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Project Number: 41946-014  
Loan Number: 2419  
June 2015

## Proposed Remedial Action Plan\*

### India: Mundra Ultra Mega Power Project

\* This document includes one addendum and two corrigenda and comprises the remedial actions approved by the Board pursuant to the Board's decision dated 24 June 2015.

This document will be disclosed by the Compliance Review Panel on the ADB website after the Board's decision on Management's proposed remedial actions, in accordance with the Accountability Mechanism Policy (2012).

**Asian Development Bank**

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## INDIA: MUNDRA ULTRA MEGA POWER PROJECT (LOAN 2419-IND)

### Updated remedial action plan

On 3 June 2015, Management submitted its proposed remedial action plan to the Board pursuant to paragraph 191 of the Accountability Mechanism Policy (2012) (“**AM Policy**”).

This document outlines ADB Management’s proposed updated remedial action plan (“**Action Plan**”) which takes into account the comments of the Compliance Review Panel (“**CRP**”) received on 2 June 2015. This Action Plan supersedes the remedial action plan previously submitted by Management to the Board.

In accordance with paragraph 190 of the AM Policy, the borrower has agreed on 19 June 2015 to the remedial actions.

### Introduction

On 9 March 2015, the CRP submitted its final report (“**CRP Report**”) in relation to the above project (“**Project**”) in which it found Asian Development Bank (“**ADB**”) non-compliant with certain of its operational policies and procedures in four respects: (i) failure to adequately disclose information and conduct consultations; (ii) loss of livelihood of fisherfolk (due to thermal discharge from the outflow channel and impacts on Modhva Creek); (iii) access restrictions to fishing grounds; and (iv) ambient air quality.

This document outlines ADB Management’s proposed remedial action plan (“**Action Plan**”) which is submitted to ADB’s Board for its consideration pursuant to paragraph 191 of the Accountability Mechanism Policy (2012) (“**AM Policy**”).

Management acknowledges that, in a number of instances, the Action Plan requires further studies to be carried out, which will determine future actions that may be required to bring the Project back into compliance. Management will share these studies with the CRP and will seek the CRP’s input prior to finalization of the studies and determination of the future actions.

The Action Plan is set out in Appendix 1 and includes the actions (including timelines) to bring the Project into compliance with ADB’s relevant policies. Management accepts that responsibility to take all the required measures to bring the Project back into compliance with ADB’s policies lies squarely with ADB’s Management. The action to implement such measures ‘on the ground’ will be undertaken by Coastal Gujarat Power Limited (“**CGPL**”), ADB’s borrower for the loan, unless otherwise indicated in the Action Plan. This action will include the engagement of a qualified NGO with relevant experience to assist ADB to undertake consultations with the local community (as specifically outlined in Appendix 1).

ADB acknowledges the ongoing cooperation of CGPL in addressing the various issues which have arisen from ADB's noncompliance with its policies, which demonstrates CGPL's strong corporate responsibility ethos, which was also acknowledged by the CRP in the CRP Report. Management is positive that, with the support of CGPL, ADB can implement the Action Plan effectively and within the required timeline. A summary of cost estimates in relation to the actions is set out in Appendix 2.

Appendix 3 sets out the corrective actions that have been taken and are on-going in relation to coal dust. This appendix is included so that this document provides a complete picture of all on-going measures. Appendix 3 does not constitute a formal part of the Action Plan since the CRP found ADB in compliance with its policies in relation to coal dust.

### **Implementation Timelines**

The proposed Action Plan is to be implemented over a period of three (3) years up to September 2018 (whilst noting that certain actions have already commenced and are ongoing). During this period, ADB will provide the CRP with reports of further studies to be undertaken as stated in the Action Plan; will monitor the implementation of the actions on an on-going basis; and will submit quarterly progress reports during the first two years and then subsequently semi-annual progress reports to the CRP at the end of June and December of each year.

ADB's reports to the CRP will detail, for each item below, the latest status of the actions taken, in progress or to be taken, referencing the scheduled dates (including any updates) specified in the Action Plan. The objective of this quarterly / semi-annual reporting by ADB will be to assist the CRP in carrying out its monitoring and reporting to the ADB Board on the status of the implementation of the Action Plan pursuant to paragraphs 192 – 194 of the AM Policy.

ADB's progress reports will be publicly disclosed on ADB's website. The CRP's monitoring reports will be publicly disclosed on ADB's website pursuant to paragraph 3 (viii) of Appendix 9 of the AM Policy.

