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LIST OF ABBREVIATIONS

ADB  Asian Development Bank
BOD  Board of Directors
CCEA  Cabinet Committee on Economic Affairs
CEA  Central Electricity Authority
DFO  Divisional Forest Officer
EA  Environmental Assessment
EAMP  Environmental Assessment and Management Plan
EHV  Extra High Voltage
EMF  Electro Magnetic Field
EMP  Environmental Management Plan
ESMC  Environmental and Social Management Cell
ESMD  Environmental and Social Management Department
ESMT  Environmental and Social Management Team
ESPP  Environmental and Social Policy Procedures
FA  Funding Agency
FP  Forest Proposal
FR  Feasibility Report
GOI  Government of India
IPDP  Indigenous People Development Plan
ISO  International Standard Organization
JBIC  Japan Bank for International Cooperation
KV  Kilo Volts
LAA  Land Acquisition Assessment
MOEF  Ministry of Environment & Forests
NO  Nodal Officer
OD  Operational Directive
OP  Operational Policy
OM  Operation Manual
OSS  Organizational Support Systems
PAP  Project Affected Person
PAF  Project Affected Families
PIB  Public Investment Board
R&R  Resettlement and Rehabilitation
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAP</td>
<td>Rehabilitation Action Plan</td>
</tr>
<tr>
<td>REB</td>
<td>Regional Electricity Board</td>
</tr>
<tr>
<td>RHQ</td>
<td>Regional Headquarters</td>
</tr>
<tr>
<td>ROW</td>
<td>Right of Way</td>
</tr>
<tr>
<td>SA</td>
<td>Social Assessment</td>
</tr>
<tr>
<td>SAMP</td>
<td>Social Assessment and Management Plan</td>
</tr>
<tr>
<td>SEB</td>
<td>State Electricity Board</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Power Grid Corporation of India Limited (POWERGRID) was set up in October 1989 to transmit power generated from Central Power stations and the surplus electricity from State Electricity Boards, to regional Load Centres, thus establishing Regional and National Power Grids. The infrastructure developed by POWERGRID is reliable, economical, and secured, that comprise of EHV AC and HV DC transmission lines, substations, load dispatch centers and communication facilities. To date, POWERGRID operates approximately 48,000 Circuit kms (Ckm) of 765 KV, 400 KV, 220 KV, 132 KV AC transmission lines, and HVDC transmission system. It has a total installed transformation capacity of 46,500 MVA, distributed over 82 substations, and maintained at a persistent level of over 99% of line availability. POWERGRID is one of the largest power transmission corporations in the world. In order to fulfil its goal of establishing a National Power Grid, POWERGRID plans to augment regional grids, reinforce inter-regional links, set up modern co-ordination systems, and control facilities.

POWERGRID has achieved the distinction of being the first Power company in India certified with Integrated Management System comprising of ISO: 9001 for Quality Management, ISO: 14001 for Environment Management and 18001 for Occupational Health & Safety. Independent and internationally accredited external agency audits these systems regularly.

POWERGRID has developed its Corporate Environmental and Social Policy and Procedures (ESPP) to ensure its activities has least impacts on environment and socio-economic fabric of the communities. The ESPP outlines POWERGRID's approach and commitment to deal with environmental and social issues, relating to its transmission projects, and lays out management procedures and protocol to mitigate the same. The ESPP includes framework for identification, assessment, and management of environmental and social concerns at both organizational and project levels.

