

Submission on the environmental impact statement (EIS)—North Galilee Basin Rail Project

Submissions close at **5pm on Tuesday 11 February 2014**

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Note: Under section 1570 of the SDPWO Act, it is an offence to give the Coordinator-General a document that contains information known to be false or misleading.

Section of EIS	Describe the issue	Suggested solution
Entire EIS	<p>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.</p> <p>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.</p> <p>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.</p>	<p>Review the EIS and correct all incorrect aspects so the Coordinator General and Federal Minister are provided with an accurate document.</p> <p>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.</p>
Section 3.1: Environmental record in Australia and internationally	<p>The EIS requires an outline of the environmental record of the proponent. While the proponent including its parent companies may not have at this time, been charged with an offence related to the environment in Australia, publically available evidence and reports shows that the environmental record of the proponent’s parent company in its home country of India is less than satisfactory. Adani as the parent company has been found guilty of numerous offences in relation to the environment and the information contained within the current EIS is clearly incorrect.</p> <p>For example, in 2012, Gujarat courts found that Adani had illegally constructed an intake channel for its power station at Mundra on private and</p>	<p>The EIS should fully disclose all matters related to Adani’s companies in both Australia and internationally. Adani has businesses in numerous countries and mining operations as an example, in Dubai, India, Indonesia, Thailand and Australia. The EIS must disclose all information as to Adani’s conduct (including but not limited to Adani Enterprises Ltd and all subsidiaries and associated entities/companies) as to their environmental record in all countries in the EIS including all convictions and pending charges before the Courts in these countries.</p>

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	<p>government land. The company was ordered to compensate the individual on whose land the illegal construction had occurred. In another 2012 judgement, the Gujarat High Court found that construction was occurring inside an Adani Special Economic Zone (SEZ) at Mundra even though the SEZ had not received environmental approval (an Environmental Clearance from the central government of India). Adani was found to have contracts with tenants within the SEZ for rent and maintenance charges for providing infrastructural facilities despite having no permission to build infrastructure in the SEZ.</p> <p>Over the past six years, Adani have been the subject of a number of court cases alleging that mass clearances of mangroves have occurred at the Mundra site. According to reports, in 2010, the Indian Ministry of Environment and Forests inspected Adani's port and special economic zone at Mundra. The environmental approvals for the development explicitly stated that no "existing mangroves shall be destroyed during construction/operation of project" and forbid the filling up and reclamation of creeks. Despite this, officials found multiple violations of these approvals including:</p> <ul style="list-style-type: none"> • Large scale reclamation using dredged material had been carried out on mangrove areas at the site; • Pipelines associated with dredging had obstructed tidal flows to mangroves resulting in them drying up; • The large scale destruction of mangroves had occurred; and • Creeks systems and the natural flow of seawater was being obstructed by reclamation along the creeks. <p>Since the 2010 inspection, and despite court orders ordering Adani to not clear mangroves, complaints and allegations against the company continue to be aired in Gujarat's courts.</p> <p>Adani was also investigated last year by the Indian Ministry of Commerce and Industry after prima facie evidence indicated that the company had "deliberately concealed and falsified material facts" when applying for a 1,840 hectare SEZ in Mundra¹⁴. The Ministry found that the SEZ did not comply</p>	

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	<p>with various required conditions and, in October 2012, cancelled the SEZ15.</p> <p>Clearly, all of these matters should be not only made public, but as it required by the relevant decision-maker, should be considered as significant, enough so to refuse the proponent an approval for the clear disregard and what could even be considered a deliberate attempt to mislead the decision maker. This failure in the non-disclosure of the environmental record of the company and its other entities also raises significant concerns as to accuracy of the entire EIS and deems that any decision-maker should be extremely wary of granting an approval to a company with such a terrible environmental record.</p>	
Section 4: Project Description	<p>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? There is a broad reference to Waratah Coal’s China First Project; however nothing is stipulated as to commercial arrangements. 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.</p> <p>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.</p> <p>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</p>	<p>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.</p> <p>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 EPBC2012/6240. 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.</p> <p>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</p>

