicinity of the Project. However, mitigation measures for both the construction and operation periods have been proposed in the EIS to reduce the impact of the Project on fauna movement. Operation impacts on terrestrial habitat connectivity and fauna movement are addressed in Section 6.4.2 and mitigation and management measures are addressed in Table 6-11 of the Nature Conservation Chapter (Volume 1, Chapter 6) of the EIS. Adani is currently preparing a Fauna Crossing Strategy to inform the design phase of the Project. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflects the commitment to prepare a Fauna Crossing Strategy, including design criteria - in consultation with DEHP.
41	NQ Dry Tropics Ltd	Organisation	41 l	Nature conservation	Natural environment Impact on the Australian Painted Snipe is considered to be unlikely due mainly to the distance from the rail corridor to closest sightings in the Caley Valley Wetland. The survey (BAAM 2012) in which these sightings were recorded and used for the Abbott Point Cumulative Impact Assessment was criticised for lacking methodology recommended for detecting these birds (NQ Dry Tropics' Response to the Abbot Point Cumulative Impact Assessment 2012). In addition, survey methodology used during fieldwork for this study also fell short of the recommended methodology.		Adani cannot comment on the methodology employed for surveys conducted by third parties.
41	NQ Dry Tropics Ltd	Organisation	41 m	Nature conservation	Natural environment Without further best practice surveys to establish the presence or otherwise of the Australian Painted Snipe, a precautionary approach would indicate that significant impact is likely. This is significantly so, given that the area in which the birds are to be found and where this project would affect them is the Caley Valley Wetlands, already subject to development by the existing port of Abbot Point, and becoming even more threatened by the port's approved expansion.		A precautionary approach is used when undertaking the significant impact assessment by including all species assessed as confirmed present or likely to occur. Impacts on Australian painted snipe (likely to occur) were assessed against the Matters of National Environmental Significance Significant Impact Assessment criteria (refer Table 7-33 of the MNES Chapter (Volume 1, Chapter 7) of the EIS) and the Project was assessed as unlikely to have a significant impact on the species. It is noted in Table 7-37 of the MNES Chapter that 'the NGBR Project is unlikely to have a significant impact on the species. The NGBR Project is unlikely to impact recorded populations in the region. Any impacts to potential habitat critical to the survival of the species will be managed through the implementation of mitigation measures.' Additionally, offsets will be acquired under State offset requirements to compensate for potential habitat loss for the species. This approach is consistent with the Terms of Reference for the Project. Refer to Table 7-55 of the MNES Chapter for cumulative impacts to potential habitat for listed threatened species, including Australian painted snipe.
41	NQ Dry Tropics Ltd	Organisation	41 n	Nature conservation	Cumulative impacts For much of its length, the rail alignment is a lone project. However, as it approaches the Port of Abbot Point, it becomes part of many more projects, current and proposed. Resulting light, noise, vibration, dust, and decreased water quality increase the significant impact on these Important Wetlands. Assessment under the Cumulative Impact component of this study was inadequate, and rated the impact as low.		The assessment of cumulative impacts was undertaken in accordance with the requirements of the ToR and is considered adequate to report on the potential impacts. Further assessment has been conducted and report in Volume 2 Appendix C of the AEIS in regard to the realignment of part of the corridor.
41	NQ Dry Tropics Ltd	Organisation	41 o	Nature conservation	Natural environment On the basis that no populations have been recorded along the rail alignment, significant impacts on the Black-throated Finch have been assessed as generally unlikely. Given that the area is quite remote and surveys have not used recommended practice for the species, and that the corridor contains habitat suitable, it is difficult to conclude that their existence is unlikely. These birds can be hard to locate as they do not range widely during the breeding season (which may be at any time of the year depending on seasonal conditions) and they need a mosaic of feeding sites.		It is noted in Table 7-37 of the MNES Chapter (Volume 1, Chapter 7) of the EIS that 'the NGBR Project may potentially have a significant impact on the species [black-throated finch (southern)]. While an important population is not considered to occur within the final rail corridor, potential habitat critical to the survival of the species will be impacted.' It also states in Table 7-37 that to manage the residual impact to this species, offsets will be acquired to compensate direct loss of potential habitat for the black-throated finch (southern). This approach is consistent with the Terms of Reference for the Project. In addition, it should be highlighted that during field surveys, natural grassland habitats required to provide sufficient food sources for black-throated finch (southern), were predominately of low value due to the presence of exotic pasture grasses and relatively low abundance and diversity of native grasses. Furthermore, areas with an abundance and diversity of native grasses were very uncommon along the NGBR preliminary investigation corridor. Refer to Table 6-3 of the Nature Conservation Chapter (Volume 1, Chapter 6) of the EIS for more information on broad vegetation communications identified within the preliminary investigation corridor.

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41	NQ Dry Tropics Ltd	Organisation	41 p	Nature conservation	Natural environment	Without evidence to the contrary, a conservative approach would conclude that the rail line infrastructure (cuttings and fill earthworks and the 100m clearance zone) might form a barrier to the movements of the Black Throated Finch, which may be between feeding (for which they need a mosaic of grounds)/nesting/watering areas. The barrier would cause a significant impact.	It is acknowledged that the construction of the NGBR Project may reduce fauna movement within the vicinity of the Project. However, the background paper to the Significant Impact Guidelines for the Endangered Black-throated Finch (southern) (DEWHA, 2009) states that black-throated finch (southern) have been recorded foraging in modified habitats such as grassy unsealed roadsides, beneath power lines and in rail corridors where suitable seeding grasses are present and have been recorded flying across roads and appear to be capable of travelling over uninhabitable sites if the distance is less than a kilometre. Due to this, it is considered unlikely that that 100 m corridor for the NGBR Project will result in a significant barrier to black-throated finch movement within the landscape. In addition to this, potential impacts on black-throated finch (southern) have been assessed against the Matters of National Environmental Significance Significant Impact Guidelines for the Project (refer Volume 1, Chapter 7 of the EIS). It is noted in Table 7-37 of the MNES Chapter (Volume 1, Chapter 7) of the EIS that 'the NGBR Project may potentially have a significant impact on the species [black-throated finch (southern)]. While an important population is not considered to occur within the final rail corridor, potential habitat critical to the survival of the species will be impacted.' It also states in Table 7-37 that to manage the residual impact to this species, offsets will be acquired to compensate direct loss of potential habitat for the black-throated finch (southern). This approach is consistent with the Terms of Reference for the Project.	
41	NQ Dry Tropics Ltd	Organisation	41 q	Nature conservation	Natural environment	The rail corridor is likely to have a significant impact on the movement of koalas from one side of the rail alignment to the other. The study states that the rail alignment is unlikely to 'fragment an existing population' (MNES p. 214). In the absence of supporting information, it is unclear as to why the study arrives at this conclusion.	It is acknowledged that the construction of the NGBR Project may reduce fauna movement within the vicinity of the Project. Within the brigalow belt bioregion, vegetated corridors along rivers, creeks and other watercourses are particularly important for koala movement. Due to this, provisions have been made to incorporate fauna crossing requirements in the design of bridges and culverts at watercourse crossings. In addition to this, impacts on koala have been assessed against the Matters of National Environmental Significance Significant Impact Guidelines for the Project (refer Chapter 7 of the EIS). It is noted in Table 7-37 of the MNES Chapter (Volume 1, Chapter 7) of the EIS that 'the NGBR Project may potentially have a significant impact on the species [koala]. While an important population is not considered to occur within the final rail corridor, potential habitat will be impacted that may be habitat critical to the survival of the species.' To manage the residual impact to this species, offsets will be acquired to compensate direct loss of habitat potential habitat for koala. This approach is consistent with the Terms of Reference for the Project.	
41	NQ Dry Tropics Ltd	Organisation	41 r	Nature conservation	Natural environment	The methodology used to estimate the likelihood of occurrence of particular species relies on base information being accurate. This methodology assumes: a. All potential habitat/habitat requirements of a species are known; b. The subject area has been surveyed for occurrence of the species or its habitat; c. Survey data are current or precautionary; and d. Base information such as RE mapping is accurate to the required resolution. Where these conditions are not met (e.g., the study states that RE mapping is not ground-truthed across the entire area of interest (Vol 2 Appendix O, p. 10), estimates of likelihood of occurrence are potentially flawed.	Assessment of likelihood of occurrence has been undertaken in accordance with the species specific guidelines under the EPBC Act, which draws on a number of published data sources as well as primary field data to inform decision making. Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.	
41	NQ Dry Tropics Ltd	Organisation	41 s	Nature conservation	Weed and pest management	The proposed Weed and Pest Management Plan must take into account the special features of the rail line with respect to establishment and spread of weeds and pests. The alignment corridor is likely to be disturbed along its total length and is also likely to stay in a heavily modified state during the ninety years of the rail's operation. This provides ideal ground conditions for establishment of weed species. Vehicles will frequently travel alongside the rail line, providing an ideal vector for transport. The corridor characteristics will accelerate spread many times faster than would otherwise be possible.	The proposed plan must therefore encompass: a. Frequent monitoring; b. Prevention and eradication measures that must be implemented within a short time of detection; c. Vehicle hygiene protocols which ARE implemented (prevention); d. Consultation with adjacent landholders and relevant Local Government Authorities; and e. the weed and pest plan and reports from monitoring must be publicly available.	Volume 1 Chapter 6 of the EIS provides details in regard to existing weed threats within the Project area and also impact and management measures for weed and pest management for the project. Volume 2 Appendix P details the commitment preparation of a Weed and Pest Management Plan. The comments are noted and will be included in the Management Plan. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflect the commitment that the Construction/Operation Weed and Pest Management Plan will "align with Adani's obligations under the Plant Protection Act 1989 and the priorities of Isaac Regional Council and Whitsunday Regional Council with regards to weed and pest species."
41	NQ Dry Tropics Ltd	Organisation	41 t	Nature conservation	Connectivity	Details on how impact and the area of impact have been calculated are not provided. It appears that the figure of total area of impact on connectivity (3,591 ha) refers to the actual area of habitat lost through construction of the rail corridor, as opposed to the area impacted by loss of connectivity. If this is the case, this reflects a significant and worrying misunderstanding of the concepts of connectivity. In reality, the impacts on faunal and genetic connectivity extend well beyond the footprint of the corridor.	Noted. The impact area is based on a footprint calculation. The impact on connectivity is described in a qualitative manner. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP framework reflect a commitment to undertake a comprehensive survey of the final rail corridor, including a qualitative and quantitative assessment of mapped biodiversity corridors within the final rail corridor.	
41	NQ Dry Tropics Ltd	Organisation	41 u	Nature conservation	Connectivity	The project will increase fragmentation substantially. The proposed rail corridor bisects several areas of High and Very High Significance (Map 6-7) and will form a barrier to movement of animals and genetic material to and from National Parks and areas of remnant vegetation and along and between riparian areas, particularly along Police Creek, Verbena Creek, Sutor River, Bowen River, Rosella Creek, and the Bogie River. The following features of the rail line form barriers to movement of fauna to greater or lesser extents: a. 100m-clearance zone 300 km long: depending on edge effects and sensitivity of flora and fauna to these, this could effectively double impact zones b. Fencing that will be constructed in such manner to prevent wildlife access to the rail corridor and in general they cannot be considered to go around the fence; and c. The ability of fauna to move from one side to the other is further eroded by extensive cut and fill earthworks. The study does not consider seriously impacts on connectivity and the impact of barriers to movement of fauna and/or genetic material. Vegetation connectivity is vitally important for movement of fauna and/or transport of genetic material. The proposed project is located within close proximity of protected areas – National Parks and Nature Refuges – and within an important network of nature corridors. These features increase the likelihood of fauna movements and transport of genetic material even though particular habitat along the project corridor has been assessed as non-existent.	Adani Mining is developing a Fauna Crossing Strategy intended to mitigate negative impacts potentially imposed on fauna communities utilising habitat which will be traversed by the NGBR. Adani intends to finalise the Fauna Crossing Strategy for approval prior to construction. The strategy is synergistic with the rail design process with the objective to formulate practical design solutions that maximise permeability for the suite of fauna species known or expected to occur. This includes consideration of Threatened Species and their habitats. The analyses have identified Key Wildlife Corridors, Local Ecological Corridors and various fragmented corridors that will be subject to specific mitigation measures to promote fauna passage. At each fauna crossing location, rehabilitation strategies and embellishments to promote and facilitate safe fauna passage will be recommended subject to faunal diversity. A fencing strategy forms an important part of the Strategy. To install a high mesh fence is not intended, rather a standard four-strand barbed wire fence is proposed to restrict stock encroachment along the majority of the NGBR alignment. As noted, fencing can impose negative impacts on wildlife, such as feeding, migration and breeding inhibition, especially where fauna passage is a priority. To provide a balance between the safety requirements of excluding cattle from the alignment and protection of native fauna, a plain top wire, with barbed wire used on the other strands will be used within sensitive areas. It is noted that applications for land use approval could include detailed information on the types and actual location of fauna-friendly infrastructure. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP reflects the commitment to prepare a Fauna Crossing Strategy, including design criteria to be developed in conjunction with and approved by DEHP.	
41	NQ Dry Tropics Ltd	Organisation	41 v	Nature conservation	Connectivity	The report indicates that connectivity across the corridor will occur via bridges and culverts. There is little evidence in the report that these bridges and culverts will be designed specifically to provide habitat connectivity. Given the significance of the corridor as a potential barrier to the connectivity this is a significant omission.	Adani Mining is developing a Fauna Crossing Strategy intended to mitigate negative impacts potentially imposed on fauna communities utilising habitat which will be traversed by the NGBR. Adani intends to finalise the Fauna Crossing Strategy for approval prior to construction. The strategy is synergistic with the rail design process with the objective to formulate practical design solutions that maximise permeability for the suite of fauna species known or expected to occur. This includes consideration of Threatened Species and their habitats. The analyses have identified Key Wildlife Corridors, Local Ecological Corridors and various fragmented corridors that will be subject to specific mitigation measures to promote fauna passage. At each fauna crossing location, rehabilitation strategies and embellishments to promote and facilitate safe fauna passage will be recommended subject to faunal diversity.	
41	NQ Dry Tropics Ltd	Organisation	41 w	Nature conservation	Connectivity	With crossings under bridges and culverts being the main avenue of movement across the rail corridor, the distance from feeding grounds to water and between feeding grounds may be increased to such an extent that it is pushed beyond limits tolerable by some fauna. The same can be said for transport of genetic material by pollinators. This is not considered in the report.	Adani Mining is developing a Fauna Crossing Strategy intended to mitigate negative impacts potentially imposed on fauna communities utilising habitat which will be traversed by the NGBR. Adani intends to finalise the Fauna Crossing Strategy for approval prior to construction. The strategy is synergistic with the rail design process with the objective to formulate practical design solutions that maximise permeability for the suite of fauna species known or expected to occur. This includes consideration of Threatened Species and their habitats. The analyses have identified Key Wildlife Corridors, Local Ecological Corridors and various fragmented corridors that will be subject to specific mitigation measures to promote fauna passage. At each fauna crossing location, rehabilitation strategies and embellishments to promote and facilitate safe fauna passage will be recommended subject to faunal diversity.	
41	NQ Dry Tropics Ltd	Organisation	41 x	Nature conservation	Connectivity	Data on movements from one side to the other should be collected prior to construction and compared with data collected in years following construction. This would help to illustrate the rail alignment's impact on fauna movements and would assist in targeting mitigation measures if necessary.	Adani Mining is developing a Fauna Crossing Strategy intended to mitigate negative impacts potentially imposed on fauna communities utilising habitat which will be traversed by the NGBR. Adani intends to finalise the Fauna Crossing Strategy for approval prior to construction. The strategy is synergistic with the rail design process with the objective to formulate practical design solutions that maximise permeability for the suite of fauna species known or expected to occur. This includes consideration of Threatened Species and their habitats. The analyses have identified Key Wildlife Corridors, Local Ecological Corridors and various fragmented corridors that will be subject to specific mitigation measures to promote fauna passage. At each fauna crossing location, rehabilitation strategies and embellishments to promote and facilitate safe fauna passage will be recommended subject to faunal diversity.	
41	NQ Dry Tropics Ltd	Organisation	41 y	Nature conservation	Connectivity	The Project expects to clear more than 225 ha of watercourse vegetation. Riparian vegetation forms important corridors, particularly in country that has been otherwise cleared for grazing. The special importance of the impact of clearing riparian vegetation is not considered.	Adani Mining is developing a Fauna Crossing Strategy intended to mitigate negative impacts potentially imposed on fauna communities utilising habitat which will be traversed by the NGBR. Adani intends to finalise the Fauna Crossing Strategy for approval prior to construction. The strategy is synergistic with the rail design process with the objective to formulate practical design solutions that maximise permeability for the suite of fauna species known or expected to occur. This includes consideration of Threatened Species and their habitats. This strategy also considers the importance of watercourse habitat in providing connectivity. The analyses have identified Key Wildlife Corridors, Local Ecological Corridors and various fragmented corridors that will be subject to specific mitigation measures to promote fauna passage. At each fauna crossing location, rehabilitation strategies and embellishments to promote and facilitate safe fauna passage will be recommended subject to faunal diversity.	
