

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
	1-b) Land loss due to noise pollution: The complaint elaborates further on the land loss due to wind turbine noise. Referring to phase one extension project EIA, it is stated that the noise generated from the wind turbines will disperse up to a distance of 300m losing approximately 70 acres of land (perhaps referring to land area that could otherwise be occupied by the people) showing the severity of loss of (habitable) lands due to all wind farm projects. 1-c) Land limitation in Mannar island: As Mannar is a low-lying area prone to inundation only a limited extent of land is available for human settlements. The proposed 250 MW wind project EIA has failed to address this critical aspect highlighting the need for further impact evaluation on cumulative, different dimensions and long- term impacts.	1-b) Land loss due to noise pollution: In the present EIA the noise analysis (Conducted by ITI which is an accredited government institute) shows that (Refer Table 4-5) only in 8 turbines there is a marginal noise exceedance (equal and above reference level 45 DB for night time, the noise levels at the 8 turbine locations are between 45 – 47 dB) and the exceedance is for night time noise only. Even this result has been obtained, without considering background noise and barrier effects induced by terrain characters such as the presence of trees and buildings (partial barrier effects). With these additional barrier effects, the net noise impact on sensitive receptors will be further reduced. Please refer sections 5.4.4.4 and 5.4.4.5 of the EIA report). As mentioned in the EIA report any complaints due to noise arising after project commencement will be addressed on a case-by-case basis through noise measurements and adoption of further mitigation measures as required. 1-c) Land limitation in Mannar island: Most of the turbines are in flood risk areas which are currently open areas and areas with natural vegetation. - Only three turbines are to be sited within 300m from settlements. - Although cumulative impact assessment with reference to other projects is not under the scope of the ToR of this EIA, the present project has taken maximum effort to minimize the impact, by completely avoiding the placement of towers in human settlements areas, allowing a sufficient buffer between the wind turbines and the settlements. - Human settlements may be implemented within about 200m from each turbine, as there will not be significant noise impact within 200m according to the present studies. However, such impacts should be site specifically assessed. Other co-benefits the project would deliver to the Mannar Island if the land around the turbine area is left undeveloped. Currently increased developmental activities and expansion of settlements have led to environmental degradation in the Mannar Island. Such developmental activities will continue at

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
		the same pace or greater pace as much of the area is under private ownership. Setting aside areas for the project and land acquisition will mean that some lands could be protected, and natural regeneration allowed to occur. Therefore, the overall impact of the wind project will be much lower than if the lands are released for human settlements and for infrastructure.
	2-Loss of Palmyra trees: for 250MW 52 turbine wind power project 9237 palmyra trees and 260 coconut trees are to be cut, with additional 8,822 trees at risk of being lost in the soft land area, each tree can generate 10,000 LKR annually, resulting an estimated permanent loss of 120million LKR per year to local economy. Considering the growth period of 15-20 years for a new tree to become productive loss of production amounted for the 15-20 year pulse the role of these tree paly in erosion control, retaining the groundwater storage the cumulative impacts has not been addressed in the EIA report.	2- Loss of Palmyra trees The EIA report has meticulously examined the impact of the project on Palmyra plants. The initial assessment has identified 13,371 Palmyra plants within the designated lands for wind turbine construction. It is worth noting that this preliminary count is a conservative estimate, encompassing (yet to yield fruits), mature plants (yielding at full capacity) and that are too old (yield less than the average), as well as both male and female specimens. Consequently, the actual impact of Palmyra removal will likely be less significant than anticipated, as outlined below: • Loss of income from Palmyra is primarily substantial for mature and older trees. However, the estimation includes younger plants which are yet to contribute to the tree clusters significantly in future. • While 13,371 plants are estimated to be within the total land area (160m*160m land pieces for each turbine), only 3,953 are located within the hard stand area (90*95m) of each plot earmarked for construction. Efforts will be made to minimize tree removal even within this area, with vegetation, including Palmyra, that will be preserved in the remaining land parcels. • Since Palmyra's primary use is for producing tubers and fruit pulp, where female plants being crucial, the number of impactful tree removals is halved due to the typical 50% female distribution in naturally grown plantations. • Wind turbine locations are dispersed across the island, preventing concentrated Palmyra removal from affecting specific households disproportionately. • Additionally, a significant number of trees slated for removal are located more than 1km away from settlements, diminishing their direct impact on local livelihoods,

Responses to Letter No 633		
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		particularly in terms of accessibility due to the distance from the plants. Hence, the actual Palmyra impact is expected to be significantly less than has been estimated in the EIA report. The forecast was to find the worst-case scenario. Accordingly, the mitigation measures have been recommended in the report, although their necessity may be reduced given the low impact than what is anticipated. • Chapter 5.3.1 outlines an entitlement matrix for Titleholders/non-titleholders affected by loss of trees due to the land acquisition, facilitating adequate compensation. • Chapter 5.3.2 specifies mitigation measures to minimize Palmyra impact during project implementation through micro-adjustments in component placement. • Additionally, the EIA mandates that the project developer preserve as many Palmyra trees and other vegetation as far as possible, within the hard/soft standing area through meticulous assessment during the construction period. There are no provisions suggesting that trees within the hard standing area should be completely removed. Only within the turbine foundation area there will be complete tree removal. • Further the same chapter states that the project will maintain its collaboration with the Palmyra Development Board and the resource users in the project area to prepare a plan to enhance income generation of the persons affected by losing the Palmyra tree. This plan will consider capacity development for value addition of Palmyra resources, fostering diversification at the community level. By doing so, the project seeks to improve the economic prospects of Palmyra resource users and contribute to the sustainable development of the community. • Additionally, the project will collaborate with the Palmyra Development Board on the replanting of Palmyra trees, exceeding the number removed. Despite observations indicating that landowners are removing Palmyra trees in the area, the project, in partnership with the Palmyra Development Board, will ensure the protection and

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
		preservation of these replanted Palmyra trees for future community use. • The areas with temporary construction use will be released and allowed to naturally regenerate Palmyra trees and vegetation-post-construction. • Replanting was considered and discussed extensively by the SLSEA, and relevant parties and it will be undertaken in concurrence with the PDB and necessary funds for replantation will be provided by the project. • All short term and long term Palmyra related economic impacts will be addressed through the RAP.
	3-Fish harvest reduction: The EIA report has lightly addressed the impact of wind turbines on the fish (harvest) and the concerns of fishing community The majority of the community in Mannar's livelihood depend on the fishery as their primary source of income, Impact of fishing areas will have a profound effect, The seriousness of this socio-economic aspect has not been addressed it in detail in the EIA.	Refer the above section "Decline in fish catch and poor consideration on the fisher community" (Section 3)
	(3 concerns 4-a,b,c) 4-a Studies using GPS signals for migratory birds have established that the bird flight corridor encompasses the Mannar island. 4-b However the EIA report suggests a bird flight corridor limited to a small area in the middle of the island. Neglecting the importance of the entire Mannar island as a flying corridor for migrating birds. 4-c This disparity in information raises significant concerns about the accuracy and reliability of the EIA report regarding this aspect.	4-a, b, c -A combined answer - Prof. Sampath Seneviratne's study which is cited by many parties in the EIA Public Comments, the hither to available information (a figure on a very high scale with low clarity without any concrete information such as flying heights, data capture frequency, location coordinates -x,y,z) clearly shows that of the 11 species (totaling 21 birds in all) he has monitored using satellite tags, only five species use the project area. It is also noteworthy that some of the satellite tagged species used the area where the Phase I towers have already been established (Thambapawani) which makes it clear that the birds are using areas with the turbine towers, imposing a low collision hazard (see Annex 9 bird collision risk study). In this study it has been stated that the transmission lines have resulted in a higher number of bird deaths in comparison to the towers. - There is a doubt about this study purportedly done by the University of Colombo as so far Colombo University has not provided the details of the so called "CAF Wetland Bird Tracking Study" based on the official requests

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
		of the SLSEA. Please see Common Responses No.12 for further details. The presently available and sensationally published information on the CAF Wetland Bird Tracking Study does not provide any conclusive or for that matter even a rough proof that there could be migratory bird collisions in the very area where these wind turbines will be established. iii. The entire Mannar Island has been designated as an area for wind power. Based on this, it is inevitable that several projects for wind power (one already implemented and others in the pipeline) are expected to be implemented. iv. Recognizing this early, even in the absence of published documents which have marked out critical migratory path within the Mannar island, the EIA team has taken a proactive step to allow a 1 km wide x 11.2 km long aerial corridor which maintain continuity between Vankalai and Adams bridge protected areas. This corridor was there in the original turbine layout prepared by the SLSEA. This corridor would not only serve as a free flight path for birds but would give an added advantage by discouraging future development of high-rise infrastructure in this area. Thus, the 11.2km² strip will remain to serve as an aerial ecological corridor which would be essential in Mannar where development is occurring unabated. The EIA team strongly believes that marking this area was more beneficial than leaving no areas at all. Hence the EIA team did not make any attempt to change this corridor. If no areas within the Mannar Island can be used solely because of bird collisions, no wind power projects (including the already existing Thambapawani) will not be possible. v. The report has not in any way undervalued the importance of the Mannar Island as one of the locations within the bird migratory route. The following sections in the report specifically relate to this, showing that the EIA report has given this issue due prominence. Please see the relevant sections below. • It is accepted that the project area is located within the general Central Asian flyway Section 3.4.5 paragraph 2 -

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
		‘Avifauna in the Mannar region’ where we have also provided a figure showing the possible routes of entry (Figure 3-28). Here we have stated that this region is important as a bird migratory corridor. That is why a one-year study has been undertaken and impacts and mitigatory measures for birds has been the central focus of the EIA report. As a precautionary measure we used the bird corridor map which was prepared for the energy resource study that was based on the bird study for Phase I. • We have dedicated an entire section to give details of the impacts on avifauna (Section 4.3.1) and outlined possible mitigatory measures (section 5.3.5.3, 5.4.1.1 and 5.4.1.2). • Bird collision risks have been identified as the highest impact (Table 4.4 point 1 under OPR 8) although it was contrary to the calculated risks that were low. (See section 4.1.1). This impact was given prominence in good faith, to propose mitigation measures, even though there was no conclusive proof by the dedicated bird studies the EIA Team undertook, that there will be significant bird collisions. • The possible impacts have been taken into consideration at the design stage where, based on our recommendation, avifaunal detecting mechanism / system and control mechanisms have been incorporated. (See Annex 5-1 propose early warning systems for mitigating early collisions) • In the Environment Management Plan (Annexure 6-1) OPR 6 relates to the management of bird collision risks. • Chapter 7.1.3 states Operation phase bird/bat collision monitoring. - Here we have covered all aspects relating to bird collisions (monitoring and reporting). • Annex 9 – ‘Summary of findings of the avifaunal study’ has been provided. • In fact, towers were removed, or micro-sighting was done to avoid areas which were already established as important for birds e.g. mudflats, active sand dunes with potentially high risks for soaring birds,

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
		birds / bat roosting sites, waterbodies (see Table 5-1. Section 5.1.1). Korakulum tank was one such feature which was completely avoided. The EIA team is confident that the bird risks have been given due prominence in identifying and mitigating the associated risks.
	5- Negligence and carelessness of project authorities in failing to comply to agreed mitigation measures: Current flooding risk: Bad experiences from the existing Thambapawani project. The complainant quotes the situation of current flooding situation in Mannar because of road construction using low-cost strategies with negligence and careless drainage plans without considering it natural flood prone low-lying terrain conditions and expresses the grievance stating that the project is in good operation while people bear all burdens. The complaint states that even though there is a drainage management plan its implementation on ground complying to agrees plan is uncertain as experienced by past projects.	5-Negligence and carelessness of project authorities in failing to comply to agreed mitigation measures: Current flooding risk - The EIA team understands the impact on the possible lapses of compliance requirement of the EMP. However, it is not within the purview of the EIA team to comment on the compliance of the EMP with respect to the already established Phase I (Thambapawani). - However, due to the concerns raised on the drainage issues and the past experiences, the EIA has assessed the flood aggravation impact due to the turbines and access roads and proposed the required mitigation measures (e.g. culverts along access roads). The culvert density is very much higher than that of the railway and other recently built roads. - Current flooding cannot be mitigated by this project but flood aggravation due to the project could be successfully mitigated. SLSEA has already taken action to carry out a full flood study for the entire Mannar Island for flood mitigation. - The EIA team has used the latest technology (i.e. 2D flood modelling) to assess the flood aggravation impacts and to propose mitigation measures.
	6-Impacts on the good groundwater resource: The places in Pesalei have a good groundwater resource which people have used as a source of drinking water and for sanitary purposes many for years. The EIA report has acknowledged the fact that the complainant raises serious concerns on the potential for groundwater contamination during the deep excavations for piling works and foundation pits.	6-Impacts on the good groundwater resource - We would like to emphasize that no turbines are located in the proximity of residential areas and their well water resource. Hence direct impact on the existing ground water use by the project is unlikely. - Nevertheless, local water quality deterioration could occur without mitigation measures, although the impacts are site specific. Hence, various detailed mitigation measures have been proposed in order to reduce the impacts such as salt-water intrusion, increased

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
		salinity in ground water, etc. (See section 5.3.6.1, EMP point no 7 in the construction phase). Adhering to these measures would substantially reduce any potential impact. iii. Only further site investigation could throw more light to this issue and thereafter specific mitigation action could be taken. If the complainants could point out to any specific location, it could be further considered. Most of the turbines (except three out of 52) are away from the settlements and dug wells so that this risk is reduced.
	7-The impacts on the sand dunes: The complainant raises concern about damage to sand dunes and leveling them. And mentions the crucial role the sand dunes play in protection from sea winds, erosion control and providing ecosystem services for a wide range of species. And states that alteration will result in far-reaching consequences. The environmental impacts to dunes cannot be grasped through short term studies alone.	7- The impacts on the sand dunes i. It is agreed that short term studies cannot envisage the potential impact on sand dunes or the ecosystems services they provide. However, it should be reiterated that all-environmental aspects, including the impact on sand dunes, were duly considered during the planning and design stage (see section 5.1.1 mitigation by design during the construction stage). ii. This involved complete avoidance or relocating turbines to reduce impact on the dunes. In fact, the 32 criteria used for recommending turbine location (see section 5.1.1 – Table 5.1) gives reference to the sand dunes (Table 5.1. criteria 20) which requires that elevated dune areas are avoided. iii. Macro siting consideration: The report has also recommended that a coastal set back of 50 m which would also result in avoiding many sand dunes (Annex 6.1, EMP, Preconstruction Additionally, we have recommended that further readjustments would be carried out if project activities encounter sand dunes (Annex 6.1, EMP, Preconstruction 2). WE have also given the supervising authorities CCD and the GSMB.
	(Last 3 paragraphs 8-1,2,3) 8-1 Failing to conduct comprehensive assessment of cumulative impact of all wind turbine project on Mannar island as a whole: The complainant states that the EIA has failed to address the overall impact of all wind project but limiting their assessment only to the single projects largely neglecting the magnitude of the cumulative impacts failing to estimate true	8-1 Failing to conduct comprehensive assessment of cumulative impact i. As stated previously, the entire Mannar Island has been earmarked for renewable energy projects. Thus, it is expected that several such projects will be implemented on the Mannar Island. ii. An EIA report is expected to address project specific impacts as outlined in the TOR, which has been done. Cumulative impacts are

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
	extent of the environmental, social, and economic impacts of project.	usually predicted through a Strategic Environmental Assessment (SEA) to assess the cumulative impact of all the projects. iii. We have taken maximum efforts to minimize the impacts within the scope of proposed project while maximizing benefits from the project to the environment and community. iv. The concerns raised have been taken into account and steps have been taken to avoid impacts that have arisen from past wind projects in order to ensure these issues will not arise from the new project. v. Carrying out a cumulative impact assessment and proposing mitigation measures to residual impacts will be a good step for the future.
	8-2 Emphasis on requiring holistic approach in sustainable development integrating multiple dimensions such as social, environmental, and economic, just economics: the complaint stresses the people in Mannar's right to deserve respect and protection in the pace of development	8-2 Emphasis on requiring holistic approach in sustainable development i. The Central Environmental Authority has taken a holistic approach in preparing the TOR for the EIA covering environment, social and economic aspects. The EIA has accordingly addressed all the aspects according to the TOR provided. The EIA has been conducted by a multidisciplinary team of experts using expert opinion, field surveys, monitoring, model studies, referring published literature from recognized agencies such as ADB, WB, USEPA. The impact identification, analyses evaluations were supported by the above studies, as well as expert opinion in order to develop appropriate mitigation measures. ii. As is the accepted procedure of the EIA process, the report was open to the public for 30 working days to facilitate public comments on the EIA report so that any omissions or further concerns could be addressed when finalizing the project. iii. The EIA process in Sri Lanka comprises of many systematic steps that allows for fact-based identification and evaluation of the significance of impacts and to derive the most appropriate and cost-effective mitigation measures with participation of all parties including the public. iv. The team is therefore confident that a holistic approach has been followed in preparing the EIA within the scope of the ToR.

Responses to Letter No 633		
Author	Main Concern/s	Relevant Response
		v. Right to deserve respect and protection in the pace of development has already guaranteed by the Constitution of Sri Lanka and various other laws, regulations and statutes etc. The whole point of the EIA process in Sri Lanka is to ensure that a transparent and participatory procedure is adopted during the implementation of development projects and that the views and opinions of the public is given due consideration during the project approval process. The EIA process also ensures that appropriate mitigation measures are proposed and adopted for the significant environmental impacts from any given development project. vi. Judicial remedies are also available in the event such rights are violated by any development project during the project planning and implementation stages.
	8.3 The final statement: the responsible community in Pesalei oppose the project and urge the CEA, the GA Mannar, and all other responsible officers to relocate all wind turbines projects away from Mannar island to another suitable location with Mannar communities primary concern as the preserve Mannar island and its community from the adverse impacts of this type of projects and request to consider <u>alternative sites</u>.	The final statement: Based on the given justification that the EIA team strongly believes that the EIA of the proposed 250MW wind power plant was prepared transparently, and in good faith, addressing all impacts within the scope of the given ToR, fully complying to the established procedure for conducting EIA in Sri Lanka. Further, we are aware that the purpose of opening the EIA to the public is to consider the concerns of a broader audience prior to granting environmental approval for the project. The I decision to grant environmental approval for the project lies with the CEA and the final decision to go ahead with the project will be taken by the Government taking into consideration economic, environmental and social aspects of the project.

Responses to Letter No 634

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Author	Main Concern/s	Relevant Response
Fathima Club	The loss of land available for human settlements development due to the installation of several wind turbine projects is a concern. Firstly, the Thambapawani wind power project occupied 180 acres solely for turbine foundations. Now, the phase 1 extension, situated approximately 1.2 to 2 kilometers from phase 1, aims to procure an additional 139 acres according to the Environmental Impact Assessment (EIA). Also, the proposed 250 MW wind power project is projected to acquire another 500 acres, resulting in a total land acquisition of 819 acres losing all these lands permanently lost for human settlement development.	The present project does not utilize any land currently occupied by settlements. Many of the turbine locations are unsuitable for occupation due to the risk of flooding. The project has limited land acquisition to the tower footing and access roads. After construction the lands in between (soft standing areas) will be released for other uses such as cattle rearing. These areas, if left untouched, will also regenerate rapidly, allowing natural plant communities to establish. The project will acquire only 150 Acres and therefore the claim that 500 acres will be acquired is incorrect.
	Inadequacies in turbine noise impact assessment a. The EIA report has evaluated the noise impact on the sensitive receptors only, without considering the total landmass exposed to different noise levels. The EIA of phase 1 wind turbine project has stated that the noise from the turbines will affect the 300m radius land mass from the base with a total area of 70 acres/ turbine signifying the loss land for settlement development due to wind turbine projects. b. As Mannar island availability of land for settlement development is already constrained by waterlogged low-lying areas	a. Scientifically noise impact is evaluated considering noise receptors and not the landmass. The landmass has been considered in the noise model to represent terrain. Please refer to the answer given in 2b of the previous letter. The high noise areas for each turbine vary and as found during the study the noise elevation above the CEA standard is marginal, even without considering the tree cover, background noise, camouflaging effects (e.g. sea noise) etc. Hence it will be difficult to infer scientifically that turbine noise will lead to loss of land. Only human settlements cannot be established within about a 300m radius. Any other activity could take place. The entire Mannar island cannot be used for human settlements because of the significance of the overall environmental impact it could cause. There are planning limitations to it. Such human settlement impacts could be very much more significant than those of wind turbines. b. Land loss due to noise pollution: In the present EIA the noise analysis (Conducted by ITI which is an accredited government

Responses to Letter No 634

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Author	Main Concern/s	Relevant Response
	this type of loss will result in not having suitable land for future generations for settlement development. The EIA report has failed to address the issues in this dimension	institute) shows that (Refer Table 4-5) only in 8 turbines there is a marginal noise exceedance (equal and above reference level 45 DB for night time, the noise levels at the 8 turbine locations are between 45 – 47 dB) and the exceedance is for night time noise only. Even this result has been obtained, without considering background noise and barrier effects induced by terrain characters such as the presence of trees and buildings (partial barrier effects). With these additional barrier effects, the net noise impact on sensitive receptors will be further reduced. Please refer to sections 5.4.4.4 and 5.4.4.5 of the EIA report). As mentioned in the EIA report any complaints due to noise arising after project commencement will be addressed on a case- by-case basis through noise measurements and adoption of further mitigation measures as required.
	Permanent loss to Palmyra trees: For the proposed 250 MW wind power project consisting of 52 turbines, a total of 9237 palmyra trees and 260 coconut trees are planned for removal. Additionally, there are 8822 more trees at risk of being removal in the soft stand area. Each tree has the potential to generate an annual income of 10,000 LKR. This leads to an estimated permanent loss of 120 million LKR per year to the local economy. Furthermore, considering the growth period of 15-20 years for a new tree to become productive, the loss of production is significant over this time frame. Moreover, the vital role these trees play in erosion control and retaining groundwater storage has not been adequately addressed in the Environmental Impact Assessment (EIA) report, greatly undermining the cumulative impacts of the project.	Loss of Palmyra trees The EIA report has meticulously examined the impact of the project on Palmyra plants. The initial assessment has identified 13,371 Palmyra plants within the designated lands for wind turbine construction. It is worth noting that this preliminary count is a conservative estimate, encompassing (yet to yield fruits), mature plants (yielding at full capacity) and that are too old (yield less than the average), as well as both male and female specimens. Consequently, the actual impact of Palmyra removal will likely be less significant than anticipated, as outlined below: • Loss of income from Palmyra is primarily substantial for mature and older trees. However, the estimation includes younger plants which are yet to contribute to the tree clusters significantly in future. • While 13,371 plants are estimated to be within the total land area (160m*160m land pieces for each turbine), only 3,953 are located within the hard stand area (90*95m) of each plot earmarked for construction. Efforts will be made to minimize tree