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	<p>native fauna. Research has suggested that barbed wire is not appropriate in a rural setting to restrict fauna movement.</p> <p>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.</p>	<p>barbed wire fence as it would not be within their knowledge and therefore something they could be found liable and guilty of under the <i>Environment Protection and Biodiversity Conservation Act</i> and <i>Nature Conservation Act 1992</i>.</p> <p>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.</p>
<p>Section 5.1: Climate and natural hazards and Section 7: Hazards and Risks</p>	<p>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).</p> <p>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.</p> <p>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.</p> <p>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</p>	<p>The EIS should be required to properly assess risks rather than the broad sweeping statements that are made throughout the document. 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.</p> <p>The EIS should use the same data as that used for example, the air quality chapter within the Hazards chapter. 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 (eg derailments as a result of flooding and/or debris on the tracks following a cyclone).</p>

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	<p>on rail lines (eg it is noted that trains are unable to run on the Melbourne rail network on days where the temperature is over 35oC). It should also include an evaluation of the potential risks of an increased number and intensity of storm events (eg 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.</p>	
<p>Section 5.1.1: Flood Mapping</p>	<p>The ToR requires the EIS to include a <i>desktop assessment of the rail line and surrounding catchments and the potential for flooding qualitatively described. The desktop assessment must also identify any high-risk watercourse crossing or floodplain locations that warrant further detailed quantitative assessment. For these locations, a comprehensive flood study must be included in the EIS that includes:</i></p> <ul style="list-style-type: none"> • <i>quantification of flood impacts on properties surrounding and external to the project site from redirection or concentration of flows</i> • <i>identification of likely increased flood levels, increased flow velocities or increased time of flood inundation as a result of the development.</i> <p>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.</p>	<p>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.</p>
<p>Section 5.2.3: Topography, geology and soils</p>	<p>The ToR for the EIS states that a <i>desktop assessment should be undertaken to identify potential areas of acid sulfate soils.</i> The ToR for the EIS then states that <i>where potential areas are identified, further investigations including field surveys should be undertaken in accordance with state planning policies and accepted industry guidelines.</i></p> <p>The EIS states that it has identified areas of actual or potential acid sulfate soils in the coastal areas of the corridor. However, as seems to be the norm throughout the EIS, no surveys or field investigations have been undertaken <i>in accordance with state planning policies and accepted industry guidelines.</i></p>	<p>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.</p>

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	<p>As with flora and fauna surveys as will be highlighted below, the EIS fails to comply with the ToR as it has not undertaken the relevant field investigations of actual or potential acid sulfate soils in the coastal areas.</p>	
<p>Section 5.4: Nature Conservation</p>	<p>The EIS requires Adani to undertake surveys in areas identified as key ecological areas during the desktop assessment. The ToR requires that the surveys must identify the existing flora and fauna values and the regional ecosystem associations that incorporate these values. The survey effort should be sufficient to identify, or adequately extrapolate, the floral and faunal values over the range of seasons, particularly during and following a wet season. The survey should account for the ephemeral nature of watercourses traversing the proposal area, and seasonal variation in fauna populations.</p> <p>The EIS is clear that it has failed to undertake this work. The EIS states that Adani for example, 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 what surveys have been undertaken were not taken to evaluate seasonal variation, where extremely short in relation to adequacy (eg 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. As an example, the surveys do not comply with the <i>Environment Protection and Biodiversity Conservation Act 1999</i> Policy Statement 3.21 (Significant impact guidelines for 36 migratory shorebird species) nor do they comply with Survey guidelines for Australia's threatened reptiles: Guidelines for detecting reptiles listed as threatened under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (2011). On this basis alone, the EIS cannot be accepted as being adequate.</p> <p>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.</p> <p>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</p>	<p>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.</p> <p>Re offsets, Adani should be required to, following the baseline surveys, correctly calculate any required offset.</p>