41	NQ Dry Tropics Ltd	Organisation	41 z	Nature conservation	Connectivity	The impact of works necessary to drill and equip bores and construct surface reservoirs and hydrants for supply of water to the Project has not been identified. Where these works must be located outside the alignment, they will cause fragmentation and edge effects additional to that already considered for track alignment and construction.	The water supply strategy is continuing to be refined as part of the design phase of the Project. Approval of these bores etc. does not form part of the EIS and will be assessed separately through relevant development applications.	
41	NQ Dry Tropics Ltd	Organisation	41ag	Offsets		The study notes that offsets for two Endangered and two Of Concern Regional Ecosystems (Table enclosed in submission) are not available within the Galilee Offsets Strategy (GOS) Priority Areas or within 10 km of the centreline of the rail corridor. Potential location of these offsets beyond the area and Priority Areas of the GOS will add to issues associated with lost connectivity and habitat.	Available offsets for the two Of Concern REs (11.12.16 and 11.2.3) identified in the submission are not available in the Galilee Basin Offsets Strategy because they relate to marine/coastal plant species. Given the coastal nature of these RE types, it is considered that suitable potential offset sites may be available within only a slightly larger range than that investigated for the purpose of the EIS. Similarly, the two Endangered REs (11.11.18 - SEVT TEC and 11.9.12) identified in the submission are expected to be able to be suitably offset within a reasonable proximity of the NGBR Project. The Biodiversity Offsets Strategy for the NGBR Project is subject to further refinement prior to finalisation, including further field survey and equivalence assessment of both the clearing footprint (to confirm these REs exist as mapped and their associated quality scores) and any proposed offset areas. As outlined in the EIS, it is expected that suitable offset sites will be available for all affected RE types to ensure a no net loss of biodiversity values is achieved for the NGBR Project.	

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41	NQ Dry Tropics Ltd	Organisation	41ah		Offsets	The study notes that there are several important actions outstanding, implementation of which are central to advancing the offsets process. As these outstanding actions include field assessment of both impact and offset sites incorporating condition, verification of quantity and characteristics of area to be impacted, offsets as proposed in the study should not be considered more than theoretical discussion points until information of a more substantive nature is obtained.		Adani has committed to undertaking additional survey work to inform the definition of offsets. This approach is consistent with State and Federal policy, which do not require offsets to be provided until development is approved.
41	NQ Dry Tropics Ltd	Organisation	41ba	Water Resources	Construction water supply	The study is silent on impacts of any proposed bores or surface reservoirs failing to be available, to supply water of an acceptable quality. It is likely that some will fail (it appears that the proponent has not yet negotiated permission with all landholders from whose property reservoirs they propose to draw water), and that draw-off from remaining sources may be increased. This will exacerbate any impacts resulting from extraction at these sources.		The water supply strategy is continuing to be refined as part of the design phase of the Project. Where Adani seeks to access existing water sources, the access arrangements will be negotiated with individual landholders. New water sources will be subject to development applications which will include an assessment of impact to other users. These development applications do not form part of the EIS.
42	Mackay Conservation Group	Organisation	42 a	Land use and tenure	Grazing industry	There is no mention of the financial and other types of losses to the grazing industry that will be facilitated by this project and the associated mining development that is planned by the current Queensland government. In terms of sustainability, the grazing industry would last much longer than the mining industry. Mining would also sterilise the land for future agriculture and associated rail and other infrastructure would affect the efficiency of agricultural operations. This makes the future of agriculture in this region appear unviable. In non-coal boom times agriculture makes as much money as coal so long-term agriculture is the more sustainable option.		Volume 1 Chapter 03 of the EIS includes an assessment of potential impacts associated within land use change, including in regard to good quality agricultural land. Whilst it is acknowledged that some impact to agricultural operations may result the proposed project is in accordance with Government policy for the economic development of the State. Valuation and compensation arrangements will continue to be developed in direct consultation with affected landholders.
42	Mackay Conservation Group	Organisation	42 aa	Nature conservation	Caley valley wetland	These are the largest (5,154 ha) and most important coastal wetlands in the Bowen region and their protection must be ensured. The bird species that need this wetland should also be protected under the International Convention on Biological Diversity as well as those species listed as MNES under the EPBC Act.		The environmental impact assessment of the Caley Valley wetland in regard to the project is based on environmental values relevant to current legislative requirements and the requirements of the project ToR.
42	Mackay Conservation Group	Organisation	42 ab	Nature conservation	Great Barrier Reef	The wetlands are an integral part of the World Heritage listed Great Barrier Reef Marine Park ecosystem. The Queensland government's Great Barrier Reef Strategic Assessment Coastal Zone draft report (Strategic Assessment) to the World Heritage Committee describes environmental values and conservation objectives for the Abbot Point Area around the Marine Park (several sections quoted in submission). Omitted from the Strategic Assessment report are the 79 Marine species recorded this wetland that also show its strong ecological and OUVs connections with the Great Barrier Reef Marine Park.		Adani was not a party to the Strategic Assessment and as such is not able to comment on the content of the assessment. The assessment of potential environmental impact to the Caley Valley wetland relied upon published information available at the time of writing of the EIS. This included documents such as BAAM 2012 which informed the Cumulative Assessment of Abbot Point.
42	Mackay Conservation Group	Organisation	42 ac	Nature conservation	Great Barrier Reef	The Strategic Assessment also included comments on the Abbot Point State Development Area (APSDA). It states that development should be avoided in the wetland area due to its ecological sensitivity, and that amendments were made to APSDA for a new Environmental Management/Materials Transportation Precinct to allow the conveyance of material between the Industry Precinct and the Port of Abbot Point in a manner which does not compromise the ecological significance of the wetlands. This is simply not true. There will be significant amounts of coal dust emitted to air or water from conveyor belts and uncovered coal wagons as they cross the wetlands. Noise will also be a factor. There is no provision or funding for wildlife rangers and wildlife and water, air and noise pollution research scientists to monitor impacts on wildlife in and adjacent to these wetlands. This contravenes the EPBC Act and the Convention on Biological Diversity and the Environmental protection Act. Long-term monitoring and pollution prevention of these wetlands and their flora and fauna must be assured.		The NGBR alignment does not directly impact upon the Caley Valley Wetland. The NGBR Project does not include the development of any rail loops. It will access the rail loop approved as part of the Abbot Point Coal Terminal 0 Project (EPBC 2011/6194) which does not enter the Caley Valley Wetland. Coal dust emissions and deposition rates adjacent to the NGBR Project final rail corridor were assessed in the EIS at Volume 1 Chapter 10 Air quality and Volume 2 Appendix I Air quality. The assessment identified that before controls are implemented both emissions and deposition of coal dust will be lower than relevant guideline criteria. Noise impacts are similarly assessed with similar findings in the EIS at Volume 1 Chapter 12 Noise and Volume 2 Appendix J. Furthermore, once the proposed mitigation and management measures are implemented for coal dust and noise, impacts are expected to be further reduced. As a result, no further mitigation and management measures are proposed.
42	Mackay Conservation Group	Organisation	42 ad	Nature conservation	Great Barrier Reef	This wetland contains twice the percentage (i.e. 2 per cent) of wetland bird populations needed to make it a wetland of international significance. The highly significant value of this wetland aggregation to support such a huge population of wetland bird species is not addressed in the Strategic Assessment.		Adani was not a party to the Strategic Assessment and as such is not able to comment on the content of the assessment. The assessment of potential environmental impact to the Caley Valley wetland relied upon published information available at the time of writing of the EIS. This included documents such as BAAM 2012 which informed the Cumulative Assessment of Abbot Point.
42	Mackay Conservation Group	Organisation	42 ae	Nature conservation	Great Barrier Reef	The Strategic Assessment states that prior to development, environmental impact assessment is undertaken by proponents of individual projects to demonstrate that all unavoidable impacts are identified, mitigation strategies proposed, and where appropriate, suggested offsets discussed. It is in this stage that project assessment quantifies the specific impacts of the project including MNES, OUV and cumulative impacts. Whilst there is not a specific requirement to assess MNES, they are identified as environmental impacts in this process. So why aren't we seeing the air, water and noise pollution risks from the rail proposal to these significant wetlands and their species being adequately addressed in this EIS?		Adani was not a party to the Strategic Assessment and as such is not able to comment on the content of the assessment. The assessment of potential environmental impact to the Caley Valley wetland relied upon published information available at the time of writing of the EIS. This included documents such as BAAM 2012 which informed the Cumulative Assessment of Abbot Point. MNES matters relevant to the NGBR Project in the vicinity of the Caley Valley Wetland are considered to be adequately described in the EIS at Volume 1 Chapter 7 MNES, in accordance with the Commonwealth Government's final EIS Guidelines for the NGBR Project.
42	Mackay Conservation Group	Organisation	42 af		Great Barrier Reef Strategic Assessment Coastal Zone draft report (with regards to Caley Valley Wetland)	Table 1.2.2 MNES at Abbot Point in the Queensland Strategic Assessment of the Great Barrier Reef World Heritage area even lists these wetlands as not being of international significance despite all the official accepted evidence to the contrary!		Adani was not a party to the Strategic Assessment and as such is not able to comment on the content of the assessment.
42	Mackay Conservation Group	Organisation	42 ag	Land use and tenure	Stock routes	The frequency of severe El Niño events in the eastern Pacific Ocean is expected to double as greenhouse gases rise this century. This is significant for stock routes because they are used as a support source of feed for cattle that need to be moved from drought-stricken areas. Therefore we need to have more not less to support the grazing industry, especially in an area that is proposed to be intensively mined. The stock route crossing at chainage 117.11 km should not be closed as it may need to be constructed in the future.		The statement in NGBR EIS Volume 1 Chapter 3 Land use and tenure Section 3.4.4 Stock route network: "Of these, one stock crossing (gazetted but not constructed), located at chainage 117.11 km, is proposed to be permanently closed." has since been identified by GHD and Adani to be erroneous. There is no gazetted stock route in this area, merely a local road reserve that is unconstructed. Volume 2 Appendix B Revised project description correctly identifies the crossing as an unconstructed road reserve. Due to minor realignments of the NGBR Project, the chainage of this crossing is now 116.6 km.
42	Mackay Conservation Group	Organisation	42 ah	Land use and tenure	Stock routes	Stock routes also serve as a source of biodiversity insurance as they provide vegetated ecological connectivity corridors for flora and fauna and a means to migrate as climate change proceeds.		The NGBR Project crosses several stock routes and includes provision for the maintenance of crossings to maintain the operation of stock routes. It is not considered that the project will have a significant adverse effect of the potential function of stock routes as environmental corridors.

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42	Mackay Conservation Group	Organisation	42 ai	Land use and tenure	Stock holding yards	Holding yards may not work very well. Initially there are 14 trains a day up to 4km long proposed along the rail line. That averages out to one train every 1 hour and 42 min. The train will travel at 80 km or less per hour. Through a crossing it could be expected to slow down. At 80 kph an hour it would take 3 minutes to travel through the crossing. At 20 kph it would take 12 minutes. Assuming it takes 10 minutes those waiting to take cattle through the crossing would have to complete that action in approximately 1 hour and 32 minutes i.e. the time between when the train passes and the next train arrives. That assumes the stockmen have perfect knowledge of when the last train has passed. If it takes a minute per beast to cross the maximum number of stock per crossing would be 92. In reality if large numbers of stock have to wait in a holding yard to ensure they have the maximum time to cross between trains they will significantly be delayed. They will also have to spend time getting cattle into and out of the yard. These time costs to get cattle in and out of holding yards and across the line between trains have to be worked out to see if crossing options presented by Adani are feasible, especially as the number of train trips will increase with time as more alternative users come on-line.	Some type of warning signal will have to be provided to let stockmen know when a train is coming.	DNRM have requested that all national stock route crossings be grade separated. These will be, where possible, or alternatively the stock route will be realigned to a point where grade separation can take place. In the scenario where a level crossing is the only option suitable stock yards will be constructed in discussion with the relevant stakeholders. These crossings will include a landline with direct access to the controller. All landholders will have an agreement in place outlining the procedure for crossing.
42	Mackay Conservation Group	Organisation	42 aj	Land use and tenure	Stock holding yards	The other concern with holding yards is that they will receive coal dust deposition and any grass eaten in such areas will be contaminated.		Stock yards will be constructed in discussion with the relevant stakeholders. These crossings will include a landline with direct access to the controller. All landholders will have an agreement in place outlining the procedure for crossing and minimising the time for cattle being yarded. As identified in the EIS Volume 1 Chapter 10 Air quality, dust deposition rates even before proposed controls are implemented are low. Therefore it is considered that after controls are implemented in accordance with the proposed Coal Dust Management Plan (including similar controls to the Aurizon CDMP), there will be minimal contamination in proximity to the rail corridor and adjacent holding yards.
42	Mackay Conservation Group	Organisation	42 ak	Land use and tenure	Stock routes	24 road, stock routes and road reserve crossings presents a total potential delay at 12 minutes per crossing of 288 minutes (4.8 hrs) per one way rail trip and 576 mins (9.6 hrs) per round trip. That adds up to a significant cost to road transport users affected by these rail crossings i.e. 28 return rail trips a day x 365 days a year x 9.6 hrs (road transport waiting time) = 98,112 hours. At \$100 an hour of waiting time the cost to road and stock route users could be \$9,011,200. Over 90 years, the proposed life of the line this amount increases to \$811,008,000. These are high end estimates. There will not be road and stock route users held up at every rail crossing on every rail trip. But the high amount indicates that costs to use users will be significant. Such costs are useful as they provide a guide as to whether Adani should be building overpasses or underpasses as crossings which are frequently used. Such an analysis should have been a part of the EIS. Otherwise such users, primarily the grazing and tourism industries, are being asked to absorb a cost Adani should rightly be paying under the "user pays" principle.		Crossing treatments are discussed and agreed to with the relevant stakeholders including IRC, WRC, DTMR and DNRM. There a number of guidelines in place that Adani has followed in order to propose the treatments listed. These guidelines take into account both the number of vehicles using the relevant road and the number of trains using the railway. As such, the proposed treatments are expected by Adani to be acceptable, and additionally are subject to ongoing consultation with the relevant agencies.
42	Mackay Conservation Group	Organisation	42 al	Transport	Road works	Rehabilitation and overlay works occurring to the Bowen Developmental Road (Bowen – Collinsville) may result in an improvement in the capacity to transport heavy vehicles or large quantities of materials from Bowen or the Port of Abbot Point to the construction site. This implies that there will be significant traffic delays, an increase the risk of road traffic accidents and additional added costs for road maintenance along the Bowen development Road. How will these issues be addressed by both Adani and the Queensland government? Who will be paying the additional costs to address these issues? Will there be bypass areas along this highway to allow heavy and very slow vehicles to pull over to let other traffic pass?		As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Volume 2 Appendix G Revised commitments identifies QFES and QPS as emergency service providers to be consulted during the development of the Emergency Management Plan.
42	Mackay Conservation Group	Organisation	42 am	Overall project	Project Need	When the project was first proposed the Queensland coal mining industry was in a boom phase with record high prices for thermal coal. That is no longer the case with economists now predicting no recovery back to the boom prices (reference to Ross Garnaut publication and IMF commodity price forecasts in submission). This EIS is for an Indian project so does the same situation apply to Indian coal companies? The value of the Indian rupee has dropped making financing of new coal-fired power plants more difficult and less likely. Adani's own financial situation is also less robust than it was. The Queensland government and the public need to be sure that financing for this project is guaranteed before disrupting and threatening the already existing viable grazing industry in the proposed Galilee Basin State Development Area which contains the proposed rail route. Where is a comprehensive assessment of the costs as well as the benefits of this project and all that it affects?		No - the NGBR Project was first officially proposed by Adani in May 2013 whilst coal prices were (and remain) significantly depressed in the global market. Adani will provide satisfactory evidence to the Queensland Government of its capacity to successfully finance the NGBR Project in due course, and as required. The NGBR Project EIS contains an economic impact assessment undertaken in accordance with the Terms of Reference for the project at Volume 1 Chapter 16 Social and economic impacts and Volume 2 Appendix N Economics.
42	Mackay Conservation Group	Organisation	42 an	Overall project	Project Need	The rail line is also supposed to be for multi-users so if demand from China does not substantially increase, Adani, which will depend on other users to help pay for the rail line, will face further financial difficulties and revenue for the State will not be as much as anticipated. It is also not clear how many other users there will be for this line if it is approved. Waratah Coal is mentioned but this is a project that also apparently faces a huge funding deficit.		Opinion noted.
42	Mackay Conservation Group	Organisation	42 ao	Overall project	Project Need	The State government has already invested \$25.5 billion of public funds for rail, port & water infrastructure to support the coal industry. They have the responsibility not to approve a project which may become a stranded asset, and the public has the right to information which demonstrates that proposed exports will actually eventuate, and the project is financially viable. Long-term it is agriculture that will earn more for the State than shorter-lived coal mining and its conservation needs to be taken into consideration in a needs assessment for this EIS.		Opinion noted.
42	Mackay Conservation Group	Organisation	42 ap	Land use and tenure	Good Quality Agricultural Land	Less than 4 per cent of Queensland is classified a good quality agricultural land. The Queensland Government considers that Strategic Cropping Land (SCL) i.e. high quality cropping land, is a finite resource that must be conserved and managed for the long term (Queensland Government 2010). The loss of 1,869 ha of this class of land for the proposed rail and ancillary infrastructure should be prevented as it means its permanent sterilisation.		Opinion noted.