**APPENDIX 1**  
**PROPOSED ACTION PLAN**

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

<b>1. Action to address ADB's noncompliance in relation to CRP's findings on disclosure of information and conduct of consultations<sup>1</sup></b>		<b>Scheduled date</b>
(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 <sup>2</sup> ; 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 tables below.

<sup>1</sup> This corresponds with Findings 'A 1 and 2' of the CRP's Report (pages 10 – 20).

<sup>2</sup> Fisherfolk in the Modhva and Tragadi villages were recognized in 2009 as affected by access restrictions to Tragadi bander. The CRP notes (in paragraph 127 of its report) that a participatory, inclusive consultation process started and livelihood support measures were introduced for these particular villages, and that which ADB staff supported CGPL's significant engagement in the consultations conducted in these villages.<sup>3</sup> This corresponds with Findings 'B 1 and B5' of the CRP Report (pages 21 – 26 and 31 – 33).

<b>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<sup>3</sup></b>		<b>Scheduled Date</b>
(a)	<p>The National Institute of Oceanography (“<b>NIO</b>”) has been engaged by CGPL<sup>4</sup> 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 this model conformity study.<sup>5</sup></p> <p>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>	October 2015.
(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.	February 2016.
(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.	March 2016.

<sup>3</sup> This corresponds with Findings ‘B 1 and B5’ of the CRP Report (pages 21 – 26 and 31 – 33).

<sup>4</sup> The NIO study is a requirement of the MOEF clearance dated April 2008.

<sup>5</sup> NIO was engaged in 2013, as an expert institute to undertake this study. The first set of field investigations under this study were completed in December 2013 and a report was submitted in September 2014. Another field investigation has been completed in April 2015 and a draft report is under preparation.

<b>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<sup>3</sup></b>		<b>Scheduled Date</b>
(d)	The results of the automatic temperature monitoring device at the outflow channel to be made accessible to the public.	Ongoing.
(e)	<p>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.</p> <p>ADB to provide the draft Livelihood Improvement Plan<sup>6</sup> to the CRP for its review and comment prior to finalization and implementation.</p>	October 2015.
(f)	Implementation of Livelihood Improvement Plan for the identified foot fisherfolk.	October 2015 - July 2018.
(g)	Review of the Livelihood Improvement Plan to be carried out by an independent expert for ADB.	June 2018 (for production of independent expert report).

<sup>6</sup> The Livelihood Improvement Plan will consider short term and long term options to address past and future impacts. The final Livelihood Improvement Plan will be disclosed on ADB's website.

<b>3. Action to address ADB's noncompliance in relation to CRP's findings on sludge treatment and disposal<sup>7</sup></b>		<b>Scheduled Date</b>
(a)	<p>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>
(b)	Implement sludge treatment and disposal measures and discontinue discharging iron-bearing sludge into the sea water via outfall channel.	June 2016

<b>4. Action to address ADB's noncompliance in relation to CRP's findings on access restrictions<sup>8</sup></b>		<b>Scheduled Date</b>
(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.	Report August 2015.
(b)	The ADB's findings in relation to access restriction issue will be translated into local language and consultations with the relevant stakeholders held.	October 2015
(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.	December 2015.

<sup>7</sup> This corresponds with Finding 'B 2' of the CRP Report (pages 26 – 29).

<sup>8</sup> This corresponds with Finding 'C' of the CRP Report (pages 34 – 36).



<b>4. Action to address ADB's noncompliance in relation to CRP's findings on access restrictions<sup>8</sup></b>		<b>Scheduled Date</b>
(d)	The surface quality of the access road to Tragadi bander for uninterrupted access during the monsoon to be maintained.	Regular maintenance for the life of the Project.

<b>5. Action to address ADB's noncompliance in relation to CRP's findings on ambient air quality<sup>9</sup></b>		<b>Scheduled Date</b>
(a)	Air quality monitoring (involving 10 monitoring stations at all villages within the Project's airshed) was established in April 2014 and will continue to be carried out for a two year period.	March 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.
(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. <sup>10</sup>	April 2016 (draft study).
(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.

<sup>9</sup> This corresponds with Finding 'E' of the CRP Report (pages 41 – 46).

