

ENVIRONMENTAL AND SOCIAL REVIEW SUMMARY (ESRS) FRV India
(39151)

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Project Description:

FRV Solar Holdings XI BV (FRV or 'the Company') has been granted, through international competitive bidding, 2 x 50MW solar power projects in the State of Andhra Pradesh in India. The contracts were awarded by Solar Energy Corporation of India Limited (SECI), a Government of India controlled parastatal. SECI has proposed development of 1500 MW solar projects inside Ananthapuramu Ultra Mega Solar Park (solar park) being developed by Andhra Pradesh Solar Power Corporation Private Limited (APSPCL). APSPCL is a joint venture company between Andhra Pradesh Power Generation Corporation Limited (APGENCO), New & Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP) and Solar Energy Corporation of India (SECI) and is the solar park owner.

FRV has been awarded two 50MW (2 x 50MW) solar project contracts inside the solar park, with a 6 month construction phase and a commissioning deadline of October 2017 or any such extended date as granted by SECI. The project cost is estimated to be around US\$ 116 million and IFC is proposing to subscribe to Non-Convertible Debentures of around US\$29 million and mobilization of around US\$58 million ("the Investment") for the development, financing, construction, operation and maintenance of 2 solar photovoltaic plants of 50 MWac each.

FRV has established two wholly owned special purpose vehicles (SPVs) incorporated in India for managing the projects. These SPVs entered into 25 year Power Purchase Agreements (PPAs) with SECI in October, 2016. During the project execution, the SPVs will enter into a fixed-price, turnkey EPC contract with third parties to execute the construction of the project as well as undertake Operations & Maintenance (O&M) for the initial 2 years. Thereafter, O&M is proposed to be done by FRV by way of a long term contract with the SPVs. The company proposes to use polycrystalline modules and fixed seasonal tilt technology in the project.

The 1500 MW capacity Ananthapuramu ultra mega solar park (UMSP) will involve six solar developers and is proposed across two neighboring mandals (counties), namely NP Kunta and Galiveedu mandals. Land parcels acquired for the solar park in these mandals are located at three different villages, namely NP Kunta (NP Kunta mandal) and Veligallu and Tumukunta (both in Galiveedu mandal) in a non-contiguous manner. APSPCL has allotted land to the project company in lands belonging to Veligallu and Tumukunta Villages in Galiveedu Mandal, District Cuddapah, Andhra Pradesh. The two plots (Plot P2 in Tumukunta village and Plot P8 in Veligallu village)

¹ Sentences in italics are standard language and cannot be modified.

allotted to SPVs are approximately 250 acres (around 100 ha) each.

APSPCL will enter into a land lease agreement with company SPVs for using the two allocated plots and is responsible for providing encumbrance free land, evacuation infrastructure and other common facilities consisting of the following:

- Each project plot to be connected to a 220/33 kV pooling substation through 33 kV cables;
- The pooling substations to be connected through a 220 kV double circuit tower line to the main 400/220 kV substation through a dedicated corridor running along the plot boundaries inside the solar park premises;
- Transmission/ utility corridor of 50m width running along the plot boundaries;
- Internal approach roads of 7m width (2 lane bituminous topped road);
- Water supply through park-wide pipeline network providing one water tapper project plot; and
- Trapezoidal cement concrete storm water drainage network on either side of the internal roads, utility corridors. The drainage network will connect to the nearest natural stream/ canal.

The entire solar park site lies on the western catchment area of Papagni River which is a prominent right bank tributary of the major Penna River. Papagni River, a monsoon river that remains dry during the non-monsoon months, flows about 2.5 km east of the FRV plot P2. Veligallu reservoir, constructed across Papagni River around 1 km south east of FRV Plot P8, is the only perennial surface water body catering to the irrigation and drinking water needs of the region.

Overview of IFC's Scope of Review:

IFC's appraisal consisted of a site visit on 19th January 2017 and a review of the available environmental and social (E&S) documents. During the site visit, IFC discussed the E&S aspects of the project including ESIA process approach with FRV, their environmental consulting company (M/s Arcadis India Private Limited), and APSPCL. IFC reviewed the draft Environmental & Social Impact Assessment (ESIA) reports prepared by M/s Arcadis on behalf of FRV. IFC's appraisal also focused on assessing the effectiveness and performance of environment, health, safety and social (E&S) management systems in place at the Company. IFC has an existing investment with FRV in Jordan, namely FRV Solar Jordan # 36877, disclosed January 14, 2016. The project was board approved in May 2016 and does not yet have an environmental and social supervision rating assigned. The ESRS for that investment can be found by using the following link: <https://disclosures.ifc.org/#/projectDetailESRS/1398>

Identified Applicable Performance Standards:

While all Performance Standards are applicable to this investment, IFCs environmental and social due diligence indicates that the investment will have impacts which must be managed in a manner consistent with the following Performance Standards.