POWERGRID developed the first ESPP document in 1998, based on desk research on the regulatory framework and analysis of priority issues in the power transmission sector. It is consistent with operational directives of the Multilateral Funding Agencies and evolved after detailed consultation, within and outside POWERGRID, including national consultation. Such consultation were also organized during subsequent revisions of ESPP with all stakeholders including Project affected Persons (PAPs) and local Communities. The regional level consultations were organised at Southern, Western, Northern and Eastern region of the country and the National level, at its corporate office in Gurgaon.
Environmental and Social Policy and Procedures

The ESPP document comprises of seven sections. **Section I** elaborates the environmental and social policy of POWERGRID. **Section II** contains legal enactments, regulations, requirements of Multilateral Agencies and their implications on transmission projects. **Section III** outlines the project cycle of a typical POWERGRID’s transmission project. **Section IV** provides a summary of environmental and social issues associated with power transmission projects. **Section V** provides details of POWERGRID’s environmental and social management framework. **Section VI** details the organizational support required to implement ESPP. **Section-VII** describes Regional and National consultation process for obtaining stakeholders feedback during revision of ESPP.

**POWERGRID's Environmental and Social Policy**

**Environment & Social Policy Statement**

"POWERGRID is committed to the goal of sustainable development through conservation of natural resources, continually improving its management system, accessing specialist knowledge for management of significant environmental and social issues and introducing new state of the art and internationally proven technologies while strictly following the basic principles of Avoidance, Minimization and Mitigation."

This ESPP is based on POWERGRID’s environment and social policy, which outlines its commitment to:

- ensure total transparency in dealing with all stakeholders from Government departments, communities, individual landowners and employees. Their involvement in POWERGRID operation shall be channelised through well-defined public consultation process and dissemination of information regarding the project at every stage of its implementation;

- maintain highest standards of corporate responsibility not only towards its employees but to the consumers, societies and world in which it operates, shouldering community responsibility as part of social responsibility through various community development activities in areas around its establishments, promoting socio-economic development and enriching the quality of life of the community like initiatives taken towards community empowerment by providing basic infrastructure facilities, relief and restoration work during natural calamities, in-house social clubs, social and cultural activities in the vicinity by providing education to poor children, organizing health awareness/check-up camp, sponsoring local religious/sports activity etc. most importantly through people’s participation; and

- take initiatives like adoption of innovative tower structure designs and multi-circuit towers for reduction in Right of Way, installation of tall towers (80 mt.) to minimise
impact on flora in ecologically sensitive areas, land management, massive plantation, provision for rain water harvesting etc.

**Policy, Legal and Regulatory Framework**

POWERGRID undertakes all its activities within the purview of Indian laws keeping in mind appropriate international obligations and guidelines of Multilateral Funding Agencies. POWERGRID sees its responsibilities under the present legal framework as twofold about its projects. Firstly, mandatory requirements under the law and the guidelines of Funding agencies, and secondly, prescriptive requirements that influence management procedures addressing environmental and social issues.

Mandatory environmental requirements for POWERGRID at a national level include: Sanction of GOI under section 68 (1) of the Electricity Act, 2003; Forest clearance under the Forest (Conservation) Act, 1980; Environmental Clearance under Environment (Protection) Act, 1986, for the projects located in two districts in the Aravalli viz., Alwar in Rajasthan and Gurgaon in Haryana only. During operation stage certain amendment of Environment (Protection) Act like Batteries (Management and Handling) Rules, 2001 regarding disposal of batteries, Hazardous Wastes (Management and Handling) amendment Rules, 2003 regarding disposal of used transformer oil and Ozone depleting Substances (Regulation and Control) rules, 2000 putting restriction on use of ozone depleting substances are also applicable and complied with. Requirements vis-à-vis Funding Agencies is an Environmental Review/Assessment as required by World Bank OP 4.01/ ADB OM-F1/BP and JBIC environmental guidelines. Most of these guidelines classify transmission projects as a Type B project, which would normally require an environmental review/assessment.

Besides the constitutional guarantees, the Mandatory Social requirements for POWERGRID at the National level includes provisions of Section 68 (5&6) of The Electricity Act 2003 regarding compensation towards damage to crop and trees, provisions of Land Acquisition Act, 1894 for activities involving LA for Substations and National Policy on Resettlement and Rehabilitation for Project Affected Families, 2004. Requirements vis-à-vis funding agencies are World Bank Operational Policy & Directives (OP 4.12 and OD 4.20) pertaining to involuntary resettlement and indigenous people and ADB Operations Manual –F2/BP regarding Involuntary Resettlement.