<sup>10</sup> This study will ascertain at all monitoring stations the proportion of PM<sub>10</sub> contributed by the Project. For this purpose, the study will involve undertaking physical and chemical analysis of particulates and their correlation with the characteristics of fly ash emissions and coal dust from the Project. This study therefore should demonstrate the Project's contribution towards particulate air pollution. This study therefore has significantly higher scientific rigor than a 'dust analysis' which could only indicate what proportion of the total dust comprises the various components of dust (fly ash, unburnt coal, airborne salt and silica) without being able to indicate the source of such dust.

5. Action to address ADB's noncompliance in relation to CRP's findings on ambient air quality <sup>9</sup>	Scheduled Date
<p>(e) Using the results of the ambient air quality monitoring and the technical 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>	December 2016.

**APPENDIX 2**  
**SUMMARY OF COST ESTIMATES FOR ACTION PLAN**

<b>Action</b>	<b>Estimated Cost (in US Dollars equivalent)</b>
Costs in carrying out required studies to identify affected foot fisherfolk and continued consultation with fisherfolk by NGO.	\$100,000
Engagement by ADB of specialist marine consultant to assess the results of the NIO study.	\$40,000
Implementation of Livelihood Improvement Plan for foot fisherfolk.	\$300,000 (to be finalized in the Livelihood Improvement Plan)
Engagement by ADB of independent expert to assess the implementation of the Livelihood Improvement Plan.	\$25,000
Design and implementation of sludge treatment and disposal measures.	\$150,000
Contingency amount in relation to any access issues, as specified in Appendix 1, Section 4, item (c) on page 6.	\$50,000
Annual maintenance of access road.	No additional cost as CGPL will carry out in any event
Third party monitoring of ambient air quality.	Ongoing, so no additional cost
Air quality study to ascertain the Project's contribution to particulate pollution in the airshed.	\$200,000
Engagement by ADB of technical support as required.	\$300,000

### APPENDIX 3 – CORRECTIVE ACTION PLAN FOR COAL DUST ISSUES

**Note: Appendix 3 does not constitute a formal part of the Action Plan since the CRP found ADB in compliance with its policies in relation to coal dust.**

Corrective Action carried out to date includes:

- (i) A tube coal conveyor belt covering the elevated 1.3 km stretch along the Vandh village has been designed (estimated cost of \$18,500,000).
- (ii) In the future, a 20-50m wide “green belt” comprising rows of fast growing trees to break the wind and intercept coal dust will develop (planted in 2012).
- (iii) A 9 m tall wind barrier has been constructed along the Vandh village-ward plant boundary, adjoining the coal stockyard to arrest the movement of coal dust.
- (iv) The height of coal piles over one-third of the Vandh village-ward length has been restricted to below 6 m.

Further Corrective Action <sup>11</sup>		Scheduled Date
(a)	Construction of the covered tube conveyor belt.	October 2016.
(b)	A water sprinkler system for the suppression of coal dust will be designed to throw a fine mist of water up to a height of 20 m along the width of the coal piles on the Vandh village-ward side to capture the coal dust that escapes over the 9 m tall wind barrier. Completed technical design of water sprinkler system to be submitted to ADB for review.	September 2015.
(c)	Implementation of water sprinkling system.	October 2016.
(d)	Until the above system has been implemented, during adverse wind condition periods (typically November – February), use (already installed) fire hydrants.=	October 2015.
(e)	The area underneath the present coal conveyor to be paved for more efficient removal of coal dust that falls through the conveyors to prevent its getting air borne during gusts and windy conditions.	March 2016.

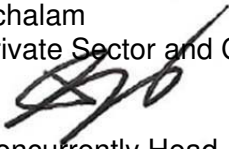
<sup>11</sup> This corresponds with Finding ‘C’ of the CRP Report (pages 36 - 40).



## Memorandum Compliance Review Panel

CRP2015DT027  
2 June 2015

To: Lakshmi Venkatachalam  
Vice President, Private Sector and Cofinancing Operations

From: Dingding Tang   
Chair, CRP and concurrently Head, OCRP

Subject: **Proposed Remedial Action Plan on IND: Mundra Ultra Mega Power Project—CRP's Comments**

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1. Thanks for your memo dated 27 May 2015 sharing the draft remedial actions with the Compliance Review Panel (CRP) on the captioned subject and seeking its comments in pursuance of paragraph 190 of the Accountability Mechanism Policy (AMP).

2. The detailed comments of the CRP are provided in the attached matrix for consideration. However, the following important points are summarized below for consideration of the Board of Directors (Board) and Management.