PS1: Assessment and Management of Environmental and Social Risks and Impacts

PS2: Labor and Working Conditions

PS3: Resource Efficiency and Pollution Prevention

PS4: Community Health, Safety and Security

PS5: Land Acquisition and Involuntary Resettlement

PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

PS7: Indigenous People

Based on the currently available information made available by APSPCL no cultural heritage is expected to be adversely impacted as the site does not contain any archaeological sites, or any structure that has paleontological, historical, cultural, artistic or religious values. No unique natural features, tangible or intangible are present in the project area which could be impacted by the project and its activities. Hence, PS8 (Cultural heritage) is not applicable to the project. However, the project will implement Chance Find Procedure and train its staff with respect to the same.

If IFC's investment proceeds, IFC will periodically review the project's ongoing compliance with the Performance Standards.

Environmental and Social Categorization and Rationale:

This is a Category B project according to IFC's Sustainability Policy as the E&S impacts associated with the project are limited, generally site-specific and could be addressed through the implementation of standard good international industry practices. The company will manage its environmental and social performance in accordance with applicable local laws and regulations and international standards, including IFC's Performance Standards on Social and Environmental Sustainability.

The key E&S issues largely relate to: social impacts due to economic displacement arising out of land acquisition by APSPCL; cumulative E&S impacts especially on water resources, land, and social aspects due to solar park development; construction phase E&S impacts; procurement and management of human resources including contract workers in accordance with IFC PS 2 requirements given that the project will be developed, operated and maintained by an EPC company during its initial years; occupational health and safety issues during operational phase; and wildlife protection and preventing man-animal conflict due to close proximity to reserved forest areas in the area.

Environmental and Social Mitigation Measures

IFC's appraisal considered the environmental and social management planning process and documentation for the project and gaps, if any, between these and IFC's requirements. Where necessary, corrective measures, intended to close these gaps within a reasonable period of time, are summarized in the paragraphs that follow and (if applicable) in an agreed Environmental and Social Action Plan (ESAP). Through the implementation of these measures, the project is expected to be designed and operated in accordance with Performance Standards objectives.

PS 1 - Assessment and Management of Environmental and Social Risks and Impacts

Environmental and Social Policy, Assessment and Management System

Solar projects in India have been listed under the "white category" of industries that does not require any permitting from environmental regulators and only an intimation report to the concerned State Pollution Control Board (SPCB) shall suffice. The company engaged M/s Arcadis India Private Limited as consultant to undertake an ESIA study of the project in January 2017 for the purposes of meeting Lender requirements. Two draft ESIA reports pertaining to plots P2 and P8 prepared in March 2017 were reviewed by IFC and the final ESIA reports and E&S Management Plans (ESMPs) are expected before the 6 month construction phase of the project begins. Based on current timelines, the project is expected to be commissioned by October 2017,

and the company has committed to integrate ESIA findings into project design, construction and O&M plans and into EPC contract agreements.

APSPCL has not undertaken any cumulative E&S risk identification and assessment studies for the entire 1500MW solar park project but followed its own siting policies and guidelines that are compliant to host country E&S regulations. Development of the solar park will have cumulative E&S impacts especially on water and land resources besides social impacts in the local community that includes households classified as Indigenous Peoples. The company - one of six solar project developers contracted by APSPCL to develop projects inside the solar park - commits to not contribute to the adverse cumulative E&S impacts envisaged by formulating and implementing E&S Action Plan (ESAP) items proposed under PS 3, 5 and 7. These actions are commensurate with the company project's risks and impacts and with due regard to conflict of interest of solar park owner (APSPCL) and other solar project developers in the park.

The company has committed to formulate and implement an E&S Management System (ESMS) in line with IFC PS 1 requirements. FRV's ESMS will consist of an Environment, Health, Safety and Social (EHS) Policy, project-specific ESMPs based on the ESIA's, with monitoring actions, and an overarching system for reporting and tracking non-compliances. The project will develop its E&S policy based on FRV's global corporate policies, Indian legislation and IFC PS requirements. The EPC contractors and O&M service providers will be contractually required by FRV to align their E&S policies and procedures with the project's policy requirements.

As per the agreed (attached) ESAP, the company will require the EPC Contractor/O&M service provider to formulate detailed management plans and programs based on the ESIA's/ESMPs. These plans will cover, among others, the following aspects: construction phase traffic management and accident prevention measures; occupational health and safety; managing migrant labor impact on local community; water conservation and management; emergency preparedness and response; labor and working conditions requirements; protection of neighborhood forest and wildlife resources; waste management, including hazardous waste; compliance with national/state environmental laws; security management procedures; community grievance redress mechanism; and environmental monitoring. The company will ensure that the EPC Contractor/O&M service provider implements these management plans and programs and is involved in monitoring and reporting on E&S performance through the project life.