The prescriptive framework includes Constitutional guarantees; Applicable legislations and relevant policies. At an international level, the prescriptive framework covers international treaties and conventions signed and ratified by India.

POWERGRID’s entitlement framework is based on Indian policies including the National Policy on Resettlement and Rehabilitation for Project Affected Families issued on 17th Feb ‘2004, with respect to the inclusion of Project Affected People (PAPs), and the nature and
extent of compensation. In order to provide a framework for the R&R process and to supplement existing procedures, an illustration of entitlements is shown in Table-I. POWERGRID reiterates that physical displacement is not and will not be a major consequence of their projects. Irrespective of whether displacement occurs, the entitlement framework will be a base for all its management procedures. The objective of the framework is to ensure rehabilitation and replacement of the acquired assets of the PAPs. Basic categories of impacts under this entitlement framework are:

- Loss of Land
- Loss of Structure
- Loss of source of livelihood
- Loss of access to common resources and facilities
- Loss of standing crops and trees
- Losses during transition of displaced persons/establishments and
- Losses to Host Communities

POWERGRID provides “adequate compensation” as required under Indian law and will compensate at replacement cost. POWERGRID if required will supplement this with rehabilitation assistance and other measures to ensure that PAPs are not made worse off by their operations. In case the PAPs opt for cash compensation for loss of land or structure, they will be provided cash compensation as per Indian law and rehabilitation assistance as per the “Social Entitlement Framework”. However, in case the PAFs opt for “land for land” they will not get any further entitlements except transition benefits if applicable.

Public consultation proceeds at every stage from identification of PAPs to payment of compensation. The site groups function in close interaction with the State Authorities during the implementation of the RAP. Although, POWERGRID implements the RAP, assistance of the State Authorities is taken for administrative services. Implementation is planned, monitored, and corrective measures if required are incorporated in the Plan. Apart from the State Government, the PAPs, the Village Leader including the Gram Pradhans may also be consulted and associated during the implementation of the Plan. The corporate ESMD evaluates the implementation of RAP on regular basis. To address the grievances of PAPs, a committee will be set up comprising of POWERGRID, representatives of local authorities PAPs and Gram Panchayats or any well-reputed person as mutually agreed with the local authorities and PAPs.
### Table 1: POWERGRID's Social Entitlement Framework

<table>
<thead>
<tr>
<th>SN</th>
<th>Type of Issue/Impact</th>
<th>Beneficiary</th>
<th>Entitlement Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Loss of land</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Homestead land</td>
<td>Titleholders</td>
<td></td>
</tr>
<tr>
<td></td>
<td>with valid title, or customary or usufruct rights</td>
<td>(i) Cash compensation as fixed by authorities  + Equivalent area of land for alternate home not exceeding 150 sq.m. in rural areas and 75 sq.m. in urban areas free of cost preferably in same village/ panchayat/ area + Registration Charges</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Agricultural Land</td>
<td>Titleholders</td>
<td></td>
</tr>
<tr>
<td></td>
<td>With valid title, or customary or usufruct rights</td>
<td>Alternative land of equivalent production potential but not more than 1 hectare of irrigated land or 2 hectare of un-irrigated land subject to  - agriculture based PAPs (rendered landless)  - availability (State Govt./ Voluntary sellers at existing rate) within same panchayat/ block  - Registration Charges  + Cash compensation for the extent of land against which replacement land is not provided or Cash compensation at replacement cost (Compensation as fixed by authorities under LA act) + Rehabilitation Assistance as follows:  a) 750 days of minimum agricultural wages for families losing entire land rendered landless. OR option for opting IGS of equivalent amount for regular income;  b) 500 days of minimum agricultural wages for families losing part land and becoming marginal farmer;  c) 375 days of minimum agricultural wages for families losing part land and after loss of land may be categorised as small farmers.  d) Minimum agricultural wages ranging between 100-200 days (depending upon the impact) for families (big farmers) losing part/negligible land and left with sufficient land to sustain them.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tenants, sharecroppers, leaseholder, encroachers</td>
<td>Individual</td>
<td>Reimbursement for unexpired lease + Rehabilitation Assistance equivalent to 200 days of minimum agricultural wages</td>
</tr>
</tbody>
</table>

