

**Loan Number: 2419– India: Mundra Ultra Mega Power Project**  
**Implementation of Remedial Action Plan**  
**Seventh Quarterly Progress Report – March 2017**

*Note: all Scheduled dates (unless otherwise stated) are for the completion of the relevant action by the end of the specified month*

CRP Findings	Action Plan	Scheduled date	Progress Report
1. Action to address ADB's noncompliance in relation to CRP's findings on disclosure of information and conduct of consultations	(a) Inclusive and transparent stakeholder consultations will be carried out to establish and address the impacts of the Project in relation to (i) thermal discharge into the outfall channel; (ii) livelihood of foot fisherfolk; (iii) access restrictions; and (iv) ambient air quality, as detailed in this Action Plan. As part of this consultative process, the affected foot fisherfolk will be identified; information on their livelihoods will be collected and impacts will be assessed; and measures to address livelihood impacts will be established in a Livelihood Improvement Plan, as detailed in this Action Plan.	See relevant dates below	See relevant progress below. (i) Thermal discharge into the outfall channel – See section (2) below; (ii) Livelihood of foot fisherfolk – See section (2) below; (iii) Access restrictions – See section (4) below (iv) Ambient air quality – See section (5) below
2. Action to address ADB's noncompliance in relation to CRP's findings on thermal discharge from the outflow channel and loss of livelihood of fisherfolk	(a) The National Institute of Oceanography ("NIO") has been engaged by CGPL and is carrying out field observations on the actual impacts of thermal discharge from the Project in Modhva Creek and adjoining coastal areas; this will involve validating the thermal modelling previously carried out by HR Wallingford during the environmental due diligence (prior to Project approval). NIO will complete	October 2015	(a) CGPL submitted to ADB in February 2016, the Draft Report of Model Conformity Study, prepared by NIO. ADB shared this report with CRP upon receipt from CGPL in February 2016. ADB also engaged a marine expert to review this report.  The marine consultant to assist ADB in the review of the NIO study completed the site visit in May 2016 and submitted his draft review report to ADB in August

	<p>this model conformity study. Findings of the draft NIO report to be reviewed by ADB (engaging external specialist marine consultant). ADB will submit to the CRP, as soon as available, for review and comment the draft study prepared by NIO.</p>		<p>2016. ADB received observations on NIO report from CRP in August 2016. Following this, a meeting between technical experts from CRP and ADB was held in Mumbai and it was decided that additional monitoring will be required to arrive at (i) the extent of zone of elevated temperature as a result of cooling water discharge, and (ii) ecological impacts on near coast marine environment.</p> <p>The scope of additional thermal and ecological monitoring has been developed through consultations with CRP technical experts and integrating their inputs. ADB submitted to CRP a technical note in November 2016, 'Proposed Thermal and Ecological Monitoring in Coastal Waters fronting the CGPL Plant' detailing the scope of additional monitoring to CRP. ADB shared with CGPL in February 2017, the proposed scope of additional thermal and ecological monitoring, for review and comments. CGPL in March 2017 communicated to ADB, the need for another round of technical discussions between experts of NIO, CRP and ADB, prior to initiation of any additional monitoring on ground. The technical discussions with NIO are expected in April 2017.</p>
	<p>(b) Summary of the NIO report to be translated into the local language and shared with interested stakeholders (including fisherfolk) to obtain and record their views.</p>	February 2016	<p>(b) The summary of the NIO report in Gujarati has been prepared and key findings of the report shared with the stakeholders in April 2016. Findings of additional studies envisaged under item 2(a) and the conclusions will be translated and shared with the stakeholders.</p>