- (i) The CRP finds that the remedial actions suggested by the Management can be basically categorized into three groups. First, there are such remedial actions which respond directly to the CRP's findings of both noncompliance and harm due to noncompliance of policy. Second, proposals for remedial actions where the CRP found noncompliance and harm due to noncompliance of policy but where the Management says a study is required to refine or define more clearly the scope and extent of the remedial action or compensation. Third, areas where the CRP found noncompliance and the possibility of harm, but due to the absence of baseline data and monitoring systems, the extent of harm still needs to be established. Thus, studies are required to establish the harm. Action Plans to address the established harms would follow subsequent to the studies.
- (ii) Most action areas of the Remedial Action Plan fall in category 2 and 3, where studies will be conducted first and only then, based on the outcomes of the studies, actions will be defined. The proposed Remedial Action Plan (RAP) is thus largely not an "Action Plan" but a "Studies Plan" where actions will be specified only later; dependent on the outcome of the studies.
- (iii) The proposed RAP itself, does not bring the project into compliance. It would be the subsequent actions, yet to be defined, which would bring the project into compliance. It is important for the Board to note, that the RAP is largely a preliminary program where actions which would address the noncompliance area and harm incurred, would only be defined in a subsequent plan. Given the tentative and preliminary nature of the proposed RAP, the CRP is of the view that

- (i) all studies conducted should be submitted to the CRP for review and comments, and, (ii) the CRP be directly engaged in the review of the action plans formulated in response to the studies conducted.
- (iv) The RAP should clearly identify the noncompliance areas that the proposed action plan matrix is designed to address. The Management's action plan matrix does not do this but refers generically to pages in the CRP's final compliance review report. As the action plan matrix is to address the noncompliance areas to bring the project into compliance with ADB policies, and forms the basis of the subsequent annual monitoring by the CRP, the identified noncompliance areas need to be clearly specified.

cc: Todd Freeland, Director General, PSOD  
Michael Barrow, Deputy Director General, PSOD  
Don Purka, Director, PSIF1

**INDIA: MUNDRA ULTRA MEGA POWER PROJECT (LOAN 2419-IND)**

Proposed Remedial Actions by the Management	CRP's Comments
<p><b>Introduction</b></p> <p>On 9 March 2015, the Compliance Review Panel (“<b>CRP</b>”) submitted its final report (“<b>CRP Report</b>”) in relation to the above project (“<b>Project</b>”) in which it found Asian Development Bank (“<b>ADB</b>”) non-compliant with certain of its operational policies and procedures in four respects: (i) failure to adequately disclose information and conduct consultations; (ii) loss of livelihood of fisherfolk (due to thermal discharge from the outflow channel and impacts on Modhva Creek); (iii) access restrictions to fishing grounds; and (iv) ambient air quality.</p> <p>This document outlines ADB Management’s proposed remedial action plan (“<b>Action Plan</b>”) which is submitted to ADB’s Board for its consideration pursuant to paragraph 191 of the Accountability Mechanism Policy (2012) (“<b>AM Policy</b>”).</p> <p>The Action Plan is set out in Appendix 1 and includes the actions (including timelines) to bring the Project into compliance with ADB’s relevant policies. While it is ADB’s responsibility to take all the required measures to bring the Project back into compliance with ADB’s policies, the action to implement such measures ‘on the ground’ will be undertaken by Coastal Gujarat Power Limited (“<b>CGPL</b>”), ADB’s borrower for the loan, unless otherwise indicated in the Action Plan. This action will include the engagement of a qualified NGO with relevant experience to assist ADB to undertake consultations with the local community (as specifically outlined in Appendix 1).</p> <p>ADB acknowledges the ongoing cooperation of CGPL in addressing the various issues which have arisen from ADB’s noncompliance with its policies, which demonstrates CGPL’s strong corporate responsibility ethos, which was also acknowledged by the CRP in the CRP Report. Management is</p>	<p>It is clear in the Accountability Mechanism policy (2012) that while remedial actions will be implemented through the borrower, CGPL, the final responsibility for ensuring that these actions are taken and successful in bringing the project back into compliance lies squarely on ADB Management. This needs to be emphasized in the Introduction.</p>