Organizational Capacity and Competency

The company plans to engage a turnkey EPC contractor to construct the project as well as undertake O&M for the initial 2 years. Beyond that O&M is proposed to be done by FRV by way of a long term contract with the SPVs. During the EPC contract award phase, the company plans to augment its organizational resources by engaging services of an Owner's Legal Counsel and support from its in-house Technical team based out of India and Dubai. The company is also engaging services of an Owner's Engineer. FRV will identify and entrust responsibility to an adequately trained and qualified Environmental, Health and Safety (EHS) Officer to supervise and manage E&S aspects both during construction and operations. This will either be a FRV employee or contracted consultant. In addition, there will be one site EHS officer for the construction phase and one off-site EHS officer during operation phase contracted to the EPC contractor/O&M provider.

Monitoring and Review

EHS monitoring requirements will be included in the ESMP for the construction and the operations phases of the project. The EHS officer contracted to the EPC contractor/O&M provider will be responsible for the implementation of the ESMP, including contractor developed management plans and programs, monitoring actions and reporting. FRV's EHS Officer will be responsible for supervision of the implementation of the ESMP, including contractor developed management plans and programs, auditing, tracking compliance and reporting. FRV's EHS Officer will also be responsible for interfacing with affected villages and responding to any community grievances.

PS 2- Labor and Working Conditions

Human Resources Policies and Procedures

During peak construction around 500 workers will be engaged by the EPC Contractor. Although priority and preference will be given to project affected persons among the local community members, the project envisages a requirement of skilled workers from outside of the immediate project area. A site labor camp will be constructed within the project boundaries and maintained till the completion of construction phase. During peak construction about 8 FRV staff and 30 EPC contractor staff in the managerial/supervisory cadre will be accommodated in leased residential houses in the local community. During operations, the company envisages deployment of 5 skilled staff and about 30 workers by the O&M service provider for each of the two solar sub-projects, for weed removal, solar panel cleaning, security and manual PV panel tilting work.

Each project SPV will develop its own overarching Human Resources (HR) Policy in line with IFC PS2 requirements and local labor regulations, and ensure that the HR policy and procedures adopted by the EPC contractor/O&M provider are aligned with it. These HR policies and procedures will stipulate terms of employment such as: wages and benefits; hours of work; overtime arrangements and compensation; leave benefits; and vacation and holidays. Terms of employment will meet national and PS 2 labor requirements and will be included in employee contracts. Additional workers' benefits for full-time operations staff will include health insurance and medical assistance, among others. The HR Policy and procedures will include a stated policy on aspects such as: non-discrimination and equal opportunity in recruitment, working conditions (including occupational health, safety and security), equal facilities for men and women workers, employee termination, retrenchment, workers right to organize, collective bargaining rights, prohibition of child and forced/bonded labor, disciplinary action, sexual harassment and a worker grievance mechanism. The HR Policy and procedures will also provide for staff and workers training (induction and recurrent) related to HR, Technical, wildlife protection, and occupational health and safety aspects. The training management systems and procedures will also cover contractual workers and workers hired by third parties.

Working Conditions and Terms of Employment

As per the ESAP, the company will ensure that adequate labor camp facilities and amenities are provided onsite to its workers, including: adequate living/sleeping facilities and space per person; potable water that meets national standards; safety from wild animal attacks; climate control (if temperatures are high); toilets, washing and cleaning facilities; canteen/mess or fuel for cooking; locker/storage facilities; and facilities for management and disposal of garbage, sewage and other waste. The company will periodically review and monitor the condition of the labour camps.

Occupational Health and Safety

Key occupational health and safety (OHS) risks for a PV project include slips and falls, potential hazards from on-site moving machinery, heavy load lifting, exposure to electric shocks and burns, snake and insect bites and safety issues related to PV module assembly. Taking into account the hot and humid climatic conditions at the project site, construction workers might be at risk of dehydration, heat exhaustion and heat stroke if not hydrated properly. Additionally, the risk of attack by wild animals in the region is significant and will prevail through the project life period due to its close proximity to reserved forest areas. As per ESAP Action item #2, FRV will ensure that the EPC contractor and O&M service provider develop a site-specific OHS procedures for the construction and operations phases as discussed under PS 1. The procedures will be designed to be specific to the PV solar sector (in terms of industry specific hazards) and the project site (man-wild animal conflicts). The OHS procedures will also include project-specific Emergency Preparedness and Response Procedures which will include fire risk assessment and control systems, fire alarm systems and drills, emergency preparedness and planning, wild animal siting as part of Occupational H&S Procedures for both the construction and operation phases.