Responses to Letter No 634

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Author	Main Concern/s	Relevant Response
		removal even within this area, with vegetation, including Palmyra, that will be preserved in the remaining land parcels. • Since Palmyra's primary use is for producing tubers and fruit pulp, where female plants being crucial, the number of impactful tree removals is halved due to the typical 50% female distribution in naturally grown plantations. • Wind turbine locations are dispersed across the island, preventing concentrated Palmyra removal from affecting specific households disproportionately. • Additionally, a significant number of trees slated for removal are located more than 1km away from settlements, diminishing their direct impact on local livelihoods, particularly in terms of accessibility due to the distance from the plants. Hence, the actual Palmyra impact is expected to be significantly less than has been estimated in the EIA report. The forecast was to find the worst-case scenario. Accordingly, the mitigation measures have been recommended in the report, although their necessity may be reduced given the low impact than what is anticipated. • Chapter 5.3.1 outlines an entitlement matrix for Titleholders/non-titleholders affected by loss of trees due to the land acquisition, facilitating adequate compensation. • Chapter 5.3.2 specifies mitigation measures to minimize Palmyra impact during project implementation through micro-adjustments in component placement. • Additionally, the EIA mandates that the project developer preserve as many Palmyra trees and other vegetation as far as possible, within the hard/soft standing area through meticulous assessment during the construction period. There are no provisions suggesting that trees within the hard standing area should be completely

Responses to Letter No 634

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Author	Main Concern/s	Relevant Response
		removed. Only within the turbine foundation area there will be complete tree removal. • Further the same chapter states that the project will maintain its collaboration with the Palmyra Development Board and the resource users in the project area to prepare a plan to enhance income generation of the persons affected by losing the palmyra tree. This plan will consider capacity development for value addition of Palmyra resources, fostering diversification at the community level. By doing so, the project seeks to improve the economic prospects of palmyra resource users and contribute to the sustainable development of the community. • Additionally, the project will collaborate with the Palmyra Development Board on the replanting of Palmyra trees, exceeding the number removed. Despite observations indicating that landowners are removing Palmyra trees in the area, the project, in partnership with the Palmyra Development Board, will ensure the protection and preservation of these replanted Palmyra trees for future community use. • The areas with temporary construction use will be released and allowed to naturally regenerate Palmyra trees and vegetation-post-construction. • Replanting was considered and discussed extensively by the SLSEA, and relevant parties and it will be undertaken in concurrence with the PDB and necessary funds for replantation will be provided by the project. • All short term and long term palmyra related economic impacts will be addressed through the RAP.
	Neglecting the decline in fishing activity on Mannar Island, and ignoring its significance: Fishing is crucial for the islanders' livelihoods, and any disruption would deeply affect the community. This omission compromises the report's completeness and disregards the	Decline in fish catch and poor consideration on the fisher community. A site-specific assessment is important because changes in fish harvest can be induced by multiple factors such as increased number of fishers, illegal fishing activities by the Indian fisherman

Responses to Letter No 634

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Author	Main Concern/s	Relevant Response
	socio-economic impact on those relying on fishing for income and sustenance.	Reduction in fish catches due to turbine noise and impact on fisher community due to the project. A- Reduction in fish catch • The EIA team is quite aware of public perception that the wind projects could impact on the fish harvest. • Credible scientific studies to prove or disprove the link between fish catches and onshore wind turbines were not found during the comprehensive literature survey. This has been mentioned in the report, and further the EIA emphasized that further study on this aspect is needed (Section 4.2.1.3). • Technically the turbine noise is completely dissipated, and it comes to the allowable noise levels, within a short distance from its center according to the model studies. • A site-specific assessment is important because changes in fish harvest can be induced by multiple factors and that cannot be solely attributed to the wind turbines. • It has been brought to our notice that a specific study is intended to examine potential impacts of Thambapavani (Phase I). SLSEA has officially requested information on this study from NARA, but it has not been made available up to now. Please see Common Responses No.28 for further details. B- Impacts on the fisher community • Concerns of the fishing community have been considered in the EIA in many ways. • An in-depth public consultation survey was conducted which included the fisher community. Annex 3-4. • The socioeconomic background of the fisher community has been documented in

Responses to Letter No 634

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		section 3.6.5 and impacts addressed in 4.5.3. • Details of the fishing activities along the coastal line is detailed out in Section 3.6.5. The distance of each wind turbine to the closes beach is given in Table 3.20. • Impacts on the fishery community has been minimized at the planning stage (Section 5.1.1 – table 5.1) where a coastal setback of 50 m and a further 60 m has been excluded with no wind turbines, the lagoon (area with high activity) has been avoided. Areas of anchorages, dry fish stations, fishing huts have been avoided. Access paths to all anchorages have been avoided. A minimum of a 200 m buffer has been left from all the locations important for fishery activities. • Access roads that will be constructed as a result of the project, would facilitate mobility, and transport facilities for the fishery community. • Multiple CSR activities for the community empowerment under education, community health, community infrastructure, and livelihood which includes the fishery community have been proposed under the project. See Annex 5-4. • Specifically, for the fishing community training has been recommended for fish yields and productivity improvement, for promoting mangrove conservation, and for providing basic infrastructure for economically weaker fisher communities. Additionally, training and awareness for fish product preservation, marketing, packaging, and forwarding has been proposed. • The Grievance Redress Mechanism (GRM) which will be established under this project (PMU) will also be available for the fisher community.

Responses to Letter No 634

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		Any concerns regarding losses that would require compensation will be addressed by the Resettlement Action Plan (RAP) currently under preparation. All the above have been discussed in the EIA report.
	Aggravation of the flood risk: The Mannar island is naturally susceptible to flooding, the community raises concern on the risk of flooding due to project, The EIA has proposed a drainage management plan, but in fear of low investment on proper drainage management systems construction under current economic constrain. The aggravated flooding induced from the pahse-1 project gives an example on the level of negligence the developer has paid on the drainage management and developers accountability.	Flood risk assessment: - Many turbines are to be in areas which are already flooded, with no human settlements, and are away from the existing human settlements. - A flood risk assessment has been conducted by an expert hydrologist, and flood dynamics were modelled to predict the risks with and without the project scenarios, followed by the identification of appropriate mitigation measures to reduce any potential flood aggravation by the project. (see sections 3.1.4, 5.3.6.2). The latest technology, i.e. 2D modelling has been used for this. - Backwater due to flooding arising from access roads and turbine construction has been minimized through the inclusion of culverts and other measures (Section 5.3.6.2). Many culverts have been provided with the access roads and the number of culverts in the access roads far exceeds the culvert density of the railroad, and A and B class roads in Mannar. - Hence there will be no aggravation of floods due to the project. Refer Annex 5-2 hydrology report for the flood risk assessment. - We emphasize that the significant positive impact of the access roads, facilitated by the project, is a point overlooked by all commentors. The provision of motorable access roads, equipped with a good number of culverts, will transform the transportation infrastructure for residents in the Mannar region, enhancing mobility within turbine areas for various activities. Many areas are currently inaccessible due to the lack of

Responses to Letter No 634

Important Note: The answer below should be read in conjunction with the answer given to the letter dated 03/03/2024 by the Church of our Lady of Victory

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		proper roads. The provision of access roads will greatly improve local flood resilience. • SLSEA in collaboration with Sri Lanka Land Development Corporation (SLLDC) has started a flood risk minimization project to address the current flood issue of the Mannar Island, as a CSR activity and SLLDC will provide suitable solutions
	Risk of fresh groundwater contamination. The areas like Pesalei are blessed with good freshwater resources satisfying both drinking and sanitation water needs. The EIA acknowledges the fact, but the complainant is in fear of potential risk to freshwater resource contamination by the deep foundation construction.	This comment is not valid due to the following reasons. I. We would like to emphasize that no turbines are located in the proximity of residential areas and their well water resource. Hence direct impact on the existing ground water use by the project is unlikely. II. Nevertheless, local water quality deterioration could occur without mitigation measures, although the impacts are site specific. Hence, various detailed mitigation measures have been proposed in order to reduce the impacts such as salt-water intrusion, increased salinity in ground water, etc. (See section 5.3.6.1, EMP point no 7 in the construction phase). Adhering to these measures would substantially reduce any potential impact. III. Only further site investigation could throw more light to this issue and thereafter specific mitigation action could be taken. If the complainants could point out to any specific location, it could be further considered. Most of the turbines (except three out of 52) are away from the settlements and dug wells so that this risk is reduced
	Damage to natural sand dunes and their unique ecosystem services. such as erosion control, providing species with niches for diversity of species,	Sand dunes All environmental aspects, including the impact on dunes, were considered during the planning and design stage (see section 5.1.1 mitigation by design during the construction stage). This involved complete avoidance or relocation of

Responses to Letter No 634

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		turbines in order to reduce potential impacts on the dunes. In fact, the 32 criteria were used to recommend a given turbine location (see section 5.1.1 – Table 5.1) gives reference to the sand dunes (Table 5.1. criteria 20) which requires that elevated dune areas are avoided. The report has also recommended that a coastal set back of 50 m which would also result in avoiding many sand dunes (Annex 6.1, EMP, and Preconstruction 1). Additionally, we have recommended that further readjustments be carried out if project activities encounter sand dunes (Annex 6.1, EMP, and Preconstruction 2). We have also proposed the supervising authorities as CCD and the GSMB.
	The final statement: strongly oppose for wind turbine projects in Mannar island and request to move the project outside Mannar island to another suitable location	The final Statement Based on the given justification, the EIA team strongly believe the EIA of the proposed 250MW wind power plant was prepared transparently, and in good faith addressing all aspects within the scope of the given ToR, fully complying with the established procedure for conducting an EIA in Sri Lanka. Further, we are aware that the purpose of opening the EIA to the public is to consider the concerns of a broader audience prior to granting environmental approval for the project. The I decision to grant environmental approval for the project lies with the CEA and the final decision to go ahead with the project will be taken by the Government taking into consideration economic, environmental and social aspects of the project.

Responses to Letter No 639

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Center for Environmental Justice (Guarantee) Limited	CEJ has over five years of experience in environmental conservation on Mannar Island. Based on this experience, they have recognized the island as a highly sensitive habitat that is facing severe impacts from various development projects and is also highly vulnerable to climate change	This has been well recognized, and every effort has been made to preserve the ecological integrity of the island and its environs whilst establishing the wind power project. This was deemed necessary as the Mannar island has been earmarked for renewable energy. Avoidance of impacts has been achieved through abolishing of turbine locations, micro-siting and the use of exclusion criteria, preventive measures and migratory measures that would considerably reduce impacts, and further monitoring measures for post project impacts have been set out in the EIA report.
	Inadequate ToR; No specifically requested cumulative impact assessment for the proposed project.	Usually, the ToRs for EIA is for the very project, its impacts and mitigation measures. Such a ToR does not deal with cumulative impacts. Such assessments are done either in the very early stage of the plan or program or at the conclusion stage of the plan or program (a group of projects). It is not a weakness of the ToR. Please refer to 33.
	Lack of study on the cumulative impact; the impact of existing Phase I and proposed sand mining is not properly addressed.	Please refer to 38.
	Damage to the migratory birds in the CAF are significant and proposed bird corridor is a greenwash. - Mannar is the most important wintering wetland for migratory birds in Sri Lanka. About one million birds, including 20 globally threatened species, utilize this region, while eight species of Seabirds, many of which are listed as CR, use this region as a breeding ground. - The International Convention on Migratory Birds may be violated. - SL-WTP conducted by UoC has highlighted the strategic role of Mannar within CAF. But the EIA report has not highlighted the real impact	Please refer to 1, 2, 3, 19, 8. The breeding ground of sea birds are located within the sand islands of the Adams Bridge National Park approximately 12 km way from the project site Refer to 18. Refer to 3 (bird movement), 21 (avoidance of congregatory habitats, 8 (basis for designating aerial corridor)

Responses to Letter No 639

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	on birds when it proposes a bird corridor as a mitigation. - Rejecting the EIA report due to, I. Bird observations lacked proper timing & oversights regarding the seasonal bird movements. II. Lack of technological integration for bird's survey III. Bird surveys have not been properly conducted using publicly available scientific data including SL-WTP data. IV. Inappropriateness of proposed bird corridor V. Aquatic habitats (lagoon, freshwater lakes, etc.) are very important for migratory birds, and if they are destroyed, it becomes very difficult for them to move around. VI. According to Thambapavani data, raptors like Brahminy Kites were most affected by turbines, while water birds were impacted by transmission lines. Although the EIA report claims the wind park is feasible since high wind periods don't coincide with bird migration, the data indicates otherwise. VII. Based on post-construction monitoring of Thambapavani, migratory birds are less affected compared to resident birds. This result surprised CEJ. VIII. CAF-SLWTP revealed Mannar's role in the waterbird-rich Palk Bay region. According to this, migratory birds regularly move between the Gulf of Mannar and Palk Bay along four major movement corridors. This study also revealed the heavy connectivity of key wetlands in the region (Ex: Crab Plover (Rare and Nationally CR) moving between Rama's bridge and Erukkalampiddy). These movements	Refer to 3, 10, 11 and 13. Refer to 12. Refer to 13. Refer to 8. See exclusion criteria when selecting turbine locations (Table 5.1) and where protected areas / lagoon has been avoided (see response 21) The anticipated number of collisions is expected owing to the Phase II Mannar project should be considerably lower due to a number of facts as outlined in Response 17. This goes to show that the impact on migratory birds is low and that considering location specific features are important. Response 17 will elaborate this fact. Many of the birds move along the coast and that is why a coastal setback has been maintained. Also, an aerial corridor has been suggested to facilitate the movement within the Mannar island. See response 3, 8, exclusion criteria Table 5.1.

Responses to Letter No 639

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	can be affected by the proposed wind farm. IX. Mitigation measures indicated in Section 5 is not very effective due to the low estimated plant factor of 41.83%. Read https://css.umich.edu/publications/factsheets/energy/wind-energy-factsheet X. In the alternative analysis, the EIA needed to explore offshore turbines to minimize the negative impacts. XI. Phase I radar system costs between 800,000 USD and 1 million USD, but the allocated cost for Phase II is only 253,968 USD. This is questionable when considering the larger scale of Phase II.	Average capacity factors for wind power projects are around 40 %. Therefore, this comment has been made by someone who is not familiar with the subject. Response 36 elaborates on the alternative analysis used in the present EIA. The offshore option has not been considered. However, judging by patterns of bird migration offshore wind turbines may have a greater impact on birds than the wind turbines located within the Mannar island. 12, 14, 35 (The difference in price largely depends on the procurement process). Countries such as India with capacity with advance technology and in-house manufacturing capability the cost of products will be much low compared to purchasing the item and installation costs etc. commissioning costs etc.
	Transmission line and proposed birds' corridor; Transmission lines threat on birds and bats. But it's unclear from the EIA where they will be located. Also, conflicting references are made to the use of underground cables and transmission lines	The EIA in the section on ecological impacts has strongly recommended that underground.
	The project put the energy sovereignty of the country at risk; The financial gains through this project for the people of Sri Lanka is still uncertain	The pre-project development for large-scale projects of SLSEA encompasses not only the Mannar Phase-II and Pooneryn projects, but also extends to various other endeavors such as the Siyambalanduwa 100 MW solar power project, Veravil 210 MW wind power project, Karachchi 162 MW wind power project, etc. SLSEA serves as the project proponent for these initiatives, with requests for Environmental Impact Assessment (EIA) also made by SLSEA, as the Project Proponent. While SLSEA conducts these preliminary studies, it is important to note that they do not serve as the implementing agency. Rather, any selected prospective developer assumes responsibility for the project's

Responses to Letter No 639

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	The proposed wind park is not in line with the UDA development plan; Paragraph 3.6.1.2 of the EIA report the proposed wind park is not matching with the UDA plan which questions the legitimacy of the project	execution upon selection. Further, tariff-related aspects are out of the scope of EIA. “Energy Development Area” was declared by the Sri Lanka Sustainable Energy Authority (SLSEA) through the extraordinary gazette No. 1858/2 of 17th April 2014, well before UDA’s gazette declaration. UDA has granted the preliminary clearance subject to the planning approval. Most of the turbines are in private lands which will not hamper any development activity. The following can be referred from the UDA’s Mannar Development Plan 2021-2030 • “Establishing renewable energy generating sources such as wind turbines and solar panel parks required large number of lands for implementation. When considering Mannar Island as a place for renewable energy and the land availability, the untapped developable lands should be a great strength.” • “To achieve that goal of it has been identified the project of 39 wind turbine establishment in the south coast of the Mannar Island by SEA as an opportunity. This would be the first phase of the three-phase project, which is expected to finish in 2022. At the end of the project, it would contribute 100MW to the National Grid. This is 5% of the National Energy demand per day.” • The first phase of the project was completed by 2022 as planned, and this project has been initiated as the next phase These initiatives, as outlined in the UDA's Mannar Development Plan 2021-2030, align with the Energy Development Area designated by SLSEA in Gazette No. 1858/2 of 17th April 2014. The UDA has granted preliminary clearance, contingent upon planning approval, citing alignment with the said gazette and the Mannar Development

Responses to Letter No 639

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		Plan. Notably, most turbines are situated on private lands, thus minimizing disruption to other development activities. Furthermore, the plan is consistent with the UDA's vision for urban development. Concurrently, a study is underway, to be executed by the SLLDC, to assess urban drainage on Mannar Island - a Corporate Social Responsibility (CSR) initiative associated with the Mannar Phase-II project.
	The EIA incorrectly states noise impacts and has not studied the cumulative impacts. - Noise modeling results mentioned in different sections of the report are controversial. - If the proposed wind farm project proceeds, the total number of wind turbines on the island will reach 110, and the cumulative impact on communities and the environment will increase further. - The EIA does not consider the cumulative impacts that could result from the proposed wind farm operating near the existing Thambapavani wind farm.	This is incorrect. Without giving reference to such places in the text we cannot provide any response. Response 25 for elaboration on the noise model. Read response 38. Read response 38.
	The project will increase flood damage and social impacts. - Flooding has drastically increased due to Phase I road construction. Phase II will further aggravate this flooding risk. - High flooding areas affect turbine sites, access roads, and the main road. Annual flood risks threaten turbine foundations, potentially impacting operations and causing environmental degradation through erosion and sediment runoff. - Site specific information is not available in the EIA report.	Please refer response 29 Please refer response 29 Site specific information was considered during ground trothing which facilitate micro-siting / abolishing of some turbines and for formulating all the mitigatory measures.

Responses to Letter No 639

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	- No funds have been allocated for offsetting flood related impacts at the operation stage. - The company will not be responsible for further flood mitigation and the GoSL will have to spend public money. - Mining, pilling work, proposed road network, and the drainage and the flooding together will have serious negative impact on the water table.	Drone images for turbine locations where this is available. Culverts have been proposed to offset the flood damage. It will go under the Engineering Cost rather than the Environmental Cost. The company cannot perform national flood damage work. It should be the duty of the government. The project related flood damage impacts have already been minimized through the provision of culverts and controlling the access road embankment. The government should have mitigated the flood at the national level irrespective of the project. Yes, the GOSL must pay public money for national development. This money must be spent irrespective of the project. This issue has surfaced, and the solutions are planned because of this project which is a positive impact. These impacts are site specific. There will be no mining activities except for the excavations for the foundation. Mitigation measures for these impacts have been given in the EIA report under relevant sections. The impacts caused by flooding on the water table is a very positive impact for the water table as Mannar is an arid area. Please refer response 29 for further information
	No benefits to the local community. - Except for the improved road network, the community will receive no benefits from the project. - The tourism potential of the region may be reduced due to lack of birds' incoming. - Non-title holders of the lands will not get compensation for their losses.	Please refer response 24 and 35 Please refer response 30 and 31 The legal procedure is that only those who have the title to the property will compensation. Others will get compensation if their livelihood activities are linked with the properties.

Responses to Letter No 639

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	Proposed CSR activities cannot be considered as the benefit sharing of the project.	The CSR activities proposed for the project is have been selected specifically considering the livelihood activities of the people (Palmyra products and fishery), promoting to domestic level renewable energy and water (solar, rainwater harvesting), improve the technical skills of youth etc. Refer annex 5-4. Note: It's evident that there's a prevailing negative sentiment among the public, including fishermen, regarding the project, likely stemming from concerns arising from the initial phase. However, it's essential to distinguish between perceptions and validated impacts. While it's understandable that apprehensions exist, they are not necessarily specific to the proposed phase. At this juncture, initiating an awareness program aimed at fishermen to disseminate accurate project information becomes imperative. Providing transparent and factual insights about the project can dispel misconceptions and foster a more informed dialogue. Hence, if the project developer has already reached out to the fishermen group in this regard, it is appreciable. It's worth noting that the Environmental Impact Assessment (EIA) conducted for the project hasn't identified any significant adverse effects leading to the living ability of Mannar Island. As a project of national importance, it's poised to bring positive contributions to Mannar Island, aligning with the broader developmental goals of the country. Furthermore, the improved road network associated with the project is not only crucial for its success but also serves as an asset for the local communities, facilitating accessibility and connectivity. Therefore, it's imperative to address concerns constructively, ensuring that the benefits and impacts of the project are accurately communicated and understood by all stakeholders involved.