(1) The proposed entitlement framework will be applicable only in the case of land acquisition for substation.
(2) Replacement cost will include compensation as fixed by competent authorities under LA act including solatium and interest + Rehabilitation Assistance
(3) Rehabilitation assistance amount shall not exceed the value of compensation
<table>
<thead>
<tr>
<th>SN</th>
<th>TYPE OF ISSUE/IMPACT</th>
<th>BENEFICIARY</th>
<th>ENTITLEMENT OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Loss of structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>House</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i)</td>
<td>with valid title, or customary or usufruct rights</td>
<td>Titleholders</td>
<td>Cash compensation plus Rs. 25,000/- assistance (based on prevailing GOI norms for weaker section housing) for construction of houses plus transition benefits as per category-6</td>
</tr>
<tr>
<td>(ii)</td>
<td>Tenant, leaseholder</td>
<td>Individual</td>
<td>Lump sum payment equivalent to 6 month rent (on production of proof) or Rs. 5000/ - which ever is higher to re-establish residence</td>
</tr>
<tr>
<td>(iii)</td>
<td>Squatters</td>
<td>Household / Family</td>
<td>Cash compensation for structure + Lump sum payment ranging between Rs. 5000 to Rs. 25000/- (depending on type of structure and family size) as one time payment towards disturbance + Transition benefits as per category-6.</td>
</tr>
<tr>
<td>b)</td>
<td>Shop/ Institutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i)</td>
<td>with valid title, or customary or usufruct rights</td>
<td>Individual</td>
<td>Cash compensation plus Rs. 10000/- for construction of working shed/shop plus rehabilitation assistance equivalent to 1 year income plus transition benefits as per category-6</td>
</tr>
<tr>
<td>(ii)</td>
<td>Tenants, leaseholder</td>
<td>Individual</td>
<td>Transition allowance equivalent to 1 year income transition benefits as per category-6</td>
</tr>
<tr>
<td>(iii)</td>
<td>Squatters</td>
<td>Individual</td>
<td>Cash compensation for structure plus transition allowance equivalent to 1 year income plus transition benefits as per category-6</td>
</tr>
<tr>
<td>(iv)</td>
<td>Cattle shed</td>
<td>Owner/ Family</td>
<td>Cash compensation as fixed by authorities plus Rs. 3000/- for re-construction of cattle shed.</td>
</tr>
<tr>
<td>3.</td>
<td>Loss of livelihood/ Wage / Occupation</td>
<td>Individual</td>
<td>Rehabilitation Assistance equivalent to 625 days of minimum agricultural wages preferably in shape of Income Generating Scheme (IGS) or in shape of Units in joint name of spouse under Monthly Income Scheme for sustainable/ regular income + provision for need based short training on development of entrepreneurship skills/ facilities on selected IGS</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Rural common property resources</td>
<td>Community</td>
<td>Replacement/ augmentation of CPRs/ amenities or provisions of functional equivalence</td>
</tr>
<tr>
<td>b)</td>
<td>Urban Civic amenities</td>
<td>Community</td>
<td>Replacement/ access to equivalent amenities/ services</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>With valid title</td>
<td>Family</td>
<td>For either category, only the cultivator will get compensation at market rate for crops and 8 years income for fruit bearing trees</td>
</tr>
<tr>
<td>b)</td>
<td>Tenant/ lessee</td>
<td>Family</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Losses during transition of displaced persons</td>
<td>Family/unit</td>
<td>Provision of transport or equivalent cash for shifting of material/ cattle from existing place to alternate</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>SN</th>
<th>TYPE OF ISSUE/IMPACT</th>
<th>BENEFICIARY</th>
<th>ENTITLEMENT OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>establishments/ Shifting / Transport</td>
<td>place</td>
<td>Augmentation of resources of host community to sustain pressure of PAPs</td>
</tr>
<tr>
<td>7.</td>
<td>Losses to Host Communities/ Amenities/ Services</td>
<td>Community</td>
<td>Land for land option shall be preferred</td>
</tr>
<tr>
<td>8.</td>
<td>Additional benefits for Tribals</td>
<td>Tribals</td>
<td>Additional relocation allowance of 500 days minimum agricultural wages if land for land option is not feasible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Resettlement if involved, close to their natural habitat</td>
</tr>
</tbody>
</table>