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	<p>relates to mapping; however, as no ground truthing has been undertaken and therefore no baseline data collected, no approval should be granted until exact offsets have been calculated. This is replicated in section 7.15.3.1. 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.</p>	
<p>Section 5.4.1: Sensitive Environmental Areas and Section 5.4.2: Terrestrial Flora</p>	<p>The ToR for the EIS requires Adani to <i>provide vegetation mapping for all relevant project sites, and for adjacent areas to illustrate interconnectivity. Mapping should also illustrate any larger scale interconnections between areas of remnant or regrowth vegetation where the project site includes a corridor connecting those other areas. Discuss any variances between site mapping and mapping produced by the Queensland Herbarium.</i></p> <p>The ToR for the EIS requires Adani to <i>highlight sensitive or important vegetation types, including any marine littoral and subtidal zone and riparian vegetation, and their value as habitat for fauna and conservation of specific rare floral and faunal assemblages or community types.</i> Further, the ToR for the EIS requires Adani to <i>For each significant natural vegetation community likely to be impacted by the project, vegetation surveys should be undertaken at an appropriate number of sites, allowing for seasonal factors, and satisfy the following:</i></p> <ul style="list-style-type: none"> • <i>the relevant regional vegetation management codes</i> • <i>site data should be recorded in a form compatible with the Queensland Herbarium CORVEG database and HERBRECS</i> • <i>the minimum site size should be 10 × 50 metres</i> • <i>a complete list of species present at each site should be recorded</i> • <i>the surveys to include species structure, assemblage, diversity and abundance</i> • <i>the relative abundance of plant species present to be recorded</i> 	<p>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.</p> <p>The submitter also replies on the additional information provided above.</p>

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	<ul style="list-style-type: none"> • any plant species of conservation, cultural, commercial or recreational significance to be identified • specimens of species listed as protected plants under the Nature Conservation (Wildlife) Regulation, other than common species, are to be submitted to the Queensland Herbarium for identification • the methodology in <i>Biocondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland: Assessment Manual (version 2.1)</i> (Eyre et al. 2011) and <i>Ecological Equivalence Methodology Guidelines (version 1)</i> (Department of Environment and Resource Management 2011a) for sites possibly requiring offset considerations under the <i>Policy for Vegetation Management Offsets (version 3)</i> (Department of Environment and Resource Management 2011b) or <i>Queensland Biodiversity Offset Policy (version 1)</i> (Department of Environment and Resource Management 2011c). <p>It is clear from the information contained within the EIS that the ToR has not been complied with. 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.</p>	
Section 5.4.3: Terrestrial Fauna	<p>The ToR requires Adani to undertake fauna surveys in accordance with the Terrestrial Vertebrate Fauna Survey Assessment Guidelines for Queensland (Eyre et al. 2012). The ToR requires Adani to <i>indicate how well any affected communities are represented and protected elsewhere in the bio-region where the project occurs.</i></p> <p>The EPBC component of the EIS also requires that the EIS comply with relevant Guidelines and Policy Statements for the undertaking of fauna surveys.</p> <p>As highlighted above in Section 5.4, the EIS is clear that it has failed to undertake this work. The EIS states that Adani for example, makes a commitment to undertake baseline surveys (the minimum that would be</p>	<p>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 Sutor 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.</p> <p>The submitter also replies on the additional information provided</p>

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	<p>expected in an EIS) post the granting of an approval and prior to construction. This is totally inadequate. 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.</p> <p>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.</p> <p>The Abbot Point Cumulative Impact Assessment 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 Cumulative Impact Assessment and BAAM report. The EIS also does not replicate the information from the Abbot Point Cumulative Impact Assessment. As an example, the EIS states that the Australian Painted Snipe is <i>likely to occur</i> when the Abbot Point Cumulative Impact Assessment clearly demonstrated that is <i>known to occur</i>. The misrepresentation of information throughout the EIS is consistent with this example and is very concerning.</p> <p>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</p>	<p>above.</p>