Responses to Letter No 639

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		While the EIA report acknowledges the potential for tourism development, it's essential to address concerns regarding the impact on wildlife and ecosystems, particularly regarding bird migration patterns. However, the EIA findings indicate that the project's impact on migratory birds is not expected to be significant, thereby suggesting that existing tourism activities will likely persist. Moreover, it's noteworthy that wind turbines, despite being considered visual obstacles, often draw interest from tourists, both domestic and international, owing to their imposing structures. Anecdotal evidence suggests that Phase 01 of the project has already become a point of attraction for local tours. Additionally, the generation of green energy through the proposed wind power project contributes to positioning Mannar Island and the country as a hub for sustainable energy, which can bolster tourism by attracting environmentally conscious travelers. It's crucial to note that the EIA has not identified a concrete tourism development plan for the project area from the Tourism Development Authority. Hence, it's imperative to collaborate with relevant authorities to ensure that any tourism initiatives align with sustainable practices and complement the project's objectives, thereby fostering economic growth while preserving the natural environment. Initial investigations indicate that most lands within the project area are privately owned, hence the presence of non-title holders is a rare scenario. This finding has been corroborated by the Divisional Secretary of the area, lending credibility to the assessment. Furthermore, it's important to note that the parcels of land designated for the project are typically portions of larger land plots, ensuring that the project's land use doesn't render them landless. This approach aims to minimize the impact on landowners while facilitating the implementation of the project. Regarding compensation, while the specific details are subject to confirmation through the land

Responses to Letter No 639

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		acquisition process, it's essential to adhere to the provisions outlined in the Land Acquisition Act. This framework ensures fair compensation for affected landowners. While it's acknowledged that Corporate Social Responsibility (CSR) initiatives mandated for companies like Adani are separate from direct benefit-sharing mechanisms of the project, it's essential to recognize the multifaceted benefits the project brings to the community. The Environmental Impact Assessment (EIA) outlines various benefits accruing to the community, including infrastructure development such as improved roads, short and long-term employment opportunities, enhanced electricity supply, and the promotion of green energy, which can potentially attract buyers and reduce electricity tariffs for local businesses. In addition to these tangible benefits, CSR activities serve as an additional avenue through which the community can benefit from the project. Adhering to the mandated CSR expenditure, which is a significant portion of the company's profits, ensures that resources are allocated towards initiatives that address social and environmental needs in the project area. While CSR cannot solely be considered as direct benefit-sharing, it complements the broader development goals outlined in the EIA and provides further support to the local community. By leveraging both the project's inherent benefits and CSR initiatives, the aim is to foster sustainable development and improve the overall well-being of the community in Mannar Island.
	Violation of Just Energy Transition principles; The project clearly does not respect the communities' voices and meaningful participation is not allowed.	It is unclear how the cited consequences applicable to this project (e.g. job losses). Even in renewable energy projects there could be site specific impacts for which mitigation measures have been suggested. Energy obtained from the project will be fed to the National Grid and the whole nation will benefit from it, as a very high percentage the of the population has access to electricity.

Responses to Letter No 639

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		Also, the project will create many employment opportunities for the people during the construction and operation of the project. The community will have benefits from the CSR activities and the proposed overall flood alleviation activities. We cannot agree with this statement as the Project Proponent and the EIA team has held so many social consultations with various social segments, as reported in the EIA. Even allowing the public to provide their comments is such a constructive step. Who has obstructed any participation? When? Where? How? CEJ is not specific in this issue. There are no such reported instances. All constructive suggestions from the community have been considered. As an outcome of the discussion given above, the project company has agreed to implement a set of CSR activities, which will be of high benefit to the society. The CSR activities will be in the areas of education, health, sustainable livelihood, community infrastructure, skill development, etc.
	Visual pollution due to wind turbines. The visual appearance of wind turbines makes them very unattractive neighbors, which will reduce property prices.	The visual impact of wind turbines is a consideration in the development of wind energy projects. Wind turbines can dominate the landscape, altering its aesthetic and potentially affecting the visual appeal of natural and rural areas. This impact is often subjective, varying based on individual perceptions, cultural values, and the pre-existing landscape character. Effective mitigation measures have been considered by siting them away from residential areas to reduce visibility from key viewpoints, designing turbines that blend with the natural environment (the color and the glint)
	EIA does not have adequate information about the land value once the project take place	This is not an item of the ToR . For practical reasons it will be difficult to predict the land value earlier without experiencing the negative and positive consequences. For example, because of the new access roads

Responses to Letter No 639

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	Will reforestation benefit Mannar community and migratory birds? • Best forest areas of the Mannar island, which serves as vital stopover and refueling sites for migratory birds will be affected. • Disturbance to Mannar can affect bird tourism across the country. • Effects of removing a large number of Palmyra trees have not been properly studied in the EIA. • A total of 260 coconut trees will be affected by turbine construction. • Reforestation programs have not identified the areas where reforestation will happen. • EIA does not provide which species will have significant negative impacts due to the loss of +8,000 trees.	Read response 19. Which elaborates on forest patches. Refer to 30, 31. Refer to 44. The affected coconut plantations will be compensated considering loss of production over fruit bearing period. Selection of suitable sites for reforestation was not confirmed at the time of preparation of the EIA as selection of suitable sites were on discussion. An addendum is given for this, refer Common Answers 19. The impact on terrestrial flora will mainly on floral species except for coconut and palmyra. majority palmyra. The impact would be general for faunal species other than for some bat species. As for the impact on that, refer to response.
	Inadequate study on alternatives; Alternative sites and technology analysis is highly inadequate in this EIA.	Please refer to 36.
	Coastal protection is compromised; Eight wind turbines are located within the 300-meter proposed setback band, even though it is recommended not to build turbines in this coastal zone.	For the turbines close to drainage paths, construction stage mitigation measures have been provided. These drainage paths carry water only seasonally. Key word search under “Thona” (coastal stream) or “Drainage path” in the EIA will lend many occasions where the contended issue has been dealt with. The setback area has been completely avoided but not the Coastal Zone. The nearest turbine is 114m away from the shoreline. None of the present turbine locations will contribute to coastal erosion while being constructed adhering to mitigation measures or during the operation.

Responses to Letter No 639

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		Please refer to 7 and 14.
	Unsolved methods for transportation of turbine parts; The EIA report includes conflicting and inconsistent descriptions of how the turbine parts will be transported.	As stated in the EIA the final turbine transport alternative has not been selected. Separate studies approvals will be sought from the authorities for turbine transportation. Most of the social impacts during land transportation could be minimized through night transport. Please refer to 42.
	Conclusion. • Since the potential for negative impacts are higher than positive impacts, CEJ strongly oppose the proposed project. • The EIA has not adequately considered the combined effects of this project along with anticipated future projects. • Sand dunes and mudflats could be adversely affected. • Extended cost benefit analysis has not considered the cost of the loss of fishery, long term impact on birds and bird migration and many other ecological impacts. • Requesting CEA to conduct public hearing.	All projects have negative impacts. The EIA has given mitigation measures to avoid and minimize the most negative impacts. All unavoidable impacts will be compensated (this is the standard procedure practiced in any EIA procedure globally) Refer to 38. See exclusion 5.1 exclusion criteria. Refer to 35. CEA will decide about this.

RESPONSES TO THE PUBLIC COMMENTS OF EFL

- ✓ *This Public Comment given by EFL contains text from Mannar Phase 1 Extension EIA which is not relevant to this EIA (Example, Comment 1). We are unsure if this is an obvious mistake on the part of EFL or whether they are trying to use these comments deviously to point out shortcomings in the Phase II report.*
- ✓ *Whether these acts are owing to the clear negligence of the contributors or whether they intend to cast a doubt on the credibility of the report is unclear. In any case this has made professionals who have approved it, mere rubber stamps.*
- ✓ *We have found evidence for such mistakes in several comments where the quoted sections and page numbers relate to the Mannar Phase 1 Extension Project report (Done by CEB). Some examples are given under the detailed answer.*
- ✓ *There are many contributors to this Public Comments including academics, (a professor from a leading university), a leading environmental lawyer who holds an honorary doctorate, and a repertoire of other professionals representing environment-related organizations.*
- ✓ *It is unimaginable that a leading law firm which appears in the interest of the public has stooped to such abysmal levels. We presume that EFL and the contributors to this document are aware of the legal maxim that **"He who comes into equity must come with clean hands"**.*
- ✓ *As the PP we condemn these inappropriate acts, for which EFL should be requested to provide a suitable explanation. We go by the principle of natural justice, **"No man should be condemned unheard."***
- ✓ *While we are not against a Public Hearing to listen to genuine public concerns, it is within the mandate of the CEA to decide on whether it is required. However, granting a Public Hearing based on misleading, erroneous and unsubstantiated comments is not justifiable.*
- ✓ *The PP is not bound to answer such wrong comments, which are not related to this EIA. The comments relevant to this EIA are unsubstantiated, run of the mill type comments for which specific scientific answers cannot be fully given.*
- ✓ *The EIA team we have appointed, has always acted very professionally in writing the EIA Report, and providing responses to the Public Comments, based on scientific principles and correct facts.*

1. Technical concerns about the Environmental Impact Assessment Report

All answers are given in bold and italics. Wrong and out of context citations by EFL have been numbered

Q 0.1 This EIA has misconstrued its purpose.

The purpose behind conducting an EIA is mainly to identify the Impacts of the Project on the Environment as a Precautionary Approach, which is a prime principle in environmental conservation and management. However, this report takes a different perspective whereas it appears that it focuses more on the impacts of the environment on the project.

1

E.g.:

“Hence, this process would not be impacted to the project related structures, as wind turbine locations are situated in the middle sections of dune structures (at least hundred meters away from the SW boundary zone of the existing sand dunes).” – page x, Executive Summary

එබැවින්, සුළං චර්මයක ස්ථාන කළු වැටි ව්‍යුහවල මැද කොටස්වල (පවත්නා වැටි කළු වල නිවැරදිව පිහිටි කලාපයේ සිට අවම වශයෙන් මීටර සියයක් දුරින්) පිහිටා ඇති බැවින්, මෙම ක්‍රියාවලිය වායානි ආශ්‍රිත ව්‍යුහයන්ට බලපෑමක් නැත.

2

“The objective of the EIA is to comply with the requirements given in the TOR (Annex 1) and submit a comprehensive report with required information to the CC&CRMD for its perusal.” – page 6, Objectives of the EIA report.

R 0.1: The citations given cannot be found on Page X of the Executive Summary nor in Page 6 of the EIA Report which is now in the public domain. However, we find that this information is in the Mannar Phase I Extension Project EIA done by CEB that has been cut and pasted into this Public Comment. (Pages x and 6). Then who has misconstrued? The EIA Team or EFL? The subterranean notion leading to the use of these erroneous extraneous references to point out that this EIA has misconstrued its purpose, may be guileful. The EIA has dealt with the impacts on the environment and proposed mitigation measures following the standard procedure. Even if there were a reference or two like this, how can such few sentences misconstrue the entire EIA? The bona fides of the contributors (university professors, leading lawyers, and others) are questionable.

Q 0.2: The EIA puts a great importance on the construction stage over the operation stage which is the most necessary phase to consider as a precautionary approach. It also neglects impacts in the event of accidents, breakdown, or closure of the project. For example, once the project lifetime is over within 25 years or so, what would be the fate of the massive structure? Who will take the responsibility of disposal should be clearly addressed.

R 0.2: over emphasis on construction phase over more important operational phase:

We cannot agree with this comment We conducted a thorough and systematic risk assessment process for impact identification, analysis, and evaluation. This process identified numerous significant impacts. Specific to the construction phase, issues related to the transportation of large wind turbines, deep excavation works, salinity intrusion, disturbance to sand dunes, coastal habitats, and sensitive ecosystems, as well as construction-phase waste disposal and water pollution were among many other. Given the diversity of these impacts, we implemented specific mitigation measures to address each issue effectively, all aiming towards the overarching goal of impact mitigation.

Similarly, we systematically addressed all operational phase impacts using the same rigorous methodology. Through strategic planning, we minimized the number of potential impacts by avoiding impacts from the outset. For instance, we excluded protected areas and physical relocation of settlements to ensure minimal disruption. Micro-siting was comprehensively used for site specific impact avoidance and reduction. Furthermore, we have implemented specific mitigation measures for all significant operational impacts, such as installing radar systems to mitigate bird collision risks and using underground cabling to reduce environmental disruption. We also proposed comprehensive flood risk management strategies.

To ensure the effective implementation of Environmental Management Plan (EMP), EIA proposed the establishment of a Grievance Redress Mechanism (GRM) and a Project Management Unit (PMU), both of which are widely recognized as best practices in environmental management. These measures collectively ensure that all potential impacts are managed proactively and efficiently, rendering the concern about a lack of pollution mitigation plans unfounded.

Accidents: Annex-6-1: Opr-12, Pre-Con 4, Section 4.5.1.5, Section 5.4.3. A key word search of “accidents” lends about 27 occurrences that deal with various types of accidents. It is seen that this comment has been given without reading the relevant sections. The report does not deal with breakdowns as turbine breakdowns do not impose a significant impact on the environment.

This report does not deal with the project closure and the resulting consequences. A new section will be added in the Addendum to the EIA, dealing with project closure.

The following comment was broken down to several parts to gain clarity and provide answers.

Q 0.3: This EIA is a good example where Scientific tools such as Modeling is used to mask negative impacts of an invasive project. The so called “Collision Risk Model” is not relevant to evaluate on impact as this mechanistic model is neither tested nor validated for this region. Merely adopting a (*sic*) alien model to justify the feasibility of the project by masking the actual impact on avifauna can be considered as misuse of science.

R 0.3: *The collision model has been tested for Mannar Phase 1 Wind Farm Project. What is meant by a mechanistic model is not clear. Hence it is not an alien model and not in any way a misuse of science. We have not only used the model with measured data for validation but also stated the uncertainties of the model. The bird collision impact has not been masked. The bird collision risk has been assessed as the most significant impact under the Risk Analysis in Chapter 4 despite the model’s prediction of low bird collisions. After identification it as a prominent risk, mitigation measures have been provided.*

Q 0.4: One of the major references related to CRM, which is Robinson 2005 is not existing and Grimmet et al 2012, Alerstam et al 2007 are not directly relevant to CRM in this area. The suitability of this CRM is highly skeptical, and the EIA team would have put some effort to validated it using actual data during the past few years as this was suggested by a Consultancy report by one of the chief investigators.

R 0.4: *The comment that the reference, Robinson 2005 does not exist is not correct as it is listed in British Trust for Ornithology Web Site as well as Google scholar profile of Robert A Robinson with 56 citations. The respondents are indicating the model is unsuitable without even knowing the details of the model or providing valid reasons as to why it is not suitable, which is however*

consistent with most of the comments provided which are either erroneous or lacks any logical basis.

Q 0.5: Any model which is not validated by a good set of data is sterile. It is highly unethical that a model which is not validated and peer reviewed, but an unevaluated consultancy report is utilized to justify installing such a high impact project.

R 0.5: *Although peer reviewed studies could be used there is no law prohibiting the use of studies based on measurements and other data in an EIA study. This is the usual practice. A top legal firm which is very much acquainted with the EIA process showing ignorance about this practice is perplexing. A review is done within the EIA process itself is (a) by the line agencies directly involved such as the Department of Wildlife Conservation, (b) the CEA Technical Evaluation Committee comprising experts in relevant fields, and (c) all inclusive of the general public during a stipulated period. EFL, while not availing itself to this facility, is now trying to cite superficial comments with terminological inexactitudes to throw a wet blanket to the studies already carried out within its practical limits.*

Had EFL been honest in their approach, why did it not read the report thoroughly nor get the very experts who have signed the document or any other independent expert to scrutinize the EIA and other related docs prior to resorting to an ostentatious semantical legerdemain.

Commenting that bird surveys were not conducted during the migratory season is one such instance when Annexure 9 clearly states that the bird surveys were done for a period of 1 year. It should be obvious to anyone (let alone the experts) to know that the period mentioned does indeed include the migratory season. This makes it clear that the report and related docs have not been read in entirety.

Q 0.6: It is hilarious that without generating data directly during EIA period to make it an empirical project, the investigators are misusing the information to go for justifying establishing turbines in this sensitive area.

R 0.6: *This comment is hilarious indeed as it lacks proper knowledge as to what an EIA actually involves. It is true that data on flora and fauna was gathered during the limited period over which the EIA was carried out (the comment itself justifies this), the observations and assessments of the biota are based on a wealth of other information available to the experts which has been used (mandatorily) when compiling species lists and predicting impacts. Isn't this what is required? Basing the report on observations conducted during a short period of time would surely underestimate species leading to incorrect recommendations being made, If EFL is indeed lobbying for conservation interests, going beyond the limited period of data collection should be taken positively.*

Contrary to the unfounded accusation the EIA team has acquired data during the EIA period through measurements and observations, and such information coupled with other information the analysis was carried out. How the information has been misused, have not been technically justified. However, in the EIA study all technical facts and figures have been provided. What evidence do you have to show that the EIA is an empirical project? We need technical facts, without verbal gymnastics, which have been used to throw a red herring to the public commenting process.

We are unsure if the commentators know the meaning of the word 'empirical' and what relevance

it has in the context of the EIA. In any case a realistic prediction of impacts would necessitate experts to use their overall knowledge on the subject.

Q 0.7: The model also neglected some of common environmental phenomenon in the area such as formation of thermal currents that result in soaring behavior of some of the birds (which is a comfort behavior) that would make them vulnerable to the impact of the proposed project.

R 0.7: *The commentors have sadly missed text in the report reiterating the fact that content of the report has not been understood, sections of the report have been purposely overlooked and/or commented without reading the report. The large active sand dune was excluded because of the soaring raptors, and this has been mentioned in Table 5-20 of the EIA Report. Also refer to Section 3.4.3 of the EIA Report under “Sand Dunes”.*

Q 0.8: The usage of avifaunal ecological data collected during the EIA period to validate this project is minimal. The type of ecological data that is used to take decisions; species richness, abundance, and certain biological characters of species of their choice; won't be adequate to evaluate the actual impact on avifauna and other aerial species thus not depicting the actual impact of the project.

R 0.8: *EFL has contradicted their own statements by first saying that “It is hilarious that without generating data directly during EIA period to make it an empirical project” and later telling “The usage of avifaunal ecological data collected during the EIA period to validate this project is minimal”.*

While we leave you to resolve your own contradictions, the response for this is given above. We also invite the commentors to patiently read the response 4 of the “Common Answers” as it would adequately provide clarifications.

Q 0.9: Wind power turbines: Every project has several stages during which environmental impacts occur. The main phases are the construction phase, operation phase and closure. When considering the operation phase, we need to look at the structure and space covered by the equipment involved. The wind turbines have a greater impact on the air space during their operation, thereby impacting the avifaunal movement.

R 0.9: *The structure and the space involved during the turbine operations have been indicated in Table 2-3 of the EIA Report. The impact on avifauna has been considered through turbine bird modelling considering the turbine position, turbine heights and turbine blade lengths and bird flight paths.*

Q 0.10: Central Asian Flyway: Sri Lanka is the southernmost point in the Central Asian Flyway which later splits into three main routes. Bird migration occurs during the period early August to late March though birds are sometimes seen even in early April. The birds normally fly at about 3000FT to 1000ft ALT. Inside the Island they fly at ground level.

There are three (03) major routes as follows:

North Western Route: The birds on northwestern route are reaching their destination in the Indo-Asian flyway. The birds enter the Island through Jaffna peninsula, and they fly over the following areas.

Eastern Route: This is the longest migratory route in Sri Lanka. The birds of Indu-Asian fly way enter the island through Jaffna peninsula and take the following route.

Central Route: Some birds take the central route and enter the hilly area and their final destinations are destinations such as Uda-walawe and Horton Plains. They are mainly forest birds and raptors (birds of prey).

It is apparent that migrants of any passage would be injuriously affected by the proposed windmill project.

R 0.10: While we do not need EFL to brief the experts on known facts on the routes of migratory birds, let us look at the point the commenter is attempting to make – that birds may be affected by the wind turbines. Further, the three routes described above are not based on any scientific basis as per our understanding there are no published studies in Sri Lanka to support this claim other than observations that tend to support that such a pattern exist.

The following responses should be digested by the commentors to find plausible answers to the comments.

- ***Bird movement within and around the Mannar island – Response No. 3***
- ***Providing some free aerial passage for birds flying through the Mannar Island – Response No.8.***
- ***Mitigating collisions of bird – Responses No. 14,15 and 16.***

1.1 Avifaunal Study

Q 1.1: “Birds: The bird study employed two main methods, vantage point survey and block counts. Altogether eight vantage points were established, and a given vantage point was monitored for 12 hours from 6 am to 6 pm to record temporal changes in bird activity as well as replicated four times to determine seasonal changes. The 12-hour sampling period was divided into three sampling windows of 4 hours (6 am to 10 am; 10 am to 2 pm and 2 pm to 6 pm). During a given sampling session each vantage point was sampled for 4 hours and therefore to complete the 12-hour sampling period it took three months. Then was repeated four times during the 12-month sampling period, which yielded 48 hours of observation per vantage point and a total of 384 hours of sampling hours for the whole project. The data collected from the vantage point surveys have been sent to the collision risk modelling expert to determine collision risk for birds by the proposed wind farm.” (Environmental Impact Assessment (EIA) for the proposed 250 MW Mannar Wind Power Project (Phase II))

R 1.1: Vantage point surveys are not carried out by observers traversing forest/ sand dunes, which is line transect survey. Vantage point surveys involve two observers standing at one point and where there is a good view shed (generally about a 2km radius) and observe all the birds that are flying through the view shed and record their identity, number, flight height and flight direction and for species identified as critical the flight path mapping is done until the bird moves out of the view shed. This would allow recording all the birds that pass through the site and vantage points are strategically selected to make sure their view sheds overlap and therefore this would allow monitoring all the birds that move around the project affected areas including their seasonal and temporal changes and this data is used for the collision modelling. Generally, 36 hours of observation is required covering different times of the day and two seasons in order to get a good idea about the birds and their movements in a given area. This is the reason why the survey was conducted in this manner and in

this study each vantage point was surveyed for 48 hours which is more than the standard practiced.