	<p>(c) ADB will review the results of the study, including the advice of its specialist marine consultant and, in consultation with CGPL, will determine if any further action is appropriate. ADB shall consult with the CRP on any further action.</p>	March 2016	<p>(c) Based on the findings of additional monitoring under item (a) above, further course of action will be decided along with CGPL and CRP.</p>
	<p>(d) The results of the automatic temperature monitoring device at the outflow channel to be made accessible to the public.</p>	Ongoing	<p>(d) CGPL has installed automatic temperature sensors in the outfall channel near the outfall weir. The results are displayed at the plant gate and accessible to the public. These results will be discussed with public during consultations on findings on thermal dispersion and ecological impacts of cooling water discharge.</p>
	<p>(e) ADB to advise CGPL appropriately on ongoing qualitative studies (i) to identify the fisherfolk who have practiced foot fishing on a regular basis in the creek and coastal area adjoining the outflow channel; and (ii) to assess any livelihood impacts on such identified foot fisherfolk for the purpose of preparing a Livelihood Improvement Plan in consultation with the identified foot fisherfolk (with disclosure of the plan in the local language). ADB shall provide the TOR for the qualitative studies and the results thereof to the CRP for its review and comment. ADB to provide the draft Livelihood Improvement Plan to the CRP for its review and comment prior to finalization and implementation.</p>	October 2015	<p>(e) CRP, in August 2016, provided comments to ADB on the draft livelihood improvement plan dated March 2016. ADB will work together with CGPL to address comments/observations by CRP on the draft livelihood improvement plan.</p> <p>In line with CRP comments, the draft livelihood improvement plan has been revised to incorporate (i) findings of the site visits and observations carried out along the Modhva shoreline to identify any additional foot fisherfolk dependent on foot fishing within the zone of elevated temperature identified in NIO's model conformity study; and (ii) development measures targeting long term livelihood opportunities to the identified foot fisherfolk. CGPL will submit the revised livelihood improvement plan to ADB for review by March 2017. ADB will share the</p>

	<p>(f) Implementation of Livelihood Improvement Plan for the identified foot fisherfolk.</p>	<p>October 2015 – July 2018</p>	<p>revised report with CRP by the second week of April 2017.</p> <p>Based on the findings of additional monitoring under item (a) above, revisions to the livelihood improvement plan will be decided along with CGPL and CRP.</p> <p>(f) CGPL has engaged an NGO to support implementation of the measures proposed under the livelihood improvement plan. CGPL initiated the implementation of the livelihood improvement plan in April 2016. Summary of the progress till date include: (i) translation of the livelihood improvement plan in Gujarati, (ii) disclosure of the plan to the identified foot fisherfolk and presentation on the implementation of the livelihood plan; (iii) transfer of the budget for 2016-17 to the bank account of the NGO implementing the livelihood plan, (iv) appointment of social coordinator within the NGO, (v) baseline socio-economic information of the identified foot fisherfolk; (vi) 100% disbursement of livelihood support grants through the implementing NGO to each of the 24 identified foot fisherfolk; and (vii) preparation activities for establishment of shrimp farming activities in Tragadi and Modhva villages, including identification of lands, obtaining clearances for establishment of shrimp farms from government departments, and identification of partner agencies in design, construction and operation of the shrimp farms.</p> <p>ADB engaged in April 2016, a social development consultant, to support CGPL</p>
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			<p>and its NGO in the implementation of the provisions of the livelihood improvement plan to the 24 identified foot fisherfolk.</p> <p>While the implementation of the livelihood improvement plan provisions for the 24 identified foot fisherfolk is underway, the plan will be updated to reflect the results of the additional monitoring and assessments envisaged under items 2(a) and 2(e), and implemented.</p> <p>(g) To be produced in June 2018.</p>
	<p>(g) Review of the Livelihood Improvement Plan to be carried out by an independent expert for ADB.</p>	<p>June 2018 (for production of an independent expert report)</p>	
<p>3. Action to address ADB's noncompliance in relation to CRP's findings on sludge treatment and disposal</p>	<p>(a) Since this issue was discovered (in December 2013), ADB has engaged with CGPL on environmentally sound ways in which to segregate the iron bearing sludge from the demineralization plant. The options for segregation of sludge and its disposal are currently under technical evaluation.</p> <p>On completion of the technical evaluation of options, ADB will consult with the CRP on the preferred option prior to finalization of preferred option.</p>	<p>October 2015</p> <p>December 2015</p>	<p>(a) ADB shared with CRP a note prepared by CGPL on options analysis for sludge segregation and management in January 2016. None of the options considered by CGPL, other than disposal of iron bearing sludge in the fly ash ponds, was technically and commercially feasible. CGPL in June 2016 shared with ADB an official communication from Gujarat Pollution Control Board (GPCB), advising CGPL not to dispose the iron bearing sludge in the fly ash ponds. ADB submitted its review of options analysis to CRP in September 2016 for further deliberation and advice. CRP will consult with GPCB in April 2017 to ascertain GPCB's views on whether (i) the sludge from the demineralization plant is hazardous, (ii) the sludge has chemical toxicity; and (iii) continuation of the present discharge mechanism by CGPL will be in compliance with the national requirements. ADB will take forward the issue based on advice from CRP after its</p>