The company will also ensure that the EPC contractor / O&M service provider assess and track their OHS performance during both construction and operations. OHS performance evaluations will be carried out and the EPC Contractor / O&M Provider's EHS Officer will record and track any OHS incidents through an incident tracker and will report on OHS statistics during both the construction and operations phases.

PS 3– Resource Efficiency and Pollution Prevention

Resource Efficiency & Water

Resource consumption in a solar PV project is expected to be minimal, with the main resource of note being the water required for cleaning the PV modules. In a drought-prone region with many competing users for the only surface water resource in the region – the Veligallu reservoir, the cumulative annual water demand of 0.3 thousand million cubic feet due to development of 1500MW ultra mega solar park project is around 8% of net reservoir capacity of 3.71 cubic feet during operations. APSPCL has committed to supply water to all project operators inside the solar park and will seek permission from State irrigation department which operates and maintains the reservoir for using reservoir water.

The project SPVs plan to tap groundwater resource water during construction phase to meet daily demand of around 70 kiloliters per day and will seek necessary approval from the competent regulatory authority. During operations, FRV will review the cleaning regime to conserve water through the use of test panels at the met station which will evaluate the degree to which efficiency drops due to dust deposition. Water consumption is expected to be around 11,000 m³/annum for both the 50MW projects of the company during the operation phase.

As discussed under PS 1 and the attached ESAP, in order to avoid contributing to the cumulative impact on water resources in the region, the company will implement water conservation and harvesting programs. Due to favorable site topography, even if 10% of the storm runoff (average annual rainfall received is not less than 400mm) is harvested/recharged to groundwater within the 500 acres of land allotted to the company, the project will contribute a net gain (of 69,900 m³/annum) to the ground water resource in the region. Water use and harvesting/recharging in the project will be a key performance indicator that will be monitored through the project O&M phase.

Solid Waste Management

It is anticipated that project might handle hazardous materials such as transformer oils, dielectric containing material, paints, batteries and generate hazardous wastes such as used oils, waste/residual paint, oil/paint soaked rags/material, filters, empty oil/paint/chemical drum/barrels, used batteries, contaminated soils and absorbent materials. The hazardous waste will be managed as per regulatory permit conditions (hazardous waste authorization) issued by local Pollution Control Board and disposed through authorized hazardous waste management agencies. Non-hazardous solid wastes such as paper, wood, plastic, scrap metals and glass will be generated during construction phase. Solid and hazardous waste generated by the project during construction phase will be managed as per detailed management plans and programs to be formulated based on the ESIA/ESMP and discussed under PS 1 earlier. FRV will ensure that waste management procedures are integrated as part of the Project ESMS discussed under ESAP Action Item # 2. Waste management will be a KPI to be monitored during construction and operational phases.

Energy Efficiency & GHG Emissions

As per the estimates of FRV, the 136 MWp capacity Project is expected to generate approximately 245 gigawatt hours (GWh) of electricity per year. The project is estimated to avoid the equivalent of 160,000 tons of CO₂eq/year.

Pollution Prevention

During construction, a minor and insignificant amount of pollution to air, noise, water and soil is anticipated which will be readily mitigated through standard pollution prevention and control measures. During the operational phase, other than minor amounts of sanitary wastewater and probable soil contamination near material/waste storage areas, no other environmental pollution impact is anticipated. FRV will require the EPC contractor / O&M operator to implement pollution prevention measures in accordance with their management procedures to mitigate the risk of any pollution as discussed under ESAP Action Item #2.

PS 4 – Community Health, Safety and Security

Both plots allotted to FRV are located adjoining the settlements of Prakashnagar and Veligallu villages. The entire perimeter of the project site will be fenced to a height of around 6 feet and entry to the project site will be regulated. The main access road to both the project plots is the 2-lane State Highway (SH34) between Kadiri and Rayachoti towns. Inside the solar park, APSPCL will be constructing 7m wide, 2 laned, bituminous topped access roads connecting all plots for alternate access and to avoid use of internal village roads during material transport. The company will implement appropriate mitigation measures including setting speed limits within the plant boundary, posting of traffic marshals and material movement planning to reduce community exposure to traffic safety risks. Further, at the project site, the company will exercise appropriate access control, barricading of excavated areas; safety signage; illumination and other measures to mitigate the risk of accidents for general public during construction. As part of Project ESMS and ESMP discussed under ESAP Action Item #2, FRV will require the EPC contractor/ O&M operator to implement traffic management and accident prevention measures to mitigate any impact on local community.

The project will engage unarmed security personnel. As part of ESAP Action item #2, the company will ensure that security management procedures integrating the following aspects are formulated and implemented by the EPC Contractor/O&M service provider: security risk assessment; working procedures; past records of security personnel employed are screened; security personnel have clear objectives and permissible actions are laid out; security personnel are trained to avoid abusive conduct even under stress or provocation; security incidents are recorded, investigated and corrective action implemented; bona fide complaints against security personnel are investigated and appropriate disciplinary actions are implemented; and there is a community grievance mechanism in place for aggrieved members of local community or employees, in the event of a violation of the code for security personnel.