Q 1.1.a: Bird observations were conducted by observers who traversed the forest/ sand dunes on foot during the daytime, specifically from 6 am to 6 pm. However, a significant proportion of movement between protected areas predominantly occurs from 6 pm to 6 am. Most birds exhibit substantial nocturnal activity, migrating in large flocks at night to conserve energy and avoid predation. In the Mannar region, the daytime monitoring approach is deemed insufficient because it does not capture the predominant nocturnal behavior of these birds.

R 1.1.a: *The statement that significant amount of movement takes place at night is not substantiated by any data as per our understanding there are no published studies in Sri Lanka to support this claim. It is only a notion entertained by the respondent based on studies reporting in long range migration of birds. It should be noted that once the birds arrive at a location their movement patterns differ from what is observed during their passage to and from between breeding and over wintering sites.*

Q 1.1.b: Notably, the night bird survey did not align with the behavioral patterns of the species in the region. This omission led to the exclusion of significant nocturnal bird species, such as the nightjars, from the observation list in Mannar.

R 1.1.b: *The commentors have got utterly confused – the statement above ‘Notably, the night bird survey did not align with the behavioral patterns of the species in the region’ is clearly wrong as no night surveys were conducted for birds.*

Read response No. 11 which clearly spells out why it is impractical to conduct nocturnal surveys. This would be only understood by experts in the field. The lack of nighttime data has been more than compensated for in the EIA through the recommendations of the maximum possible mitigatory measures to reduce bird collision risks.

Q 1.1.c: Furthermore, the Environmental Impact Assessment (EIA) did not address the critical migratory period of birds during the study, resulting in the oversight of substantial bird movement. Consequently, the observers failed to witness the large-scale movement of birds, particularly since resident birds in Mannar typically do not exhibit the same flocking behavior as migratory ones.

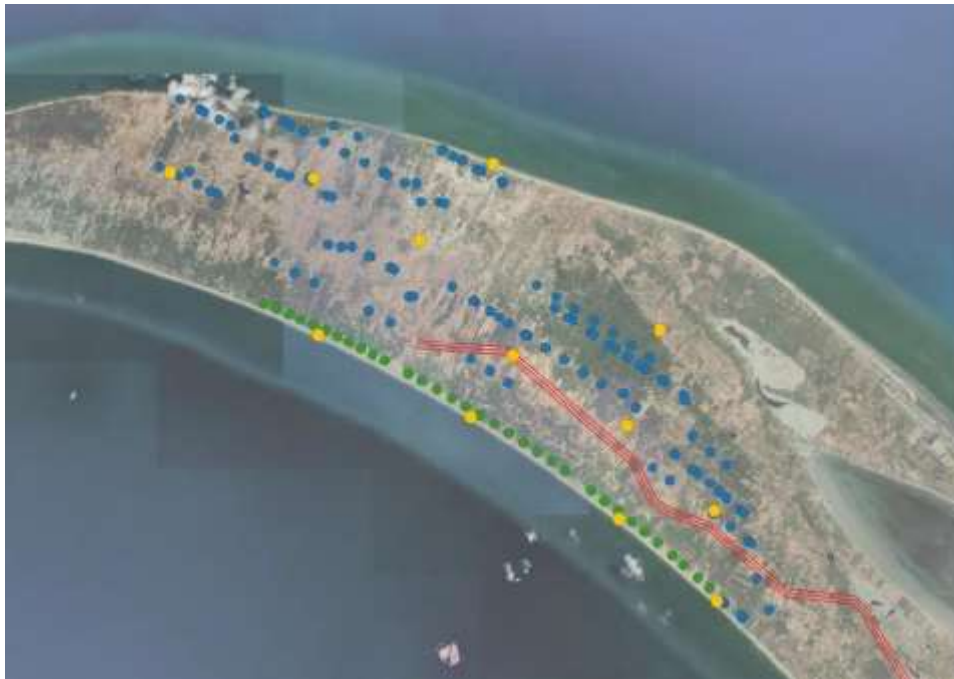


Figure 1 Vantage point survey of the bird study the vantage points surveyed are indicated in yellow circles. The four vantage points indicated along the southern shore depict the vantage points that were established for the 100 MW windfarm constructed and operated by the Ceylon Electricity Board. The red line indicates the transmission line from Nadukuda to Mannar. Blue circles indicate the proposed wind turbines, and the green circles indicate the existing wind turbines of the CEB

R 1.1.c: *Responding to this comment is truly a waste of time when the commentators have miserably failed in their duty to read the report. It has been clearly stated in the EIA (Sections 3.4.6 and 4.3.2) that the bird survey was done for a period of a year. See also response No. 4.*

Since majority of the birds move along the coast it is inevitable that fewer numbers would be travelling through the Mannar island as was confirmed by the daytime surveys. The aerial corridor has been provided to facilitate movement of birds between the congregational areas on either side of the island. See response 8.

Q 1.1.d: They propose 52 turbines parallel to the Thambapawani Wind Power Project, as depicted in the above picture (Fig. 1). However, the illustration indicates only 12 vantage points for the environmental impact assessment (EIA), which appears insufficient for such a large-scale project. While birds are mobile, some species are confined to specific areas, or they have preferred habitats such as mudflats. The choice of only 12 vantage points is inadequate for assessing the potential impact of the proposed wind farm.

R 1.1.d: *On what grounds does EFL say the vantage points were not sufficient? In establishing the vantage points for bird observations, both the turbine positions and the spatial coverage have been considered. It is the experience and the judgement of the avifaunal experts and the spread pattern of vantage points in similar studies that count. Also, please refer to the detail comment given above which provides the rationale for placing the Vantage Points.*

Read response 15.

Q 1.1.e: Furthermore, a third of the selected vantage points are already within the existing wind farm area, posing another issue with the vantage point selection. The red line mentioned in the illustration represents the power line, a potential collision risk for larger birds. Notably, only one vantage point is directly associated with the power line, which is insufficient given the significance of bird collisions with power lines.

R 1.1.e: *It is essential to monitor the bird movements on the existing turbines in tandem with the proposed turbine locations, to observe the bird behavior and collision with the existing turbines to take the cue for the application to the current turbines.*

The red line is not the power line of the current project. The present EIA does not cover the powerlines. Read response 45.

Q 1.1.f: To address these concerns, it is crucial to conduct more than the proposed 12 vantage counts for the EIA. Additionally, the proximity of some vantage points to each other should be reconsidered, as they may introduce bias into the assessment. The current vantage points are not randomly distributed, as evident from the provided picture. Therefore, a more comprehensive and strategically distributed set of vantage points is necessary for a thorough environmental impact assessment. Establishing such vantage points would be expensive but compulsory.

R 1.1.f: *The avifaunal expert in the EIA has used his judgement and the experience of him. Certainly, the vantage points are not randomly distributed. Each vantage point has been selected on its own merit to facilitate the bird observations covering the project area. The viewshed overlaps have been considered and the viewshed coverage and overlap is sufficient to cover the Project Area. Once again please read the comment above giving the rationale for vantage point selection. As per the first comment given by the respondent who seems to have confused vantage point surveys with line transect survey indicate that the respondent is not familiar with this particular survey technique. Therefore, we would like to reiterate that respondents must understand the technical aspects before they respond as their lack of understanding appears have clouded their judgement leading to making illogical statements.*

Q 1.1.g: The EIA proposes that the turbines should adopt a detection system. However, the sensitivity and effectiveness of the detection systems are unpredicted and unaccounted for. This could be effective on solitary birds, but migratory birds can be in flocks, pairs or solitary birds.

R 1.1.g: *The radars are internationally used to detect bird flocks and shutdown the turbines to avoid collision. EFL says that the effectiveness of radars is unpredicted when such radars are used all over the world for these purposes? What evidence do they have to the contrary? The following references given under “5 Technologies for Reducing Bird Mortality at Wind Farms” ([5 Technologies for Reducing Bird Mortality at Wind Farms \(robinradar.com\)](https://www.robinradar.com/)) shows the effectiveness of radar in detecting bird flocks along with their pros and cons. The pros outweigh the cons.*

Radars can detect and log hundreds of birds at once, including their size, speed, direction, and flight path. Such systems have been used as a practice in many countries for reducing bird collisions in wind farm sites that operate at a large scale, in addition to their superior range, spanning kilometers of a wide area. Avian radars can also be integrated with turbine shutdown functionality, providing greater accuracy for operators to reduce downtime.

Pros:

***Superior range capabilities
Suitable for large wind farm sites
Turbine shutdown functionality
Detailed, scientific data
24/7, 365 days a year use
Capable of working in fog conditions***

Cons:

***Affected by heavy rain
Line of sight limitations
Can't identify specific species, only size***

Q 1.1.h: The EIA Report sheds very little light on migratory birds and their pathways and casually suggests that studies were conducted off season and there should be a monitoring study following the EIA for Phase 1. However, there has been enough research initiated by Field Ornithology Group of Sri Lanka and sources and reports of literature such as e-bird, newspaper articles and experts conducting research in the area who could have been consulted in the process, if there is an absence of published scientific literature. It is a pity to observe that there is much sensible general consensus among the birders and ornithologists about the direct importance of this area for avifaunal migration when the experts conducting the EIA suggest another study costing 3.6 million for monitoring which should eventually state the obvious that this project needs to be shifted from the proposed location.

R 1.1.h: *We are baffled as to why the comment 'The EIA Report sheds very little light on migratory birds and their pathways and casually suggests that studies were conducted off season' was made when the EIA report devotes a substantial portion of its text to migratory birds. It would seem the comment has been written by a person who has not read the report (and annexes), not understood it, or purposefully overlooked it.*

There are no citations about an additional study costing 3.6 million in our EIA report. We believe that these erroneous citations which are in the Mannar Phase I, report as in the many other instances when the reader has got muddled or has attempted in vain to discredit the present EIA Team and / or to inveigle the unsuspecting public.

EFL and the entourage of the signatories to this document has put their feet in their mouths again and pulled down their 'credibility, to low ebb.

And about any misconceptions about the bird studies not having covered the migratory season the commenter is invited to read response 10.

Q 1.1.i: The line of proposed turbines considered for the EIA are in line with the migratory route, therefore directly impacting the birdlife. Birds that inhabit a particular area for a long- time could expected to habituate (avoid the stimuli), however, birds who reach the country after a very long journey at a particular time of the year and exhausted due to the long-travel distance may find this a death trap. Many birds could not differentiate a cloud from a white wall when they are so fatigued after a long journey, and it is a known truth by scientists and citizen scientists. Thus, this important area should be kept intact for them. The decision should be taken by the humans to not to make them vulnerable.

R 1.1.i: *What evidence does EFL have to state that the turbines directly fall across the path of birds?*

Mannar has been ear-marked as a potential area for wind power generation. Given this, the EIA team has strived to reduce all impacts on birds to a bare minimum. On the contrary, scientific evidence indicates that many of the migratory birds use the coastal route, congregate at the protected areas and might also move between them. Provisions have been therefore made to avoid all sensitive locations and reduce collision risks through many other means such using underground powerlines and installed radar systems.

Q 1.1.j: Scientists should completely deny doing further EIA in this area to find out the feasibility of such project (but in-depth behavioural and ecological studies) as the existing evidence is more than enough to consider this an important area that should be kept intact for the sake of the benefit of the future generations. In fact, authorities should take steps to upgrade the conservation status of such areas or the authorities such as CEA naming them as highly sensitive areas in a formal manner for the sake of the future of birds.

R 1.1.j: *EFL has not quoted any existing evidence. Mere semantics. We agree to the conservation of the bird infested areas and that has already been done and this project is away from such sensitive areas.*

Q 1.1.k: In the Environmental Management Plan (EMP), the proposed mitigation measures concerning bird migration is two-fold: It only considers the nuisance to birds during the construction phase. If the turbine construction crosses their migratory path it is recommended to restrict construction work during the known period of migration/breeding period by the birds. The construction period was suggested to be finalized in keeping with the migratory season. However, it doesn't give much importance to the operation phase when the true damage is bound to happen. The mitigatory measure suggested in the EMP for possible collision of migrant birds with wind turbines is merely monitoring the bird movements during the migration period. The EMP does not even suggest holding operation of the turbines during the migratory season, which will render the power plant below efficient levels.

R 1.1.k: *This statement is not true. The EIA has not only recommended bird monitoring through radar surveillance, and it has recommended to shut down the turbine after bird flock migration detection towards the turbines (Page 2016 of the EIA). Please look at the following remarks in the same page.*

In the event of a radar system failure, it is imperative to promptly suspend turbine operation until the necessary corrective measures are implemented and the radar system is fully restored. This precautionary action is crucial to ensure the overall integrity and safety of the system. Once the radar system has been rectified and is functioning optimally, normal turbine operations can resume, maintaining a seamless and secure operational environment.

In case if there is a significant number of bird collisions at a given turbine, the turbine will be shut down immediately. The new operation schedule should commence only after a careful investigation on the cause -impact analysis followed by rectification of the cause. If the cause cannot be rectified permanent operation restrictions on the given turbine will be done. We did not add this in detailed in the common EMP but, this will be developed with a specific bird collision risk management plan which will be developed by the PMU in collaboration with the DWC.CEA and the project proponent. The PMU can utilize all support information pertinent to this given in the relevant sections, the special avifauna studies, Collision risk assessments etc., The PMU can even decide on new studies. The PMU has provisions to hire a specialist for this purpose. Therefore, it may not be necessary to dedicate a separate comprehensive section to this aspect in the Environmental Impact Assessment (EIA) since it falls under the purview and obligation of the PMU.

The statement that EMP is suggesting merely monitoring is erroneous. The whole idea of monitoring is

to identify and determine collision patterns that will be used to make adaptive changes to turbine operation such as shut down of specific turbines at specific time periods if monitoring indicate that there is high rate of collision involving a specific turbine(s) or during certain times of the year.

Q 1.1.l: The EIA does not consider the impact of the noise on avifauna.

R 1.1.l: *This has been addressed, Refer response – No 05*

Q 1.1.m: There are 5 turbines near the lagoon which will impact nesting and habitats of the fauna during the construction and maintenance stages.

R 1.1.m: *There are no 5 turbines close to the lagoon according to our latest layout in Figure A in the Executive Summary. The turbine layout given Figure 3 of the EFL comment is not relevant to this EIA. Additionally, Figure 3-22 of the Mannar Phase 1 Extension project shows 5 wind turbines in the lagoon. This shows that EFL has quoted irrelevant facts from some other report, showing total negligence on the part of EFL and contributors.*

2

Q 1.1.n: Accordingly, we could say that this EIA does not consider the most imminent ecological threat from the wind turbines which is its effect to migratory avifauna.

R 1.1.n: *The EIA has sufficiently addressed this issue using scientific evidence backed by on-site observations. All evidence has been provided in different sections of the EIA.*



Figure 2 Migratory paths of birds in Sri Lanka extracted from Birds of Sri Lanka

1.2 Impacts on avifauna and their migratory / movement paths

1.2.1 Death and injury due to collision

“Birds flying through the turbine rotor swept zone, are potentially at risk of collision and serious injury or death. Elsewhere in the world, kills due to turbines have been found to range from 1.8 birds per MW (USA), 4.6 and 8.2 birds per turbine per year (South Africa) (Bennun et al., 2021). It is reported that bird fatalities increase at low wind speeds, and before and after passage of storm fronts. Not surprisingly, impacts on birds will be greater during the migratory season (September to April) (Smallwood & Bell, 2020). It should be noted that the highest winds are observed during the

period May to October when the southwest monsoon is active. Therefore, the bird density, which is an important factor that determines collision, is low in Mannar during the period when highest generation capacity is present”.

- Based on the results of the post construction monitoring of the existing Thambapavani wind farm, indicates that collision risk for migratory species, that arrive at Mannar island in large numbers in a dispersed passage is comparatively low compared to resident birds. Out of the 139 carcasses recorded representing 24 species migrants accounted for 6 collisions (4%) representing 4 species (16%).
- Many residential birds of prey including Brahminy Kites and Serpent Eagles, soar over the large sand dunes in search of prey. This was frequently observed at turbine locations. Therefore, such species would be exposed to greater risks of collision than other species.

R 1.2.1: *Indeed so, that is why turbines initially designed to be installed in large sand dunes were shifted.*

Q.1.2.1.a: The mortality of such local species increases with turbine tower height and rotor diameter. The results of the post construction monitoring of the existing wind farm in Mannar indicates that birds of prey are highly vulnerable for collision with turbines (78% of the collisions recorded comprise birds of prey with Brahminy kites accounting for 72% of the collisions). However, we should keep in mind that only a fraction of damage is recorded this way while the majority of casualties may be undetected as no such regular monitoring programme is executed.

R 1.2.1.a: *Post construction surveys were conducted at a frequency of four surveys per month (Weekly basis) / Therefore the claim that no regular surveys were done is an erroneous statement. Further the claim that the majority of casualties were undetected is an uninformed conclusion which has no logical basis.*

Q 1.2.1.b: The results of the collision risk modelling using a range of avoidance rates, with 98% adopted as a conservative position indicates that the percentage increase over the baseline mortality is negligible for most species recorded as well as species for which Mannar is considered as a critical. A low magnitude collision risks were also predicted for Indian Cormorant, Little Egret and Intermediate Egret, Brahminy Kite and White-bellied Sea-eagle. Further, model predictions using a 98% avoidance rate for the two raptors Brahminy Kite and White-bellied Sea-eagle (which accounts for 72% of the collisions at Thambapawani wind farm) are 21 and 1.4 collisions per year which are less than the numbers recorded at Thambapawani wind farm at present.” Environmental Impact Assessment (EIA) for the proposed 250 MW Mannar Wind Power Project (Phase II) page 172)

R 1.2.1.b: *We can't help but argue that the expected bird collisions in Mannar Phase II would be lower than that resulting from Mannar Phase I due to the following reasons,*

- ✓ ***Many of the collisions resulted from overhead power lines in Phase I – We strongly propose underground powerlines / cables for Phase II which would eliminate this risk altogether.***
- ✓ ***The Mannar Phase I is located closer to the coast which would mean that it will be in the route of more migrants than in Phase II turbines located within the Mannar island.***
- ✓ ***A safe aerial passage connecting the PA on either side of the Mannar Island has been left unobstructed.***
- ✓ ***The radar detection system proposed for Phase II is much more advanced and more sensitive than that used in Phase I.***

- ✓ *Location specific features of the landscape was considered when abolishing and shifting through micro-siting exercise to minimize impacts on critical habitats. E.g. large sand dunes were avoided.*
- ✓ *The residential bird collisions (e.g. Brahminy kite) were more owing to the fact that some turbine locations / power lines were in close proximity to the fish landing site (seine nets), where these birds are attracted by the fish caught. No such places are present in the Phase II Mannar site.*
- ✓ *Special evidence-based monitoring and reporting system will be in place to take any action of non-compliance and if bird mortalities are high.*

Q 1.2.1.c: Indeed, all animals in a specific ecosystem contribute to the intricate web and chain of life. The issue arises when some animals are killed by the turbines and attract scavengers like crows to the area, creating an indirect bird collision rate that compounds the impact of direct bird collisions, especially near the power line.

Crows attracted to carcasses around wind turbines, may also use power cables as roosting sites, exacerbating the indirect collision rate. By choosing underground power cables, the risk of attracting scavengers and roosting birds to the turbine vicinity would be minimized. This not only reduces direct and indirect bird collisions associated with the power infrastructure but also mitigates the attraction of other scavengers like mongoose, feral dogs, cats, and pigs to the area. These aspects are neglected. The presence of these additional scavengers poses a threat to ground-nesting birds, impacting migratory and breeding bird populations. Indirect bird collisions on wind turbines can lead to heightened mortality pressure, potentially resulting in a decline in bird populations in the affected area.

R 1.2.1.c: *The commenter acknowledges that underground power cables would reduce risks of collisions, which is exactly what the report has recommended. How it evaded the reader is a mystery. See Section 5.4.1.5 of the EIA Report.*

Crows would be attracted to the carcasses, but the carcasses would be on the ground, isn't it? It is therefore highly unlikely that these crows would collide with the turbine blades.

It should also be pointed out that most of these statements are not supported by any data but simply notions entertained by the respondents. Bird Collision studies have been conducted by the ornithologist who contributed to the EIA report, for 32 months on a regular basis and have not seen any evidence to support that there will be an increase in crow population or increase in predator presence along the existing Thambapavani wind farm or transmission line from Nadukuda to Mannar. Further, during the 32-month post construction carcass survey no crow collisions were observed in the transmission line and only two crows (one large-billed crow and one house crow) have collided with the wind turbines that shows these statements are not based on any scientific evidence as many of the statements made by the respondents.

1.2.2 Barrier effects resulting in alterations in flight paths.

“The birds are forced to alter their migration flyways or local flight paths to avoid a wind farm. This effect is of concern because of the possibility of increased energy expenditure when birds have to fly further in order to avoid a large array of turbines, and the potential disruption of linkages between distant feeding, roosting, molting and breeding areas that are otherwise available for them. The proposed wind farm comprises multiple rows of turbines (Figure 4-8) and therefore, will act as a barrier preventing access to important bird habitats. This may, in the long term, result in changes in flight paths, particularly as there

are large numbers of closely spaced turbines in each landscape. Further, if the transmission cables connecting the turbines are placed above ground this will create a further barrier effect as this would create a network of lines across the island based on the placement of the turbine arrays. It should be noted that the number of carcasses recorded during the post construction monitoring of the existing windfarm and transmission line across Vankalai Sanctuary indicate that bird mortality due to the transmission line (235) is much higher than what is recorded at the wind farm “(Environmental Impact Assessment (EIA) for the proposed 250 MW Mannar Wind Power Project (Phase II) page 139).

Migratory birds arriving on the island, guided by visual cues, face significant challenges when encountering rows of wind turbines. These birds, often traveling in large flocks along established routes, are at an increased risk of collisions with the turbines. It is essential to recognize that any obstacles impeding their flight paths not only result in fatalities but also compel them to expend critical energy reserves, potentially leading to altered routes or the abandonment of essential rest stops. Observations in other countries indicate that migrating raptors adjust their flight trajectories to avoid wind farms, suggesting a potential long-term alteration in bird flight routes. The cumulative impact of these barrier effects may become more pronounced as additional wind farms are developed in the region. The introduction of the proposed windfarm could definitively alter the migratory routes of birds, presenting a major issue.