<b>Proposed Remedial Actions by the Management</b>	<b>CRP's Comments</b>
<p>positive that, with the support of CGPL, ADB can implement the Action Plan effectively and within the required timeline. A summary of cost estimates in relation to the actions is set out in Appendix 2.</p> <p>Appendix 3 sets out the corrective actions that have been taken and are on-going in relation to coal dust. This appendix is included so that this document provides a complete picture of all on-going measures. Appendix 3 does <u>not</u> constitute a formal part of the Action Plan since the CRP found ADB in compliance with its policies in relation to coal dust.</p>	
<p><b>Implementation Timelines</b></p> <p>The proposed Action Plan is to be implemented over a period of three (3) years up to September 2018 (whilst noting that certain actions have already commenced and are ongoing). During this period, ADB will provide the CRP with the final reports of the further studies to be undertaken as stated in the Action Plan; will monitor the implementation of the actions on an on-going basis; and will submit semi-annual progress reports to the CRP at the end of June and December of each year.</p> <p>ADB's reports to the CRP will detail, for each item below, the latest status of the actions taken, in progress or to be taken, referencing the scheduled dates (including any updates) specified in the Action Plan. The objective of this semi-annual reporting by ADB will be to assist the CRP in carrying out its monitoring and reporting to the ADB Board on the status of the implementation of the Action Plan pursuant to paragraphs 192 – 194 of the AM Policy.</p> <p>ADB's progress reports will be publicly disclosed on ADB's website. The CRP's monitoring reports will be publicly disclosed</p>	<p>Submit quarterly progress reports during the first two years and subsequently semi-annually reports.</p>



<b>Proposed Remedial Actions by the Management</b>	<b>CRP's Comments</b>
on ADB's website pursuant to paragraph 3 (viii) of Appendix 9 of the AM Policy.	

**APPENDIX 1**  
**PROPOSED ACTION PLAN**

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

<b>1. Action to address ADB's noncompliance in relation to CRP's findings on disclosure of information and conduct of consultations<sup>1</sup></b>		<b>CRP's Comments</b>
(a)	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 <sup>2</sup> ; and (iv) ambient air quality, as detailed in this Action Plan. As part of this consultative process, the affected foot fisherfolk will be identified; <u>information on their livelihoods will be collected and impacts will be assessed.</u>	<p>ADB will assist CGPL to establish a system of inclusive and transparent stakeholder consultations with all fisher folks at Tragadi bander to assess impacts of Tata Mundra plant on an ongoing basis.</p> <p>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 impacts of foot fisher folks; (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, impacts will be assessed and remedial actions, including compensation, established.</p> <p><b>Note:</b> As failure to conduct consultations with Tragadi bander fisherfolks (including all fisherpeople not only foot fisher) has been a major noncompliance area, the CRP recommends to address this noncompliance area</p>

<sup>1</sup> This corresponds with Findings 'A 1 and 2' of the CRP's Report (pages 10 – 20).

<sup>2</sup> Fisherfolk in the Modhva and Tragadi villages were recognized in 2009 as affected by access restrictions to Tragadi bander. The CRP notes (in paragraph 127 of its report) that a participatory, inclusive consultation process started and livelihood support measures were introduced for these particular villages, and that which ADB staff supported CGPL's significant engagement in the consultations conducted in these villages.<sup>3</sup> This corresponds with Findings 'B 1 and B5' of the CRP Report (pages 21 – 26 and 31 – 33).

<b>1. Action to address ADB's noncompliance in relation to CRP's findings on disclosure of information and conduct of consultations<sup>1</sup></b>		<b>CRP's Comments</b>
		by conducting and ongoing inclusive consultation process with all fisherfolks at Tragadi bander.

<b>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<sup>3</sup></b>		<b>CRP’s Comments</b>
(a)	<p>The National Institute of Oceanography (“<b>NIO</b>”) has been engaged by CGPL<sup>4</sup> 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 this model conformity study.<sup>5</sup></p> <p>Findings of the draft NIO report to be reviewed by ADB (engaging external specialist marine consultant).</p> <p><b>Scheduled date:</b> October 2015</p>	<p>ADB will submit to the CRP, as soon as available, for review and comment the draft study prepared by NIO.</p>
(b)	<p>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> <p><b>Scheduled date:</b> February 2016</p>	<p>No comments.</p>

<sup>3</sup> This corresponds with Findings ‘B 1 and B5’ of the CRP Report (pages 21 – 26 and 31 – 33).

<sup>4</sup> The NIO study is a requirement of the MOEF clearance dated April 2008.

<sup>5</sup> NIO was engaged in 2013, as an expert institute to undertake this study. The first set of field investigations under this study were completed in December 2013 and a report was submitted in September 2014. Another field investigation has been completed in April 2015 and a draft report is under preparation.