PS 5 – Land acquisition and involuntary resettlement

A total of 74 families were economically displaced on account of Government-managed land acquisition for FRV's project sites. The land acquisition did not result in any physical displacement. Further, no cultivation was reported on the government land acquired for the project. As detailed further below, the compensation amount paid to each farmer is stated to be minimum 3 times the basic market price of the land and considered as adequate replacement cost of land in the region.

The project site measuring ~500 acres (~ 202 ha) is located within the larger site of 11,528 acres (~ 4665 ha) identified by APSPCL for development of 1500 MW Anathapuramu solar park. As noted in the project description section, FRV is leasing Plots P2 and P8 for a 25-year period from APSPCL.

Land acquisition for the solar park has been government managed, led by APSPCL. This agency reportedly followed certain principles, such as: avoiding tribal and forest lands; giving preference to waste lands and government lands; avoid farm lands with irrigation facilities and used for more than one crop season; avoiding physical displacement and avoiding common property resources.

In Galiveedu mandal where the FRV project sites are located, APSPCL is currently in the final stages of closing the land acquisition process. The plots allotted to FRV (P2 and P8) were comprised of 52% government land; 39% assigned lands (government lands allotted to poor landless persons with no other means of livelihood); and 9% private lands. Assigned lands belonged to 53 farmers (including 2 farmers belonging to an Indigenous community of Scheduled Tribes and 5 scheduled caste farmers categorized as vulnerable) and private lands were owned by 21 farmers before the land acquisition. In all, 74 project affected persons (PAP) were impacted by the land acquisition for FRV projects.

Government land acquired by APSPCL are classified as "banjar" or "gayalu" (waste lands) per government records. No forest or tribal lands have been acquired. The project area is barren and marked by the presence of thorny bushes and shrubs. In few areas of the allotted plots, farmers have sown rain fed crops (Red beans) that were ready for harvest in January 2017. Government formed a Negotiation Committee to negotiate a land acquisition price with affected farmers. The base price for land was fixed based on last 6 months market selling price; the compensation amount agreed was at least 3 times the base market price fixed for each category of land. The compensation amount was mutually agreed and the agreed price with minutes of the meeting was signed between the two committees. APSPCL allowed farmers to harvest standing crops in the acquired land. In acquiring private land, APSPCL directly executed sale registration deeds with concerned owners

and paid the compensation amount decided in the joint committee. In all the acquisition proceedings cash transactions and involvement of middle men was completely prohibited and a transparent procedure was followed to the satisfaction of village committee. FRV will analyze the status of land-related payments to affected farmers and document this for Lenders in the Final ESIA report.

As per attached ESAP, the company will formulate and implement a supplemental livelihood restoration plan (LRP) targeting the 74 families affected by land acquisition associated with FRV's plots (P2 and P8) for project-affected households. The LRP will be based on a Livelihood Impact Assessment (LIA) and consist of non-cash interventions considering the role of FRV in the solar park project. The LIA will assess the impacts on identified PAPs, including any agricultural laborers and share croppers.

As per attached ESAP, the company will undertake a LRP completion audit in one year to assess if all the LRP provisions have been met. The completion audit will include, at a minimum, a review of the totality of LRP mitigation measures implemented by the company, a comparison of implementation outcomes against agreed objectives, and a conclusion as to whether the monitoring process can be ended.

PS 6– Biodiversity conservation and sustainable management of living natural resources

Anathapuramu solar park is located in the midst of five reserved forests (RF), a seasonal river (Papagni) and –Veligallu Reservoir: all located within a 15km radius from FRV Plot P2. However, only Thumukunta RF is located near (about 1km from) FRV Plot P2 boundary; the other 4 RFs are located 6-10km away from FRV plots. The FRV ESIA involved baseline ecological surveys and a consideration of direct and indirect project-related impacts on biodiversity and ecosystem services. It found that the solar park site is located in modified habitat marked by the same degraded natural vegetation as found inside the RFs in the region. Due to pressure from cattle grazing, chopping of wood, low rainfall and forest fires, the natural vegetation has already degraded from southern thorn forest to southern thorn scrub and southern euphorbia scrub. Currently about 80% of the forest is covered by xerophytic thorn scrubs of very low density and without any conservation efforts is slowly deteriorating into euphorbia scrub, dry grasslands and ultimately to barren lands with rock boulders.