R 1.2.2: The possibility of the proposed wind power turbines and transmission lines acting as a barrier has been indicated in the EIA report. How this was predicted as ‘definitive’ by EFL is only known to them.

It should also be noted that the existing wind farm and transmission line has been operating for more than three years and during this time a significant reduction in migrants have not been recorded in the area. If there is a significant barrier effect the number of migrants should decline with time. The claim that the Mannar Phase II will significantly change the migratory routes is also unsubstantiated with any scientific evidence.

The barrier effects would be more of an issue when these turbines and transmission lines are located along the coast, a most birds take the coastline route. Nonetheless, to mitigate any impacts, it has been strongly recommended that powerline be laid underground, which would reduce the barrier effect and collision risks to a considerable extent. Also, note that impacts of transmission lines would be extensively dealt with this a separate EIA/IEE as required, and does not fall within the scope of the present EIA.

As a further precautionary measure, the experts have recommended a safe aerial corridor which is free of turbines and transmission lines to be maintained to allow for free passage of birds.

See responses 8, which will provide more details on the raised concerns.

1.2.3 Impacts on nature-based tourism

The Mannar region is renowned for its migratory birds, forming the backbone of an eco- tourism industry that directly relies on bird watching. Any changes in the migratory routes of birds in this area could have profound implications for bird-based eco-tourism in Sri Lanka. This potential alteration could be a significant issue affecting the annual income of Sri Lanka. The high bird diversity in the Mannar region is a primary attraction for bird watchers who choose Sri Lanka as their destination, underscoring the critical importance of preserving the existing migratory routes in this ecologically significant area. The economic aspects of this facet of the project is highly neglected or not genuinely attempted in the present EIA. This aspect may need developing an economic model incorporating all possible parameters that will

suggest relocating the present project.

R 1.2.3: The comment that Mannar is the backbone of the ecotourism industry is not supported by available statistics. As per the Mannar development plan for 2019-2030 by UDA the number of tourists arriving at Mannar is only 800 (Page 72) in 2016 and in that very same year more than 2 million tourists arrived in Sri Lanka according to the Annual Report of the Sri Lanka Tourism Development Authority. This indicates that Mannar attracts less than 0.04 tourists arriving in Sri Lanka. Further the development plan indicates that only 3000 tourists are expected by 2030. Therefore, like many other statements given by the respondents this too is a figment of imagination on their part and the respondents are reaching out too far to articulate arguments that are not supported by existing evidence and reflects a lack of understanding in their part about the ground realities that exist in the Mannar region.

Further, there will not be any impact on tourism as the core island areas where the turbines are sited are not used as tourist areas as most of them are private lands. The Sri Lanka Tourism Development Authority has granted the clearance to the project.

This comment concerns the project's impact on tourism, specifically due to potential effects on migratory birds, rather than land use for the project. The response to this comment should address the project's potential impacts on birds as identified by the EIA study. An expert in ornithology and related ecological aspects should prepare the response, clarifying whether any impacts on bird movements have been identified.

"The EIA study has identified no potential impact on bird populations or bird movements, including those of local and migratory birds. Consequently, the impact on bird-related tourism is negligible, and no adverse effects on businesses or the economy connected to this tourism are expected." This response can be further refined by the relevant expert.

1.2.4 Impacts on animals due to erection of transmission line

"Some threatened and endemic species were found in areas that will be cleared. Consequently, it is anticipated that the faunal populations in the region may experience a decline, particularly if all three phases of the wind power project (I, II, and III) are implemented. This will add to the harmful impacts of the already implemented developmental projects in the area which have also resulted in the clearance of vegetation. "(Environmental Impact Assessment (EIA) for the proposed 250 MW Mannar Wind Power Project (Phase II) page 174)

Waterholes serve as significant attractions for a diverse array of waterbirds, encompassing both native and migratory species. As the dry season unfolds, the concentration of waterbirds in these reservoirs intensifies. The increased density of waterbirds near waterholes heightens the likelihood of collisions with avifauna. The movement to and from water bodies, undertaken by both bats and birds, amplifies the risk of avian collisions near these water sources. Consequently, constructing towers near water bodies places avifaunal species at a notably elevated risk in that region. Given these considerations, it is evident that the proposed wind farm is not suitable for the Mannar region, where the heightened risk to avifauna near water bodies presents a significant concern.

R 1.2.4: The transmission line is not a part of this EIA although its tentative route has been mentioned in the EIA report. The impacts and mitigation measures will be provided under a future EIA/IEE study. The letter given by the Project Proponent which will be attached to the EIA report addendum is given

in response 45.

1.2.5 Other concerns

The EIA has also ignored ecological, social and economic impacts post operation stages such as breakdown, accidents, disruptions, or even closing of the project. In the event of a sudden accident, blowout, such as a turbine blade getting detached, there could be grave damages to surrounding human and other life, and property. It must be considered that the proposed wind power project is arranged in a linear manner with minimal distance allowance (300 m).

R 1.2.5: *The wind turbines are designed, constructed, and operated according to the IEC standards (International Electrotechnical Commission) IEC standards provide comprehensive measures to mitigate these risks and ensure the safety of wind turbine operations. For fire hazards, IEC 61400-24 specifies the installation of Lightning Protection Systems (LPS) and Surge Protection Devices (SPDs) to prevent lightning-induced fires. IEC 61400-1 requires robust mechanical and electrical designs, incorporating temperature monitoring and fire detection systems, to minimize the risk of fires from component failures. To prevent blade throw, IEC 61400-1 mandates stringent design criteria, including material quality, fatigue testing, and aerodynamic stability, alongside regular maintenance, and inspection protocols as per IEC 61400-30. For tower fall prevention, IEC 61400-1 outlines rigorous structural design and material standards, ensuring towers can withstand extreme loads and environmental stresses. Condition Monitoring Systems (CMS) are recommended to detect early signs of structural weaknesses or mechanical anomalies, facilitating timely maintenance and repairs. These standards collectively enhance the safety and reliability of wind turbine operations, safeguarding against fire, blade throw, and tower fall hazards.*

We have given specific inclusions under 5.4.3 Mitigation Measures for Blade throw Accidents., 2.3.3 Repair and maintenance activities with frequencies Lightning protection, 2.1.1.1 Wind power plant Capacity of an individual wind turbine. Design, installation, operation of wind turbine meeting the requirements of this standard will make the risk of hazards extremely low. However, for further clarification for the public and addendum will be given with more details.

Answers regarding breakdowns and accidents have already been provided. Turbine fire and blade throw risks are extremely rare events. Only a few turbines are near the housing clusters (within 200 m). Compensation and damage restoration is the only available mitigation measures including preventive maintenance. Turbines cannot be placed in a strict array as micro siting is needed to minimize environmental impacts. The minimum distance of more than 300m is already there as the usual minimum distance is 500m.

Q 1.2.5.a: The EIA does not put enough importance on the protected areas near the proposed project. There are 3 PAs (Vedithalathive Nature Reserve, Adam's Bridge National Park and Vankalai Bird Sanctuary) surrounding the proposed site from northwest, east and southeast. It erroneously refers to all three PAs as sanctuaries. The EIA Report erroneously states that the project does not fall within 100 m boundary of a sanctuary or within 1 mile of a natural reserve under the Fauna and Flora Protection Ordinance. (page 9)

R 1.2.5.a: *The protected areas and such areas have been completely avoided. The remarks given are erroneous. There are no such citations in Page 9 of the EIA Report. These texts appear in (Mannar Phase 1 Extension EIA -Page9 -Table 1–3-point Number 4)*

Q 1.2.5.b: The EIA team has forgotten that this area has a higher potential as a tourism.

R 1.2.5.b: *Existing evidence which has been presented above shows that the Potential of Mannar area for tourism development is very low based on the current state of tourism as well as the forecasts made by agencies that are responsible for tourism development. The EIA team has operated based on these ground realities rather than imaginary scenarios which are not supported by the existing evidence base. There is no tourism potential in the core project area as that area consists of arid private lands mostly. The Tourism Development Authority has been consulted and their approval has been granted. The turbines will become a tourist attraction.*

Q 1.2.5.c: It is apparent that the most of the major decisions were taken based on the data collected in 2014 to 2016 when a consultancy report had been prepared for the CEB by one of the chief investigators (Persival and Weerakoon 2016). Ideally, original data on avifauna and other fauna generated during the EIA period should be used to evaluate the project but this aspect is seriously neglected by the team. These avifaunal impacts aspect of this report could have been prepared without this EIA and the use of current data is minimal to predict the impacts. The expert team should be more sensitive to look at the impact on highly mobile species of animals, but only minimal attention is given to such dimensions.

4

R 1.2.5.c: *This shows the commentators' inability to fully understand the context in which is quoted. The decisions were taken on three sets of data; viz., studies conducted during the EIA, one year bird and bat study conducted for the Mannar Phase II, data available for Mannar Phase I (preconstruction, construction, and operation). This has been done to ensure that all available evidence is explored in identifying potential impacts and proposing mitigation measures. Please read response 4.*

Q 1.2.5.d: Mudflats and Invertebrate prey: Habitat and faunal list is composed of many errors. For example, mudflats are not considered as an important habitat in the area (page 67), however, at certain points they are considered to significant habitats (page 77). An effort has been put to find out plankton diversity in water, however, the most important factor that influence birds are the invertebrate prey inhabiting the mudflats. It is hilarious that mud samples are not examined although biota in mud is a major component of the feeding guild.

5

R 1.2.5.d: *There are no similar citations quoted in Pages 67 and 77 of this EIA. These remarks are in Mannar Phase 1 Extension Report.*

Q 1.2.5.e: Errors and misinterpretations are numerous (page 141, 153, 154, 177, Page 494 Checklists with missing scientific names such as bark gecko, shed more doubts about the ecological quality of the report. The ecology of mammalian life in the area is not studied well. For example, how opportunistic species such as house rat, wild boar, etc. will be attracted to the manipulated area is not evaluated at all.

6

R 1.2.5.e: *These remarks have been given Mannar Phase 1 Extension Report.*

Q 1.2.5.f: The proposed wind farm on Mannar Island, as discussed in this conversation, brings forth a mix of potential benefits and significant challenges, particularly with respect to its impact on avian populations. While recognizing the importance of developing wind energy for sustainable solutions, valid concerns arise regarding potential consequences for local bird species, especially migratory and ground-nesting birds. The highlighted issue of bird collisions with wind turbines, influenced by factors like turbine number and design, bird density, and flight patterns, underscores the vulnerability of species such as birds of prey, water birds, and fast-flying birds. Additional challenges emerge from potential visual intrusion, disturbance during construction and operation, and alterations to established migration flyways, creating a complex set of environmental concerns.

R 1.2.5.f:

- *PAs, Waterbodies, Salt marshes, Mudflats, lagoons have been avoided recognizing these habitats as congregational areas of birds and shifting / abolishing many turbines.*
- *All critical habitats such as large sand dunes and waterbodies within the Mannar island have been left untouched as these are important for birds.*
- *An aerial corridor has been demarcated to provide a turbine free passage which links PAS on the extreme ends of the Mannar island.*
- *An advanced radar technology has been recommended for reducing collision risks along with several other migratory measures.*
- *Bird collision risks and other recommendations have been made based on long term data*
- *Large forest patches have been left untouched and further it is recommended to conserve patches of scrub that are presently privately owned.*

Q 1.2.5.g: Although the proposed mitigation measures, including micro siting, turbine shutdown on demand, and habitat management, demonstrate a proactive approach, their effectiveness remains uncertain and subject to ongoing monitoring and adaptive management. Complicating matters are challenges observed in existing wind farms, such as radar failures and potential adverse effects of deterrents on bird behavior, introducing further uncertainties about the successful implementation of mitigation strategies.

The significance of Mannar Island as a hub for migratory birds and a hotspot for bird diversity, supporting an eco-tourism industry, adds an additional layer of complexity. Potential alterations to migratory routes pose potential economic repercussions for the region, affecting income derived from bird-based eco-tourism.

R 1.2.5.g: *Please see comments given above regarding the ecotourism and tourism potential of Mannar region. We have given number of clarifications about the migratory birds and native birds as well. This is just repeating the same concerns which has been adequately addressed in the previous sections.*

Q 1.2.5.h: While acknowledging the promise of the wind farm in contributing to renewable energy, our reservations about the methods employed and the overall project in this area are significant. We believe the project demands a more critical examination, meticulous planning, and transparent communication, rigorous ongoing monitoring and coordination with wildlife conservation authorities and stakeholders are imperative to take the right decision based on facts.

This proposed project is a grave danger to one of the most important elements of Sri Lanka's ecology. It impacts the migratory avifaunal route from the Central Asian Flyway which attracts thousands of tourists contributing to the local and national economy, many ecological processes in the area and social systems based upon them, eventually causing the absence of the fauna. Even if the EIA Phase 1 is proposing a monitoring study of the birds, bats and impacts the final result is to say that this project is a threat to the area. Therefore, the final comments on the EIA are that it is incomplete, misconstrued and suggests ineffective mitigation measures. In conclusion, the project needs to be shifted to a different location of less impact among the recognized areas.

R 1.2.5.h: *This is only a matter of opinion where the commentor repeatedly uses broad statements which are mostly unsubstantiated by hard evidence or misinterpretations or erroneous interpretations due to their inability to comprehend some of the technical aspects and the confusion they are having regarding the Mannar Phase II and Mannar Phase I extension which are two different projects.*

1.3 Effects of proximity to sensitive areas and high biodiversity zones on environment and communities

Q 1.3.1: The proposed project site is located in Mannar, which is a biodiversity rich, ecologically diverse and intricate complex of ecosystems. The wind farm is to be built in between three protected areas (PAs), Adams Bridge National Park, the Vidattaltivu Nature Reserve, and the Vankalai Sanctuary, managed by the Department of Wildlife Conservation (DWC). It is well established that connectivity of PA systems is necessary to facilitate large-scale ecological and evolutionary processes such as gene flow, migration and species range shifts. Thus, well-managed and interconnected PAs can enhance biodiversity and deliver essential ecosystem services to people. By studying the proposed site in isolation, as an area located only marginally away from three PAs, the report has failed to consider potential impacts on the entire area with the inclusion of all the PAs.

R 1.3.1: *“The proposed project site is located in Mannar, which is a biodiversity rich, ecologically diverse and intricate complex of ecosystems”. This statement is not fully true for the Project Area (Not the Project Influential Area). Also, this statement is highly generic. It should also be noted that the Mannar island has an extent of 143 sq km and the entire project affected area is less than 30 sq km and does not overlap with any of the critical habitats identified in the Mannar island. Further, 90% of the land in Mannar island is held by private parties which have using the land for various activities such as human habitation, shrimp farming, cultivation of Palmyra and Coconut, other small and medium industries that has resulted in significant area of the island been subjected to degradation, denudation, vegetation removal etc., Hence such biodiversity nexus cannot be maintained in future unless the whole Mannar Island is declared as a National Park, which is highly unlikely to happen as already nearly 25% of the islands extent has been declared as protected areas and increasing their extent will likely to result in a social unrest.*

Q 1.3.2: The report provides no evidence on the effectiveness of the proposed “bird corridor” and thus raises concerns as to whether it can be accepted as a mitigatory measure. Five of the turbine locations fall on the borders of the bird corridor, and it is incomprehensible how the birds will navigate through the 52 wind turbines across the declared bird corridor. This also questions the validity of the collision risk assessment conducted by the proponents, especially noting that the result from the previous collision risk assessment has been inaccurate for the Thambapawani wind power plant and the project led to a higher than predicted number of bird collisions (pg xxi).

R 1.3.2: *The commentor states that “The report provides no evidence on the effectiveness of the proposed “bird corridor.”*

This is likely because many of the birds use the coastal route. This fact has been mentioned in the report – read also response 3.

The proposed aerial corridor is not haphazardly designated, rather it is a precautionary measure to allow for safe movement of birds between the protected areas located at the two ends of the island.

The presently designated corridor does not have any turbines (see figure). Allowing for a passage of 1.2 km x 9km space should be looked at positively by anyone concerned about bird movement given the development of high-rise infrastructure that might occur in the future within the island.

In relation to the comparison between the bird collisions from the proposed wind power Phase II project and Thambapavani Phase I Wind Power Project, response 17 would offer a plausible explanation.

Q 1.3.3: The report recommends further bird collision observations for the proposed wind plant, alerting that the current risk analysis is conducted with a limited data set (pg xxix). It is also noted that “The data

collected from the vantage point surveys have been sent to the collision risk modelling expert to determine collision risk for birds by the proposed wind farm” (pg. 11). Lack of details of the model, parametrization, model performance and limitations raise concerns over the applicability of the model and accuracy of the results produced (i.e. bird collision impact is minor).

R 1.3.3: The fact that the commentor finds fault with the sentence ‘...further bird collision observations for the proposed wind plant, alerting that the current risk analysis is conducted with a limited data set (pg xxix)’ shows that they are complete novices unaware of the requirements of developmental projects such as this. In fact, for a country such as Sri Lanka that would be increasingly investing on such renewable sources, more data would be beneficial in the long run, and EFL should be happy that this has been given as a recommendation.

EFL is requested to read responses 16 and 4 which relate to the use of data and parameters for modelling collision risks.

The response 15 which elaborates on the experience of the national and international experts, should clarify any matters with regards to expertise.

Q 1.3.4: The proposed project area has well documented high biodiversity and high conservation significance. The report confirms this as it highlights the large number of records of waterbirds from the area and further expresses that over 30% of all the bird species found in the country are recorded from Mannar region. This is not surprising considering that Mannar region forms a part of the Central Asian Flyway which is the corridor used by migratory birds flying between the Arctic and the Indian Ocean. Mannar is an important destination for many migratory birds as Sri Lanka is the final landmass south on this route and many enter the country via Adam’s Bridge. Results from the Central Asian Flyway-Sri Lanka Waterbird Tracking Project conducted by the University of Colombo has observed that some of these migratory birds fly over 7,000 kilometers during the winter season. Therefore, these avifaunal species reach landmasses in search of food and resting sites after long and exhausting journeys. Having wind turbines in land and seascapes that provide important breeding, feeding and nesting sites will undoubtedly affect the migratory bird populations. Recent Convention on Migratory Species (CMS) COP14 announced that populations of over 240 species of migratory birds are in decline in the Central Asian Flyway, with 48 species listed as Globally Threatened or Near Threatened. Sri Lanka is a signatory to CMS from 1990 and has endorsed a signatory party to the CMS, Sri Lanka since 1990s.

R 1.3.4: It is indeed utterly surprising that EFL refers to the study ‘Central Asian Flyway-Sri Lanka Waterbird Tracking Project conducted by the University of Colombo’ as an information source from which useful information on the movement of migratory birds can be obtained for the present project.

It is stated that “Results from the Central Asian Flyway-Sri Lanka Waterbird Tracking Project conducted by the University of Colombo has observed that some of these migratory birds fly over 7,000 kilometers during the winter season’, How would this have any direct bearing on the proposed wind power project if we do not know which paths the birds take across the Mannar island, and the heights at which they fly? Based on statements with respect to the usage of satellite data, and assuming that this information was available, SLSEA has made repeated official requests to the University of Colombo and its author (initial request about a month ago) to no avail. See Attachment 2 for the official request letter.

We wish to bring to your notice that the only available information with respect to birds using the Mannar island, stemming from the so-called tracing project, is an image of satellite movements of birds. This too was available only on social media which the EIA team cannot consider to be a credible source of information. Whether EFL is in possession of such a report we do not know!

To learn more about the usability of satellite data and its relevance to the present project, the commentor must read response 12b.

Q 1.3.5: As a Range State for the CAF under CMS endorsed Action Plan for waterbirds and their habitats in 2005. The Country report tabled in 2005 by the Department of Wildlife Conservation the focal point for CMS establishes Mannar and the Palk Strait region as an important entry point for migratory birds.

Vankalai Sanctuary was declared as a Ramsar site in 2010 and harbours a combination of coastal and marine integrated wetlands and coastal landscapes (e.g. sand dunes) that provide habitat for many waterbird species. During a waterbird census conducted between 2011 and 2017, more than 100,000 waterbirds were seen at three different instances in Mannar region, where the study sites consisted of Vankalai, Vidattaltivu and Erukkalampidy. Amongst a myriad of other criteria, one of the main criteria to meet for Ramsar recognition is the ability to support well over 20,000 waterbirds at a given time. Mannar region supports well over that threshold and therefore, is a critical wetland complex of international importance. In designating a Ramsar site, a Contracting Party commits to maintaining its ecological character. In the face of adverse risks, countries are required to report any actual or potential adverse human-induced changes in a Ramsar Site to the Secretariat. As such, the Ramsar focal point of Sri Lanka (i.e. DWC) should be held answerable and take preventive action to minimize the threats to the Vankalai sanctuary arising from the proposed wind power plant development.

R 1.3.5: The wind power plant is away from Vankalai Sanctuary. And the Project area is not a Ramsar site. It is true that some turbines are in the buffer zone of Vedathalaithivu Nature Reserve. Such proposals are not illegal as the EIA is subjected to the approval of DWLC.