	(b) Implement sludge treatment and disposal measures and discontinue discharging iron-bearing sludge into the sea water via outfall channel.	June 2016	discussions with GPCB.  (b) See (a) above.
4. Action to address ADB's noncompliance in relation to CRP's findings on access restrictions	<p>(a) Subsequent to the CRP findings, ADB investigations indicate that actions taken by CGPL (including identification of and consultations with affected persons and the measures taken to address the impacts of such access restrictions) adequately address the impacts of access restrictions to Tragadi bander. ADB will submit these findings to CRP for their review and comments.</p> <p>(b) The ADB's findings in relation to access restriction issue will be translated into local language and consultations with the relevant stakeholders held.</p> <p>(c) Based on the CRP's review of ADB's findings, if any further action is required, such action will be determined by ADB. ADB, and not CGPL, will be responsible for ensuring the implementation of such action.</p> <p>(d) The surface quality of the access road to Tragadi bander for uninterrupted access during the monsoon to be maintained.</p>	<p>August 2015</p> <p>October 2015</p> <p>December 2015</p> <p>Regular maintenance for the life of the project</p>	<p>(a) Revisions to the draft access restrictions report, to address the CRP's comments have been carried out. The revised report has been shared with CRP in March 2016. The CRP, in its First Annual Monitoring Report (dated September 2016) to the Board of Directors on the implementation of remedial actions for the project, found the revised report on access restrictions (March 2016) to have adequately addressed its comments.</p> <p>(b) ADB translated the findings in Gujarati and carried out consultations with the relevant stakeholders in April 2016.</p> <p>(c) CGPL has confirmed its commitment to (i) undertake maintenance activities required to ensure all-weather access to Tragadi bander, and (ii) ensure continued provision of services to Tragadi bander of an appropriate quality on a regular basis.</p> <p>(d) ADB will continue to carry out visits to access road to the Tragadi bander and engage with CGPL on continued maintenance of the access road and provision of uninterrupted access.</p>
5. Action to address ADB's noncompliance in relation to	(a) Air quality monitoring (involving 10 monitoring stations at all villages	March 2016	(a) The air quality monitoring has been continued as per the schedule

<i>CRP's findings on ambient air quality</i>	within the Project's airshed) was established in April 2014 and will continue to be carried out for a two year period.		during September – December 2016.
	(b) Undertake a study in the villages surrounding the Project to ascertain the extent of health impacts associated with air pollution (PM <sub>10</sub> and PM <sub>2.5</sub> ).	December 2015 – July 2018	(b) The baseline health study has been completed and the draft report has been submitted to CRP for their comments in September 2016. CRP shared the comments from their technical expert in December 2016. ADB has updated the report to include sections on how to use the data for future comparisons and why coastal fumigation is unlikely to influence the results.
	(c) With respect to particulates, a technical study to be undertaken (to be carried out by an independent consultant engaged in consultation with ADB) to ascertain the contribution of the Project to ambient PM <sub>10</sub> levels within the Project's airshed.	April 2016 (draft study)	(c) A detailed analysis of existing air quality and emission data has been completed by the consultant engaged by ADB. ADB submitted the report to CRP in February 2017.
	(d) Findings of the technical study to be made accessible to interested stakeholders, and technical study to be finalized taking into account their views. A summary of the technical study will be translated into local language and shared with local communities and other stakeholders. ADB will provide the CRP with the terms of references for the study and draft study report for its review and comments.	June 2016	(d) This will occur after completion of the study envisaged in 5 (c) above.
	(e) Using the results of the ambient air quality monitoring and the technical	December 2016	(e) This will occur after the study envisaged in 5 (c) above.

	<p>study, ADB will undertake a correlation analysis of ambient air quality and stack emissions which will be used to determine, in consultation with CGPL, and relevant stakeholders, any further action in relation to ambient air quality monitoring and any control measures.</p> <p>ADB will submit the correlation analysis to CRP for its review and comment. Any further action in relation to ambient air quality monitoring and any control measures may include additional monitoring, plantation of trees and paving of internal roads within the villages if considered appropriate.</p>		
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