Consultations with forest department and local communities confirm the presence of about nine (9) wild mammals like leopard, sloth bear, wild boar and fox in the closest RF. Only leopard and sloth bear have near threatened and vulnerable status respectively as per IUCN and other mammals found in RF are of least concern category. Leopard movement has been reported near the RFs but very rarely based on anecdotal evidences such as cattle killing. Sloth bear siting is reported as occasional while other mammals (such as wild boar, jackal) were found commonly in the region. It is evident that for sloth bear and leopard, the project region is the least preferred habitat as can be inferred from their infrequent siting. No part of the solar park is located within the forest reserves and no forest land has been acquired for the park, thus avoiding impacts on biodiversity and ecosystem services. The project is not located within legally protected or internationally recognized areas as specified under Para 20 of PS 6. The internal roads, transmission line alignment, utility corridors have been planned within the solar park land identified and no component of the project will pass through or fragment the RFs in the region. As part of land lease agreement condition, APSPCL has requested all solar project developers to not alter the natural streams flowing through the plots allotted and not to alter the natural contours. As per Para 12 of PS 6, the siting of project in a modified habitat will trigger Performance Standard 6 only when the areas of modified habitat include significant biodiversity value.

Though biodiversity value of the area is low to moderate as per ESIA assessment, risk scenarios such as the following warrant triggering PS 6 standards for the project to comply with: potential man-animal conflict envisaged due to development of the solar park close to two RF boundaries in the region; reduced habitat size considering the same vegetation type in a contiguous manner between solar park site and RF areas; and short term construction phase impacts could accentuate habitat degradation and loss of wildlife.

In line with PS 6 objectives to protect and conserve biodiversity, as part of ESAP, the company will formulate and implement a wildlife protection and management plan through the project life cycle. The key objective of the plan is to mitigate the risk scenarios stated above such as managing man-animal conflict and mitigating short term construction phase impacts. The company will implement measures such as a recurrent awareness building/training program to construction/O&M phase workers and staff on wildlife behavior and how to respond to wild animal attacks; formulating site specific OHS and emergency procedures for managing wildlife within project sites; prohibit hunting, prevent staff/workers entering forest areas, dumping food or other wastes that will attract wild animals; and recording man-animal conflict incidents as part of OHS records and reviewing each incident to prevent their recurrence. The company will involve wildlife experts from the local forest department, community members and other local resources as and when needed to formulate and implement the plan.

Management of Ecosystem services

The ecosystem services from the RFs is minimal but Veligallu reservoir provides water to the drought prone project region and offers livelihood to about 500 fisherman in the region. As discussed under PS 3, water demand by the solar park project from the reservoir could have an adverse impact on competing water users such as farmers (for irrigation) and Rayachoti urban community (for drinking water). However, the ESIA indicates that this impact is mitigable if the solar park integrates rainwater harvesting and ground water recharging plans. At the project level, as part of IFC funding, FRV commits to integrate rainwater harvesting and ground water recharge plan into the project design and development plans as discussed under PS 3.

PS 7: Indigenous People

The solar park site does not fall within a Scheduled Area (Indigenous Peoples lands) as defined in the Fifth Schedule of the Constitution of India. APSPCL avoided all tribal owned patta lands (private owned) and communally held tribal land during the land screening and siting process for solar park. Nonetheless, the solar park is surrounded by villages having a high proportion of Scheduled Tribe (ST) population; e.g. Veligallu village has 23.5% of ST population; and Thumukunta has 3% ST population who mostly reside at Prakashnagar hamlet.

FRV's ESIA process has identified that despite the projects' best efforts, two ST farmers are impacted directly due to acquisition of 7.1 acres (10 ha) of "assigned" government lands (government lands allotted to poor landless persons with no other means of livelihood).

As noted under PS 5, APSPCL has acquired about 11,528 acres of land for the solar park. This could result in social impacts especially on the ST population and vulnerable sections of the local community residing in five nearby project villages, i.e. Veligallu, Prakashnagar, Tumukunta, NP Kunte and Kothapalli. Since no cumulative E&S impact assessment was conducted by APSPCL the park-wide social impact on indigenous people and other vulnerable sections of the local

community have not been quantified. As a single developer, this falls beyond FRV's responsibility; the company will focus on mitigating the known impacts of its projects, but will also discuss the matter of cumulative social impact mitigation with APSPCL and other solar park developers with a view to investigating ways to improve social license to operate.

FRV will address the social risks and impacts through ESAP as discussed under PS 5, where the 2 ST farmers are included with the 72 other farmers affected by FRV-related land acquisition and have been compensated following due process. In addition, FRV as part of the LIA and SIA will undertake an assessment of impacts on the 2 ST families. The ST families will be considered as vulnerable group along with other groups such as SC and accordingly LRP will include special livelihood restoration provisions for them. . The LRP ESAP requirement is deemed sufficient to meet PS 7 requirements because (i) the number of ST (IP) households affected by the project is so small (2 families); (ii) the ST families are well integrated with the other affected groups; and (iii) the nature of impact on the IPs is broadly similar to the other affected groups.