42	Mackay Conservation Group	Organisation	42 aq	Land use and tenure	Good Quality Agricultural Land	Cropping land resources and related industries are also key components of the Queensland economy. The agriculture and agri-food system generated \$22.7 billion dollars in 2006–07, and employed 272 471 Queenslanders. Availability of the land resource is critical in allowing the agricultural sector and associated regional and rural communities to adapt and respond to shifts in markets (DNRM Strategic Cropping Policy referenced in submission).		Noted.

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42	Mackay Conservation Group	Organisation	42 ar	Land use and tenure	Good Quality Agricultural Land	While the 1,669 ha is a small per cent of GQAL in the state, it is a large area for this region, containing valuable lands used for fattening cattle for market, and keeping agriculture viable in this region. It also sets a precedent for more sterilisation of such land by future rail lines planned in this region. There are currently five line proposed. What is the long term value of the loss of this land?		Opinion noted. The NGBR is designed to cater for up to 100 mtpa coal, including from third parties, to serve the Galilee Basin and avoid/minimise multiple rail corridors being established by different proponents. This is in line with Queensland Government policy of June 2012 on Preferred Rail Corridors for the Galilee Basin and the Queensland Government's Galilee Basin Development Strategy November 2013. It is also noted that should the GBSDA be declared and the NGBR Project be developed in accordance with the draft GBSDA Development Scheme, the number of possible separate individual rail lines will be decreased accordingly with the objectives of the GBSDA and the Galilee Basin Development Strategy. A detailed soil and geotechnical investigation will be conducted prior to construction works commencing to validate proposed management practices for specific soil types and related issues. The investigation will be conducted in accordance with a specific soil survey methodology, which will include surveys tailored for: <input type="checkbox"/> SCL assessment <input type="checkbox"/> GQAL assessment <input type="checkbox"/> ASS assessment <input type="checkbox"/> Contaminated land assessment. Valuation and compensation arrangements will continue to be developed in direct consultation with affected landholders. It is not considered accurate to suggest that impacts associated with the NGBR Project are too great on any one property. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
42	Mackay Conservation Group	Organisation	42 as	Land use and tenure	Good Quality Agricultural Land	The other concern that is not addressed is how the loss of this land affects the surface operations and incomes of the current land users? Where impacts are too great the action should be avoided.		Valuation and compensation arrangements will continue to be developed in direct consultation with affected landholders. It is not considered accurate to suggest that impacts associated with the NGBR Project are too great on any one property.
42	Mackay Conservation Group	Organisation	42 at		Compensation	An impact considered to be of extreme significance would need to be met with a high level of mitigation. How is "extreme significance" impact defined and identified? Are cumulative smaller impacts that result in an impact of extreme significance to be considered for mitigation? Are there examples for this project where impacts will be of such extreme significance that they will be avoided altogether?		Valuation and compensation arrangements will continue to be developed in direct consultation with affected landholders. It is not considered accurate to suggest that impacts associated with the NGBR Project are too great on any one property.
42	Mackay Conservation Group	Organisation	42 au		Compensation	There appears to be a conflict between mitigation requirements and the intent by the Queensland government's plan to declare the Galilee Basin and the lands between the Basin and Abbot Point as the Galilee Basin State Development Area. In a State Development Area compulsory acquisition by the State would be possible. The State and Adani could avoid the requirement for full offsetting or compensation in advance simply by compulsorily acquiring such lands. That puts the affected landowners at a serious disadvantage and would allow both the State and Adani to circumvent mitigation requirements. How does the Queensland government and Adani propose to resolve this conflict?		Adani is committed to undertaking good faith negotiations regarding valuation and compensation arrangements with affected landholders. However, it is also correct that should the GBSDA be declared as proposed, and voluntary negotiations between Adani and individual landholders do not prove successful, that the Queensland Government could compulsorily acquire the necessary land tenure for the NGBR Project.
42	Mackay Conservation Group	Organisation	42 av	Nature conservation	Ecological surveys	The amount of field survey work seems extremely inadequate to describe all species that could be present and for whom the region provides significant habitat, which is a criteria for its protection. The Adani ecological surveyors do note the seasonal differences in species present. Some species such as the koala colony at Diamond Creek west of Moranbah migrate up and down that creek and could easily be missed in a couple of surveys. How much attention did Adani pay to information from local landowners on flora and fauna species that they know are present? Not much according to our information.		The approach to conduct limited survey effort in favour of ecosystem and habitat mapping has been accepted by DEHP as an appropriate approach for linear projects. Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.
42	Mackay Conservation Group	Organisation	42 aw	Nature conservation	Ecological surveys	The creek and river systems in the region act as ecological connectivity highways for many species. Were biodiversity surveys done up and down the riparian areas of the waterways that the proposed rail line would cross? How will barriers presented by the rail line and its levee to such travel by wildlife be addressed to maintain ecological connectivity?		Volume 1 Chapter 06 of the EIS reports the extent and findings of aquatic habitat surveys conducted for the project. Field surveys were conducted to identify aquatic flora, fauna and habitat characteristics within the preliminary investigation corridor and study area. For the purposes of the aquatic ecology assessment, aquatic fauna species of interest included fish, freshwater turtles, crocodiles and freshwater macroinvertebrates. Aquatic habitats were assessed in terms of their habitat diversity and extent, suitability for aquatic fauna groups, sensitivity to change, existing disturbances / modifications or barriers, riparian condition and flow characteristics. All sites were assessed using Queensland River Assessment System protocols (AUSRIVAS). Aquatic survey sites were selected to represent the diverse range of aquatic habitats in the preliminary investigation corridor including artificial dams, wetlands, drainage lines, small streams and rivers.
42	Mackay Conservation Group	Organisation	42 ax	Nature conservation	Ecological surveys	Changes to hydrology from the proposed line will also impact the presence or absence of species and this is not addressed in the EIS. For example the threatened vulnerable species black ironbox (Eucalyptus raveretiana) was listed as potentially occurring according to the EIS. This is a species that is found along streams where the groundwater table is accessible to its roots. If the rail line levee affects groundwater recharge and hence groundwater levels this species would be adversely affected.		Volume 1 Chapter 09 (9.4) the construction and operation of the NGBR Project is expected to have minimal impact to groundwater resources.
42	Mackay Conservation Group	Organisation	42 ay	Nature conservation	Ecological surveys	The cotton pygmy-goose (Nettion coramandelianus) (QLD Nature Conservation Act) was listed as present and is a wetland indicator species for this region in the Queensland Wetland Info database. It nests in the ephemeral streamside wetlands created during the Wet Season. Will the proposed rail line and levee change suitable nesting habitat for this species in or near its proposed waterway rail crossings through construction or changes in hydrology?		Volume 1 Chapter 09 (9.4) The design of water crossing is aimed at minimising alteration to afflux and period of inundation for waterways and as such minimise impacts to environmental values of waterways.
42	Mackay Conservation Group	Organisation	42 az	Nature conservation	Ecological surveys	All the threatened species listed in the Executive Summary as present in the surveys for the EIS prefer riparian habitats or to be not far from water. The EIS notes the presence of some of the conservation significance species for the bioregions traversed by the proposed rail line i.e. Desert Uplands and Northern Brigalow Belt. It also notes that lack of good ground cover habitat, likely lost to grazing, reduced the number of conservation significant species observed e.g. grey-crowned babbler, hooded robin, speckled warbler, brown treecreeper. Of these only the grey-crowned babbler and the brown treecreeper were recorded in the Adani surveys. The other species prefer undisturbed good quality ground cover e.g. logs of dead trees, plenty of tree hollows etc.		Noted.
42	Mackay Conservation Group	Organisation	42 b	Legislation and approvals	Land Act 1994	Where is the justification in this EIS that land for this project will meet the development object in the Land Act to facilitate the most appropriate use that supports the economic, social and physical wellbeing of the people of Queensland. The project may be able to meet the economic requirement in the short-term if there is enough coal exported. But sustainability includes the ability to conserve land to benefit future generations. This project cannot meet the object requirement to meet the social and physical well being of Queenslanders because so many properties will be adversely affected and so much land will be sterilised for the use of future generations for agriculture or other uses.		Volume 1 Chapter 01 of the EIS provides a justification for the project in regard to need. The project is also consistent with Government policy for the development of the Galilee Basin.
42	Mackay Conservation Group	Organisation	42 ba	Nature conservation	Species impacts	Threatened and near-threatened species such as the little pied bat are likely to occur at numerous locations near water along the proposed rail corridor. Cumulative impacts on such species should be considered.		Assessment of threatened fauna and flora species has been conducted based on determination of likelihood of occurrence, considering species presence (via observation) or through mapping of potential habitat. Cumulative assessment has been undertaken based on residual impact.
42	Mackay Conservation Group	Organisation	42 bb	Nature conservation	Existing disturbance	It is interesting that the EIS states "existing disturbance across terrestrial and aquatic habitats in the preliminary investigation corridor is extensive and mainly due to the direct and indirect impacts of land use (cattle grazing), exotic flora and fauna (mostly pigs) and existing infrastructure (particularly roads and waterbody crossings)." We would expect that the presence of existing disturbances would be all the more reason not to create further sources of disturbance such as the rail line and associated infrastructure, e.g. more water body crossings, and to provide plans to mitigate some of the present damage within the proposed corridor e.g. a feral pig control program in cooperation with local land owners, and/or underpasses and overpasses to provide ecological connectivity.		Opinion noted.

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42	Mackay Conservation Group	Organisation	42 bc	Nature conservation	Biodiversity values	The EIS provides plenty of description for flora and fauna and regional ecosystems and in general high biological diversity but little to nothing on how these biodiversity values will be conserved in the face of the huge changes the coal rail line and coal and gas mining would bring to the proposed developments. The EIS should do that as well.	Noted. Cumulative impacts have been considered within the requirements of the ToR.
42	Mackay Conservation Group	Organisation	42 bd	Nature conservation	Estuarine crocodiles	The former owner of Birralee Station near the Bowen River at Collinsville told us that estuarine crocodiles do live in the nationally listed Birralee wetlands near his property. He has seen them frequently in the Wet Season and there is certainly food for them there. The rail route goes quite close to this area. So any adverse impacts on hydrology from the rail levee in that area must be prevented.	Noted. The design of water crossing is aimed at minimising alteration to afflux and period of inundation for waterways.
42	Mackay Conservation Group	Organisation	42 be	Nature conservation	Species impacts	The rail corridor includes the range of the threatened species Irwin's turtle (Fig. 3). There will be migratory and nomadic wetland bird species within the waterways of the rail investigation corridor as well (figure of location or range and sightings of Irwin's turtle enclosed in submission).	Assessment of threatened fauna and flora species has been conducted based on determination of likelihood of occurrence, considering species presence (via observation) or through mapping of potential habitat.
42	Mackay Conservation Group	Organisation	42 bf	Nature conservation	Species impacts	There are a number of dominant endangered and of concern regional ecosystems that will be further fragmented by the rail project. Some of these are also endangered or of concern for biodiversity. What is of further concern is that the rail line will open up land on either side for mining and that will further fragment these ecosystems. So the impacts go well beyond the actual rail corridor over time. We see many threatened species being pushed towards higher threatened categories and even at risk of becoming extinct in this region as a result of this rail line mainly because of the extensive habitat clearing that will occur because of clearing for the rail and mines. Arboreal species such as birds, koalas and reptiles in particular will be affected because woodlands are the most common vegetation form. Such losses especially of species not now listed as threatened, are not addressed in this EIS.	Noted. Potential impacts to flora and fauna have been considered in relation to the local and regional significance having regard to State and Federal legislative requirements. The provision of offsets is designed to ameliorate localised impacts associated with the Project. A comprehensive survey of the ecological values of the final rail corridor will be undertaken to: - Confirm state significant biodiversity values under the relevant offset policies - Confirm the extent of matters of national environmental significance, including threatened ecological communities and potential habitat for species listed under the Environment Protection and Biodiversity Conservation Act 1999 - Confirm the extent and condition of regional biodiversity corridors within the final rail corridors - Confirm the extent of watercourse vegetation - Complete biocondition assessment of confirmed state significant biodiversity values or matters of national environmental significance - Determine likely extent of potential groundwater dependent ecosystems. The findings of the comprehensive survey of ecological values will be provided to the Department of Environment and Heritage Protection and the Department of the Environment. The comprehensive survey of ecological values will inform the development of the environmental management plan, the final offset package, subsequent vegetation clearing applications and associated property maps of assessable vegetation. Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP framework reflects the commitment for a comprehensive survey of ecological values.
42	Mackay Conservation Group	Organisation	42 bg	Cumulative impacts	Threatened species	What will be the cumulative impacts on each threatened species affected by this rail proposal and its downstream impacts e.g. the additional adjacent mining it facilitates? How will wildlife be affected by air and noise pollutants?	Volume 1 Chapter 07 of the EIS described cumulative impacts to threatened species.
42	Mackay Conservation Group	Organisation	42 bh	Topography, geology and soils	Erosion	How much will erosion rates increase due to vegetation clearing?	Erosion and sediment control will be managed in accordance with the Erosion and Sediment Control Plan. With these management measures in place it is considered that limited increases in erosion will occur. Adani has committed to preparing an erosion and sediment control plan in line with best practice guidelines. Volume 2 Appendix H Revised EMP framework has been expanded to include mitigation measures for problematic soils within the Soil Management Plan.
42	Mackay Conservation Group	Organisation	42 bi	Air Quality	Emissions data	Can emissions be converted to particulates in terms of parts per million? (reference to Table 11-6 GHG Inventory)	Reporting of emissions is in accordance with relevant standards.
42	Mackay Conservation Group	Organisation	42 bj	Noise and Vibration	Modelling	Have any of the noise and vibration predictions done in the desktop assessment and modelling been field-tested and validated especially near the "sensitive receptors"?	Volume 1 Chapter 12 (12.4.2) of the EIS describes monitoring of vibration undertaken at coal rail coal trains on the Australian Rail Track Corporation rail network in the Hunter Valley (HunterB Alliance 2010). Monitored trains included those operated by Pacific National and Aurizon. The monitoring indicated a low probability of human comfort or structural vibration criteria (refer 12.2.6) being reached more than 40 m from the rail line. Additional rail vibration assessments of the same network (HunterB Alliance 2010) for trains similar to those used for the NGBR Project resulted in similar findings, with negligible vibration levels at distances greater than approximately 50 m from the rail line. Vibration levels from the operation of the NGBR Project were expected to be consistent with the above findings. Baseline monitoring was undertaken at a number of sensitive receptor location. However, specific monitoring for validation of model outputs has not occurred to date.
42	Mackay Conservation Group	Organisation	42 bk	Noise and Vibration	Low frequency infrasound noise	Low frequency infrasound noise is not addressed yet is associated with heavy machinery including the diesel train locomotives. Infrasound (generally inaudible sound with a frequency of <20 Hz is associated with complaints of non-specific symptoms including annoyance, sleep disturbance, headaches, and nausea. These symptoms are perceived by the susceptible individuals to be due to a low-frequency hum-like noise in and around their homes that is not clearly audible to everyone. Because the proposed rail line will exist for at least 90 years this suggests that a long-term monitoring program should be established where the proposed coal rail lines will contribute high levels of ultrasound i.e. where they are close together and where levels will be high enough to potentially disturb people and animals. Other sound pollution should also be monitored to obtain data to best manage any sound pollution and measure its impacts on homesteads and animals.	Volume 2 Appendix J (2.5.3) of the EIS describes the noise modelling which is based on CadnaA. CadnaA is a computer program for the calculation, assessment and prognosis of noise propagation. Environmental noise propagation was calculated according to ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors. Ground absorption, reflection, terrain and relevant shielding objects are taken into account in the calculations. The model takes account of climatic conditions, ground conditions and timing of noise emissions to provide a 24hr assessment of potential noise taking account of potential impacts to sleep. Volume 1 Chapter 12 (12.4.2) of the EIS describes proposed mitigation measures where operational noise criteria are found to be exceeded (following operational monitoring) at a sensitive receiver. Where operational noise monitoring identifies noise impact occurring at a sensitive receptor, employ additional mitigation, such as - Construction of screening and barriers or bunds - Noise mitigating building works at sensitive receptors, such as double glazing. To be consistent with OCG directions regarding NSW rail noise objectives (see Issue 20U) - Volume 2 Appendix G Revised commitments reflects a commitment to "consult with the Department of Environment and Heritage Protection during the planning stage of operational noise monitoring regarding applied noise standards."
42	Mackay Conservation Group	Organisation	42 bl	Noise and Vibration	Modelling	Operation of the NGBR Project was considered at maximum capacity (100 Mtpa), comprising 28 total train movements per 24 hour period. Elsewhere in the EIS the number of total train movements per 24 hour period is given as 14. Is the difference because initially the rail line will handle half the 100 Mtpa tonnage?	The number of train movements is predicted to be 28 per 24 hours during full operation at ultimate capacity of 100 Mtpa. This consists of 14 trains in the loaded direction and 14 trains in the unloaded direction per day (i.e. 14 train cycles = 28 total train movements per day).