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	<p>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. This failing is consistent with Greenpeace's submission on the Carmichael Mine EIS that demonstrated that appropriate mapping had not been undertaken of Black Throated Finch habitat and the same is true in this EIS. The same is true in relation to the Squatter Pigeon as to the failure to provide accurate surveys and mapping.</p> <p>The failure to include this information and moreover, to not properly assess the habitat through appropriate surveys demonstrates that the EIS is not adequate.</p>	
<p>Section 5.4.2: Aquatic Ecology</p>	<p>The ToR requires Adani to describe <i>any wetlands listed by DEHP as areas of national, state or regional significance and detail their values and importance for aquatic flora and fauna species.</i></p> <p>As highlighted above, the EIS does not provide adequate information on the existing environment and therefore the potential impacts of the project on for example, the Caley Valley Wetland. For example, section surveys have not been undertaken consistent with the EPBC Policy Statement 3.2.1. As highlighted above, the EIS is not consistent in relation to the information that has previously been collected for migratory species at Abbot Point The Abbot Point Cumulative Impact Assessment 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 Cumulative Impact Assessment.</p> <p>More importantly, 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 Cumulative Impact Assessment 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.</p>	<p>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.</p>

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Section 5.5: Water Resources	<p>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.</p> <p>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.</p> <p>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.</p>	<p>Adani should be required to undertake water quality sampling across the entire corridor during both the wet and dry seasons.</p> <p>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.</p>
Section 5.6: Air Quality	<p>The EIS is required to describe the existing air quality that may be affected by the project. In doing so, the ToR requires the EIS to <i>discuss the existing local and regional air shed environment, including:</i></p> <ul style="list-style-type: none"> • <i>background levels and sources of particulates</i> • <i>any pollutants (including greenhouse gases)</i> • <i>any baseline monitoring results, sensitive receptors.</i> <p><i>Data on local meteorology and ambient levels of pollutants should be gathered to provide a baseline for later studies.</i></p>	<p>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.</p> <p>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</p>

Section of EIS	Describe the issue	Suggested solution
	<p>There are a number of major concerns with this section of the EIS. Firstly, 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.</p> <p>Secondly, regarding the modelling that has been undertaken, there are concerns as to the use of data from the Bureau of Meteorology and that 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.</p>	<p>human and animal health.</p>
<p>Section 8: Cumulative Impacts</p>	<p>The ToR states that the EIS is required to <i>summarise the project's cumulative impacts and describe these impacts in combination with those of existing or proposed project(s) publicly known or advised by the office of the Coordinator-General to be in the region, to the greatest extent practicable.</i> The ToR further states that Adani must <i>assess cumulative impacts with respect to both geographic location and environmental values. In particular, address cumulative impacts in sensitive environmental areas identified in section 5.4.1 of this TOR. Explain the methodology used to determine the cumulative impacts of the project, detailing the range of variables considered (including relevant baseline or other criteria upon which the cumulative aspects of the project have been assessed, where applicable).</i></p> <p>There are fatal flaws in the current cumulative impact assessment as it is totally deficient and does not in any way 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.</p>	<p>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 (eg 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.</p> <p>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.</p>

Section of EIS	Describe the issue	Suggested solution
	<p>Adani was involved in the preparation of the Abbot Point Cumulative Impact Assessment which is what the public expect now as the standard for this section of an EIS. While we do not feel it was perfect, it was a major step towards what should be done when undertaking the cumulative impact assessment component of an EIS. Should this not be appropriate, the International Finance Corporation for example has recently released the <i>“Good Practice Handbook: Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets”</i> that could have been referred to when undertaking the cumulative impact assessment</p> <p>The EIS includes projects in the cumulative impact assessment that are no longer relevant. As an example, we understand that BHP has withdrawn its referral for Terminal 2 at the Port of Abbot Point from the Federal Government in October 2013. Secondly, it is extremely concerning that within the cumulative impact assessment chapter of the EIS, various projects are included and then 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 Cumulative Impact Assessment and more importantly, other sections of the EIS, thereby demonstrating the issues raised in the first section of this submission as to inconsistencies etc.</p> <p>The cumulative impact assessment 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 cumulative impact assessment 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. On this basis, it is somewhat concerning that the EIS then makes extremely broad sweeping statements that the project, in association with other projects, will not have an impact on the environment. Without adequate data and the appropriate modelling, these statements are fatally flawed.</p>	