Note: Vulnerable group like women headed/SC/physically handicap/ disabled families under categories 1-3 shall be considered for additional need based benefits.

**POWERGRID's Project Cycle**

POWERGRID's project cycle forms the operational framework and background through which Environmental and Social issues are addressed. Key milestones in POWERGRID's transmission projects are:

I. Project Conceptualization
   1. Project Identification (in consultation with CEA, REBs and SEBs)
   2. Concurrence of Constituents
   3. Environmental & Social Screening and Scoping
   4. Feasibility Studies
   5. Preliminary Approvals (Internal Management, FA’s Appraisal)

II. Project Planning
    1. Reconnaissance & Preliminary Survey
    2. Environmental Assessment & Management Planning
    3. Concurrence of Constituents

III. Project Approvals
    1. In-principle approval of Planning Commission
    2. Preliminary Public Investment Board (Pre-PIB) Recommendation
    3. Public Investment Board (PIB) Recommendation
    4. Funding Agencies (FA)
    5. Cabinet Committee on Economic Affairs (CCEA) Approval
    6. Government of India (GOI)
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IV. Design & Tendering
1. Detailed Survey
2. Social Assessment & Management Planning
3. Design, Estimates & Finalization of Specifications
4. Tendering & Award of Contract

V. Project Implementation
1. Check Survey
2. Execution of EAMP and SAMP
3. Tower Erection & Stringing
4. Sub-Station Construction
5. Testing & Commissioning

VI. Operation & Maintenance
1. Grid Operation
2. Preventive Maintenance

VII. Project Review
1. Monthly Review
2. Annual Review

ENVIRONMENT AND SOCIAL ISSUES IN TRANSMISSION PROJECTS

Construction and operation of transmission lines and substations may involve environmental and social concerns that are distinct from each other in terms of their nature of impacts. Some of the environmental and social issues that could arise from its projects are unavoidable, and POWERGRID seeks to address them through its management processes outlined in its Environmental and Social Policy and Procedures (ESPP) document. Based on its experience from managing 48,000 Ckm transmission lines criss-crossing the length and breath of the country, POWERGRID has identified environmental and social issues typically associated with its projects as below.

Environmental Issues are:
- Lopping of Trees within Right of Way
- Clearing of Ground vegetation for movement of Machinery
- Clearing of Ground vegetation for substations
- Used transformer oil

Social issues are:
- Loss of livelihood due to acquisition of private agricultural land
- Loss of homestead
- Loss of common property resources due to acquisition of revenue land
Environmental and Social Policy and Procedures

- Loss to standing crop
- Change in land prices.
- Temporary loss of access to Common Property Resources

POWERGRID try to avoid orchards, plantations, and forests in the course of line routing through studies of alternative routes. If inevitable, care is taken to route the line through a path of minimum disturbance. POWERGRID takes into consideration the following points while routing its transmission lines:

- the route does not involve any human habitation;
- the route does not affect any monument of cultural or historical importance;
- the proposed route does not threaten the survival of any community, especially tribal communities;
- the proposed route does not affect any public utility services like play-grounds, school and other establishments, etc.; and
- the line route does not pass through any sanctuaries, National park, etc.