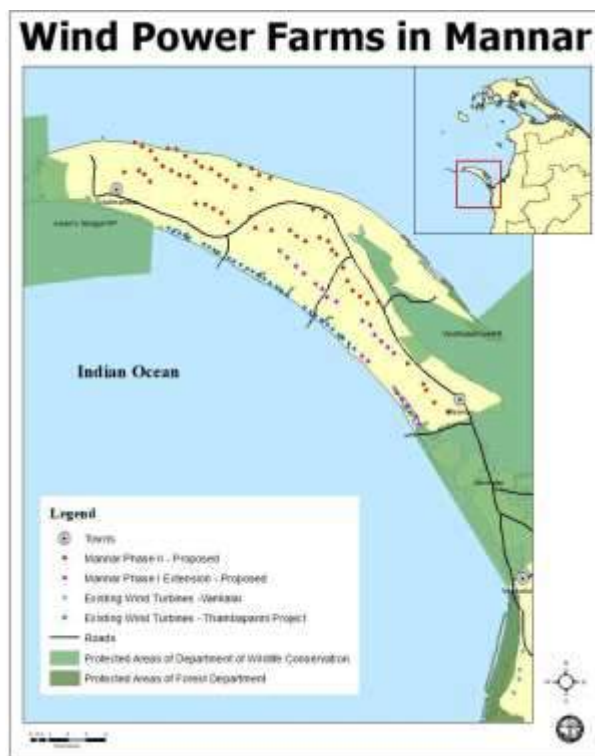


Figure 3 Map showing proposed and existing wind farms in Mannar area

Q 1.3.6: Protection of wetlands and PAs to reduce threats to biodiversity is also essential to achieve targets under the Global Biodiversity Framework (GBF) of the Convention on Biological Diversity (CBD). As a signatory party, Sri Lanka is compelled to enhance efforts towards protecting biodiversity as it is fundamental to human well-being, a healthy planet, and economic prosperity for all people. The very first Target 1 of the GBF directly aims “..to bring the loss of areas of high biodiversity importance,

including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities”. As the focal point of the CBD, National Environment Action Plan 2022-2030 and ESA Policy, we believe that the project proponents should also seek approval from the Ministry of Environment prior to implementing this project. Noting that there are already a significant number of existing wind farms in the region (Fig. 3), the impacts of additional wind turbines across an area of important biodiversity habitats with vital ecosystem service provisioning, will have far reaching implications.

R 1.3.6: *The project approval agency CEA comes under the purview of the Ministry of Environment, and it is up to them to consult any other line agencies within their ministry that they deem important. What is stated here lies outside the scope of the EIA team.*

Q 1.3.7 Socio Economic Impacts [This header was added by the EIA Team for clarity]

EFL also wishes to highlight the lack of adequate analysis on the socio-economic impacts of the project. The report states that the impact of the wind turbine noise on the marine environment is limited but admits that the scientific information in this regard is lacking (pg.157). There are over 20 landing sites around the Mannar island, and fisheries is the predominant livelihood of the local communities (pg. 131).

R 1.3.7: *Adequate socio-economic analysis was conducted by consulting all affected parties. Details have been reported. The EIA has identified that the project components are located away from fishing grounds, beach seine places (Madel paadu), landing sites, access roads to fishing grounds and landing sites, and any other infrastructures related to the fishery sector. Because of this, no physical obstacles are expected to be caused to fishing activities by the proposed project. None of the lands earmarked for the project components are identified with fishing or fishery-related activities, directly or indirectly. Consequently, the project's land use has no permanent or temporary impact on the fishery sector. However, the Entitlement Matrix in the EIA stipulates compensation if any unforeseen impacts temporarily arise during the construction stage.*

Additionally, no scientific evidence in the literature justifies the impacts of wind turbine noise and vibration on fish stocks. Although it has not been established that wind turbine operations adversely affect fish stocks in the vicinity, the EIA has recommended conducting an independent study on this matter. It has also proposed continuous monitoring of fish catch throughout the project period to ensure the fishery sector is not impacted by the project in the future.

Furthermore, the access road proposed for the project sites will be permitted for public use. These roads can enhance the accessibility of fishers to their landing sites and other areas.

Overall, EIA has thoroughly examined the potential impacts of the proposed project on the fisheries sector and determined that the project components are strategically located to avoid any direct interference with fishing grounds, landing sites, and related infrastructure. Despite the concerns raised by local fishers regarding reduced fish catch, there is no scientific evidence linking wind turbine noise and vibration to this issue. The EIA has taken a precautionary approach by recommending further independent studies and continuous monitoring of fish catch to ensure that any unforeseen impacts are promptly identified and addressed.

Hence the lack of analysis is a generic statement without any reference to the relevant sections of the EIA.

Q 1.3.8: Unverified reports published on the impacts of the previous Thambapawani project on local communities observed that the fishing yield has reduced greatly over time due to cumulative impacts of rampant illegal fishing and increasing development activities in Mannar region. The locals attribute the reduced fish catch to the shading and noise effects generated by the wind turbines that drive the fish

away or deeper into the waters. Further vegetation clearance and increased impermeable surfaces in the region are reported to have increased the risk of flooding in the area.

R 1.3.8: *EFL admits that the reports are unverified. Hence this has no scientific basis. Recently NARA has prepared a report on the turbine noise impact on the fish catch. This report was officially requested from NARA by SLSEA, but the report was not provided for a further comment. Please see common response 28-A and Attachment 2 for the official request.*

Q 1.3.9 The proposed project also intends to build a temporary jetty on Nadukuda beach to transport the long turbine parts and tower blades (pg. 66). The potential impacts of this jetty on marine life and local fisheries industry have not been analyzed.

This highlights the greater need to conduct scientific assessments to determine the impacts of the wind power plant and related activities on marine ecology, local livelihoods, and societal well-being.

R 1.3.9: *Although tentatively included in the EIA report, the proposed jetty is only an optional proposal. Depending on the final analysis the jetty may or may not be constructed. If it is constructed a separate EIA will be carried out and impact will be dealt with at that stage. Refer to Section. of the EIA Report. Refer section 2.1.1.1- sub section: Piers: “The feasibility of this option has yet to be studied and will be dealt with in a separate environmental assessment. (Details are in Annex 2-3 - Executive summary of the Logistic Report by Adani)”. Pl refer to 2,6,5 transportation options for wind turbines.*

Q 1.3.10 It is well recognized that transitioning to cleaner forms of energy is vital for climate change mitigation and sustainable development. EFL acclaims the efforts to reduce carbon emissions through the expansion of renewable energy projects in the country. However, EFL queries the methodology and the factors used for the selection of sites for renewable energy projects. The report states that “Many areas in Mannar have already been declared as “Renewable Energy Development Areas”” and if this in reference to the Renewable Energy Resource Development Plan 2021-2026 produced by the Sri Lanka Sustainable Energy Authority (SLSEA), we assert that additional criteria related to ecological sensitivity, ecosystem services, and socioeconomics should be applied prior to demarcating areas suitable for renewable energy projects. We encourage project proponents to refer to the IUCN guidelines for solar and wind energy development which outlines a number of overarching principles prior to project development. The first principle involves considering biodiversity and landscape scale risks at the earliest stage of project planning. This requires strategic-level planning exercises at national or local scale that identify suitable sites for wind and solar energy development in areas of low biodiversity sensitivity. Where strategic assessments do not yet exist, the guidelines recommend producing such assessments together with relevant, appropriate and local stakeholders. EFL emphasizes the need to conduct science-based assessments integrating local and expert knowledge to deduce areas for renewable energy development.

R 1.3.10: *In the renewable energy project development process, land areas with high wind resource potential devoid of any declared constraint areas, such as forest reserves, archaeological reserves, etc. are considered for renewable energy projects, and once a site out of this category is earmarked for a project, it is declared as a Renewable Energy Development area.*

As the next phase, the initial project development activities come, which include pre-feasibility study, feasibility study and the EIA. The aspects mentioned in the comment in concern are those coming under EIA, and according to our understanding it is a bit impractical to switch the process to have those environmental aspects at the initial stage of the process, as any intervention from SLSEA for a project is possible only once it is included in a “Development Area”. This necessitates that the

declaration of the Development Area to be the first, and the environmental studies are subsequent.

As the necessary filtering is done at any stage of the process, with due diligence for the socio-environmental aspects, we do not see any loophole in the process, or any such case where the aspects are negated or not given the due concern.

1.4 Concerns pertaining to marine environment.

R-1.4: The simple answer to this comprehensive comment (given below) is that detailed studies have not been conducted on these options and there is no final decision on these transportation options including the proposed jetties. Ones, the transportation options are finalized necessary approvals (e.g. EIA/IEE or any other) will be obtained from the relevant authorities after conducting suitable studies. At that time the valuable material provided under this comment will be made use of. Although these options have tentatively published in the EIA for completeness and to generate an idea on the project these items are not part and parcel of the EIA as separate studies have been recommended in this EIA itself. Pl refer to 2,6,5 transportation options for wind turbines. of the EIA. The answer covers up to Section Refer section 2.1.1.1- sub section: Piers: “The feasibility of this option has yet to be studied and will be dealt with in a separate environmental assessment. (Details are in Annex 2-3 - Executive summary of the Logistic Report by Adani)”.

Analysis Section

Section 2.6.5 Transportation option of wind turbines

The section refers to three option methods being proposed for the transportation of wind turbines to Mannar. While option 1 refers to the land transportation of wind turbines from Trincomalee to Mannar, option 2 refers to sea transportation directly to Mannar. Option 3 refers to air transportation which is not recommended due to the additional cost although stated that this is the least environmentally impactful method of transportation.

Option 1 refers to the land transportation of turbines to Mannar which has been the traditional practice for the earlier phases of wind turbine blades which was 62m in length. However, the report negates continuing this method as the rotor blades are 70m in length suggesting the temporary removal of certain disturbances along the path. This includes telecommunication lines, widening certain bends and roads and roadside community disturbance. The report notes an additional drawback stating a size/capacity limitation by the project developer. The report fails to highlight how an additional distance of 8m of blade length poses a significant challenge to the transportation process where the already developed road system used for the previous phase of transportation would cater towards additional lengths beyond 62m and has adequate capacity to transport blades without additional cost and impact to the roadside communities and other byroad obstacles.

Option 2 refers to the sea transportation of blades through a supposedly temporary jetty on the south side of Mannar Island to use for operating barges near the project site. Although the report highlights the need for a detailed study and approvals from relevant authorities, the report annex provides a logistical summary overview of the Jetty logistical plan. The logistical plan has conducted a bathometric survey and has included drawings for a proposed jetty which also includes a proposed schedule for the construction. The above mentioned has been compiled by Adani Green Energy SL Limited which does not include details of how the plan was designed and how the bathometric survey was conducted.

The report also highlights the operation details of the proposed vessels to be jettied. The report indicates that either a cargo ship or large barges will be used to unload at the proposed jetty. Although the report indicates certain challenges such as weather, sea conditions, sea bathymetry and the

ecological sensitivity, the logistical plan proposed by Adani Green Energy SL Limited has proposed extensive details on the timeline to construct the jetty even prior to adequate approvals and studies are conducted.

The Pearl Protectors have identified the following possible significant impact areas from the proposed construction of the jetty based on the information available on the report, prior shallow water surveys conducted in the area and based on discrepancies from similar coastal construction case studies.



Figure 4 Proposed jetty south of Mannar Island

1.4.1 Impact area 1

The proposed site is not suitable for a Jetty

The report indicates the use of cargo ships or large barges for the transportation of wind turbine blades to the jetty proposed to be built in the south side of Mannar. Based on a survey conducted by The Pearl Protectors in Vankalai, Silavathurai and Arippu reef areas, the median depth of the shallow water seabed was 2.5 meters.

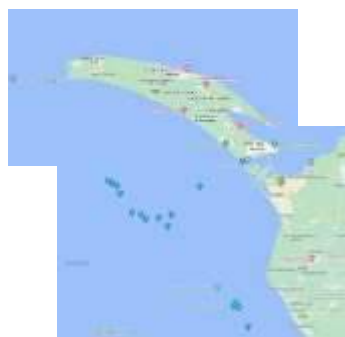


Figure 5 Locations of Surveyed Areas

1.4.2 Survey Conducted

Dating in September and October 2023, The Pearl Protectors conducted a series of surveys to ascertain the impact caused by ALDFG (abandoned, lost, discarded fishing gear) in the South Mannar area, during the surveying, 20 areas were surveyed to understand the depth, the marine eco system and the prevalence of ALDFG. Figure 1 shows the areas the surveying was conducted.

The Surveyed locations are situated 13km south of the proposed site of the jetty. Based on observations gathered during the surveying, the median depth of the reef was 2.5m ranging from the least depth of 20cm and to a greater depth of 5m. Beyond the surveyed locations, the depth of the seabed was consistent with mostly sandy areas in combination of rocky reef areas near Vankalai Reef while the reef areas consisted of many varieties of hard and soft corals. Additionally, large areas of seagrass were identified in many of the surveyed locations with at least 4 different seagrass varieties abundant in the area.

The survey also identified a variety of marine life congesting near the sandy areas, seagrass areas, coral reef areas and rocky reef areas.

The Vankalai reef had a greater distance of approximately 15km stretching from (8.93337, 79.74463) to (8.80106, 79.86384).

The above reef and the shallow seabed area are south of the proposed jetty location. This prompts extensive concern towards the movement of large barges along with tugboats or cargo carrying ships. On average a cargo vessel draft is 8.3 meters making it impossible to use cargo ships in the south sea of the Mannar Island.



Figure 6 Draft of a cargo vessel

A large barge on average has a draft of 2.5m (without cargo) which can carry large quantities of cargo on calmer waters. The draft of a fully loaded barge can extend several meters below sea level. All large-scale barges need to be maneuvered using tugboats which has to both push and pull the barge to the desired location. The report has failed to mention the use of tugboats to use has support vessels to the large barges. A tugboat has an average draft of 3.7m and has multiple engines to increase movement capacity of the barges.

Based on the area survey conducted, the use of any large barge with any tugboat is impossible in the south of Mannar sea due to the shallow median depth of 2.5m and in parallel with reefs, seagrass beds and coral reefs.

Extensive surveying is required to determine if any deep-water path is available to the jetty to maneuver the proposed barges and tugboats to the proposed location. If the surveying fails to

determine any deeper water pathways, we recommend abandoning the construction of the proposed jetty in the South Mannar location.

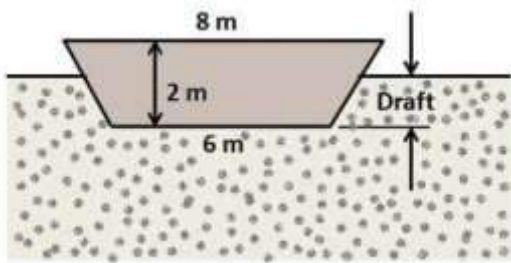


Figure 7 Average draft of a large barge



Figure 8 Large barge maneuvered by tugbo



Figure 9 The use of multiple tugboats to maneuver

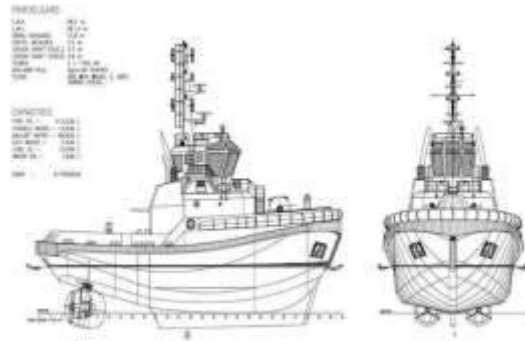


Figure 10 Details of a tugboat including the draft a large barge

1.4.3 Ecological impact through the movement of vessels

Dredging a path of maneuvering any cargo vessel or large barges to the proposed jetty location can have a significant long-term negative impact on the surrounding marine environment. Based on the survey conducted by The Pearl Protectors mentioned above, the area consists of coral reefs which are sensitive and rich in marine biodiversity. The area also consists of many varieties of seagrass meadows which contribute towards the sequestration of carbon. Seagrass is considered a vital aspect of combating climate change and the Mannar basin has some of the largest seagrass meadow area's in the South Asian region. The movement of sediments through oceanic currents pushes sand and other elements from the South to the north resulting in the accumulation of sediments in the South Mannar sea area. Dredging of a vessel pathway may lead to sediments compiling in the pathway in a shorter period and resulting in marine ecological damage which is irreplaceable.



Figure 11 Coral reefs found in Vankalai Reef south of the proposed jetty



Figure 12 Shallow depth reef harboring sensitive marine ecology

Based on the data available and based on the proposed construction logistical plan, The Pearl Protectors does not recommend the construction of a jetty in the South Mannar Island. Such Any proposal to construct a jetty in the proposed location must be after conducting an extensive ecological impact environment impact assessment.

1.5 Concerns pertaining to marine biodiversity

The proposed Mannar Wind Power Project (Phase-II) signifies a significant step towards sustainable energy generation in Sri Lanka. According to the EIA, the project aims to harness the region's wind resources to contribute substantially to the national energy grid. Amid the good effort to make more renewable energy, it's

important to carefully think about how it might affect the marine life around Mannar.

Located within untouched coastal landscapes, the project area is closely connected to environmentally important areas such as the Adams Bridge National Park, the Vidataltivu Nature Reserve and the Vankalai Sanctuary, recognized globally for their significance. These protected areas harbor diverse flora and fauna, serving as vital habitats for numerous species. Additionally, the Korakulum wetland within the Vidataltivu Nature Reserve stands as a crucial refuge, providing essential freshwater sources crucial for sustaining local biodiversity.

Although the Mannar Wind Power Project (Phase-II) mainly operates on land, its impacts extend beyond terrestrial areas. The interlinkage of ecosystems emphasizes how activities on land can affect marine life indirectly. Even though there is no direct construction in the sea, the project's influence spreads through complex ecological systems, posing threats to terrestrial, intermediate and marine systems.

The proposed Mannar Wind Power Project (Phase-II), although located on terrestrial grounds, holds potential consequences for nearby marine environments and ecosystems. Despite its terrestrial nature, alterations to the project site could indirectly impact the interconnected marine ecosystem. The significance of ecosystem connectivity becomes evident when considering estuaries, salt marshes and the broader coastal ecosystem mosaic (CEM) that surrounds them. Coastal ecosystems serve as crucial links between terrestrial and offshore marine environments, facilitating various functions such as flood control, pollution filtration, nutrient recycling and nursery ground utilization. They encompass a diverse array of habitats, including estuaries, wetlands, mangroves, seagrass beds, reefs and pelagic waters, among others. These habitats are interconnected and collectively contribute to the functionality of coastal ecosystems.

The proposed wind power project, situated within the Mannar region, could disrupt the delicate balance of these interconnected ecosystems. While the project itself may not directly impact marine environments, its presence and associated infrastructure could lead to habitat fragmentation, alteration of coastal landscapes and disturbance to wildlife populations. For instance, construction activities may result in habitat destruction and increased human disturbance, affecting the breeding and foraging patterns of marine species.

Furthermore, the Mannar region is home to diverse marine life, including endangered species such as marine turtles, dugongs and various fish species. Any disruption to the coastal habitats and food chains within the project vicinity could have cascading effects on the entire marine ecosystem. Additionally, the alteration of terrestrial habitats, such as mangroves and wetlands, could impact the productivity and health of adjacent marine environments.

R 1.5: Rapid underwater visual surveys were conducted using snorkeling which is a very scientific and systematic way of describing underwater habitats, sensitive habitats, and noteworthy marine fauna and flora in shallow waters. Previous data collected by scuba diving in the same area by the marine ecologist was also used to describe the marine environment. In addition, discussions were made with fishers who were engaged in fishing in the same area during the survey to confirm any sensitive marine habitats around the proposed development sites (turbines; T33, T34, T42, T43, and T52-T55 which will be placed close to the beach within the coastal zone). Therefore, systematic methodologies were adopted, and the marine ecological studies conducted are appropriate for a project which has no proposed direct marine interventions.

Therefore, there are no marine interventions that would cause direct impacts on the marine environment. The report has clearly stated the potential indirect impacts of the construction of basements on the marine

environment by means of sediment dispersal during the construction phase which may elevate suspended particles. However, the report has clearly stated such impacts can be minimized by sound best practices during excavation, disposal as well as any dewatering to be managed within the land.

Further, the report highlights the growing concern from some fishermen that noise generated from wind turbines would scare the nearshore fish away and the fish catch of the artisanal fishers will be hampered. However, there is no scientific evidence for such a claim that noise generated in the air would have impacts on fish. The wind turbine will be distant from the coast and sound pressure from the turbine will be negligible when reaching the sea to sense by the fish.

Any impact of wind turbine noise has not been proven, however, since the fishers' have a growing concern, it is suggested in the report to monitor (Monthly Data for an extended period) catch by species in nearshore fisheries and CPUE to be measured against a reference point away from wind turbines.

Therefore, marine ecology is adequately addressed in the EIA report considering the project that has no direct interventions in the marine environment. See response 23.

Q 1.5.1 Environmental impacts mentioned associated with water pollution (Environmental impacts - Pollution of surface and ground water quality by hazardous chemicals & waste, Contamination of land by pollutants and spoils, invasive weeds, and seeds, intentional disposal and accidents spillage of chemicals, fuel on soils & contamination of soil, Impacts on water resources due to deep piling for tower foundation and dewatering, Deterioration of surface water by land clearing, excavations, stock piling of waste and material, impacts on surface and ground water quality dewatering of wind turbine foundation pits, Pollution of surface water and groundwater from black and gray water disposal and increased, Pollution of surface and ground water from waste oil spills when servicing and maintaining machinery and equipment, Destruction of Aquatic Flora and fauna, salt marshes/ freshwater pools and water retention areas by the disposal of wastewater, sediment laden runoff, waste materials, open piles of construction and other waste, Deterioration of surface and ground water quality with hazardous chemicals & waste, Pollution of surface water, groundwater with construction wastewater) has not been addressed to an acceptable manner as Mannar Island natural water drainage system is not consistent. The fate of wastewater retention tanks in nearby shrimp aquaculture facilities is a good example that suggested wastewater retention tanks during rainy season is not successful. The mitigation measures mentioned are not promising and not up to the standard for a sensitive ecosystem comprised of estuaries, saltmarshes and many water ways. Most of the area get extensively damp and overflowed during rainy seasons where adequate measures are needed to store or remove wastewater/waste/contaminants from the site.

R 1.5.1: ***Specific mitigation measures have been suggested to overcome these impacts. Please refer to Sections bellow. The comment "The mitigation measures mentioned are not promising and not up to the standard for a sensitive ecosystem comprised of (sic) estuaries, saltmarshes and many water ways" is highly generic and nonspecific to provide an answer". What is specifically meant by "not promising"? What is the standard that EFL is referring to? Had this comment been candid and professional EFL should have suggested additional mitigation measures that could be included in the final EIA report, specifically in the EMP.***

We accept the fact that most of the turbine areas are flooded in the rainy season. The rainy season in the area is the most extensive in the Northeast monsoon to cause flooding. The floods occur only for a shorter period while most of the year the area remain dry. This provides ample opportunity for planning construction works and careful on-site waste management planning during the construction phase. Therefore, it is not logical to compare the wastewater issues of current shrimp farm with that of the

proposed project. In the proposed project the on-site waste management facilities can be properly planned spatially and temporarily to avoid risk of waste mismanagement and risk of pollution.