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 <sup>3</sup>		CRP's Comments
(c)	<p>ADB will (subject to the results of the NIO study) use the results of the study to reconfirm its decision to agree to the 7°C water discharge standard (instead of the PPAH standard).</p> <p>ADB, in consultation with CGPL, will determine if any further action is appropriate.</p> <p><b>Scheduled date:</b> March 2016</p>	<p>ADB will use the results of the study to assess the impacts of the outflow channel and agree on the appropriate standards to be applied.</p> <p>ADB will consult with CRP on the appropriate action as a follow up to the NIO study.</p> <p><b>Note:</b> ADB Management needs to have an open mind and to ensure that an independent study is done and to examine whether that study discloses valid and cogent grounds to justify the selection of thermal discharge standards. As a follow-up action would bring the project into compliance, consultations with the CRP on the actions to be agreed upon are essential.</p>
(d)	<p>The results of the automatic temperature monitoring device at the outflow channel to be made accessible to the public.</p> <p><b>Scheduled date:</b> Ongoing</p>	<p>Temperature monitoring at the weir of the outfall channel should be installed and made accessible to the public.</p> <p><b>Note:</b> At present, there is no temperature monitoring at the weir of the outfall channel. The public should be able to have access to this temperature information.</p>
(e)	<p>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)</p> <p><b>Scheduled date:</b> July 2015</p>	<p>ADB to advise CGPL to conduct a survey with the following components: (i) identify the fisher folk who practice foot fishing on a regular basis in the creek and coastal area adjoining the outflow channel; (ii) assess the livelihoods impacts of the outflow channel on foot fisher folks; (iii) prepare a Livelihood Improvement Plan to compensate or improve foot fisher folks for impacts incurred in the past and in the future. Livelihood Improvement Plan needs to provide for compensation measures and livelihood support.</p>

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 <sup>3</sup>		CRP's Comments
		<p>The result of the survey and proposal for the Livelihood Improvement Plan need to be translated into local language and consultations need to be undertaken with all relevant stakeholders, including in particular, but not exclusively, the fisher community.</p> <p>Provide to the CRP (i) the terms of references of survey and (ii) draft survey report for its review and comment.</p> <p>Provide to the CRP the draft Livelihood Improvement Plan for its review prior to finalization and implementation.</p> <p><b>Note:</b> As the Livelihood Improvement Plan would bring the project into compliance, agreement with the CRP on the Livelihood Improvement Plan is necessary.</p>
(f)	<p>Implementation of Livelihood Improvement Plan for the identified foot fisherfolk.</p> <p><b>Scheduled date:</b> August 2015 - July 2018</p>	<p>Implementing progress of the Livelihood Improvement Plan should be one of the key items of the quarterly or semi-annual progress report to the CRP, that needs to highlight the progress, issues, views from interested stakeholders, as well as further actions which may needed to respond to new concerns/requests.</p>
(g)	<p>Review of the Livelihood Improvement Plan to be carried out by an independent auditor for ADB.</p> <p><b>Scheduled date:</b> June 2018 (for production of independent audit report)</p>	<p>Livelihood Improvement Plan should be made publicly available.</p> <p><b>Note:</b> The role and function of an independent auditor in the review of the Livelihood Improvement Plan is unclear, as the term "auditor" is not commonly used for review of such plan. The reference to an independent auditor should thus be deleted.</p>

<b>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<sup>3</sup></b>	<b>CRP's Comments</b>

3. Action to address ADB's noncompliance in relation to CRP's findings on sludge treatment and disposal <sup>6</sup>		CRP's Comments
(a)	<p>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><b>Scheduled date:</b> October 2015</p> <p>On completion of the technical evaluation of options, ADB will review and provide its feedback prior to finalization of preferred option.</p> <p><b>Scheduled date:</b> December 2015</p>	<p>ADB will consult with CRP on the final options laid out under the study prior to implementation.</p> <p><b>Note:</b> As the action would bring the project into compliance, consultation with the CRP on final action is important.</p>
(b)	<p>Implement sludge treatment and disposal measures.</p> <p><b>Scheduled date:</b> December 2016</p>	<p>Implementation of sludge treatment and disposal measures by June 2016.</p> <p>Discontinue practice of discharging iron-bearing sludge into the sea water via outfall channel by June 2016.</p> <p>Monitoring measures of sea water quality on weir of the outflow channel needs to be established. The temperature monitoring data will be made accessible to the interested stakeholders.”</p> <p><b>Note:</b> Needed is a clear commitment when discharging of iron-bearing sludge into the sea water via outfall channel will be discontinued. Moreover, monitoring of water quality is good established practice and monitoring results should be made available to the public. As the</p>

