

Environmental and Social Review Summary

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Country: ETHIOPIA

Project Name: Renewable Energy Guarantees Program (REGREP)- Phase 1 Metehara Scaling Solar Power

Program Number: P 162607

Environmental Category: B

Project Description

- 1. The proposed Ethiopia Renewable Energy Guarantees Program (REGREP) supports a remarkable transition from public sector led energy sector development to private sector driven expansion of new generation capacity – representing what could be one of the largest independent power producer (IPP) program in Sub-Saharan Africa.** The proposed REGREP will mobilize IDA guarantees to back-stop certain obligations of the Government for the country's first set of competitively procured renewable energy (solar and wind) auctions to be developed as IPPs, enabled by the landmark 2018 PPP Proclamation. The proposed REGREP will be the first instance of IDA Guarantees being deployed in Ethiopia and is exceptionally well aligned with the World Bank's corporate priorities on climate change and maximizing finance for development. Overall, the proposed program could mobilize over US\$1 billion in investment for over 1,000 MW of renewable energy (solar and wind) projects in Ethiopia.
- 2. The program is structured as Multi-Phased Approach (MPA) for IDA Guarantees, with one front-runner solar IPP transaction (Metehara) supported in the first phase with follow-up three phases over a six-year period.** Structuring the REGREP as MPA responds to the Government's need for programmatic structured support to build a plausible IPP program and track record of bankable transactions to attract credible private sector sponsors and financiers. First, the MPA allows for continuity and lessons learned to be incorporated into the process and investment framework. Second, the MPA signals a long-term Government commitment (backed by WBG) to the private sector to develop IPPs in a transparent, affordable, and sustainable manner. Third, the MPA facilitates the implementation of the Development Policy Operation (DPO)-supported reform program to maximize private sector financing through a longer-

term, adaptive, and continuous engagement. Fourth, the MPA offers a more efficient and agile response to private sector investors, further improving the attractiveness of the investment environment.

3. **The program is designed as a World Bank Group (WBG) engagement to harness world-class solar and wind resources in a vanguard renewable energy led power system.** The first phase of this MPA includes one project – Metahara solar, supported by Power Africa as Transaction Advisor, with all the WBG instruments available to the selected sponsor. The second phase of this MPA encompasses two projects developed as Scaling Solar, supported by IFC Advisory Services as Transaction Advisor and offers IDA Guarantee, MIGA Political Risk Insurance, and IFC Blended Finance to potential investors. The Government of Ethiopia (GoE) has requested continued IFC Transaction Advisory Support in the development of future phases of solar projects. The technical work for site selection and pre-feasibility of wind projects, supported by Government of Denmark, is ongoing and will be considered in third and fourth phases of this MPA.

4. **The program complements the ongoing Ethiopia Growth and Competitiveness Programmatic Development Program Operation (DPO) series to sustain GoE’s ambitions and defined targets towards economic transformation, underpinned by reforms in infrastructure sectors, including power.** The power sector reform program under the DPO series encompasses: (a) the legal and regulatory framework to attract private sector financing from independent power producers (IPPs); (b) tariff reforms aiming at full cost recovery in the medium term: under the approved multiyear tariff reform, the average effective tariff would increase to US\$0.07 per kWh by 2021; (c) institutional reforms toward unbundling of sector institutions and privatization of selected generation assets; (d) measures to improve the operational efficiency, service delivery, and customer service of the utilities; and (e) restructuring of the power sector utilities’ existing debt obligations.