Since 1998, POWERGRID is implementing its ESPP as an integral part of project execution. Prior to 1998, it has laid transmission lines of approximately 27,000 Ckm across the length and breath of the country. Of this approximately 6% of the total transmission lines crosses the forest area. However, after implementation of ESPP this trend has shown tremendous improvement and reduction of the use of forest to approximately 2% from 6%. Taking into consideration the addition of approximate 20,500 Ckm of line during last 6 years, the total involvement of forest is around 4.25% for total 48,000 Ckm line.

POWERGRID has incorporated the best technical practices in an attempt to deal with environmental issues. In landslide prone areas, POWERGRID designs tower bases with leg extension and revetments that prevent soil erosion near the tower. POWERGRID has also designed special tall towers (80 m) for reducing impact on trees, orchard, wildlife, and crossing of wetlands, riverbeds. Wherever appropriate, multi circuit and compact towers for reduced ROW requirement have been installed.

The corporation has started using all modern techniques/tools like GIS, GPS aerial photography to optimize route alignment. The Introduction of GIS and GPS provide topographical and geo-technical details in route selection process. This helps in developing cost effective design alternatives related to local site conditions and planning for the mitigative measures. After the finalisation of route, POWERGRID carries out an Environmental Assessment with the help of authorised agencies (Forest Officials) and formulates an Environmental Assessment and Management Plan (EAMP), which include the forest proposal. Local Forest authorities certify that the final route selected involves the barest minimum of forests.
Social issues associated with transmission projects are mainly related to land acquisition carried out for substation sites. No land is acquired for footing towers. However, POWERGRID exercises flexibility in siting substations as well as footing towers. POWERGRID has developed in-house capacity to build safe towers at railway, highway, and other crossings. As far as possible, POWERGRID plans and conducts its construction activity after the harvests to avoid damage to crops. In case damage to standing crop is unavoidable, POWERGRID provides compensation at market rate for the same. POWERGRID ensures that hazards due to fires are non-existent by adopting high standards of safety.

In an effort to locate substations for power transmission project, POWERGRID uses flexible approach in project implementation minimising the socio-economic concerns of the local communities. The concept of efficient land management is being followed to reduce the land requirement. POWERGRID experience indicates that, for a typical substation an area of 100 to 150 acres of land used to be acquired which has now been reduced 40 to 70 acres which on an average. The land acquired would be owned by 30 -50 persons. POWERGRID avoids human displacement and till date only one homestead has been acquired. Hence, in POWERGRID’s projects affected persons (PAPs) mostly lose agricultural land and their livelihood opportunities particularly when acquisition of private land is involved.

In case adverse impact on the local people R&R is totally unavoidable, POWERGRID addresses resultant R&R issues through its Social Entitlement Framework based on National R&R Policy (February 2004) provisions. POWERGRID ensures proper replacement value of land and other assets extends support for each category of PAFs in their R&R and minimize lengthy cumbersome procedures. POWERGRID enhances opportunities for marginalized groups through the RAP, and community development activities. For tribal communities, if affected, development plans are prepared. POWERGRID consult the project stakeholders including local administration on all socio-economic issues that arise from its project activities.