<sup>6</sup> This corresponds with Finding 'B 2' of the CRP Report (pages 26 – 29).



		actions would bring project into compliance with ADB policies, consultation with CRP on options to be pursued is necessary.
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4. Action to address ADB's noncompliance in relation to CRP's findings on access restrictions <sup>7</sup>		CRP's Comments
(a)	<p>In addition to the actions already taken by CGPL on access improvements to Tragadi bander (as previously documented in Management's Response to the CRP), an assessment is being carried out and will be continued, with advice from ADB. The findings of this assessment will be documented.</p> <p><b>Scheduled date:</b> Draft report August 2015; Final report October 2015</p>	<p>Undertake an assessment of impacts of access restrictions resulting from the fencing off of the CGPL plant on Tragadi bander and on residents of villages other than Modwha and Tragadi bander villages. This assessment needs to be based on a scoping exercise which – based on a participatory process – determines the population group and possible impacts to be studied under the assessment. The scoping exercise and assessment need to look at people residing at Tragadi bander and at people living in villages other than Modwha and Tragadi bander.</p> <p>Translate the assessment into local language and consult with all relevant stakeholders.</p> <p>Provide Terms of References for access restriction assessment and draft assessment to CRP for review.</p>
(b)	<p>Further action to be determined by ADB in consultation with CGPL and the foot fisherfolk coming to Tragadi bander in the light of the assessment.</p> <p><b>Scheduled date:</b> December 2015</p>	<p>Based on results of assessment establish action on how to address impacts. Such action plan would need to be established in consultation with relevant stakeholders and presented to CRP for review.</p> <p><b>Note:</b> As an action plan will bring the project into compliance, the CRP needs to be consulted on the action plan prior to finalization.</p>

<sup>7</sup> This corresponds with Finding 'C' of the CRP Report (pages 34 – 36).

(c)	The surface quality of the access road to Tragadi bander for uninterrupted access during the monsoon to be maintained.  <b>Scheduled date:</b> Regular maintenance for the life of the Project	No comments.
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5. Action to address ADB's noncompliance in relation to CRP's findings on ambient air quality <sup>8</sup>		CRP's Comments
(a)	<p>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.<sup>9</sup></p> <p><b>Scheduled date:</b> April 2016 (draft study)</p>	<p>Conduct an air quality monitoring program under third party engagement which should focus on PM10, not only PM 2.5. All monitoring information needs to be made available and shared with the public. The ambient air monitoring program needs to include a correlation analysis between the ambient air qualities and stack emission of Tata Mundra Plant. Such air monitoring program needs to be carried out for at least three years.</p> <p>Carry out site specific health monitoring study on diseases typically caused by air pollution (PM10 and PM2.5) for a period of at least three years and make information available to public.</p> <p><b>Note:</b> Although the third party monitoring of ambient air quality and a health status study among the children and elderly in the villages surrounding the Project have been included and mentioned in Appendix 2 and Appendix 3 of this remedial action plan respectively, the CRP suggests to detail those programs under the Item 5 of the Remedial Action Plan (Appendix 1).</p>
(b)	<p>Findings of the technical study to be made accessible to interested stakeholders, and technical study to be finalized taking into account their views.</p>	<p>Provide Terms of References for the study and draft study report to the CRP for its review and comments.</p> <p>At least a summary of the study needs to be translated</p>

<sup>8</sup> This corresponds with Finding 'E' of the CRP Report (pages 41 – 46).

<sup>9</sup> This study will ascertain at all monitoring stations the proportion of PM<sub>10</sub> contributed by the Project. For this purpose, the study will involve undertaking physical and chemical analysis of particulates and their correlation with the characteristics of fly ash emissions and coal dust from the Project. This study therefore should demonstrate the Project's contribution towards particulate air pollution. This study therefore has significantly higher scientific rigor than a 'dust analysis' which could only indicate what proportion of the total dust comprises the various components of dust (fly ash, unburnt coal, airborne salt and silica) without being able to indicate the source of such dust.