These are comprehensively discussed under the relevant sections with clauses such as avoid pilling activities in the wet season, remove all temporary on-site waste/material storages before the rainy season begins. We cannot agree on this general comment. We have made the EMP (annex 6-1) as a project contract document. The contractor is expected to develop an Environmental Management Action Plan based on this. This will be reviewed by the PMU EHS officer and approved by the PD-PMU. By doing so the project implementation contractor becomes legally bound to effective implementation of EMP in addition to the EPL.

Therefore, the EIA has made the required level of intervention for waste management and pollution control. Satisfactory implementation of EMP is a responsibility of the PMU. This is the practice implemented by all large-scale projects in the country. The EIA cannot take the responsibility for the fact of inability to conform with Environmental Management and cannot be considered as weakness in the EMP of the proposed project or the EIA.

Q 1.5.2: Construction of turbines near the water holding areas poses a significant threat to those mini ecosystems. They play a major role in regulating the water balance in the area as well as refugees, feeding grounds and breeding grounds for many aquatic species. Extreme care should be taken when considering digging or constructing structures near these delicate systems as underground soil and water profile can be easily disturbed resulting complete dry out or inability to regulate the flooding pattern.

R 1.5.2: ***The comment is well noted. These are comprehensively discussed under the relevant sections with clauses such as micro siting to avoid delicate habitats water pools, avoid pilling activities in the wet season. As the turbines are located about 400m apart the cumulative impacts from multiple turbines on one sensitive habitat will not occur. However, pollution control specially with respect to sediment laden material and waste are important, these are comprehensively addressed in the EIA and EMP. such as under the sections on remove all temporary on-site waste/material storages before the rainy season begin. We have made the EMP (annex 6-1) as a project contract document. Long term permeant dry up of systems will not be applicable to Mannar area due to its geology (sand) and rainfall variability (extreme rainfall event in the North-east monsoon).***

Further, the contractor is expected to develop an Environmental Management Action Plan based on this. This will be reviewed by the PMU EHS officer and approved by the PD-PMU. By doing so the project implementation contractor become legally bound to effective implementation of EMP in addition to the EPL. Therefore, the EIA has made required level of intervention for waste management and pollution control. Satisfactory implementation of EMP is a responsibility of the PMU. This is the practice implemented by all large-scale projects in the country.

Q 1.5.3 The above-mentioned water quality related issues are difficult to manage during the rainy season which can impact the surrounding marine, intermediate and terrestrial ecosystems at large. The mitigation methods are not clear and not conducting such constructions during rainy periods are not clear.

R 1.5.3: ***The drainage characteristics of the Mannar area are unique, with water primarily discharged into the sea through seasonal water paths known as thonas. These thonas are active only during the rainy season, during which much of the turbine locations can become flooded, and a significant portion of rainwater infiltrates into the groundwater rather than being discharged into the sea. Within our project***

area, there is only one such thona, located near turbine site T-52. To mitigate potential impacts, we have strategically placed T-52 away from the thona's active discharge area to prevent interference with its natural water flow.

Additionally, we have implemented a robust waste management system and a thorough piling de-watering strategy to control and minimize any potential pollution or contamination. The EIA does not recommend any foundation construction during the rainy season. The Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP) detail these mitigation measures and ensure compliance with environmental standards. These plans include regular monitoring and maintenance protocols to promptly address any issues that might arise.

Q 1.5.4 Unavailability of clear plan on constructions during rainy seasons. As the turbines T 33, T 34, T 42, and T 43 are located close to drainage paths towards the sea, if this path is obstructed the water drainage can run over other sensitive areas (beach erosion, flooding) and any sediment resulted due to excavation can end up in the sea. This is directly affecting the water profile and the quality of the sea water as well. Since excess rainwater can carry sediments and other waste materials resulted from constructions, they can either scatter around the nearby marine ecosystems or transport towards sea grass beds or coral reefs depending upon the current flow and beach profile. This can also result in the destruction of sandy ecosystems.

R 1.5.4: *See response under R-1.5.3*

Q1.5.5 Construction of barriers, roads and structures can modify the water flow and runoff which eventually can be a reason for beach erosion. Since the fishery landing site and beach seine areas are currently operating in front and near vicinity of T33, T42, T43, T52, T53, T54 and T55 turbines, this can be affecting the livelihood of fishers as well. And it can be a possible reason for future conflicts.

R 1.5.5: *We are leaving a coastal set back of 50m+additional 60m buffer and avoid thonas from siting turbines. Hence beach erosion is not likely due to project. However, we would like to bring to the notice of the commentor that during extreme rainfall (which is not un common) the active areas of the thona is subjected extensive erosion and carry large amounts of sediment to the sea as a natural phenomenon.*

We have avoided siting project activities in the fishery intervention areas and in the lagoon area. Refer common response 28-B further details. Therefore, possible obstruction is unlikely. In fact, the road network of 33km will be constructed by the project which is open to public including fisher community and will certainly enhance their livelihood significantly.

The barrier effect due to roads is managed with proper drainage management plan which has already proposed good number of culverts. Refer common response 29 further details

Q 1.5.6 Strict biosecurity programs to avoid any introduction of invasive species is not available. Specially with sand and other construction materials bringing into a sensitive ecosystem poses a significant threat of spreading invasive alien species. Increased vehicle movement can bring already invasive species in the nearby mainland area therefore strict actions should be taken to mitigate these introductions.

R 1.5.6: *Once again, we have to reiterate that the commentor chooses to make broad statements such as 'Specially with sand and other construction materials bringing into a sensitive ecosystem poses a significant threat of spreading invasive alien species. What does sensitive ecosystem mean? All PAs and*

other critical habitats will not be disturbed.

Also, the section on invasive species has been purposely overlooked or misunderstood by EFL, which ever it is the response X, elaborates on what has been given in the report.

Please refer to Section 3.4.9 and 4.3.9. It seems that this comment was given without reading the report. A simple key word search shows the word invasive on many instances. Pl refer to following section for reference of the EIA.

Instructional framework Section 7.2 / 7.2.2 of which Senior EHS officer who is responsible for all environmental health and safety issues which include bio safety as well. The Mannar island is not isolated from the main Mannar island. Already, there is an extensive connectivity with the mainland. Hence, there are risks of bio-safety already. Therefore, the EIA concentrated on two specific biosafety risks in addition commonly practiced by many construction sites (washing vehicle tyres) The material brought into sites and selection of sites for such extraction has to be approved by the EHS officers. The officer has to work within this specified framework and the failure of the PMU / EHS is not an obligation of the EIA. This is not a pristine environment. However, as a precautionary measure we have identified this issue as a potential problem. Therefore, the report has adequately addressed this as shown below. Exotics plant species found at the site Listed (Annexure 3-3; section 3.4.9) and raised a caution as to some danger due to their spread (Sections 4.3.9, 4.3.10) and also reported that monitoring of their spread in required is important (Section 5.3.5.7 and Annexure 6.1 EMP Con 3, Con 19)

Q 1.5.7: Transportation option of wind turbines – Transportation by sea by building a temporary jetty is posing a significant threat in terms of breaching national biosecurity as no quarantine or mitigative measures has not been mentioned (transporting goods from India). The adjacent marine area is home to marine mammals where they can be affected with increased ship traffic. The proposed location for this jetty may be in between an existing reef system thereby can pose a threat to that entire ecosystem. Careful survey is essential before implementing this kind of transportation route.

R-1.5.7: Please read the answer provided under Section 1.4. The temporary jetty is not a part of this EIA even though it was mentioned to provide a complete idea of the project.

Q 1.5.8: The lack of any promising pollution mitigation or control plan if any operation fails to perform as planned is a matter we should be concerned about when dealing with this kind of a sensitive environment. Being the sensitivity too high, the actions mentioned throughout the project do not reflect a clear, concise, and appealing framework to address any resulting adverse effects.

R 1.5.8: Mitigation measures on pollution has been given in response 27. The comment “Being the sensitivity too high, the actions mentioned throughout the project do not reflect a clear, concise, and appealing framework to address any resulting adverse effects” is a generic comment without any specificity. Hence, specific scientific answers cannot be given.

The concerns raised about the lack of a pollution mitigation or control plan in the event of operational failure have been duly noted. However, it is important to note that the nature of wind turbine projects inherently limits the potential for significant pollution incidents requiring emergency plan for system failure. Wind turbines do not produce large quantities of wastewater or other waste materials that would necessitate extensive emergency response plans typically associated with industrial hazards. The project has proactively addressed environmental sensitivities from the outset. Through careful early project planning and a detailed micro-siting exercise, we have excluded and avoided sensitive habitats and

ecosystems within the project area.

Furthermore, we have implemented comprehensive impact management strategies during both the construction and operational phases. These include stringent mitigation measures outlined in chapter 5 of the EIA, the Annex 6-1 Environmental Management Plan (EMP) and annex 6-2 Environmental Monitoring Plan (EMoP). These plans ensure that all potential risks of pollution are minimized and managed effectively. Additionally, the project includes routine monitoring and maintenance protocols to promptly identify and address any unforeseen issues, further safeguarding against environmental impacts. Considering these robust measures, the potential for pollution-related hazards incidents is minimal, and we consider that the existing emergency management applicable to projects and the existing plans are adequate to handle any unlikely occurrences, thereby ensuring the project's alignment with environmental protection standards.

Q 1.5.9: Although the Mannar Wind Power Project (Phase-II) focuses on land (onshore), its potential consequences extend beyond the project site to adjacent marine ecosystems. The statement mentioned as no significant impact on marine environment is concerning. This unique ecosystem is connected through marine, intermediate and terrestrial lineages and depending upon each other makes it venerable if any system is affected. More importantly connecting, intermediate ecosystems like saltmarshes are very delicate where saltwater balance should not be disturbed. There is no sufficient evidence shown to believe this balance will not be affected. Therefore, it is essential to carefully assess and mitigate the indirect impacts of the project on the interconnected coastal ecosystems to ensure the long-term health and sustainability of the marine environment in the Mannar region.

R 1.5.9: *The EIA has been conducted by a team of experts in different fields and EFL by elaborating upon some basic facts is only showcasing their immaturity. The fact that the proposed wind power project on land, might have direct / indirect impacts on the marine ecosystem, salt marshes, has been taken into consideration when selecting turbine locations and when making recommendations for reducing impacts. The exclusion criteria have set aside many important ecosystems (including the coastal setback), the aerial corridor linking protected areas on either side seeks to provide a turbine free passage for birds.*

The commentor by making broad statements such as ‘..‘depending upon each other makes it venerable if any system is affected. More importantly connecting, intermediate ecosystems like saltmarshes are very delicate where saltwater balance should not be disturbed’ has tried to overcome the difficulty in pinpointing exact locations where this has occurred.

Q 1.6 Concerns pertaining to the transportation of wind turbines

The section refers to three option methods being proposed for the transportation of wind turbines to Mannar. While option 1 refers to the land transportation of wind turbines from Trincomalee to Mannar, option 2 refers to a sea transportation directly to Mannar. Option 3 refers to an air transportation which is not recommended due to the additional cost although stated that this is the least environmentally impactful method of transportation.

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along the path. This includes telecommunication lines, widening certain bends and roads and roadside community disturbance. The report notes of an additional drawback stating of a size/capacity limitation by the project developer. The report fails to highlight how an additional distance of 8m of blade length has a significant challenge to the transportation process where the already developed road system which was used for the previous phase of transportation was developed to cater towards additional lengths beyond 62m and has adequate capacity to transport blades without additional cost and impact to the roadside communities and other byroad obstacles.

Option 2 refers to a sea transportation of blades through a supposedly temporary jetty on the south side of Mannar Island to use for operating barges near the project site. Although the report highlights the need for a detailed study and approvals from relevant authorities, the report annex provides a logistical summary overview of the Jetty logistical plan. The logistical plan has conducted a bathometric survey and has included drawings for a proposed jetty which also includes a proposed schedule for the construction. The above-mentioned has been compiled by Adani Green Energy SL Limited which does not include details of how the plan was designed and how the bathometric survey was conducted.

The report also highlights the operation details of the proposed vessels to be jettied. The report indicates that either a cargo ship or large barges will be used to unload at the proposed jetty. Although the report indicates certain challenges such as weather, sea conditions, sea bathymetry and the ecological sensitivity, the logistical plan proposed by Adani Green Energy SL Limited has proposed extensive details on the timeline to construct the jetty even prior to adequate approvals and studies are conducted.

R-1.6: Please read the answer provided under Section 1. 4. The EIA clearly states that there will be separate EIA for the construction of jetties, The approval is preponderant although tentative timelines have been indicated.

2. Socioeconomic concerns of the Environmental Impact Assessment Report

Please refer to response 25.

2.1 Opportunity cost of affected land uses (p.229)

“There are no distinctive farming methods in this area. Several areas are shrub jungle and underutilized. Several of them are bare lands with no signs of commercial or agricultural activity. Hence, direct unit land values were obtained from www.lankapropertyweb.com and estimated total value of affected land extent accordingly.” (p229)

Observations

- i. Makes no mention of any attempts to ascertain value of the land use patterns among the residents and the community that is highlighted in section 3.6.1
- ii. While we are not familiar with EIA opportunity costing, it raises the question - shouldn't opportunity cost include alternative developmental uses of the land in addition to existing land use values? Or is the implicit assumption that the “next-best” use of land is the existing usage?
- iii. Considering the above, the decision to purely rely on direct unit land values seems inadequately justified. Moreover, the reference point for land values of a single website can be misleading, especially if the

number of listings of land in Mannar are low on this website. Moreover, land values on a website that focusses on certain types of properties would not give a good sense of the value, and therefore taking this approach could result in inaccurate estimates of land value. See b.) below.

- “Hence, direct unit land values were obtained from <https://www.lankapropertyweb.com/> and estimated total value of affected land extent accordingly. As a result, the range of the projected land value per hectare is minimum USD 25,102 to maximum USD 75,307.” (p229)

Observations

- iv. The methodology used to obtain this price range is extremely vague. The link provided is purely to the landing page. How did they estimate the total value of the land using this website? What data sources did they use? There is no indication of how the range was calculated. Is there a specific land price calculator on the website for Mannar? There doesn't seem to be one on the website – it may be good to check.
- v. This seems a wide price range – with the maximum being exactly three times the minimum. Additionally, the estimation of land value does not contain a consideration of the fact that even though

they may be ‘bare lands with no signs of commercial or agricultural activity’ gives no true indication of whether these are therefore fully unproductive lands (for agricultural purposes) or lands that cannot be developed (for commercial purposes). The consultants are only taking a view based on what the status is – i.e., is based on the uses observed at the time the EIA was being done.

- “The project cost associated with land acquisition, compensation, and relocation costs are not included in the investor's cost estimate. Consultant appraised the value and allotted USD 9.64 million based on the current market price and the overall area of the land. Moreover, a lump sum payment of USD 2.41 million was given for resettlement cost. Eventually, the overall cost of the social damage is computed as USD 12.04 million of economic price and included to the benefit cost model.” (p229)

Observations

- vi. So based on this quote, the consultant values the total land as USD 9.64 million. And if I read the first paragraph in the opportunity section correctly, the total land area is 202.030ha. Which means, the consultant values the land at USD 47,715.685 per ha. The midpoint of the range mentioned is USD 50,204.5. So, the valuation they did is a little under the midpoint of the range they calculated using lanka property web.

2.2 Cost of environmental damage (p.229-232)

- “Required reference values of ecosystems services were found from equivalent biomes in “The Economics of Ecosystems and Biodiversity [TEEB] Valuation Database4” for Sri Lanka. The research study (Project Reports. 69) released by the Portland State University in 2020 relating to Sri Lanka ecosystem services. This study is based on the “Economic Valuation of Ecosystem Services Provided by Forest Ecosystems in Sri Lanka: A Study is Based on 2010 Forest Cover Classification and the TEEB Database”. The goal of this study was to calculate the total economic value of all ecosystem services rendered by Sri Lanka’s Forest ecosystems in 2019 USD values. The findings show that the Mannar district's approximate ecosystem

values for 2019. As a result, the estimated annual unit value for ecosystem services in the Mannar district in 2023 ranges from USD 1515 per hectare per year to USD 92203 per hectare per year, with an average of USD 22592 per hectare per year.

According to the environmental and social assessments, total permanent affected land parcel size is 202.03 ha., and it is an environmentally sound, and sensitive area. Therefore, all environmental impact calculations were based on this extent of land parcel. The environmental impact calculations are mainly focused on estimated above annual unit value for project locations, research findings, Millennium Ecosystem Assessment and associated and updated TEEB database findings. Moreover, during the development phase, there may be temporary environmental impacts. All the temporary impacts require monetization to address and reduce them. Table 6-2 provides a summary of the short- term environmental impacts and the monetization process at each project level.” (p229)

Flora fauna	and	Construction	Removal of trees	Included contractor's cost
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Figure 13 Extract of the table 6.2: Environmental impacts and monetization process

Observations

- vii. No mention in the section whether any of the quoted estimates of ecosystem services rendered by the existing ecosystem was included as a cost in the cost side. Does the row item Flora and Fauna – removal of the trees being included in contractors cost mean that the ecosystem services were included as a cost? Doesn't seem like it as the table is looking at mitigation costs.
- viii. The range of values is extremely wide – USD 1515 to USD 92203. They have highlighted that the average is USD 22592. Does that mean it was the average that was used as the baseline value of ecosystem services? Given that the report acknowledges that the selected land is “an environmentally sound, and sensitive area”, it can be the case that the ecosystem services provided by the land area in question would be higher than the average.

2.3 Cost of reforestation

- “Program cost for reforestation: Table 3-17 shows the land use of the plots being identified for the project components. It is recommended that new vegetation be established to cover 62 ha. of the impacted lands as compensation. The cost per acre for improving the vegetation of a tree plantation has been calculated by the Sri Lanka Climate Fund of the Mahaweli Development & Environment Ministry in 2016. The unit cost for the ha. was projected for 2023 using this estimate. Therefore, the anticipated unit cost for the reforestation program is USD 11411 per ha. in 2023, and the overall cost is USD 707,491 for 62 ha. The estimated cost was transformed to economic terms and was accounted for in the benefit-cost analysis.

Table 3-17: The land use of the plots being identified for the project components.

Project Components	Land use type within the project land (ha)					
	Scattered palmyra	Scrub Jungle	Open barren	New farms	Existing paths	Coconut
Wind Turbines	96.53	35.68	15.12	0.35	0.00	2.31
Access and Approach roads	23.87	21.71	2.05	0.00	3.62	0.79
Total	120.39	57.39	17.17	0.35	3.62	3.11

Figure 14 Land uses identified within the project area as presented in the EIA

Benefits of reforestation: The program is anticipated to begin in 2024, and benefits will begin to be returned in 2027. The proposed 62 ha. land parcel's vegetation provides a number of environmental benefits and absorbs carbon dioxide from the atmosphere⁵. As a result, the evaluation of the benefits of reforestation was based on four types of environmental services: provisioning, regulating, cultural, and supporting services. The expected benefit of the reforestation program is USD 1.40 million per year, and it will start to receive from 2027. This benefit stream is included in the benefit side with converted value.” (p230)

Observations

- ix. The benefit from the reforestation program is calculated to be USD 1.40 million per year and is directly added to the benefit side. Given that the reforestation is occurring in 62 ha, the reforestation benefit per ha is USD 22,580.64 which is very close but slightly below the above quoted average ecosystem service value in Mannar district of USD 22592. Does this imply that this was the baseline value used to calculate the loss of ecosystem services as well?
- x. The loss of ecosystem services for the remaining 140 ha (202-62) at USD 22580 per ha may not have been included as a cost in the cost side. It is a concern, then, because while the reforestation benefits are mentioned to be added, the ecosystem loss is not.

2.4 CSR Program

“CSR Program: The total budget for the CSR program is USD 0.78 million for a 36-month period, and this amount is included on the benefit side as direct social benefit. “(p. 230)

Affected community	Implementation	Full or partially loss of livelihood activities	Cost of CSR program to be included in the project developer's cost.
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Figure 15 Extract of the table 6.2: Environmental impacts and monetization process

Observations

- xi. Given that there is no estimate of land use activity valuation other than the market value of the land in the opportunity cost calculation, inclusion of USD 0.78 on the benefit side as a direct social benefit seems

unsubstantiated.

- xii. No rationale provided for the estimate and adequacy of USD 0.78 million to compensate for full or partial loss of livelihood activities.

Legal concerns of the Environmental Impact Assessment Report

3.1 Alternatives not evaluated according to the NEA requirement.

The definition of an Environmental Impact Assessment (EIA) report, as stated in Section 33 of the National Environmental Act (NEA), inter alia, says that an EIA report should contain “a description of the alternatives to the activity that are less harmful to the environment together with the reasons why such alternatives were rejected.”

The Terms of Reference (ToR) for the project, under the heading 2.6 gives a detailed description of the things that need to be considered. (The relevant part is provided herewith for easy reference)

Thus it is clear, both from the definition of the EIA and the abovementioned part of the ToR that the evaluation of alternatives is the most important part in the evaluation of the EIA by both the public and by the Project Approving Agency (PAA).

The present EIA report has not done an extensive study of the alternatives, as required under the NEA and the ToR given to the Project Proponent. It has not looked in to the alternative sites which needs to be “less harmful to the environment” than the proposed site in Mannar Island, and the report has failed to do an evaluation of the potential sites and reason out “why the less environmentally harmful” sites have been rejected. The Site alternatives (2.6) in page 60 of the EIA does not mention why the other alternatives that scored a similar score or even a little higher were not selected and what are the special reasons why less environmentally harmful sites have been rejected (refer Table 2-9 in page 91)The report only says that the present site “satisfies the technical feasibility” which is not a reasonable evaluation of the alternatives but is only tantamount to saying that Mannar site is suitable for the purpose of the Project Proponent. It is therefore evident that this report has failed to comply with the most basic requirement of an EIA, that is, to make it in accordance with the definition under Section 33 of the NEA and the ToR. The roles of the Project Approving Agencies and the Central Environmental Authority (CEA) is to make a proper scrutiny of the EIA. The lack of an analysis of alternatives leaves the CEA in a predicament with two choices.