**ENVIRONMENT AND SOCIAL MANAGEMENT PROCEDURES**

POWERGRID has developed comprehensive Environmental and Social management procedures and incorporated them to its project cycle, to ensure that its operation eliminates or minimises adverse environmental and social impacts. The E&S management procedures identifies the E&S issues at the early stages of project cycle and enable them to implement the basic principals of sustainable development through Avoidance, Minimization and Mitigation. POWERGRID’s E&S Management process is outlines in Figure 1 and is summarised below.
FIGURE 1: ENVIRONMENTAL AND SOCIAL MANAGEMENT PROCEDURE

PROJECT CYCLE

PROJECT CONCEPTUALISATION

PROJECT PLANNING

PROJECT Approval

Detailed Design & Tendering

PROJECT IMPLEMENTATION

Operation & Maintenance

EXTERNAL IMS AUDITS

ENVIRONMENT & SOCIAL MANAGEMENT PROCEDURE

PROJECT DETAILS FROM ENGG DEPT

Environmental & Social Screening and Scoping for Transmission Lines

Clearance from Internal Management

Detailed Survey for Baseline Information
- Finalise optimal route
- Select Optional Sub Station Site
- Consultation with Stake Holders

Environmental & Social Screening and Scoping for Substations

Environment Assessment and Management Plan

MOEF for Forest Clearance

GOI Agencies

Funding Agencies

Consultation for Environmental Management Work

Social Assessment and Management Plan
(S-E survey)

Implementation of EAMP
- ROW Clearance
- Crop / Tree Compensation
- Public consultation
- Compensatory Afforestation

Award of Social * Management Contract

Execution of Social Management Plan
- Land Acquisition
- Compensation to PAPs
- Rehabilitation assistance
- Community Development Programs

*If required

E&S Issue Identification

E&S Assessment

E&S Management

E&S Plan Implementation

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Project conceptulisation: During the conceptulisation stages of the proposed project, environment and social screening process assist in identifying potential environment and social issues that may require evaluation and implementation during project development. The Environmental screening and scoping report forms an integral part of project feasibility study and is tabled to the internal management committee for appraisal. At this stage, Funding Agencies (FA) may separately appraise the project. During this stage, following activities are undertaken.

- Environmental screening and scoping for transmission lines
- Social screening and scoping for transmission Lines
- Environmental approval from internal management

Project planning: During this stage, the tentative locations for substation sites are identified and environment and social screening is conducted. Transmission route for the project is finalised at this stage based on environmental baseline information and the other engineering parameters.

After environmental issues for transmission line and substation are identified through screening and scoping exercise, Environmental assessment and Management Plan (EAMP) is prepared. EAMP forms an integral part of Forest proposal and is submitted to MoEF for review. Following activities are conducted in this stage

- Environment and social screening for substation
- Environmental Assessment and Management Planning (EAMP)

Project approval: Environmental and Social Management Steps are initiated during Approvals and clearance stage of the Project cycle. At this stage the procedure of Forest Clearance are initiated by submitting forest proposal to Ministry of Environment and Forest (MoEF). The Project Feasibility reports including EAMP are submitted to GOI authorities and funding agencies.

After receiving approval from these authorities, the process for implementation of EAMP is initiated by short-listing agencies and awarding contracts (if required) for Environment management works.

Environmental and social Risk assessment procedure includes the following.

- Forest clearance
- Approval from GOI authorities
- Funding agency acceptance
**Detailed design and tendering:** Social assessment and management planning is undertaken during this phase. The SAMP that includes RAP and TPDP is submitted to funding agencies for appraisal. Consultation processes for implementation of EAMP is also initiated at this stage. The environmental and social management procedures undertaken during this phase are

- Social assessment and management planning
- Concurrency from funding agencies
- Consultation for environmental management work

**Operation and maintenance:** Environmental and social initiative taken in earlier phase of project cycle is monitored in this phase.

**Annual review:** POWERGRID management reviews the performance of environment and social management measures including the findings of independent IMS audits.

**Environmental and Social Risk Assessment:** Environmental and Social Risk Assessment is a vital part of POWERGRID's environmental and social management strategies. The risk assessment process identifies existing risks, and forecast future potential risks in its power transmission projects. It is a scientific process that includes Cost Benefit Analysis. The environment and social management procedures developed by POWERGRID evaluate these risks, both qualitatively and quantitatively, and prioritise them. Based on prioritisation, environment and social management options are selected.