As discussed under PS 5, APSPCL engaged with the local community including IP community members and PAPs through the land acquisition process during the ESIA process. As part of ESAP, FRV will undertake an additional engagement process during the livelihood assessment with affected IP households as required in Para 10 of PS 7 (i.e. IP representative bodies, if present, will be consulted and sufficient time will be allocated for IP decision-making processes, if relevant) and before formulating the LRP. The LRP will be disclosed to affected IP households and they will be consulted with before finalization and implementation.

No requirement for Free, Prior and Informed Consent has been identified because the ESIA has documented that there are no project-related impacts on lands and natural resources subject to traditional ownership or under customary use of Indigenous Peoples community; there is no physical relocation of Indigenous Peoples from lands and natural resources subject to traditional ownership or under customary use; and there are no impacts on critical cultural heritage that is essential to the identity and/or cultural, ceremonial, or spiritual aspects of Indigenous Peoples lives; and the project does not intend to use the cultural heritage, including knowledge, innovations or practices of Indigenous Peoples for commercial purposes.

Stakeholder Engagement:

The solar park owner - Andhra Pradesh Solar Power Corporation Private Limited (APSPCL) - has established communication with the local village panchayat (local tier of Government) leaders and community members and has been interacting with them on an ongoing basis during land acquisition process to reach agreement on compensation and sort out grievances arising out of solar park-related activities. There were concerns among the local community regarding government managed land acquisition process in the early phase of the solar park project. In the absence of a solar park ESIA process, stakeholder engagement has been focused around the solar park land acquisition process led by APSPCL. This process has involved a series of community meetings beginning in July 2015 during which project related information was disclosed and solar park benefits were highlighted. As an outcome of these community engagements, a Village Committee was formed with representatives of local community members and project affected farmers. The village committee acts as the grievance redress forum for all solar park affected farmers. There is no bar on individual farmers to seek legal redress if their grievances are not redressed to their satisfaction. To date, three farmers of FRV Plot P8 have approached the courts

to settle their grievances; the results are expected in 2-3 months' time. FRV's final ESIA report will document and analyze the nature of these legal cases and the causes of grievances. APSPCL has obtained a no objection certificate from the local panchayats for the solar park development.

APSPCL being the implementation agency of the solar park including associated development and maintenance activities will be spearheading community engagement as well as local area development. FRV, as part of the implementation support agreement with APSPCL, is committed to contribute Rs 1.0 lakh (Rs 0.1 Million)/MW/year for 5 years to local area development fund (LADF) that will be managed by APSPCL. FRV would be a member of the local area development committee to be instituted and operated by APSPCL for developing transparent policies and for carrying out developmental works in the local community using the LADF.

In terms of disclosure of project and E&S information, FRV as part of the ongoing ESIA process between January 2017 to March 2017 has completed additional stakeholder engagement with regulators, state government departments responsible for managing environmental and social resources in the project vicinity, the solar park owner (APSPCL), local government heads, local community members including PAPs, IPs and other vulnerable sections. The local community members and PAPs were well informed of the project and they sought better livelihood and employment opportunities from the project during the consultations. Moreover, the company plans to disclose IFC ESRS/ ESAP and two project ESIA Reports at local government offices, APSPCL office and FRVs site office in the project area.

The company will operate inside the solar park that is managed by APSPCL. As the solar park owner, APSPCL will be responsible for implementing and maintaining external communications and addressing any community grievances. The company will co-operate and co-ordinate with APSPCL in addressing any community grievances related to the project as part of ESMP and will institute and operate project-specific community grievance redress mechanisms. FRV, working via the EPC contractor, will initiate this community grievance redress procedure prior to the start of construction and constitute a grievance redress committee to look into any project-related stakeholder concerns and grievances. Information about this committee and the grievance redress mechanism will be shared with the stakeholders through locally appropriate communication tools. The stakeholders will be encouraged to approach this committee with their concerns and suggestions. Minutes and proceedings of the meetings of this committee will be documented and shared with relevant stakeholders. The company also proposes to develop and implement appropriate community development programs in consultation with the affected communities. Particular attention will be paid to ensuring that persons economically displaced from the two project plots have been adequately consulted with and compensated during the Government managed land acquisition process, and that any related grievances have been recorded and resolved.