- i) One is to find more material of the proposed and rejected alternative sites and to make an assessment on their part and thereafter evaluate the same. However, the law precluded the PAA or CEA from preparing any such reports.
- ii) Second is to act in accordance with the provisions of the NEA in this instance. Thus it is evident that the NEA empowers the CEA only to evaluate the EIA prepared by the Project Proponent.

An evaluation in this kind of a situation can be based only on the material provided by the Project Proponent in the EIA. It is evident that they have not only failed to justify the present location from the alternatives provided by themselves but has failed to provide adequate material for the CEA to do an evaluation by themselves as well. In such a situation that is a great risk and the possibility that any kind of decision

without the perusal and evaluation of relevant information will be faulty.

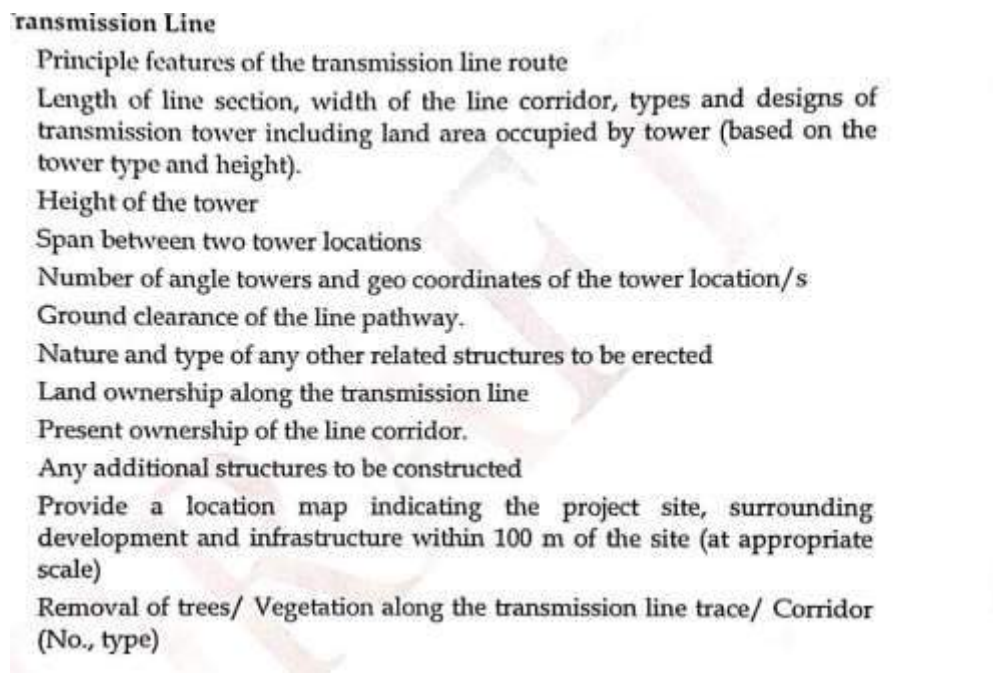
Therefore, the Project approving Agency needs to reject this report on the ground of inadequate information and more importantly based on it not complying the legal requirement under Section 33 of the evaluation and also the failure to comply with the requirements of point 2.6 of the ToR.

R 3.1: Refer to response 36.

3.2. Failure to provide and comply with the requirements for the transmission line

The ToR in point 2.1.1 provides a detailed description of the items that need to be covered in the section on the transmission line which are provided below for easy perusal.

Transmission Line



- Principle features of the transmission line route
- Length of line section, width of the line corridor, types and designs of transmission tower including land area occupied by tower (based on the tower type and height).
- Height of the tower
- Span between two tower locations
- Number of angle towers and geo coordinates of the tower location/s
- Ground clearance of the line pathway.
- Nature and type of any other related structures to be erected
- Land ownership along the transmission line
- Present ownership of the line corridor.
- Any additional structures to be constructed
- Provide a location map indicating the project site, surrounding development and infrastructure within 100 m of the site (at appropriate scale)
- Removal of trees/ Vegetation along the transmission line trace/ Corridor (No., type)

Figure 16 Points to be covered within the EIA as per the ToR

The EIA report only deals with the power generation aspect of power generation and has not adequately dealt with the transmission of electricity from the wind turbines to the grid. It is even mentioned in this EIA report that most of the bird deaths from the existing wind power project in Mannar is due to the collisions that happen along the power transmission lines. Thus, we see that the transmission line is an integral part of the EIA and should not be precluded from the EIA from being evaluated in-depth.

In this regard, it's seen that the EIA has failed to consider the transmission line in accordance with the ToR.

Therefore, we state that this EIA is fundamentally flawed in this regard and needs to be considered for evaluation only with the power transmission line aspect complying to the ToR.

R 3.2: The Project Proponent did not want to consider the transmission line under this project, as it has been agreed that the CEB will do it as a separate project, and it will be considered under a separate (EIA/IEE as the case may be). The relevant letter from the Project Proponent is attached. Refer response

45.

Any Project Proponent is within his rights to drop any component of the project for practical reasons, and it is his business irrespective of the issuance of the ToR which is only a guideline to carry out an EIA. The project proponent has not violated any law in dropping the transmission line for practical and administrative reasons. No court of law will intervene to dictate how a business should be carried out unless there are legal violations. In this case EFL has not stated what legal provisions under the National Environmental Act or any other act have been violated by the Project Proponent for dropping the transmission line for a plausible reason. The onus of the burden of proof lies with the EFL in this matter. EFL has brought in something de minimis for which the court may not intervene.

3.3 Strong possibilities of transgressing the FFPO ignored in evaluations.

The EIA report has totally ignored the legal implications and the consequences of different types of animals that would be harmed by the project.

- i) All the migratory birds are protected under Section 31(1) of the Fauna and Flora Protection Ordinance. Similarly all resident bird species except for five species (House Crow, Jungle Crow, Rose-ringed Parakeet, Scaly-breasted Munia and White-backed Munia) are protected. In addition, some species that occur in the area. Thus, it is seen that any activity that violated the said provisions cannot be approved or permitted to be carried out and hence any project or activity that could possibly or probably harm any protected species of animal cannot be approved by the CEA and by any Project Approving Agency. Furthermore, the EIA report should have clearly identified and stated the strictly protected species and protected species that would be possibly harmed by the project and the measures that will be taken to prevent any violation of the laws. Therefore, it is our position that any project or activity that has a high possibility of harming protected species cannot be permitted or approved.
- ii) Some of the resident bird species found in the area such as the Great Thick-knee, Eurasian Thick-knee and the Yellow-wattled Lapwing are falling into the Strictly Protected category and are protected under Section 31(2) of the said ordinance.
- iii) All bat species found in Sri Lanka are protected under Section 30(1) of the Fauna and Flora Protection Ordinance.
- iv) All species of butterflies and dragonflies are protected under the provisions of Section 31B of the Fauna and Flora Protection Ordinance.

It is evident that the EIA has failed to state the protection given to the different types of species and that any death, injury or harm caused to any of the aforementioned types of species is an offence punishable under the FFPO and according to Section 67B, all the abovementioned offences are deemed to be cognizable offences. That is anyone who commits such an offence can be arrested without a warrant.

It must be stated that no government institution, including the CEA and those that are designated as Project Approving Agencies under the NEA cannot approve any project or activity, or action that would lead to offences punishable under any prevailing legislation.

Thus, it is unlawful to approve any project that may cause the death, injury or other types of harm to any species that are Strictly Protected or Protected under the FFPO. Therefore, this alone provides adequate grounds to refuse approval to this project.

R 3.3: *We are truly baffled by this comment. Yes we indeed agree that the FFPO cannot be violated. But what does FFPO stipulate and what this entails for the project.*

Part I of the FFPO sets out activities that are not permitted within protected areas – All protected areas have been avoided. The buffer of 1.6 km is relevant to National Parks, Part II – Relates to elephants and buffaloes – this has no direct relevance to the project Part III - Broadly refers to offences outside protected areas - kill, wounds, injures or takes any mammal or reptile, destroys the eggs or nests, sets traps for the purpose of killing, wounding, injuring animals. The project activities do not directly involve any of the above.

With respect to the butterflies and dragonflies the FFPO states that 'Any person who in any area outside a National Reserve of Sanctuary- (a) knowingly kills, wounds, injures, takes or collects any invertebrate included for the time being in Schedule IV A ; or (b) takes or destroys the eggs, spawn, larva or nest of such invertebrate ; or (c) uses any boat, lime snare, net, spear, trap, gun, rod, line or hook with any accessories or bait, or explosives of any description or any other instrument used for the purpose of killing, wounding, injuring, taking or collecting any such invertebrate; or (d) has in his possession, or under his control, and such invertebrate killed or taken or any part of such invertebrate egg, spawn or larva , or (e) exposes or offers for sale, or transports, any such invertebrate or part of such invertebrate or ' . (f) purchases such invertebrate for the purpose of drying, curing or for any other purpose...',

The project does not intent to violate any of the above.

If clearing private land outside a protected area is taken as violation of the FFPO, the no lands across Sri Lanka could be used for any development. Since nearly all lands are currently under private ownership, the FFPO would be violated even under the 'no project alternative' since the lands are being cleared for human settlements and agriculture.

On the contrary, the EIA has given due consideration to impacts on both flora and fauna. Read responses 6,20,19 and 21.

3.4 Non evaluation of the whole area and ignoring the wider issues

The EIA report has not considered the “Impacts” of the project in a meaningful manner but has only looked at the project site to consider the impacts.

The site of the project is surrounded by three protected areas, namely the Adam’s Bridge Marine National Park on the West, the Vankalai RAMZAR the South-East and the Wediththalatiev Nature Reserve to the North-East. The project site and the rest of the Mannar island surrounding the project land thus make a “Contiguous Zone” with the three protected area and thus it can be expected that there would be continuous movement of species, especially birds, between these areas which will be through the project site. Therefore, having the project in the middle of this Contiguous Zone would have implications on the wildlife inhabiting these areas, a fact that has been overlooked and not even acknowledged in the report and hence there are no suitable measures being proposed to circumvent these issues.

The migration of species to the Mannar is not confined to birds. It has been found that certain species of butterflies, especially the Crimson Rose, migrate to Sri Lanka through the Adam's Bride Marine National Park. The other noteworthy migrant that has been excluded from being considered is the dragonfly known as the Wandering Glider (*Pantala flavescens*).

Therefore, it is seen that the EIA has deemed it fit to confine the area under review to include only the project site and has failed to evaluate the factors that have a bearing on the project site due to its proximity to the protected areas.

R 3.4: This comment has been made without full knowledge of the procedures followed during the present EIA. One would understand it fully if you were to consider the original turbine locations. Many turbine locations were totally abandoned while others were shifted through a micro-siting exercise taking into consideration the broad landscape of the area. In doing so several exclusion criteria were used, specific mention must be made of the avoidance of the protected areas, large and active sand dunes, mudflats, and the coast. Leaving an arial corridor also took into consideration the possible movement of birds from one protected area to another. Considering that measures have been taken giving due consideration to the broad landscape of the entire Mannar island, what the commenter means by the statement 'has failed to evaluate the factors that have a bearing on the project site due to its proximity to the protected areas' is unclear.

3.5 Lack of adequate analysis on the impacts during the operational phase

The EIA has evaluated only those risks during the construction phase and has not evaluated the possible and probable impacts that may arise during the operational phase of the project. This is a serious omission and is another fundamental flaw in the information provided and in the evaluation.

R 3.5: The report detail recommendation for monitoring several impacts during the operational phase. These include nearly 15 operational phase impacts for the risk assessment. These include noise, blade throw, bird collisions, shadow flicker, floods, spread of invasives, etc. The commenter does not explicitly state what impacts have been left out and hence we cannot give a definitive response. Thus, as stated the commentor must justify how omissions (if any) amount to a 'serious omission and a fundamental flaw' of the EIA report. Rather this comment is likely a serious omission on the part of EFL to read the relevant sections (E.g. for noise section 1.4.6 monitoring baseline noise, 1.4.7 Noise modelling, 3.3 Baseline noise levels and sensitive receptors, 4.2.1.3. impacts, 5.4.4. mitigation of noise impacts, EMP annex 6-1, EMoP monitoring noise, similar assessments were conducted for shadow flicker, bird collision etc.)

The EIA has followed similar procedures practiced by other countries well versed in this process and are environmentally conscious. Some of the approaches for impact evaluation (RA), impacts in the preconstruction phase and mitigation (micro-siting) are novel approaches which have not been used previously by for EIAs. It should also be noted that most of the operational phase impacts have been mitigated by micro-siting.

Specific Comments on the Environmental Impact Assessment (EIA) for the Proposed 250MW Mannar Wind Power Project (Phase-II)

Comment No	EIA Pg No	EIA Section reference	Comment
1.	101	3.4.2 Special features / uniqueness of the existing vegetation and habitats	Question (Q): Bird species such as Long tailed shrike, Eurasian collared dove, Common kestrel and are strictly protected birds under section 31, Schedule 4 of the Fauna and Flora Protection Ordinance as amended. Therefore, mitigatory actions should be taken with the supervision of the Department of Wildlife Conservation. Response (R): Agreed. See responses 19, 21
2.	106	3.4.4 Rare, threatened, and endemic fauna and flora, (if any) within the study area and distribution of such spp.	Q: Plant species like <i>Vahlia dichotoma</i> are protected under the Fauna and Flora Protection Ordinance as amended. Therefore, mitigatory actions should be taken with the supervision of the Department of Wildlife Conservation. R: Agreed. See responses 19
3.	109	3.4.4 Rare, threatened, and endemic fauna and flora, (if any) within the study area and distribution of such spp.	Q: Mammals and reptiles such as Chelonia mydas, Eretmochelys imbricata, Fishing Cat, Rusty spotted cat, dugon are protected under section 30, schedule 2 of the Fauna and Flora Protection Ordinance as amended. Therefore, mitigatory actions should be taken with the supervision of the Department of Wildlife Conservation. R: Agreed. See responses 19 The importance of this point is well noted. Therefore, we would also recommend a plan for the capture and relocation of any displaced animals to be done in collaboration with the Department of Wildlife along with initiatives that can be taken to facilitate the escape of mobile animals during the initial clearance of vegetation at turbine locations. This elaboration of this point would be included as an Addendum.
4.		Anex 1-1-Line Agency Preliminary Approvals	Q: It is stated that some of the turbines are within the 1.6 km buffer zone of the Vidaltivu nature reserve and as per Section 9A of the Fauna and Flora Protection Ordinance as amended no person or organization, whether private or State shall within a distance of one mile of the boundary of any National Reserve declared by Order made under section 2, carry out any development activity of any description

Comment No	EIA Pg No	EIA Section reference	Comment
			whatsoever without obtaining the prior written approval of the Director-General. This approval letter is not attached under "Anex 1-1-Line Agency Preliminary Approvals." <i>R: See response 21. Further, the DWC reviewed the document during a technical evaluation meeting before it was finalized, and the entire EIA report will be also reviewed by the DWC again. The project no doubt will only go ahead with their consent. Also, any additional conditions / concerns stipulated by the DWC will have to be addressed / included in the Environment Protection License.</i>
5.		Anex 1-1-Line Agency Preliminary Approvals	Q: The copy of the letter given by the Department of Fisheries and Aquatic Resources is not clearly printed to understand the contents. Moreover, it appears that the Department of Fisheries has not given their approval for the project and has stated the need to carry out a comprehensive study. The approval is limited to carry out a preliminary study. <i>R: CEA to provide evidence for having considered the observations of the Department of Fisheries and Aquatic Resources</i>
6.		Anex 1-1-Line Agency Preliminary Approvals	Q: The letter given by the National Aquatic Resources Research and Development Agency states that obstruction to avian migratory paths could lead to alter the balance of the ecosystem and that the turbines should be located in location with minimum disturbance to the migratory paths. This has not been done and therefore, the location should be changed. <i>R: See responses 28, 21, 7, 8</i>
7.		Anex 1-1-Line Agency Preliminary Approvals	Q: The Department of Forest Conservation has recommended changing the location of Turbine 37, but it has not been done. <i>R: We have done a fact-finding exercise and provided elaborations on this as reported in Section 5.1.1 Impact of turbine number 37 figure 5.2 to state that it is not a thick scrub patch. The Forest Department would review this and instruct accordingly.</i>
8.		Anex 1-1-Line Agency	Q: Only a part of the letter sent by the Survey Department has

Comment No	EIA Pg No	EIA Section reference	Comment
		Preliminary Approvals	been scanned and therefore, the entirety of the letter cannot be read. Agreed. <i>R: This was an error on our part. The entire letter would be included in the revised EIA.</i>
9.		Anex 1-1-Line Agency Preliminary Approvals	Q: As per the approval letter from the Coast Conservation and Coastal Resource Management Department and the Coast Conservation and Coastal Resource Management Act No. 57 of 1981 as amended a permit should be obtained from the Director General to carry out a development activity within the Coastal zone. Accordingly, it is mandatory to obtain this permit. <i>R: All the project activities as set out in the EIA fall within the coastal setback of 50 m and a further 60 m inward from this setback (total 110 m) the mentioned approvals are not required. However, if any further developmental activity outside of the scope of this EIA but related to the project requires to be done within the coastal reservation, then it would be mandatory for approval of these two organizations to be obtained.</i>
10.	48	2.1.1.3 Land preparation	Q: It states that a total of 3953 Palmyra trees and 123 Coconut trees will be removed to facilitate the installation of the wind turbines. Additionally, 4,912 Palmyra trees will be cleared to establish the access roads and transmission lines necessary for this project. Attention should be directed to the Felling of Trees (Control) Order, 1962 which states that no person shall fell, lop, or kill or cause or permit the felling, lopping, or killing of jak trees, breadfruit tree and female palmyra tree unless with a license granted by the Director of Agriculture. An amendment was brought by Gazette No.2232/33 dated 18th June 2021 to the said Felling of the Trees (Control) Order 1962 which added coconut to the Schedule. Accordingly, permission from the Director of Agriculture should be obtained in relation to the felling of female palmyra and coconut trees. <i>R: The notable large trees comprised palmyra and coconut which will be felled. During the micro siting exercise areas where large native trees were found were avoided. The actual number of such trees that would be felled could only be verified after the layout plan has been finalized on the</i>

Comment No	EIA Pg No	EIA Section reference	Comment
			<i>ground.</i> <i>As a precautionary measure we included mitigation measures as mentioned above. Any felling has to be done under the purview of the authorities (Forest Department, DWC Section EMP Con 18 & 20)</i>
11.	183	4.5.1 Impacts on land use and zoning (Land acquisition related impacts)	Q: Clearing land and building access roads for wind turbines and mineral sand excavation projects can result in increased soil erosion. And it also affects soil fertility and water quality. R: <i>Refer section on 5.3.6.3 Mitigation of impacts on surface and groundwater quality (Construction phase: Erosion, soil scouring, sediment laden runoff, siltation and Turbidity in streams and sea water. This section comprehensively addresses all forms of erosion risk and mitigation of impacts. Also, refer annex 6-1 EMP- Con-8</i>
12.	183	The Installation of wind turbines T19, T20, T21,T22 and T23 their cable routes and access roads result in a potential conflict with the proposed mineral sand extraction project, because both projects partly share the same land/ground and space. Even though the area has been gazetted for renewable energy development, this overlap results in conflict in terms of the project activities and land usage.	Q: It's important for relevant Government Departments to carefully assess and mitigate these impacts through proper planning, environmental impact assessments, and implementation of best practices to minimize the negative effects on land use and the environment. R: <i>CEA has confirmed that NO ToR has been still issued for an EIA with respect to the sand mining project you have referred to.</i>
13.	184	Impact on currently unproductive land	Q: Since the ownership of lands had not been verified and there was a delay in selection of land for ongoing purposes which had to be done with the concurrence of the forest department and other line agencies. R: <i>Of the 150 Ha of land proposed to be acquired for permanent facilities, only around 52 ha will be used for the project, and all of the other areas will be released to the community for agriculture and other selected activities.</i>

Comment No	EIA Pg No	EIA Section reference	Comment
			<i>Further, it will be recommended that suitable areas be maintained with the intervention of either the Forest Department or the Department of Wildlife Conservation. This will be included as Addendum to the EIA report. A plan for proposed replantation has been included in the report (Annex 5 -3).</i>
14.	184	Impact on farms and coconut estates	Q: Land use conflict might be happened because of Wind farms require large areas of land for the turbines and associated infrastructure. This can lead to conflicts with existing farms and coconut estates, particularly if the land is converted from agricultural use to a wind farm. Also, the construction and operation of wind farms can result in damage to crops due to factors such as increased dust, noise, and vibrations. This can lead to reduced yields and economic losses for farmers. And Wind farms can restrict access to farms and coconut estates, making it more difficult for farmers to tend to their crops and harvest them. R: See response 21
15.	185	Felling of palmyra and coconut trees: The removal of palmyra and coconut plants from the foundation, hard standing area and road network area is necessary for the wind turbine project.	Q: It is also to monitor the process of cutting coconut trees within the area. The Approval letter which given by the Coconut Cultivation Board stated that no recommendations have been given for the implementation of the proposed project on that land due to the need to cut down a large number of coconut trees on the land where Turbine No. 19 is expected to be built, as this will cause great damage to coconut cultivation. Therefore, an alternative site for the Turbine No. 19 was not mentioned. R: See section 5.1.1 minimizing impact on coconut cultivation.
16.	186	4. 5. 4 Impacts on fishery / fishery farms / fishing community / ongoing aquaculture activities	Q: The construction and operation of wind farms can result in changes in water quality, including increased sedimentation and turbidity, which can impact fish and marine life. And the presence of wind farm projects can lead to the displacement of fishing activities, particularly in areas where fishing grounds overlap with the wind farm footprint. Further, fishing communities that rely on the affected areas for their livelihoods may experience economic impacts due to changes in fish populations and fishing opportunities. R: Construction phase water quality impacts on the marine