POWERGRID's Risk Management process involves risk preparedness, risk mitigation and the sharing of liabilities (via Internal Arrangements and Insurance). Responsibilities in the event of occurrence of a risk have been illustrated in Table –II.

**Table II: POWERGRID's Risk Responsibility Framework**

<table>
<thead>
<tr>
<th>Risk</th>
<th>GOI</th>
<th>POWERGRID</th>
<th>CONTRACTOR</th>
<th>INSURERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Compliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; Regulatory</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>&gt; Contractual</td>
<td>-</td>
<td>-</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Major hazards, e.g. tower fall during construction</td>
<td>-</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>During O&amp;M</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Impacts on health etc.</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Force Majeure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; Insurable</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>&gt; Non-Insurable</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Inclusion/Exclusion of concerned Communities/NGOs</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Public interest mitigation</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Delayed implementation of SMP</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
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</table>
INSTITUTIONAL FRAMEWORK

To ensure quality POWERGRID sets out procedures and provides a work culture that encourages total involvement of all its personnel. It has consciously adopted a strategic environment within its organizational structure that is marked by:

- A synchronized system of functioning coordinated by a Corporate Planning and Corporate monitoring group, which monitors all activities in the organization
- An emphasis on an intra departmental approach to all projects, delineation of departmental responsibilities and the delegation and decentralization of authority resulting in a fast response and quick adjustment to change
- A commitment to provide the best possible time bound quality service in all areas of its operations.

POWERGRID's institutional framework is evolved along above principles. To ensure effective implementation of its ESPP, POWERGRID focuses on:

- Strengthening the implementation of the ESPP by redeployment of appropriately trained personnel at key levels
- Reinforcing in-house capabilities by working with specialised external agencies
- Reviewing progress of the ESPP internally or through external agencies

POWERGRID's operations are divided into seven regions. The regions consist of several site offices to oversee transmission projects; and maintenance of transmission lines and substations. Site offices report to Regional Headquarters (RHQs). RHQs have overall responsibility for construction, operation, and maintenance of transmission systems apart from providing necessary support services.

At the Corporate level, POWERGRID has a dedicated Environmental and Social Management Department (ESMD) that coordinates all environmental and social activities related to a project from conceptualisation to operation and maintenance. Apart from this, the ESMD interacts with various Multilateral Agencies and the MoEF for the environmental/forest clearance of all its projects. POWERGRID deploys the required personnel with appropriate training, to the ESMD in order to reinforce its capacity whenever required.

At its Regional Office POWERGRID created Environmental and Social Management cell (ESMC) to manage Environmental and Social issues and to interface between ESMD at the corporate level and the site offices.

At the site level, POWERGRID had made the head/in-charge of the site office responsible for implementing the ESPP. POWERGRID had deployed personnel at appropriate levels of the
organizational hierarchy to effectively execute the ESPP. They are given all relevant training and forms the Environmental and Social Management team (ESMT).

In order to improve planning and implementing environmental and social management and to meet the international requirement/ benchmark the upgraded ESPP is being reviewed by a committee comprising of eminent persons/ renowned environmentalist/ experts of international repute, and representatives nominated by multilateral funding agencies. Mr. Samar Singh, a renowned environmentalist and former Secretary General, World Wide Fund for Nature (WWF) India, is the Chairman of the committee. ESMD, ESMC and ESMT had already been familiarized with the ESPP, thereby facilitating its implementation. The revised ESPP shall be shared with other departments (viz. engineering department, corporate planning, legal and contract services). In order to facilitate the effective functioning of the ESPP, POWERGRID have designed a training plan, which will be implemented by the Human Resource Department within the next two years with the assistance of renowned environmental and social institutions in India.