42	Mackay Conservation Group	Organisation	42 bm	Noise and Vibration	Modelling	We note that trains will run at night. Generally noise and vibration carry farther at night than during the day. Has this difference between night and day levels been taken into account in estimations and if so what is the difference?	Volume 2 Appendix J (2.5.3) of the EIS describes the noise modelling which is based on CadnaA. CadnaA is a computer program for the calculation, assessment and prognosis of noise propagation. Construction environmental noise propagation was calculated according to ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors. Ground absorption, reflection, terrain and relevant shielding objects are taken into account in the calculations. The model takes account of climatic conditions, ground conditions and timing of noise emissions to provide a 24hr assessment of potential noise.
42	Mackay Conservation Group	Organisation	42 bn	Noise and Vibration	Modelling	Have estimates been made on the combined noise and air pollution from both this and the GVK/Hancock rail project? The distance between them ranges from 2 – 30 km for some 200 km for much of the distance. This is close enough for the cumulative impacts of many factors besides air and noise pollution to be assessed e.g. other forms of transportation, agricultural operations and the natural environment.	Modelling of combined noise impacts from multiple rail corridors was not initially undertaken due to the separation distances. Volume 2 Appendix C of the AEIS includes modelling of existing and proposed infrastructure where the impacts are likely to be cumulative.
42	Mackay Conservation Group	Organisation	42 bo	Noise and Vibration	Construction	Earthworks construction activities were expected to exceed noise limits (either during or outside standard working hours) for 10 of the 23 "sensitive receptor" homesteads (reference Table 12-7 Estimated Construction Noise of EIS, P12-18). What is the expected duration of these exceedances for the full term of the construction?	Volume 1 Chapter 12 (12.4.1) of the EIS describes the maximum noise levels during construction. At this time it is not possible to describe the duration of exceedances as a number of variables and assumptions have been utilised to determine the maximum impact. Actual noise experienced at a sensitive receptor is likely to be lower than predicted and short term, given that: - Equipment would not operate at full power for the entire time - Certain types of equipment for a given activity will be present for brief periods of time - Equipment would be moving around the final rail corridor - Noise emissions from equipment working in cuttings may be reduced. Proposed management measures take account of the exceedances.
42	Mackay Conservation Group	Organisation	42 bp	Noise and Vibration	Construction	Noise and vibration estimates are typically underestimated for proposed projects which suggest models do not incorporate all factors that could contribute to higher noise levels. Do these estimates include conditions when sound will travel farther than under modelled conditions e.g. warmer air, more humid air (especially near the coast); a combination of very warm and very humid air, and under temperature inversion conditions when sound travelling through a colder air layer below bounces back to the ground when it reaches warmer air aloft. Temperature inversion conditions are common along the coast.	Volume 2 Appendix J (2.5.3) of the EIS describes the noise modelling which is based on CadnaA. CadnaA is a computer program for the calculation, assessment and prognosis of noise propagation. Construction environmental noise propagation was calculated according to ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors. Ground absorption, reflection, terrain and relevant shielding objects are taken into account in the calculations. The model takes account of climatic conditions and ground conditions (specifically humidity).

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42	Mackay Conservation Group	Organisation	42 bq	Noise and Vibration	Construction	Homestead 22 seems particularly at risk as it will receive higher levels of noise and air pollution being only 1 km from the project. What mitigation measures will be in place to reduce these impacts?		Volume 1 Chapter 12 (12.4.2) of the EIS describes proposed mitigation measures where operational noise criteria are found to be exceeded (following operational monitoring) at a sensitive receiver. Where operational noise monitoring identifies noise impact occurring at a sensitive receptor, employ additional mitigation, such as – Construction of screening and barriers or bunds – Noise mitigating building works at sensitive receptors, such as double glazing. To be consistent with OCG directions regarding NSW rail noise objectives (see Issue 20U) - Volume 2 Appendix G Revised commitments reflects a commitment to "consult with the Department of Environment and Heritage Protection during the planning stage of operational noise monitoring regarding applied noise standards. "
42	Mackay Conservation Group	Organisation	42 br	Climate and natural hazards	Climate change impacts	This chapter fails to consider this project's impacts on climate change necessary because those impacts have no borders and will eventually impact Australian weather and the Outstanding Universal Values of the Great Barrier Reef in the very region in which this project will operate.		The assessment has been undertaken in accordance with the Terms of Reference and final EIS Guidelines for the NGBR Project.
42	Mackay Conservation Group	Organisation	42 bs	Climate and natural hazards	Flooding	How does Adani plan to work with landowners and communities in the region in situations where the rail line levee changes the height and frequency of extreme flooding events?		Detailed hydraulic modelling is included in the EIS at Volume 2 Appendix H2 Hydrology and hydraulics and summarised within the impact assessment at Volume 1 Chapter 9 Water resources. The modelling undertaken shows compliance with the proposed design criteria at all locations. As such, minor deviations from current flood regime may occur adjacent to the rail formation in proximity to major watercourse crossings, however no significant impacts are predicted to occur during construction or operation of the NGBR Project. Section 1.5.4 of Volume 2 Appendix G H Revised EMP framework includes additional detail on bushfire response, based on NGBR Project EIS Volume 1 Chapter 17 Climate and natural hazards.
42	Mackay Conservation Group	Organisation	42 bt	Climate and natural hazards	Bushfires	Long-term rainfall records obtained by Adani from BOM indicate annual rainfall decreases with distance inland from the coast. How does Adani propose to manage an increased frequency of fires caused by the operation of the rail line? During frequent dry periods a spark can set off fires that will damage agricultural operations and regional ecosystems through which the rail line would pass.		Adani is committed to maintaining the rail corridor in accordance with the Bush Fire Management Plan.
42	Mackay Conservation Group	Organisation	42 bu	Climate and natural hazards	Flooding	The rail loop is planned to be in the Caley Wetlands. Flooding in a large Wet Season in these wetlands is severe so there will be more to plan for than wind and rain.		The NGBR Project does not include the development of any rail loops. It will access the rail loop approved as part of the Abbot Point Coal Terminal 0 Project (EPBC 2011/6194) which does not enter the Caley Valley Wetland.
42	Mackay Conservation Group	Organisation	42 bv	Climate and natural hazards	Flooding	Historical data is limited in this region so the height of the ARI 100 flood level is really unknown. Mining companies within the flood plains of the Bowen Basin now design for the estimated ARI 1000. Without geomorphological studies to date the frequency of past large flood events the ARIs are simply guesstimates. Floods can be shallow but very wide, hence their value for fattening cattle. Widely flooded areas make access very difficult to impossible and causes a larger area of transport infrastructure damage. This all adds to the risks of running heavy long train trips through this region during the Wet Season.		Flood modelling takes into account all of the actual historical data available at the time of modelling. Any specific phenomena is normally picked up as a result of discussions with landholders. Adani is more than happy to include any of these phenomena in their flood modelling provided they are made aware of it. Flood plans are produced for all of the major waterways and these are discussed with the relevant landholders prior to the treatments being fully adopted. Landholder consultation is an ongoing and iterative process, and as such Adani will continue to incorporate any substantiated landholder advice regarding flood phenomena in further flood modelling during development of the project design. As stated previously the drainage is designed to minimise any hydrological effect that it has on the existing waterways and groundwater resources. As committed in the EIS, additional hydrology and hydraulic modelling will be undertaken during detailed design to refine bridge design, culvert design and afflux values, and ensure the minimisation of hydraulic impacts.
42	Mackay Conservation Group	Organisation	42 bw	Climate and natural hazards	Extreme events	What should be reviewed is the frequency of days with highest temperatures. In heatwaves over the past few years rail lines have buckled in NSW and Victoria during well above average temperatures. How will the proposed rail line fare under extreme temperatures that will become more frequent?		Rail buckling due to heat stress is encountered where temperatures significantly exceed the stress-free temperature of the track. The stress-free temperature is different for each railway, as it relates directly to the temperature at which the rail was laid and thereafter the temperature at which periodic de-stressing maintenance is undertaken. The NGBR Project rail track will be laid at appropriate stress-free temperatures for the predicted climatic conditions expected for the project locality. Periodic maintenance (including distressing) will be undertaken thereafter to ensure rail stress is maintained within appropriate tolerances.
42	Mackay Conservation Group	Organisation	42 bx	Climate and natural hazards	Extreme events	I hate to be the bearer of bad news but electrical equipment is sensitive to high temperatures and the frequency and duration of these extreme temperatures is only going to increase. Today's standard designs are unlikely to be sufficient for the future under more warming.		Opinion noted.
42	Mackay Conservation Group	Organisation	42 by	Climate and natural hazards	Storm surge	The rail loop is planned to sit within the Caley Wetlands. These wetlands are subject to tides and storm surge that will certainly impact the rail loop in extreme events accompanied by flooding and high tides. The information in Table 17 needs further review by people who know these wetlands and the Australian climate. More work needs to be done here.		The NGBR Project does not include the development of any rail loops. It will access the rail loop approved as part of the Abbot Point Coal Terminal 0 Project (EPBC 2011/6194).
42	Mackay Conservation Group	Organisation	42 bz	Greenhouse Gas	Changes to legislation	This chapter needs updating in light of changes being implemented by the new Australian and Queensland governments.		The EIS referenced policies which were in effect at the time of writing. It is noted that some changes have come into effect since publication. These changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals.
42	Mackay Conservation Group	Organisation	42 c	Climate and natural hazards	Independent review of floodplain modelling	Approximately one third of the affected region is devoted to fattening cattle so is obviously a floodplain system. The flood plain modelling maps show no discernible changes as a result of the proposed rail line and its levees, presumably because the culverts will be large enough to handle any sized flood no matter how large. But enormous planned levees for the line will interfere with the flow of water across the natural contours of the land, and as a result, its agricultural productivity. This is not addressed in the EIS.		Cross drainage is provided for all waterways except only very minor ones. The only general change to overland flow will be that the water will be channelled into the waterways sooner rather than later with the overall catchment not affected. Hydraulic modelling included in the EIS at Volume 2 Appendix H2 has been undertaken in accordance with relevant guidelines and standard industry practice. The modelling indicates that no significant change will occur to the extent of flooding (afflux, duration, area of inundation), but rather that the design criteria are met at all locations and therefore significant impacts are not predicted for the design flood events of Q20, Q50 and Q100. As committed in the EIS, additional hydrology and hydraulic modelling will be undertaken during detailed design to refine bridge design, culvert design and afflux values, and ensure the minimisation of hydraulic impacts.
42	Mackay Conservation Group	Organisation	42 ca	Greenhouse Gas	Emissions data	Will emissions data for the project be reported in the National Pollution Inventory?		Adani's obligation to report under the National Pollution Inventory will be considered during detailed design, once the volume of NPI substances produced/purchased/handled/used can be accurately predicted. Adani is required to report greenhouse gas emissions in accordance with NGER Scheme.
42	Mackay Conservation Group	Organisation	42 cb	Greenhouse Gas	GHG Volumes	Table 11-1 needs to also include the volumes of GHGs from each source for the project to give a more representative figure of the project's contributions.		Greenhouse gas assessment was undertaken in accordance with the terms of reference for the project.
42	Mackay Conservation Group	Organisation	42 cc	Greenhouse Gas	Offsets	Reference from EIS Chapter P11-11 Sequester GHG emissions through – Revegetation – Purchase of carbon offsets. Where will offsets be located and how will the public get access to this information?		Volume 1 Chapter 11 of the EIS states that "Sequestration calculations were not carried out, due to the absence of a detailed revegetation plan for the NGBR Project. As such, this GHG assessment does not consider the ameliorating effect of sequestration on the emissions of the NGBR Project. The assessment is therefore considered to be conservative, as a progressive rehabilitation program is proposed during and following completion of construction activities." The location and extent of offsets will be reported in accordance with approval condition requirements and NGER Scheme requirements.
42	Mackay Conservation Group	Organisation	42 d	Climate and natural hazards	Independent review of floodplain modelling	The claim by Adani through their preliminary modelling of no change to hydrology is simply not believable, given the extent of flooding that can occur. According to reports to the Mackay Conservation Group from landowners, the levee on which the rail line will sit will be at least 10 m high and that will have a significant impact on flood flow hydrology, flow direction, flow rates, erosion rates and groundwater recharge rates.		Hydraulic modelling included in the EIS at Volume 2 Appendix H2 has been undertaken in accordance with relevant guidelines and standard industry practice. The modelling indicates that no significant change will occur to the extent of flooding (afflux, duration, area of inundation), but rather that the design criteria are met at all locations and therefore significant impacts are not predicted for the design flood events of Q20, Q50 and Q100.
42	Mackay Conservation Group	Organisation	42 e	Climate and natural hazards	Independent review of floodplain modelling	The land owners are being advised they will have to work their operations through tunnels in this massive levee. They object strongly to this as they need to work with level crossings or overpasses. Why does Adani object to level crossings or overpasses?		Landholders have been consulted to discuss crossing treatments and which type is the most suitable for the landholder. Where practical the preferred crossing is utilised however in some cases the height of the formation does not make some treatments practical such as a level crossing over an eight metre formation or a 3.6 metre square underpass on a one metre high formation.

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42	Mackay Conservation Group	Organisation	42 f	Climate and natural hazards	Independent review of floodplain modelling The proposed rail line crosses a major floodplain in the Sutor River and several smaller creeks and ephemeral water bodies in this catchment as well as the Bowen, Bogle, Elliott river catchments and that of Pelican Creek catchment. Pelican Creek is a lower end tributary of the Bowen River. During major floods on the Bowen River floodwaters back up in Pelican Creek and cause flooding levels in the creek to be larger than predicted by hydrology models as they do not take such phenomena into account.	Modelling for the design of this project should incorporate such backup flows for major events.	Flood modelling takes into account all of the actual historical data available at the time of modelling. Any specific phenomena is normally picked up as a result of discussions with landholders. Adani is more than happy to include any of these phenomena in their flood modelling provided they are made aware of it. Flood plans are produced for all of the major waterways and these are discussed with the relevant landholders prior to the treatments being fully adopted. Landholder consultation is an ongoing and iterative process, and as such Adani will continue to incorporate any substantiated landholder advice regarding flood phenomena in further flood modelling during development of the project design. As stated previously the drainage is designed to minimise any hydrological effect that it has on the existing waterways and groundwater resources. As committed in the EIS, additional hydrology and hydraulic modelling will be undertaken during detailed design to refine bridge design, culvert design and afflux values, and ensure the minimisation of hydraulic impacts.
42	Mackay Conservation Group	Organisation	42 g	Climate and natural hazards	Independent review of floodplain modelling No data for culvert sizes are provided apparently because planning has not yet progressed to that stage. Such data should be in the EIS. The planning should have been done before being presented in an EIS to the public for comment.		Development of final culvert sizes is part of the design phase of the project which is currently progressing.
42	Mackay Conservation Group	Organisation	42 h	Climate and natural hazards	Independent review of floodplain modelling Nobody knows the long-term record for flooding in the rail route region. The fluvial geomorphologic research has not been done, and is absolutely essential to determine the frequency and intensity of large scale flood events if the rail design and rail impacts are to be properly determined. The need for more accurate information to inform flood modelling is especially urgent as regional climate change studies show that rainfall intensity is increasing and flooding events will cover greater areas. Where are such scenarios in this EIS?		Noted. Assessment of hydraulic impacts has been undertaken as required by the ToR.
42	Mackay Conservation Group	Organisation	42 i	Climate and natural hazards	Independent review of floodplain modelling Adani's work on floodplain modelling for this project needs independent peer review by scientists, not just engineers, who work in hydrology and related fields such as fluvial geomorphology and climate change.		Assessment of hydraulic impacts has been undertaken as required by the ToR. This does not include a requirement for independent third party review.
42	Mackay Conservation Group	Organisation	42 j	Climate and natural hazards	Surface and groundwater hydrology How will the rail levee affect both ground and surface water hydrology e.g. surface water and groundwater?		As stated previously the drainage is designed to minimise any hydrological effect that it has on the existing waterways and groundwater resources.
42	Mackay Conservation Group	Organisation	42 k	Air Quality	Sensitive Receptors 4,000 train trips per year x 9.9 to 15.5 kg per train trip = 39,600 to 62,000 kg of dust particulates a year of emissions, not including coal dust blown from the wagons i.e. 39.6 to 62 tonnes per year. We note in the Noise and Vibration Chapter 12 p. 6 that the planned maximum number of trains is 28 per day. These will more than double the emission estimates I have given above and elsewhere in this submission from the train loads and locomotives i.e. from 4,000 to over 10,000 loads per year.		The number of train movements is predicted to be 28 per 24 hours during full operation at ultimate capacity of 100 Mtpa. This consists of 14 trains in the loaded direction and 14 trains in the unloaded direction per day (i.e. 14 train cycles = 28 total train movements per day).
42	Mackay Conservation Group	Organisation	42 l	Air Quality	Sensitive Receptors The EIS appears to imply that because their modelling of particulates and other pollutants shows that Australian and Queensland air quality standards are not exceeded within a few hundred metres of the rail line there will not be air quality problems for these homesteads. In reality this is highly unlikely.		Volume 2 Appendix I of the EIS reports the findings of modelling which shows clearly, and confirmed by numerous other similar assessments, that there is exponential decline away from the coal source. So within a few hundred metres the incremental impact has decreased to be well below the ambient levels. So in reality, the homesteads have impacts that would be difficult to measure (against the background variation – and this applies for all pollutants).