Broad Community Support:

BCS – Not Applicable

Environmental and Social Action Plan:

S. No.	Description	Expected Timeline
1	<p>FRV will formulate and implement an Environment and Social Management System (ESMS) in line with IFC PS 1 requirements. This will consist of an Environment, Health, Safety and Social (E&S) Policy; a project-specific E&S Management Plan (ESMP) with monitoring actions based on final ESIA outcomes; a system for reporting and tracking non-compliances; and an organizational framework.</p> <p><i>Deliverables:</i> Company EHS Policy and Project ESMP</p>	30 th June 2017
2	<p>FRV will include E&S plans and mitigation programs established in the ongoing ESIA process into project EPC and O&M service provider agreements. Further, the company will contractually require these parties to formulate and implement detailed E&S management plans and programs based on the project ESMP, and to monitor and report on E&S performance during construction and operations.</p> <p>Coverage of such plans will include, but not be limited to: construction phase traffic management and accident prevention measures; occupational health and safety; water conservation and management; emergency preparedness and response; labor working conditions requirements as per PS 2; protection of neighborhood forest and wildlife resources; waste management, including hazardous waste; compliance with national/state environmental laws; security management procedures as per PS 4; community grievance redress mechanism; and E&S monitoring and reporting.</p> <p><i>Deliverables:</i></p> <p>1) EPC Contractor/O&M service provider agreements with appropriate clauses integrated as stated above.</p> <p>2) EPC Contractor developed management plans and monitoring program</p>	<p>30th June 2017</p> <p>30th June 2017</p>
3	<p>FRV will identify and entrust responsibility to an adequately trained and qualified Environmental, Health and Safety (EHS) Officer to supervise and manage E&S aspects during construction and operations of the project. This will either be an FRV employee or contracted consultant to represent the company. In addition, there will be one on-site EHS officer for the construction phase and one off-site EHS officer for operation phase contracted to the EPC contractor/O&M provider respectively. Roles and responsibilities are presented in the ESRS under PS 1.</p>	31 st July 2017

	<i>Deliverables:</i> Identified EHS Officer in the Project Management Team of FRV and EPC Contractor	
4	<p>Project SPVs will develop a project-specific Human Resources (HR) Policy in line with IFC PS2 requirements and local labor regulations. SPVs will ensure that the HR Policies and Procedures developed by the project EPC contractor/O&M provider are aligned with its HR policy and procedures. Human Resources KPIs will also be developed for reporting from sub-contractors to the EPC Contractor / O&M provider and then to FRV. .</p> <p><i>Deliverables:</i> Company SPVs and EPC Contractors HR Polices and Procedural Manual meeting IFC PS 2 requirements and local labor laws</p>	31 st July 2017
5	<p>The company will ensure that adequate facilities and amenities are provided for construction workers, either in leased houses and/or a workers' accommodation camp, including: adequate living/sleeping facilities and space per person; potable water that meets national standards; safety from wild animal attacks; climate control; toilets, washing and cleaning facilities; canteen/mess or fuel for cooking; locker/storage facilities; and facilities for management and disposal of garbage, sewage and other waste. The company will periodically review and monitor the condition of the labour camps through the construction phase.</p> <p><i>Deliverables:</i> EPC Contractor developed Construction Labor Camp management plan and procedures</p>	31 st July 2017
6	<p>The company will integrate rainwater harvesting and groundwater recharging plans in the Project design and implement the same through EPC Contractor.</p> <p>Water use and harvesting/recharging in the project will be a key performance indicator that will be monitored through the project O&M phase</p> <p><i>Deliverables:</i> Rainwater harvesting and or groundwater recharging plans integrated into EPC Contractor scope</p>	30 th June 2017
7	<p>The company will undertake a Livelihood Impact Assessment (LIA) based on which it will formulate and implement a Livelihood restoration plan (LRP). LIA and LRP will meet the requirements specified in the ESRS.</p> <p><i>Deliverables:</i> Livelihood Impact Assessment and Livelihood restoration plan (LRP) documents</p>	30 th June 2017
8	<p>The company will undertake an independent LRP completion audit in one year to assess if all the LRP provisions have been</p>	30 th June 2018

	met. The completion audit will include, at a minimum, a review of the totality of LRP mitigation measures implemented by the company, a comparison of implementation outcomes against agreed objectives, and a conclusion as to whether the monitoring process can be ended. <i>Deliverables:</i> Independent LRP Completion Audit Report	
9	The company will formulate and implement a wildlife protection and management plan through the project life cycle. The key objectives and elements of the plan will meet the requirements specified in the ESRS. <i>Deliverables:</i> Wildlife protection and management plan	31 st July 2017

Local Access of Project Documentation:

The company will locally disclose the social and environmental information for the project at the following locations:

M/s FRV Power India Private Limited,
Plots P2 and P8,
C/o Divisional Engineer, Andhra Pradesh Solar Power Corporation Limited (APSPCL)
Ananthapuramu Ultra Mega Solar Park (1500 MW) - Galiveedu Site
Veligallu Village, Galiveedu Mandal,
District Cuddapah
Andhra Pradesh - 516267

Any queries and/or comments about the project may be directed to:

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