5. Action to address ADB's noncompliance in relation to CRP's findings on ambient air quality <sup>8</sup>		CRP's Comments
	<b>Scheduled date:</b> June 2016	into local language and shared with local communities and other stakeholders concerned.
(c)	<p>Based on review of air monitoring results and assessment of final technical study, ADB to determine, in consultation with CGPL, if further action is required. This may include additional monitoring, plantation of trees and paving of internal roads within the villages if considered appropriate.</p> <p><b>Scheduled date:</b> December 2016.</p>	<p>The CRP needs to be consulted prior to the determination if and what actions are required to address air quality improvement.</p> <p>Proposed action plan should also be consulted with relevant stakeholders.</p> <p><b>Note:</b> As the action plan would bring the project into compliance with ADB policies and procedures, engagement of the CRP in review of the action plan is essential.</p>

**APPENDIX 2**  
**SUMMARY OF COST ESTIMATES FOR ACTION PLAN**

<b>Action</b>	<b>Estimated Cost (in US Dollars equivalent)</b>	<b>CRP's Comments</b>
Costs in carrying out required studies to identify affected foot fisherfolk and continued consultation with fisherfolk by NGO.	\$100,000	Please refer to the comments on this item at above Action 5 (a).
Engagement by ADB of independent marine consultant to assess the results of the NIO study.	\$40,000	
Implementation of Livelihood Improvement Plan for foot fisherfolk.	\$300,000 (to be finalized in the Livelihood Improvement Plan)	
Engagement by ADB of independent auditor to assess the implementation of the Livelihood Improvement Plan.	\$25,000	
Design and implementation of sludge treatment and disposal measures.	\$150,000	
Contingency amount in relation to any access issues.	\$50,000	
Annual maintenance of access road.	No additional cost as CGPL will carry out in any event	
Third party monitoring of ambient air quality.	Ongoing, so no additional cost	
Air quality study to ascertain the Project's contribution to particulate pollution in the airshed.	\$200,000	

### APPENDIX 3 – CORRECTIVE ACTION PLAN FOR COAL DUST ISSUES

**Note: Appendix 3 does not constitute a formal part of the Action Plan since the CRP found ADB in compliance with its policies in relation to coal dust.**

<p>Corrective Action carried out to date includes:</p> <ul style="list-style-type: none"> <li>(i) A tube coal conveyor belt covering the final 2 km stretch along the Vandh village has been designed (estimated cost of \$18,500,000).</li> <li>(ii) In the future, a 20-50m wide “green belt” comprising rows of fast growing trees to break the wind and intercept coal dust will develop (planted in 2012).</li> <li>(iii) A 9 m tall wind barrier has been constructed along the Vandh village-ward plant boundary, adjoining the coal stockyard to arrest the movement of coal dust.</li> <li>(iv) The height of coal piles over one-third of the Vandh village-ward length has been restricted to below 6 m.</li> </ul>	<p style="text-align: center;"><b>CRP’s Comments:</b></p> <p>No comments.</p>
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<b>Further Corrective Action<sup>10</sup></b>		<b>CRP’s Comments</b>
(a)	<p>Construction of the covered tube conveyor belt.</p> <p><b>Scheduled date:</b> October 2016</p>	No comments.
(b)	<p>A water sprinkler system for the suppression of coal dust will be designed to throw a fine mist of water up to a height of 20 m along the width of the coal piles on the Vandh village-ward side to capture the coal dust that escapes over the 9 m tall wind barrier.</p> <p>Completed technical design of water sprinkler system to be submitted to ADB for review.</p>	No comments.

<sup>10</sup> This corresponds with Finding ‘C’ of the CRP Report (pages 36 - 40).

Further Corrective Action <sup>10</sup>		CRP's Comments
	<b>Scheduled date:</b> September 2015	
(c)	Implementation of water sprinkling system.  <b>Schedule date:</b> October 2016	No comments
(d)	Until the above system has been implemented, during adverse wind condition periods (typically November – February), use (already installed) fire hydrants.=  <b>Scheduled date:</b> October 2015	No comments
(e)	The area underneath the present coal conveyor to be paved for more efficient removal of coal dust that falls through the conveyors to prevent its getting air borne during gusts and windy conditions.  <b>Scheduled date:</b> March 2016	No comments
(f)	Undertake a health status study among the children and elderly in the villages surrounding the Project to define health conditions as of 2015.  <b>Scheduled date:</b> December 2015	Please refer to the comments on this item at above Action 5 (a).