42	Mackay Conservation Group	Organisation	42 m	Air Quality	Sensitive Receptors We also wonder why Total Suspended Particulates were included in the EIS in relation to "sensitive receptors". This form of measurement is out of date according to the World Health Organisation and the Australian government's 2011 review and recommendations on the National Environment (Air Quality) Pollution Measures (NEPM). TSP measures do not address human health impacts so are of no help in addressing impacts on "sensitive receptors" which is the main need.		Opinion noted. TSP is an Air Quality Indicator in the Environmental Protection (Air) Policy ((EPP (Air) Schedule 1) with a clearly defined objective (to be used in assessing environmental values) for "health and wellbeing". So sensitive receptors involve humans and hence the value being assessed. The EPP (Air) also has other indicators which have also been assessed. Adani has committed to development of a Dust Management Plan and Coal Dust Management Plan consistent with the Aurizon Coal Dust Management Plan. It is anticipated that this will include a requirement for veneering of coal wagons. It is noted that ongoing research is being conducted by various parties to identify strategies for the management of coal dust. Adani will remain appraised of these studies and implement various mechanisms for coal dust management as required by the Coal Dust Management Plan. Volume 2 Appendix G Revised commitments reflects the commitment that "all complaints relating to air quality (including dust emissions) will be recorded and managed in accordance with the complaints management procedure. Corrective action will be undertaken in accordance with the environmental management plan if the complaint is validated." The type of monitoring to take place would depend on the nature of the complaint. It is noted that complaints are not considered likely given the findings of Volume 2 Appendix C NGBR Project realignment report and NGBR Project EIS Volume 1 Chapter 10 Air quality.
42	Mackay Conservation Group	Organisation	42 n	Air Quality	Dust impacts We analysed dust deposition data from 2000 – 2012 collected by North Queensland Bulk Ports near and up to 8 km downwind of the Port of Hay Point coal terminals. We found coal dust up to that 8km distance. The percentage of coal dust in the dust deposition declined exponentially away from the coal stockpiles within the Hay Point port lands. Within a few hundred meters of the coal stock piles 97% of the dust deposition samples contained coal dust. This declined to 40% two kilometres from the stock piles. In this example most of the monitoring stations were south of the stock piles so received dust from the port of Hay Point when the far less frequent north winds blew. Prevailing winds at Hay Point are from the southeast. So we would expect that dust containing coal dust travels much farther than 8 km from this port.		The finest dust may well travel relatively long distances – at the PM10 fraction the equivalent aerodynamic diameter leads to diminishing 'fall-out' rates – and below PM5 the particle can be assumed to have the same characteristics as an aerosol. The statement in the submission confirms that heavier coal particles 'fall-out' within a 'short-range' with only a limited fraction making it to the distances quoted. Dispersion increases with distance travelled so concentrations (and for particulate matter the amount of material available for 'fall-out') are negligible values at 8 km.
42	Mackay Conservation Group	Organisation	42 o	Air Quality	Dust impacts Heavier particulates >10PM probably drop out within 1 to 2 km of a sources but finer 2.5PM and less particulates travel much farther, and they would contain coal dust and other hazardous pollutants such as carcinogenic fine diesel particulates. Fine soot travels in dust storms east from China on upper level winds between 2,000 to 7,000 metres high and raises pollution levels on the west coast of the United States so we fully expect that the homesteads listed in the EIS will receive coal dust and other hazardous pollutants for the proposed coal rail traffic and diesel locomotives. This is of concern because the World Health Organisation and the Australian National Pollution Inventory both state there is no known level at which coal dust is not harmful to human health. Fine coal dust is particularly hazardous because these particulates penetrate the lower parts of the lung and are not expelled, and accumulate over time. A reference to the New York Times website is provided against the statistics provided for the US above.		Coal dust from sources involving mining and transport (before the combustion processes of a Power Station) has very little mass fraction in the 'fine soot' ranges of below PM2.5. This is more often associated with combustion processes (oil, coal, gas, wood etc.). The mined coal is even 'washed' before transport (which also removes other 'fines' such as clay particles). In relation to Chinese fine particulate matter transporting long distances, this is from a continent sized source region (with many combustion sources) whereas the rail line source region is measured in far less an area (many orders of magnitude lower).
42	Mackay Conservation Group	Organisation	42 p	Air Quality	Human health As Adani plans to operate this rail line for at least 90 years the cumulative impacts of coal dust on the health of exposed people, stock and wildlife needs to be properly considered.		TSP is an Air Quality Indicator in the Environmental Protection (Air) Policy ((EPP (Air) Schedule 1) with a clearly defined objective (to be used in assessing environmental values) for "health and wellbeing". So sensitive receptors involve humans and hence the value being assessed.
42	Mackay Conservation Group	Organisation	42 q	Air Quality	Coal wagon covering At the very least coal wagons need to be fully covered along the rail route. Veneering, which has been suggested because theoretically it can reduce dust emissions by 80 per cent, in reality does not work, partly because application of the veneer is not even or complete (we confirmed this in conversations with coal train drivers), and because during the long train trip, vibration shakes open the veneer cover.		Adani has committed to development of a Coal Dust Management Plan consistent with the Aurizon Coal Dust Management Plan. It is anticipated that this will include a requirement for veneering of coal wagons. It is noted that ongoing research is being conducted by various parties to identify strategies for the management of coal dust. Adani will remain appraised of these studies and implement various mechanisms for coal dust management as required by the Coal Dust Management Plan.

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42	Mackay Conservation Group	Organisation	42 r	Air Quality	Modelling	The modelling is totally inadequate in considering only air quality standards as it is the composition and impacts of any hazardous materials such as coal dust within those pollutant emissions that must be considered. If these impacts are unknown the costs of the proposal cannot be fully ascertained, and thus the objects of the Land Act cannot be met.	TSP is an Air Quality Indicator in the Environmental Protection (Air) Policy ((EPP (Air)) Schedule 1) with a clearly defined objective (to be used in assessing environmental values) for "health and wellbeing". Modelling has been undertaken in accordance with relevant national standards.
42	Mackay Conservation Group	Organisation	42 s	Air Quality	Monitoring	Any modelling also needs to be verified with data from on-ground monitoring, especially of the more hazardous fine particulates.	Air quality modelling has been undertaken in accordance with the ToR and relevant standards. Monitoring of construction and operation activities will be undertaken if required as a condition of the development approval.
42	Mackay Conservation Group	Organisation	42 t	Land use and tenure	Listed Protected Areas	Listed Protected Areas within the Australian National Reserve System should not be called Recreational Areas as their primary management objective is for the conservation and protection of their natural values. The areas listed are all part of the Australian National Reserve System of Protected Areas and should be identified as such. A reference to Table 3-6 of the EIS is included.	Noted.
42	Mackay Conservation Group	Organisation	42 u	Land use and tenure	Listed Protected Areas	Clearly the intent is that Listed Protected Areas not be harmed. Protected Areas cover about 11.5 per cent of Australia. In the proposed Galilee Basin State Development Area they have less than 2 per cent representation which is even more reason that they should not be placed at risk of adverse impacts. The IUCN six-level system classifies protected areas according to their management objectives, which range from strict nature conservation to multi-use reserves (objectives must not be inconsistent with the primary purpose which is biodiversity conservation) (referenced in submission Appendix I (a)). Of the Protected Areas listed in Table 3.6 National Parks are IUCN II and Nature Refuges and Resource Areas are IUCN VI. These are further described in Appendix I (b) (in submission). The management plans for Protected Areas define what activities may be carried out within them. While most allow some form of public access (and in some cases multi-use activities) such activities must not adversely impact on ecological and biodiversity values of the Protected Area.	Noted. No listed protected areas will be directly impacted by the project.
42	Mackay Conservation Group	Organisation	42 v	Land use and tenure	Listed Protected Areas	Listed Protected Areas in Table 3-5 are within 4 to 9 kilometres of the investigation corridor. As can be seen from our comment in Section 3 regarding "Sensitive Receptors" which were homesteads, and the data from Hay Point on the presence of coal dust in dust deposition samples at least 6 km from the coal stockpiles at Abbot Point, hazardous fine particulates such as coal dust and partially burned diesel particulates will reach these Protected Area Systems. As these hazardous pollutants do not degrade; can bio-accumulate up the food chain; the life of the coal rail line is expected to be 90+ years; and there are no air quality standards for wildlife exposure, the coal wagons must be covered if the requirements of the Precautionary Principle, which underlies environmental protection legislation, are to be met. Veneering will not be sufficient.	Noted. Air quality modelling does not support the submission.
42	Mackay Conservation Group	Organisation	42 w	Air Quality	Proposed offset hubs for mines in the Galilee Basin	Areas of significant environmental values that would be lost to mining in the Galilee Basin are proposed to be offset by establishing covenant protection (for the life of the mines the rail line will serve) within the proposed Offset Hubs. Ostensibly this is to ensure that after mining some biodiversity values of this region will remain. But as the proposed rail route will pass near or through these hubs, and the coal wagons will not be covered, pollution from fine hazardous particulates is inevitable. Noise and light may also be disturbance factors for wildlife in and near these offset hubs and the Protected Areas. No evidence is presented in the EIS to show that the current proposal will not have detrimental impacts on the ecological values the offset hubs will be established to protect. The air quality modelling only addresses current air quality standards which do not cover health impacts from fine hazardous particulates, and do not cover harm to wildlife.	Volume 1 Chapter 06 and 07 of the EIS provide an assessment of potential impacts to existing environmental values of the areas potentially impacted by the project. This includes any offset areas which may be within the project study area. Management of future offset areas will be undertaken in accordance with agreed programs designed to maintain or enhance existing environmental values of offset areas.
42	Mackay Conservation Group	Organisation	42 x	Nature conservation	Caley valley wetland	This national and internationally significant wetland is not listed in Table 3-5 as a significant area in the EIS.	Noted.
42	Mackay Conservation Group	Organisation	42 y	Nature conservation	Caley valley wetland	Fig. 3-7 Port of Abbot Point land use designation shows its proposed rail loop within the Caley Valley wetlands. This is in the area where wetland bird species that breed in Saltwater Creek to the east bring their young, when old enough, across to the area that includes the rail loop. There is no Environmental Management Plan for the protection of the flora and fauna of the Caley Valley Wetlands to handle the hazardous particulates dust and noise and light from the coal trains running 24/7 along this loop, despite our repeated requests for one over the last decade. A draft EMP was produced by the previous Queensland government but never a final plan. It reported that these wetlands met RAMSAR criteria for internationally significant wetland status.	The NGBR Project does not include the development of any rail loops. It will access the rail loop approved as part of the Abbot Point Coal Terminal 0 Project (EPBC 2011/6194) which does not enter the Caley Valley Wetland. Abbot Point Coal Terminal 0 includes the development of a combined rail loop within the footprint of existing rail loop access the Port. The development of the rail loop does not form part of the NGBR Project. As such the comment is not relevant to the NGBR EIS.
42	Mackay Conservation Group	Organisation	42 z	Nature conservation	Caley valley wetland	Allowing rail loops in these wetlands, the breeding grounds for up to 40,000 birds and over 200 bird species in the Wet Season, will have adverse impacts and is abhorrent to all those who care about this wetland and these species. Coal dust contains heavy metals which move up the food chain and bio-accumulate. Even if the coal wagons are covered, they will not be on the return journey and coal dust will shake loose from the wagons. Such pollution has not been addressed despite our requests for this in the draft ToR.	The NGBR Project does not include the development of any rail loops. It will access the rail loop approved as part of the Abbot Point Coal Terminal 0 Project (EPBC 2011/6194) which does not enter the Caley Valley Wetland.
43	Isaac Regional Council	Local council	43 a	Social and economics	Local benefits	The EIS refers to 1700 jobs and \$2.2b expenditure as significant benefits however after an initial construction peak lasting just over one year, ongoing operational workforce is projected to be 254 in 2021 and 370 at project peak by 2026. Presumably the bulk of the operational expenditure will be for the operational workforce (hopefully most resident in regional Queensland) as well as fuel and other consumables. What proportion of the operational expenditure is actually expended in the region?	Additional information highlighting anticipated expenditure within the Local Area, Central Queensland Region, State of Queensland and Australia, this would help clarify the actual benefit to the region, its businesses and communities and potentially integrate local procurement and supply chain investment to leverage the project investment.
43	Isaac Regional Council	Local council	43 b	Social and economics	Economic profile	Table 16.19 and Figure 16.13 cite REDC (2012) Regional Report Card 2006-2011 however the table appears to be from REDC (2013) Regional Economic Profile which has transposed the GRP totals for Isaac and Whitsunday Regional Councils. The overall conclusion regarding the reliance of the region on mining remains unchanged.	Cross check tables and amend
43	Isaac Regional Council	Local council	43 c	Climate and natural hazards	Extreme events	Adani and GHD utilisation of recognised climate projections as a basis for addressing rainfall and flooding risk is acknowledged. The conclusion that tropical cyclones and associated flooding is considered as "low risk" (17.3.2) is questioned in light of projections that suggest while cyclones will become less frequent, they may be more severe.	The proponent continues to assess climate risk, particularly cyclone related flooding through the detailed design phase and liaise with Isaac Regional council. See also Tropical cyclone frequency falls, but will lull last? The long term resilience of the infrastructure is critical to support the investment decisions and sustain economic benefit.
43	Isaac Regional Council	Local council	43 d	Nature conservation	EMP	The EMP states that clearing and grubbing at site will take place immediately.	Ensure that clearing activities are as staged as practicable to minimise the risk of large-scale erosion and sedimentation preceding final construction and final land for stabilisation.
43	Isaac Regional Council	Local council	43 e	Nature conservation	Great Barrier Reef	The Great Barrier Reef Marine Park Act 1975 is not included as a piece of Commonwealth legislation relevant to the project. The GBRMP is adjacent to the eastern coastal boundary of the project, and the project takes place over a significant portion of the GBR catchment.	Include reference to the GBRMP Act as relevant legislation for the project.
43	Isaac Regional Council	Local council	43 f	Nature conservation	Weed and pest management	The EMP notes that weed surveys will be undertaken prior to construction, but does not specify how far in advance.	Ensure that pest surveys are undertaken sufficiently in advance to allow time for treatment and control activities to ensure activities do not exacerbate control responses.

Sub. No.	Submitter	Submitter Type	Issue No.	Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response	
43	Isaac Regional Council	Local council	43 g	Nature conservation	EMP	The EIS states that an ecologist will assess vegetation prior to clearing and grubbing activities, and will 'facilitate' fauna management. Will the ecologist have suitable fauna spotter qualifications? Working in remote regions, it is unlikely that qualified persons will be readily available to provide fauna first aid and retrieval.	Ensure that the ecologist or another suitably qualified person is engaged to efficiently undertake fauna management activities.	Noted. These comments will be incorporated into the development of the Fauna Management Plan.
43	Isaac Regional Council	Local council	43 h	Cultural Heritage	Cultural heritage management	When managing unexpected fossil finds, a palaeontologist should be consulted, not an archaeologist.	Amend the nomenclature to state that an archaeologist will be engaged in the event of anthropomorphic finds, and a palaeontologist will be engaged for fossil finds.	Noted. The comments are noted and will be considered in the development of the final EMP for the project. Volume 2 Appendix H Revised EMP framework states: "Survey and management of Indigenous cultural heritage will be undertaken in accordance with Adani's duty of care under the Aboriginal Cultural heritage Act 2003. In the event of a find, Traditional Owners will be engaged." "Survey and management of non-Indigenous cultural heritage will be undertaken in accordance with Adani's duty of care under the Queensland Cultural Heritage Act 1992. In the event of any archaeological find, a qualified archaeologist will be engaged." "In the event of a fossil find during construction, work will stop in the vicinity of the find and an appropriately qualified palaeontologist engaged to assess its significance and authenticity. Suspected fossils will not be destroyed, damaged, moved, excavated or disturb unless documented approval has been granted by the construction environmental manager. The potential for fossils finds will be outlined in inductions to create awareness and train employees in the identification of archaeological material and actions to take in the case of a find."
43	Isaac Regional Council	Local council	43 i	EMP		The EMP does not specify times for blasting activities. Blasting activities should be confined.	Ensure that the finalised noise management plan includes reference to the applicable local government legislation.	Noted. The comments are noted and will be considered in the development of the final EMP for the project. To be consistent with OCG directions regarding NSW rail noise objectives (see Issue 20U) - Volume 2 Appendix G Revised commitments reflects a commitment to "consult with the Department of Environment and Heritage Protection during the planning stage of operational noise monitoring regarding applied noise standards."
43	Isaac Regional Council	Local council	43 j	Transport	Local roads	The EMP notes that Adani is committed to consultation with Isaac Regional Council prior to the development of its traffic management plan. The project fringes upon the Isaac region, and in conjunction with the Byerwen project undertaken QCoal,	Expand and clarify the likely impacts upon local roads in the Isaac region.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani is in ongoing discussions with both the Isaac and Whitsunday regional councils in regard to local road infrastructure. Specific management measures for local roads will be subject to the RIA and RUMP and infrastructure agreements with relevant Councils.
43	Isaac Regional Council	Local council	43 k	Social and economics	Employment	The EMP notes that the project is committed to developing local employment initiatives - through what mechanisms? Will local employment be preferred over FIFO/DIDO?	Clarify how the project will develop local employment opportunities and support a diversified and resilient Isaac region	The EIS presents an estimated proportion of FIFO versus DIDO workforce requirements including the sourcing (and training) of approximately 20% of the peak workforce from the local region. Whilst this case is presented in the EIS as a best estimate of the likely proportion of local/regional employment, the assessment does not limit the potential for flexibility in relation to origins of the workforce. In addition, the EIS presents Adani's commitment to undertaking initiatives to build capacity for local and regional business.
43	Isaac Regional Council	Local council	43 l	Hazard and risk	Chemical storage	Will chemical storage be compliant with AS1940?	Ensure that chemical storage, handling and bunding is compliant with the Australian Standard.	Adani is committed to ongoing consultation with various representatives in each of the Mackay, Isaac and Whitsunday Regional Councils during development of the NGBR Project.
43	Isaac Regional Council	Local council	43 m	Transport	Low frequency infrasound noise	The EIS does not clearly establish the network of supply chains and transport links the project will make across the region.	The EIS must commit to negotiating infrastructure agreements with Isaac Regional Council for all road infrastructure subject to increased usage.	Adani is committed to ongoing consultation with Isaac Regional Council and the development and implementation of agreement relevant to road infrastructure within the region.
43	Isaac Regional Council	Local council	43 n	Social and economics	Construction workforce	IRC acknowledges labour mobility, geographic or otherwise, is a critical factor influencing the mining industries economy's capacity to adjust to shocks and structural change. However, the Isaac experience suggests that when particular forms of geographic labour mobility are promoted as the only workforce solution to participation in certain industry sectors, the long term sustainability of regional economies and communities is significantly threatened.	It is important to clarify that IRC is not opposed to FIFO/DIDO and recognises that it is sometimes the only viable workforce solution. However a key area of concern is the removal of genuine choice from geographic labour mobility options. Recently the resource sector made unprecedented changes to workforce arrangements which removed genuine choice from the labour market. BHP Mitsubishi Alliance not only secured Queensland government approval for a 100% FIFO workforce for its Caval Ridge and Dainia Mines, near Moranbah in the Bowen Basin, but further specified potential employees would only be recruited from Cairns or Brisbane, metropolitan areas, excluding permanent relocation as an option. IRC strongly advocates that all 21 recommendations of the House of Representatives Standing Committee on Regional Australia's report into fly in/fly out and drive in / drive out workforce practices in Regional Australia 'Cancer of the bush or salvation for our cities' are implemented to ensure the impacts of geographic labour mobility are genuinely understood.	The EIS presents an estimated proportion of FIFO versus DIDO workforce requirements including the sourcing (and training) of approximately 20% of the peak workforce from the local region. Whilst this case is presented in the EIS as a best estimate of the likely proportion of local/regional employment, the assessment does not limit the potential for flexibility in relation to origins of the workforce. In addition, the EIS presents Adani's commitment to undertaking initiatives to build capacity for local and regional business. Adani is committed to ongoing consultation with various representatives in each of the Mackay, Isaac and Whitsunday Regional Councils during development of the NGBR Project.
43	Isaac Regional Council	Local council	43 o	Social and economics	Local transport	It is mentioned that the Moranbah Airport will be utilised for the coming and goings of non-residential workers. There is no mention of road/intersection upgrades around the airport as this will increase the traffic impact for the area.	Suitable compensation/upgrades to be made to ensure that the increase in traffic does not affect the major access road for Moranbah. Parking at the airport will also need to be increased. Also the numbers of private transport to and from the airport need to be specified as buses will not represent 100% of the transportation methods.	As committed in the NGBR Project EIS, Adani will develop a traffic impact assessment and pavement impact assessment (forming the road impact assessment) and road use management plan, in consultation with the Department of Transport and Main Roads for State-controlled roads and local governments for local roads, prior to commencement of construction. Adani is in ongoing discussions with both the Isaac and Whitsunday regional councils in regard to local road infrastructure. Specific management measures for local roads will be subject to the RIA and RUMP and infrastructure agreements with relevant Councils.
44	Greenpeace	Organisation	44 a	Entire EIS		Overall, the EIS documents are not of a sufficient standard to meet the Terms of Reference or be accepted as a n adequate assessment of the projects likely true impacts. It fails to provide the public or the coordinator general with the information needed to make informed input or an evidence-based decision. For example, many sections contain basic errors, there are inconsistent figures in different sections of the document, and in many cases baseline data is missing or entirely insufficient to meet the statutory requirements. There is no need to increase coal production in Australia or anywhere else. In fact, if we are to avoid the worst impacts of climate change, we need to reduce coal production and consumption considerably and rapidly.	Correct mistakes and inconsistencies. Undertake further research to provide adequate baseline data. Require a Supplementary EIS to fulfil the original Terms of Reference and address gaps in the EIS.	The adequacy of the EIS for public notification was assessed by DSDIP and considered acceptable.
44	Greenpeace	Organisation	44 b	Proponent	Proponent	Adani Mining Pty Ltd (the proponent of this project) and Adani Abbot Point Terminal Pty Ltd are both subsidiaries of Adani Enterprises Ltd, part of the Adani Group of companies, based in India. The enclosed report 'Remote Prospects' (section 9 page 51-52) contains details of the Adani Group's history of significant governance and environmental failings, including breaches of Indian legislation. Adani Abbot Point Terminal Pty Ltd is currently being investigated for breaches of environmental conditions relating to Terminal 1 at Abbot Point., Greenpeace and Lock the Gate have lodged complaints with the Federal environment department against Adani Mining Pty Ltd in relation to unauthorised clearing of Black Throated Finch habitat during exploration activities at the Carmichael mine site.	This information should be included in the EIS to give a full picture of the Adani Group's poor legal, environmental and social record. No approval should be granted until the outstanding investigations are complete.	Relevant information regarding the proponent as required by the ToR has been included in the EIS. Adani Mining Pty Ltd (Adani) is an Australian company, which does not have international operations, proposing an Australian project - namely the North Galilee Basin Rail Project - in accordance with Australian laws and has undertaken an EIS in accordance with final TOR developed by the Queensland government and final EIS Guidelines developed by the Commonwealth government. Adani has not been subject to any proceedings for protection of the environment or sustainable use of natural resources under Commonwealth or Queensland laws. Adani is committed to compliance with Queensland and Commonwealth Government laws throughout development of the NGBR Project.

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44	Greenpeace	Organisation	44 c	Project Description	Project Need	The proposal is for a multi-user railway with a capacity of 100Mtpa, but Adani's Carmichael mine will have a maximum annual production of 60 Mt (average 40Mtpa over 60 years). There is no clear justification for making the rail capacity 100Mtpa, since there are no other approved coal mine projects in the northern Galilee Basin. The nearest proposed coal mines are Macmines China Stone proposal (45 Mtpa) and Vale's and Degulla mine (35Mtpa). Both would require significant additional rail infrastructure to link to the Nth Galilee Basin rail line, yet this infrastructure is not detailed or assessed. The Degulla mine proposal has been on the market since mid 2013, and its prospects for reaching completion are very slim, no development applications have been lodged with either the Queensland or Federal Governments. The China Stone project is currently preparing an EIS for the Queensland co-ordinator general, but has not lodged an application with the Federal Government. The Queensland Government has indicated its intention to allow only one South-to-North rail-line linking the Galilee Basin to Abbot Point, and Waratah's China First mine and rail project has already been approved. Approving a second railway proposal would be inconsistent with the Galilee Basin Infrastructure Framework.	Reduce the capacity of the proposed rail line to 60Mtpa, or detail and assess the impacts of the additional infrastructure required to link to other proposed Galilee mines.	As stated in the project description the project is designed to provide capacity for third party users, thus limiting potential future impacts from additional rail corridors.
44	Greenpeace	Organisation	44 d	Land use and tenure	Property acquisition	The proposed State Development Area encompassing this rail corridor raises the possibility that properties will be compulsorily acquired, with major social impacts on affected landholders. This is not assessed in the EIS.	Include assessment of social impacts of potential compulsory land acquisitions.	Volume 1 Chapter 16 (16.5.3) of the EIS describes impacts to landholder affected by the project. This includes impacts associated with acquisition of land.
44	Greenpeace	Organisation	44 e	Water resources	Flooding	The modelling of potential flood impacts is only undertaken on 50 year ARI, this is not adequate given the areas known propensity for major floods, and the likelihood of more extreme rainfall events under climate change projections. The extent of water quality sampling is inadequate. The assessment of actual or potential acid sulfate soils in the coastal areas of the corridor does not include adequate surveys or field investigations.	Modelling of flood impacts should be done at 100 year ARI.	Hydraulic modelling included in the EIS at Volume 2 Appendix H2 has been undertaken in accordance with relevant guidelines and standard industry practice. The modelling indicates that no significant change will occur to the extent of flooding (afflux, duration, area of inundation), but rather that the design criteria are met at all locations and therefore significant impacts are not predicted for the design flood events of Q20, Q50 and Q100.
44	Greenpeace	Organisation	44 f	Nature conservation		The EIS fails to meet the ToR requirement to undertake surveys to document the flora and fauna values of the area, in particular it fails to document changes in flora and fauna extent, composition and abundance in different seasonal conditions across the year. There are large sections of the corridor that have not been surveyed at all. Instead the proponent intends to undertake this work after the approval is granted. This is not an acceptable approach, as it does not provide the information that the public or the coordinator general require to make informed comment and decisions. The intention to fence the rail line with 4-stranded barbed wire will both restrict the movement of native fauna and is likely to result in wildlife deaths. The EIS does not meet the ToR in relation to vegetation mapping and surveys.	Adani must provide full nature conservation surveys consistent with the Federal and State requirements prior to any approval being granted. Water quality sampling should be conducted across the entire corridor during both wet and dry seasons.	The approach to conduct of limited survey effort in favour of ecosystem and habitat mapping has been accepted by DEHP as an appropriate approach for linear projects. Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy.
44	Greenpeace	Organisation	44 g	MNES	Ecological surveys	The surveys that have been conducted fail to comply with the Environment Protection and Biodiversity Conservation Act 1999 Policy Statement 3.21 (Significant impact guidelines for 36 migratory shorebird species) and the survey guidelines for Australia's threatened reptiles. Surveys for the EPBC-listed Striped and Collared Daima were inadequate to prove that the species does not occur in the railway corridor. Mapping provided for the Black Throated Finch, the Australian Painted Snipe and the Squatter pigeon are inaccurate, and do not contain all known records for the species, or reflect the true extent of important habitat for these species within the project area. The international significance of the Caley Valley Wetland at Abbot Point, and its importance for migratory shorebirds is not fully described, based on the most recent surveys undertaken for the Abbot Point Cumulative Impact Assessment.	Undertake further surveys and mapping, correct inaccuracies to meet all standards required under the EPBC Act. Re-assess potential impacts on MNES based on this new information.	The approach to conduct of limited survey effort in favour of ecosystem and habitat mapping has been accepted by DEHP as an appropriate approach for linear projects. Additional terrestrial and aquatic ecology field surveys were undertaken in October 2013. Increased land access was obtained for that survey allowing broader coverage across the corridor. Information from these surveys is described in Volume 1 of the AEIS and has been utilised to inform Volume 2 Appendix C, D and E of the AEIS. Adani has also committed to undertaking additional surveys as part of the finalisation of the Biodiversity Offsets Strategy. The assessment of potential environmental impact to the Caley Valley wetland relied upon published information available at the time of writing of the EIS. This included documents such as BAAM 2012 which informed the Cumulative Assessment of Abbot Point.
44	Greenpeace	Organisation	44 h	Water resources	Construction water supply	Water usage at the construction camps has not been adequately assessed, and it is not clear where the water will be sourced or what impact the usage will have on other users in the area.	Provide more detailed information and assessment.	The water supply strategy is continuing to be refined as part of the design phase of the Project. New water sources will be subject to development applications which will include an assessment of impact to other users. These development applications do not form part of the EIS.
44	Greenpeace	Organisation	44 i	Air quality	Coal wagon covering	The potential for damage to the health of residents near the rail corridor from coal particulate pollution has been under-estimated and requires more thorough assessment. The data presented on baseline air-quality is inadequate, as is the modelling of potential spread of coal dust particulates.	Best practice requires that coal wagons should be covered, not veneered, to prevent the release of particulate which is dangerous to human health.	Adani has committed to development of a Coal Dust Management Plan consistent with the Aurizon Coal Dust Management Plan. It is anticipated that this will include a requirement for veneering of coal wagons. It is noted that ongoing research is being conducted by various parties to identify strategies for the management of coal dust. Adani will remain apprised of these studies and implement various mechanisms for coal dust management as required by the Coal Dust Management Plan.
44	Greenpeace	Organisation	44 j	Greenhouse gas	Failure to consider GHG	The greenhouse emissions resulting from the burning of coal transported by the rail line have not been considered in the EIS, nor are they considered in the EIS process for the Carmichael mine. This represents a flawed definition of the boundary of the project and results in major environmental impacts being omitted from scrutiny. The 40 Mtpa of coal exported from the Carmichael Mine on average each year will result in approximately 85.6 Mt CO2 of greenhouse pollution. A railway line carrying 100 Mtpa would result in approximately 214 Mtpa of CO2 pollution. This is inconsistent with the Australian Government's stated goal of limiting global climate change to below 2 degrees of warming, to avoid dangerous and irreversible impacts on the global population, economy and environment.	Include assessment of the impacts of emissions resulting from the export and burning of coal transported by the rail line (unless or until those impacts are assessed in the EIS processes for related coal mines).	Noted. The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
44	Greenpeace	Organisation	44 k	Climate and natural hazards	Extreme events	The assessment of natural hazards under climate change scenarios identifies high risks resulting from more extreme precipitation events and flooding, but provides only one line responses to address these risks. Extreme high temperatures are ranked as a medium risk which is an under-estimate given climate projections and the potential for rail lines to buckle causing derailments. Given the likelihood of changed future climate it is imperative that the potential impacts of extreme weather events be assessed in detail. The risks and impacts of future record-breaking flood events in particular needs to be examined.	Undertake more detailed analysis of the potential impacts of natural disasters such as floods and heatwaves in future climate changed conditions.	Flood modelling includes a range of flood events including extreme events. Rail buckling due to heat stress is encountered where temperatures significantly exceed the stress-free temperature of the track. The stress-free temperature is different for each railway, as it relates directly to the temperature at which the rail was laid and thereafter the temperature at which periodic de-stressing maintenance is undertaken. The NGBR Project rail track will be laid at appropriate stress-free temperatures for the predicted climatic conditions expected for the project locality. Periodic maintenance (including de-stressing) will be undertaken thereafter to ensure rail stress is maintained within appropriate tolerances.
44	Greenpeace	Organisation	44 l	Hazard and risk	Train derailment impacts	The assessment of the potential consequences of a train derailment is inadequate, given the record length and capacity of trains proposed to be used, this deficiency needs to be addressed.	Investigate potential impacts of derailments in greater detail.	Noted. The assessment is considered to meet the requirements of the ToR.
44	Greenpeace	Organisation	44 m	Cumulative impacts		The rail line is proposed to enable the export of coal from unidentified third-party coal mines in the Galilee Basin. Therefore, it is impossible to conduct a thorough cumulative impact assessment until those mines have been identified and their individual impacts examined and documented.	Identify other mines likely to transport coal via the rail line, and wait until full information on their impacts is available before completing the cumulative impact assessment.	The cumulative assessment was undertaken in accordance with the ToR for the Project. This included identification of all project known to Adani which may be relevant to the assessment.
44	Greenpeace	Organisation	44 n	Overall project		A report entitled "Remote Prospects" was submitted as part of the submission which details financial analysis of various project being pursued by Adani.		Noted. The submitted report is not relevant to EIS assessment against the ToR for the project.
45	DNRM	Agency	45 a	Legislation and approvals		A property map of assessable vegetation will be prepared and certified by the Queensland Herbarium, to confirm potential impact areas. The Department of Natural Resources and Mines (DNRM) certify property maps of assessable vegetation, not the Queensland Herbarium.	Amend the wording as follows: A property map of assessable vegetation will be prepared and certified by DNRM prior to any vegetation clearing, if any inaccurate mapping data is identified.	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals

Sub. No.	Submitter	Submitter Type	Issue No.		Issue - Topic	Issue - Details	Submitter Recommendations / Suggested Mitigation	Proponent response
45	DNRM	Agency	45 aa	Water resources	Construction water supply	The EIS states: The northern part of this section of the alignment (ChO to Ch27.5) is located within the Bowen Groundwater Area (Figure 4.10) and therefore groundwater bores may not be installed unless used for irrigation or stock watering purposes. The wording in this section is slightly incorrect	Suggest rewording this paragraph to: The northern part of this section of the alignment (ChO to Ch27.5) is located within the Bowen Groundwater Area (Figure 4.10) and therefore groundwater bores may not be installed without a development permit unless used for irrigation or stock watering purposes, domestic or monitoring purposes.	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 ab	Water resources	Construction water supply	This section provides a good summary of requirements. It should also be noted that DNRM may require additional information to accompany a water permit application, such as analysis of possible drawdown impacts on surrounding users or nearby GDE's. (Similarly for section 6.2.2- DNRM may require additional information)	The proponent should update this section to note that additional information may be requested to support a water permit application.	Noted. Adani will consult with DNRM prior to/during preparation of development permits to confirm requirements for any further detailed information. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 ac	Water resources	Construction water supply	The EIS states: To prove that the application is consistent with a current water entitlement, the applicant must be granted 'consent of the Chief Executive for new operational works that extract from and/or interfere with the flow of water'. This application is made to DNRM and assessed by the Chief Executive. Once the consent of the Chief Executive has been granted, Adani can apply for the development permit. The development permit is submitted through the IDAS. Amendments to the Sustainable Planning Act 2009 (removal of section 264), mean that consent of the Chief Executive (DNRM) is no longer required to progress a development application for operational works. However water cannot be taken from those works unless a water permit, where required, is held. It should be noted that development permit applications for construction of works such as a bore, are to be submitted to, and processed by Department of State Development Infrastructure and Planning. DNRM process water permit applications	Update wording to reflect that consent of the Chief Executive is not required to submit a development application for a bore. Also update flowchart on page 113 to reflect the suggested changes in the issues section.	Noted. These changes will be noted where relevant in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 ad	Water resources	Construction water supply	The section discusses the requirements for new bores in an undeclared area. The second paragraph is not correct in this context. In an undeclared area, bores may be constructed and water taken for any purpose without the need of an authorisation under the Water Act or reference to a protocol under the Water Regulation.	It is suggested that the proponent deletes the second paragraph.	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 af	Water resources	Construction water supply	This section notes that water permits are required for the take of groundwater at location HYD-N004 This location is likely to be outside of any declared sub-artesian areas, and if so would not require a water permit or development permit. Similarly, for other proposed supply points outlined in section 10, as a rough observation, all supply points (other than possibly HYD-N001 to N003 and HYDN030-N033) appear to be outside of any declared sub-artesian areas.	The proposed water supply hydrant locations should be checked against boundaries of declared sub-artesian areas	Noted. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 ag	Water resources	Construction water supply	This section outlines details of each hydrant supply point. In each assessment, there is no mention of any nearby bores which may be affected by any proposed groundwater take. This should be included, and if no bores exist, this should be noted.	For each hydrant supply point, an assessment of any nearby bores which may be affected should be included. If there are bores identified nearby, an assessment of any water level drawdown impacts could also be included.	Noted. NGBR EIS Volume 2 Appendix H3 Water supply strategy Figure 4.9 included depiction of all GWDB registered bores within a 20 km buffer from the NGBR project EIS alignment (NB the buffer encompasses the vicinity of the NGBR Project realignment), including bore yield indications where known. The assessment requirements will be addressed in any future development applications.
45	DNRM	Agency	45 ah	Land use and tenure	Stock routes	The EIS states: One stock crossing (gazetted but not constructed), located at chainage 117.11 km, is proposed to be permanently closed. The Department has a no let loss and continued connectivity policy for the stock route network.	This closure must be accompanied by a reopening/realignment for that section of stock route, to be determined by discussions with the department and relevant local government	The statement in NGBR EIS Volume 1 Chapter 3 Land use and tenure Section 3.4.4 Stock route network: "Of these, one stock crossing (gazetted but not constructed), located at chainage 117.11 km, is proposed to be permanently closed." has since been identified by GHD and Adani to be erroneous. There is no gazetted stock route in this area, merely a local road reserve that is unconstructed. Volume 2 Appendix B Revised project description correctly identifies the crossing as an unconstructed road reserve. Due to minor realignments of the NGBR Project, the chainage of this crossing is now 116.6 km.
45	DNRM	Agency	45 ai	Land use and tenure	Stock routes	The EIS states: Potential delay times for vehicular stock movements are expected to be minimal and similar of a minor nature for movements of stock on foot. Unless delay times can be specific (Maximums stated) and mandated, expected delays are not a guarantee and the potential for increases in production that cause long delays and even prevent cattle crossing permanently are considered unacceptable- grade separated crossing prevent this occurrence.	As per our discussions to date with Adani representatives due to the potential for increasing production, the Department has a preference for grade separated crossings.	Adani had discussions with WRC on 9 August 2013 and gave a presentation about crossings (Local roads & stocks routes) due to NGBR and proposed treatments. On 30 October 2013, WRC confirmed that the Adani basic design for road crossings is consistent with Council's Development Manual. Adani also had discussion with IRC on 7 August 2013 and treatment of road crossings was discussed and tentatively agreed. Previous consultation with DNRM on the Carmichael Rail Line has resulted in the affected stock routes on that project being grade separated using a number of different options and compromises. Adani are aware that DNRM's preference is to grade separate all of the stock route crossings however this is not always practical as the height of the formation restricts the ability to grade separate. As such, the treatments detailed in the EIS are the base case scenarios and Adani will consult with DNRM, IRC and WRC to look at options in order to achieve the preferred grade separation as per the process that was carried out on the Carmichael Rail line.
45	DNRM	Agency	45 aj	Land use and tenure	Stock routes	Table 14-5 outlines the proponents proposed treatments for crossings of public roads, stock routes and road reserve crossings. The table indicates the proponents' preference for 'At-grade crossings' indicated for stock routes.	As per our listed discussions with Adani representatives, due to potential for increasing production, the Department has a preference for grade separated crossings.	Previous consultation with DNRM on the Carmichael Rail Line has resulted in the affected stock routes on that Project being grade separated using a number of different options and compromises. Adani are aware that DNRM's preference is to grade separate all of the stock route crossings however this is not always practical as the height of the formation restricts the ability to grade separate. As such, the treatments detailed in the EIS are the base case scenarios and Adani will consult with DNRM, IRC and WRC to look at options in order to achieve the preferred grade separation as per the process that was carried out on the Carmichael Rail line.
45	DNRM	Agency	45 b	Legislation and approvals		On 2 December 2013, a range of reforms to Queensland's vegetation management laws took effect, and vegetation clearing development applications will continue to be assessed against Module 8 (native vegetation clearing) of the State Development Assessment Provisions. NGBR Project is a project declared to be a coordinated project under the State Development and Public Works Organisation Act 1971, section 26, and it will be assessed against P02 of Table 8.1.3 & P01-P010 of Table 8.1.4 of Module 8 (native vegetation clearing) of the State Development Assessment Provisions (SDAP) version 1.1 (22 November 2013).	Amend the 5th paragraph (page 6-53) and Table 6-9 to reflect the changes to the vegetation management legislative reforms as detailed in the 'Issue' column.	The EIS referenced policies which were in effect at the time of writing. The changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 c	Legislation and approvals		On 2 December 2013, a range of reforms to Queensland's vegetation management laws took effect, including the provision of a new regulated vegetation management map (trigger map). While the Department agrees that 'the type of vegetation clearing application required is dependent on the nature of the vegetation to be cleared', this process begins with the trigger map. Only mapped Category A, Category B, Category C and Category R shown on the regulated vegetation management map will be assessed under this process. Any mapping errors or inaccurate mapping data of the regulated vegetation management map has to be resolved by PMAV process prior to lodgement of the application for the Development Approval to DNRM.	Amend the 9th paragraph to reflect the changes to the Vegetation reforms as detailed in the 'Issue' column.	The EIS referenced policies which were in effect at the time of writing. The changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 d	Legislation and approvals		On 2 December 2013, a range of reforms to Queensland's vegetation management laws took effect, and vegetation clearing development applications will continue to be assessed against Module 8 (native vegetation clearing) of the State Development Assessment Provisions. NGBR Project is a project declared to be a coordinated project under the State Development and Public Works Organisation Act 1971, section 26, and it will be assessed against P02 of Table 8.1.3 & P01-P010 of Table 8.1.4 of the Module 8 (native vegetation clearing) of the State Development Assessment Provisions (SOAP) version 1.1 (22 November 2013).	Amend the paragraph to reflect the outcomes as stated in Module 8 (native vegetation clearing) of the State Development Assessment Provisions (SDAP), version 1.1 (22 November 2013). These outcomes offer acceptable solutions for offsetting any impacts from clearing of vegetation.	The EIS referenced policies which were in effect at the time of writing. The changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals

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45	DNRM	Agency	45 e	Legislation and approvals	On 2 December 2013, a range of reforms to Queensland's vegetation management laws took effect, and vegetation clearing development applications will continue to be assessed against Module 8 (native vegetation clearing) of the State Development Assessment Provisions. Appendix A of Module 8 of the SDAP details the Policy for Vegetation Management Offsets.	Amend this section to reflect the Policy for Vegetation Management Offsets detailed at Appendix A of the Module 8 (native vegetation clearing) of the State Development Assessment Provisions (SDAP), version 1.1 (22 November 2013).	The EIS referenced policies which were in effect at the time of writing. The changes will be reflected in future development applications. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 f	Legislation and approvals	Data sources directly used in the production of this offsets strategy are outlined below: • Remnant Vegetation Cover Version 6.1 • High Value Regrowth Vegetation Version 2.1 • Survey and Mapping of Pre-clearing Vegetation Communities and Regional Ecosystems Version 6.1 On 2 December 2013, a range of reforms to Queensland's vegetation management laws took effect, including the provision of new regulated vegetation management maps. The data sources used for the production of the offsets strategy should be updated to reflect government policy.	The proponent must amend the offset strategy to reflect the current regulated vegetation management maps.	The EIS referenced policies which were in effect at the time of writing. Volume 2 Appendix E of the AEIS includes recalculated offset values based on the information available at the time of completing the AEIS. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 g		Queensland Government Environmental Offset Policy (QGEOP) (2008) -Policy for Vegetation Management Offsets Version 3 (PVMO) (2011) On 2 December 2013, a range of reforms to Queensland's vegetation management laws took effect, including the Policy for Vegetation Management Offsets in Appendix A of Module 8 of the SOAP.	The proponent should amend the dot point as follows: Queensland Government Environmental Offset Policy (2008) -Policy for Vegetation Management Offsets (Appendix A of the Module 8 of the SOAP, version 1.1, date 22 November 2013).	The EIS referenced policies which were in effect at the time of writing. Volume 2 Appendix E of the AEIS includes recalculated offset values based on the information available at the time of completing the AEIS. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 h		A summary of predicted impacts to threshold regional ecosystems is provided in Table 3.4. On 2 December 2013, a range of reforms to Queensland's vegetation management laws took effect, including removing the requirement for threshold regional ecosystems to be assessed in any development application or Environmental Impact Statement.	The proponent should note that assessment of threshold ecosystems are no longer required to be assessed under Module 8 of the SDAP, version 1.1, date 22 November 2013.	The EIS referenced policies which were in effect at the time of writing. Updated approvals material is provided in Volume 2 App J Revised legislation and approvals
45	DNRM	Agency	45 i	Project description	Quarries and borrow areas While the EIS provides indicative quantities of various construction materials required for the formulation of the rail line, the sources of this material is not specified. The Project Description- Overview section of the Executive Summary (page 4) states that "quarries and borrow pits within acceptable haulage distances will be required" and "the number and location of borrow pits will be investigated further during detailed design". Despite this no suitable quarries or borrow pits are identified or nominated. It is unclear if the proponent proposes to source sand locally via a Quarry Materials allocation notice (approval would be required by DNRM). The issues of suitable quarry locations and transportation to site were also identified in DNRM's comments on the draft ToR for this project, but appears to have not been addressed in the draft EIS.	Amend the EIS to include the location of quarries and borrow pits and transportation to site	Volume 1 Chapter 02 of the EIS identified the requirement for a number of quarry and borrow pit areas. Investigations in regard to quarries and borrow areas are ongoing and will be refined during the design phase. The development of the road impact assessment will include consideration of the transportation of quarry materials. Adani will secure all necessary development approvals, permits and licences associated with accessing quarry materials.
45	DNRM	Agency	45 j		The proposed rail corridor crosses Petroleum Pipeline Licence (PPL) 89 held by North Queensland Pipeline No 1 Pty Ltd. Volume 1 Section 3.4.2 of the EIS indicates the PPL holder was informed of the North Galilee Basin Rail Project and offered the "opportunity to discuss" that project. This approach is insufficient to satisfy the legislative requirements of the Petroleum and Gas (Production and Safety) Act 2004 which imposes requirements for consent of pipeline licence holders for activities on the pipeline land. Consideration of activities on the pipeline land would require compliance of sections 807 and 808 of the Petroleum and Gas (Production and Safety) Act 2004 which provides, respectively, that a person must not construct or place a structure on pipeline land without the prior consent of all the pipeline licence holders, and that a person must not change the surface of pipeline land without the prior consent of all the pipeline licence holders.	The proponent must show consent and/or detailed discussion with pipeline licence holders PPL 89, North Queensland Pipeline No 1 Pty Ltd, in accordance with the requirements of the Gas (production and safety) Act 2004.	Noted. Adani will ensure that consultation with the stakeholder meets the requirements of the Petroleum and Gas (Production and Safety) Act 2004.
45	DNRM	Agency	45 k	Land use and tenure	Resource deposits The summary of the entitlements of the various forms of mining tenure provided in the EIS appears to incorrectly state that a prospecting permit cannot be used to peg a mining lease for coal. Section 19(1)(c) of the Mineral Resources Act 1989 only prohibits the hand mining of coal - not the pegging of a mining lease for coal. A prospecting permit held by Adani was used to peg a mining lease which forms part of the Carmichael Coal Mine Project.	Amend the EIS to indicate that a prospecting permit entitles the holder to peg a mining lease for coal but does not allow the hand mining of coal.	Noted.
45	DNRM	Agency	45 l	Land use and tenure	Resource deposits The following tenure shown in Table 3-3 no longer exist for the reasons indicated: - EPC 1021 - Conarco Minerals Pty Ltd (tenure surrendered on 15/11/13) - EPM 16527- Drummond West Pty Ltd (application abandoned on 2/1/14) - EPM 25294- Kenex Pty Ltd (application abandoned on 28/11/13). The correct name of the holder of EPC 773 is Glencore Coal Queensland Pty Limited, not Xstrata Coal Queensland Pty Limited, as shown in the Table 3-3.	The tenure details depicted in the report require updating by deleting references to EPC 1021; EPM16527 and EPM 25294. The name of the holder of EPC 773 needs to be changed to Glencore Coal Queensland Pty Limited.	Noted. The changes in tenure occurred after the completion of the EIS. These changes will be reflected where relevant in any future development applications.
45	DNRM	Agency	45 m	Land use and tenure	Restricted area RA8 protects the Sutton River Dam from applications for mining tenures. While the railway runs through the RA8 it was unclear if the route (and associated bridges?) would prevent conflict with the full supply level (and any allowance for overflowing during floods). We note that DEWS and DNRM (Water) are the nominated referral entities and, as such, should be consulted in relation to the potential impact of the railway on the future dam site.	The proponent must consult with DNRM and DEWS over any intersection of the proposed rail line and the Sutton River dam site (RA8).	Noted. Adani will consult with DEWS and DNRM (Water) in regard to RA8. At the outset Adani expects similar conditioning to be applied to the NGBR Project with respect to RA8 as applied to the Alpha Coal Project: "should the rail line need to be relocated at some time in the future as a result of construction of the RA8 Dam-the proponent will contribute to the full costs of relocation". Volume 2 Appendix G Revised commitments reflects this commitment.
45	DNRM	Agency	45 n		The EIS correctly identified the exploration permits for coal, minerals and petroleum, as well as one petroleum pipeline licence in existence over or crossing the rail alignment at the time of compilation of the data. It appears that the holders of these tenures were not consulted during the EIS preparation and, as a consequence, the statement that "The NGBR Project final rail corridor does not cross and identified or known mineral resources" cannot be supported. The existence of coal prospectivity in the area south of the Bowen River, between the Sonoma mine and Jax and Drake mining proposals in the north and the Newlands mine and Byerwen mining proposal in the south should have been recognised, particularly as the GVK Hancock rail alignment had previously been over this same area and had been relocated to avoid conflict with coal resources identified by one current EPC holder. The NGBR proponent's consultants assessed open file data on exploration in this area, but this did not contain any material from the current holder's exploration programs as this information is currently not publicly available. In another section of the alignment, where it crosses exploration permits for minerals east of the Mount Carlton mine, a zone of assessed mineral prospectivity has been identified for priority follow up drilling. In this area, it is felt that a more suitable rail route could be found that avoids the prospective area and would appear to be superior from a topographical/engineering point of view as well	DNRM's view is that the State's interests are best served by aligning the NGBR corridor so as to avoid the coal resources identified in this area. A route that follows largely the existing rail alignment (Newlands line) and the GVK Hancock corridor in this section of track, is seen as the better option. Discussions facilitated by DSDIP and DNRM between the NGBR proponent and relevant EPC holders have been successful in identifying an alignment that is acceptable to all above parties and minimises the potential impacts on coal resources in the area. DNRM has facilitated a meeting between Adani and the EPM holder but no agreement on an approach to achieve DNRM's preferred outcome was reached. DNRM recommends that this matter be given further consideration by Adani before the EIS is finally approved.	Adani confirms it has discussed potential realignment options with DNRM, DSDIP and affected tenement holders, namely Q Coal and Glencore. In addition, Adani has received written confirmation from Q Coal on 3 February 2014 that the proposed realignment is acceptable. The same realignment plan has been provided in the Q Coal submission (Submission 40) which affirms common understanding on the realignment. Adani, DNRM, DSDIP and Q Coal agreed to the realignment of the NGBR Project to minimise the impact on coal sterilisation of the Moranbah Coal Measures. Similarly, Glencore also provided a submission (Submission 34) on the NGBR Project EIS to the effect that its preference was for realignment consistent with the realignment option agreed to by Q Coal. Adani acknowledges DNRM and DSDIP's ongoing facilitation in order to achieve this outcome. The NGBR Project realignment has been closely aligned with the existing Aurizon brownfield rail infrastructure (namely the Northern Missing Link and Newlands line), following a corridor consistent with that proposed for the already approved Alpha Coal Project railway, in order to minimise impacts on affected landholders and tenement holders - and thereby potential sterilisation of economically viable resources. An assessment of the NGBR Project realignment is provided as Volume 2 Appendix C NGBR Project realignment report.

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45	DNRM	Agency	45 o	Topography, geology and soils	Strategic cropping land	The EIS identifies 26 parcels of potential Strategic Cropping Land (SCL) within the rail and ancillary infrastructure corridors. These parcels of potential SCL are, according to the EIS, located within ten properties spread across the Western Cropping and Coastal Queensland zones, within the SCL Management Area. Under the Strategic Cropping Land Act 2011 (SCL Act), potential SCL can only be decided as being Non-SCL on the basis of a SCL validation application. To date no validation application pertaining to the subject parcels of land has been lodged with DNRM. Hence any assertion that these areas of potential SCL should or would be Non-SCL is entirely speculative- particularly given that the evidence of non-compliance with the SCL zonal criteria and cropping history test provided in the EIS would not satisfy the requirements for a validation application. This lack of evidence includes whether the ten properties mentioned in the EIS constitute properties as defined in s46 and s47 of the SCL Act. A Protection decision is not the appropriate approval required for the rail line. Protection Decisions are only relevant to resource activities under a resource tenure. The issue of pre-empting of SCL validation decisions is further compounded by the EIS claiming 'that nine of the ten properties fail the HOC analysis [SCL cropping history test]'. The proponent should note that the 2013 review of the SCL Act recommended that cropping history test no longer be the basis for deciding whether land was or was not SCL, so this option may or may not be available for future validation decisions.	Reword section 5.3.5 of the EIS to acknowledge that there are 26 parcels of potential SCL within the rail and infrastructure corridors, removing any discussion that could be seen to pre-empt any decisions that might be made as to whether this land is or is not SCL. As the rail corridor will not be a resource tenure, a protection decision or compliance certificate is not the appropriate SCL approval. If the corridor happens to become a State Development area, then it may be excluded from any SCL requirements under section 6 of the SCL Act. In that case validation or other SCL applications would not be required. If the corridor does not become a SDA, and the development requires an MCU under the relevant planning scheme/s, the application will likely trigger assessment under the State Development Assessment Provisions for SCL. Note, in this case any validation decisions resulting in land validated as non-SCL will need to be in effect prior to lodging the MCU application to avoid being triggered for SCL for those areas.	Noted. These changes will be noted where relevant in future development applications.
45	DNRM	Agency	45 p	Topography, geology and soils	strategic cropping land	Currently the SCL framework is being reviewed to improve its effectiveness and to align with the statutory regional planning processes to protect priority agricultural land and streamline legislation. The proponent should also note, the Regional Planning Interests Bill 2013 was introduced in Parliament on 20 November 2013. The bill integrates the policy objectives of the SCL Act by identifying strategic cropping land as areas of regional interest. The commencement of the bill will repeal of the SCL Act.	The advice given in relation to SCL is based on the current framework and may change as a result of the review and subsequent reforms to the SCL framework. Please note, there is an intent from the Queensland Government to remove SCL triggers associated with development subject to the Sustainable Planning Act 2009. It is currently unknown when these changes will take effect. A report summarising the review of the SCL framework has been released and is available on the DNRM website.	Current changes in the assessment of SCL are noted and will be reflected in future development applications as required.
45	DNRM	Agency	45 q	Water resources	Construction water supply	The information on construction water demand provides no indication of the total volume of water required for construction. The requirements indicated in each of the dot points the text do not seem to match the cumulative water use shown in Figure 2-6.	It is requested the proponent provide additional information in the text and clarify the information provided in Figure 2-6. The proponent is requested to provide estimates of total volumes required during construction for items listed in section 2.4.4 including additional construction water requirements in the second list of dot points.	Figure 2-6 (Volume 1 Chapter 2) provides an indicative demand curve for total water supply volumes throughout construction - as a blue line. The total demand indicated on that figure is 4.5 GL for the entire construction period. Constructability analysis and planning, including the calculation of final total water demand for construction, will form part of detailed design which is ongoing. Adani will provide DNRM with further indicative total construction water supply volumes prior lodgement of future development applications.
45	DNRM	Agency	45 r	Water resources	Approvals	The EIS states: Any riverine protection permits required under the Water Act 2000 will be obtained for the construction of watercourse structures (refer Chapter 20 Legislation and approvals) which will also ensure that potential water quality impacts to downstream water users are minimised. Please note that new Riverine protection permit exemption requirements outline when it is permitted to excavate or place fill in a watercourse, lake or spring without the need for a riverine protection permit, in accordance with section 814 of the Water Act 2000. If any proposed activity cannot be undertaken in accordance with the exemption requirements, a riverine protection permit may be required. The Riverine protection permit exemption requirements can be found at http://www.nrm.qld.gov.au/water/management/QdfrQQ-exemQdfrQQ . Section 2.4 states the holder of an environmental authority (for a resource activity) under the Environmental Protection Act 1994 or a mineral development licence or mining lease under the Mineral Resources Act 1989 can use the exemption requirements and the construction of infrastructure can be completed using the exemption requirements.	The proponent to note the exemption requirements that may apply to the proponent for excavation or placing fill in a watercourse, lake or spring without the need for a HPP under the Water Act 2000.	Noted. The exemption requirements will be considered in the assessment of future development application requirements.
45	DNRM	Agency	45 r	Water resources	Approvals	The EIS states: The Water Resource (Burdekin Basin) Plan 2007 applies to the NGBR Project as it is located within the Burdekin Basin. The portion of the project within the Plan area only needs to comply with the Water Resource (Burdekin Basin) Plan 2007.	The proponent to note that the provisions of the Water Resource (Burdekin Basin) Plan 2007 only apply to the portion of the project located within the Plan area.	Noted.
45	DNRM	Agency	45 s	Water resources	Approvals	Table 9-9 Mitigation and management measures states: Appropriate permits and/or licences will be obtained for all water required during construction, including groundwater abstraction, overland flow harvesting, in-stream and off-stream storages. In addition, appropriate permits for operational works that affect waterways will be obtained for all waterways to be affected during construction.	Amend the EIS to identify that water permits would usually be used for the supply of water for activities with a reasonably foreseeable conclusion date (e.g. construction water supply).	Noted. Amended text has been included in the AEIS where necessary.
45	DNRM	Agency	45 t	Water resources	Approvals	Table 9-9 Mitigation and management measures states: Appropriate permits and/or licences will be obtained for all water required during construction, including groundwater abstraction, overland flow harvesting, in-stream and off-stream storages. In addition, appropriate permits for operational works that affect waterways will be obtained for all waterways to be affected during construction.	The proponent should note that works that affect waterways (such as any proposed construction of in stream storages) within the Water Resource (Burdekin Basin) Plan 2007 area must comply with the Plan.	Noted. Adani will obtain all necessary development permits prior to commencement of any construction works.
45	DNRM	Agency	45 u	Water resources	Approvals	The EIS states that riverine protection permits may be required for the destruction of vegetation. The proponent should note that changes to the Water Act 2000 have removed the riverine protection permit provision for destroying vegetation in a watercourse. The Water Regulation 2002 has also been amended to remove the exemption for this provision and to amalgamate the excavation and placement of fill exemptions into one section (section 50).	The proponent to note that changes have been made to the requirements for riverine protection permits under the Water Act 2000.	Noted. These changes will be noted where relevant in future development applications.
45	DNRM	Agency	45 v	Water resources	Approvals	The EIS states: Smaller drainage lines are to be re-directed with longitudinal drainage lines along the NGBR Project final rail corridor; a water licence will be required for the proposed interference with overland flow. The proponent should note that diverting overland flow does not require a water licence. However, the diversion of flow in a watercourse as defined under the Water Act 2000, requires a licence under the Water Act 2000.	The proponent should note that diverting overland flow does not require a water licence. However, the diversion of flow in a watercourse as defined under the Water Act 2000, requires a licence under the Water Act 2000.	Noted. Any diversions of watercourses will be discussed with DNRM and relevant development permits sought prior to construction.
45	DNRM	Agency	45 w	Water resources	Stream diversions	Table 3.1 Waterway Crossing Classification identifies nine minor waterways requiring diversion, another six waterways with "diversions in cuttings" and shows 196 watercourses identified that will be subject to provisions of the Water Act 2000. The nine crossings in the table in Appendix C: Waterway Crossings Register of Appendix H2 with information on flow direction (for diversions) have a stream order of 1 and have small catchment areas (less than 1 sq. km). As only watercourses as defined under the Water Act 2000 require water licences for interference with flow, it is recommended that the proponent discuss any potential diversions of watercourses (as identified during the desktop study for Appendix H2) with DNRM to identify whether a request for watercourse determination is required to be made to the department.	A Water Licence for the interference with flow in a watercourse is only required for watercourses as defined under the Water Act 2000 that are determined by an authorised officer under the Water Act 2000. It is recommended that the proponent discuss any potential diversions of watercourses (as identified during the desktop study for Appendix H2) with DNRM to identify whether a request for watercourse determination is required to be made to the department.	Noted. Adani will consult with DNRM regarding watercourse determinations.

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45	DNRM	Agency	45 x	Water resources		<p>The proponent should note the following general comments in relation to this appendix and elsewhere throughout the EIS:</p> <ul style="list-style-type: none"> The project is not entirely within the Water Resource (Burdekin Basin) Plan 2007 area The Water Resource (Burdekin Basin) Plan 2007 sets out the regulatory provisions associated with the interference of watercourses by impoundment. The use of the word "pond" is confusing as it is applied to both in stream and offstream storages. Also the approvals for the proposed take from existing offstream storages will depend if water is captured overland flow or taken from a watercourse under an existing authorisation. The use of overland flow water taken from existing storages is not restricted to any lot on plan. The capture of overland flow in the Burdekin Basin can only be taken under the provisions of the Water Resource (Burdekin Basin) Plan 2007. Any proposed storage to capture overland flow with a volume greater than 250ML will require a water licence. Proposed offstream storages with flow channelled into a storage or the construction of wet wells may constitute interference with flow in a watercourse and may require a water licence. In addition, the take of water may require a water licence. The take of water from the Bowen Broken Water Supply Scheme is not authorised by DNRM as the water scheme operator is Sunwater. Water licence applications for the take of water will have to meet the provisions of the Water Resource (Burdekin Basin) Plan 2007 and the Burdekin Basin Resource Operations Plan 2009 within the area covered by the plans. 	<p>General comments should be noted by the proponent and the documents in the EIS should be updated in all relevant locations including the approvals flowcharts in appendix H3.</p> <p>The proponent can contact Water Management in Central Region for further details about approvals or to request a meeting to discuss water related approvals on 1800 822 100.</p>	<p>Noted. These changes will be noted where relevant in future development applications.</p>
45	DNRM	Agency	45 y	Water resources		<p>There are a number of sections within the report which uses terminology that are not used in the Queensland regulatory framework for the management of groundwater.</p> <ul style="list-style-type: none"> Chapter 09 Water Resources, Section 9.3.5, page 9-20 and pg 9-21; Appendix H1 Water Resources, Section 3.5.4, page 40 to 42 Executive Summary pg ii, second paragraph <p>An example of this is the use of the term 'unincorporated area' which appears to be taken from terminology used to describe reporting areas in the National Land and Resources Audit 2007 (Also quoted in Hancock Prospecting Alpha Coal Rail EIS in 2010). In Queensland, sub-artesian groundwater is managed through either Water Resource Plans, a Sub-artesian Area under the Water Regulation 2002, or through a Wild River Declaration. The use of terminology such as the Don River, Yarraman and Bowen unincorporated areas creates unnecessary confusion in regards to regulatory requirements. Also the use of "Don River GMU" appears to also be terminology used by the NLRA to describe the Bowen declared Subartesian Area. The regulation of sub-artesian water in the area traversed by the rail corridor is summed up better by the paragraphs headed "Water Regulation 2002" to "Bowen Declared Subartesian Area" on pages 9-21 and 9-22.</p>	<p>The following changes are suggested to paragraphs in Chapter 09 page 9-20, and similar paragraphs in Appendix H2 pg 40-42.</p> <p>A groundwater area is an area identified in the Water Regulation 2002, a water resource plan or a wild river declaration within which management requirements for groundwater exist. In Queensland groundwater areas are referred to in various ways under subordinate legislation such as subartesian areas identified in the Water Regulation 2002 and, groundwater management areas (GMAs) identified in a water resource plan, groundwater management units (GMUs) and unincorporated areas (UAs).</p> <p>A GMU is a hydraulically connected groundwater system that is actively managed. UAs are all groundwater resources that are not part of GMUs and which have no requirements for allocations of groundwater abstraction for livestock or domestic use. Subartesian areas are areas where water that occurs naturally in an aquifer, which if tapped by a bore, would not flow naturally to the surface. If data used in the National Land and Water Audit is to be retained, it is suggested that relevant sections be rewritten to differentiate between regulatory regimes as identified above, and areas merely used for other reporting purposes, such as "un-incorporated areas" used by the National Land and Water Audit</p>	<p>Noted. These changes have been reflected in the AEIS documentation.</p> <p>Updated approvals material is provided in Volume 2 App J Revised legislation and approvals</p>
45	DNRM	Agency	45 z	Nature conservation	Groundwater dependent ecosystems	<p>The scale of the figures showing potential groundwater dependent ecosystems is such that some detail is not clear (Figure 3.9 Appendix HZ; and Figure 9-7 Chapter 09)</p>	<p>It is recommended that a number of better scaled figures be used to zoom in on potential GDE areas traversed by the rail corridor</p>	<p>Noted. The scale of mapping provided in the EIS is considered appropriate to the level of detail in the underlying data presented.</p> <p>A comprehensive survey of the ecological values of the final rail corridor will be undertaken to:</p> <ul style="list-style-type: none"> Confirm state significant biodiversity values under the relevant offset policies Confirm the extent of matters of national environmental significance, including threatened ecological communities and potential habitat for species listed under the Environment Protection and Biodiversity Conservation Act 1999 Confirm the extent and condition of regional biodiversity corridors within the final rail corridors Confirm the extent of watercourse vegetation Complete biocondition assessment of confirmed state significant biodiversity values or matters of national environmental significance Determine likely extent of potential groundwater dependent ecosystems. <p>The findings of the comprehensive survey of ecological values will be provided to the Department of Environment and Heritage Protection and the Department of the Environment.</p> <p>The comprehensive survey of ecological values will inform the development of the environmental management plan, the final offset package, subsequent vegetation clearing applications and associated property maps of assessable vegetation.</p> <p>Volume 2 Appendix G Revised commitments and Volume 2 Appendix H Revised EMP framework reflects the commitment for a comprehensive survey of ecological values.</p>
46	Mackay Regional Council	Agency	46 a	Social and economics	Employment	<p>Mackay Regional Council recognises the positive economic impacts from the NGBR Project and the potential for support services and employment in the wider Mackay, Isaac and Whitsunday region. Mackay Regional Council's interest regarding the NGBR Project is the degree to which employment and services will be sourced from the Mackay region. Mackay Regional Council recognises that a majority of benefits would accrue to the areas geographically closer to the rail line corridor - described as 'key urban localities' in the EIS, namely Bowen, Collinsville and Moranbah.</p>		<p>Noted.</p>
46	Mackay Regional Council	Agency	46 b	Social and economics	Construction workforce	<p>The predominantly fly-in-fly-out construction workforce (as stated in the EIS) has a limiting factor on Mackay's local economic sustainability and future community development within the wider Mackay, Isaac and Whitsunday region. Council is not supportive of a proposal which would result in a predominantly fly-in-fly-out workforce. Although the current proposal refers to "predominantly fly-in-fly-out construction workforce", Council submits that the proposal will be improved by allowing greater flexibility in the place of residence of the workforce.</p>		<p>The EIS presents an estimated proportion of FIFO versus DIDO workforce requirements including the sourcing (and training) of approximately 20% of the peak workforce from the local region. Whilst this case is presented in the EIS as a best estimate of the likely proportion of local/regional employment, the assessment does not limit the potential for flexibility in relation to origins of the workforce. In addition, the EIS presents Adani's commitment to undertaking initiatives to build capacity for local and regional business.</p> <p>Adani is committed to ongoing consultation with various representatives in each of the Mackay, Isaac and Whitsunday Regional Councils during development of the NGBR Project.</p>