5. **Implementation of the Public-Private Partnership (PPP) transactions supported by REGREP will be overseen by the Ministry of Finance’s (MoF) PPP Directorate.** The PPP Proclamation (adopted in March 2018) and PPP Directive (September 2018) together provide a new PPP approval process that applies to all sectors and constitute the transparent governance framework that the Government needs to develop the PPP market. A PPP Directorate has been established in MoF to serve as the secretariat of the PPP Board that oversees the performance of the scheme, including PPP prioritization, preparation, procurement, and award selection. PPP implementation guidelines that establish the procedures and authorizations required for the commitment of government support obligations to PPP transactions—including sovereign guarantees—are expected to be passed by mid-2019. While the PPP legal framework addresses the need for sound ESAs, the establishment of a process and assignment of an independent authority for review, approval, and enforcement of ESAs, which is crucial for the Government to account for environmental externalities and implement risk mitigation measures during the life of the project, is expected by mid-2019. Both the PPP implementation guidelines and the ESA authority are important institutional steps for the REGREP MPA program but do not provide obstacles for the first three frontrunner transactions, for which both guarantees and ESAs are being approved on an exceptional basis. Their establishment will ultimately help build confidence in the fairness and transparency of the process, leading to greater predictability of the pipeline project quality, instilling confidence in the public

and investors, and thereby minimizing risks and increasing investments in infrastructure PPPs and ensuring long-term fiscal and environmental and social sustainability.

6. **EEP will be the implementing agency and contracting authority for the renewable energy IPPs supported through guarantees under REGREP.** However, it is important to point out that project companies (IPPs) under their respective corporate mechanisms, will be the primary implementing agencies for the power plants themselves. The construction of these IPPs would be implemented through standard engineering, procurement, and construction (EPC) contracts. The operation and maintenance (O&M) of the invested facility may be contracted to capable third-party contractors. EEP's role as the commercial off-taker of the IPPs is limited to running transparent tender processes (auctions) to procure the IPPs and negotiate the PPAs. EEP would also be responsible for providing any credit-enhancement mechanisms (such as LCs) to the investors, possibly supported by IDA guarantees. Finally, as the buyer of the energy services of the IPPs, EEP would be responsible for ensuring that the IPPs adhere to the World Bank Group's guidelines regarding fiduciary and safeguards management, results monitoring, sustainability, and so on. EEP has experience with World Bank guidelines, as the executing agency of several IDA-financed projects. EEP has retained skilled technical and procurement staff. EEP has established an IPP unit, with staff assigned from its strategic investment unit, to oversee the development of IPPs. However, the sector overall, and EEP, have no experience with IPPs, specifically on commercial, legal, and financial aspects. EEP is supported by the World Bank Group as well as other DPs, including, Power Africa, IFC Advisory, and Denmark for transaction advice on most IPP transactions in the pipeline. IDA will continue to provide ongoing support through the lifecycle of REGREP.

7. **Under Phase 1 of the REGREP MPA program, EEP is intending to enter into a Power Purchase Agreement (PPA) with Enel Green Power (EGP)** to construct and operate a photovoltaic (PV) power plant with an installed capacity of 100 MW in the outskirts of Metehara town in Fentale woreda, Oromia Regional State, Ethiopia. The Metehara Solar Power PV plant will become the first utility-scale solar PV plant in Ethiopia connected to the national grid.

8. **The project consists of the design, development and operation of solar power PV plant which will occupy 250 ha of land at Gelcha Kebele, Fentale Woreda, in Oromia National Regional State, immediately east of Metehara town and south of the main road between Addis Ababa and Djibouti.** The facilities for the project comprise large number of PV modules (solar panels), inverters, transformers and a new substation. The required infrastructure includes internal access roads to the different parts of the PV facilities, fencing of the site as well as a CCTV system. Different light buildings will also be built like an operation and administration center, security posts, storage place for spare parts and different commodities for the O&M teams (toilets, break room, etc.).

9. **EEP has developed Program level Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF)** which have been prepared to establish a mechanism to address environmental and social impacts of all projects under REGREP. A site specific Environmental and Social Impact Assessment (ESIA) has been prepared for Metehara, as one of the Solar projects under

REGREP. Due to the need to guaranty the private investment activity in the involvement of power development, EEP seeks a guarantee support for Metehara Scaling Solar project.

Key Issues

10. Key environmental issues: The site is generally characterized as a bare land which is mostly covered with the invasive and evergreen shrub species *Prosopis juliflora*. There are also some acacia tree species with no concern of conservation status. Nonetheless, clearing of vegetation for the PV installations, risks of contamination from accidental spills or improper storage/disposal of hazardous waste (including PV panels and oils of different purpose), potential collision of birds and bats with project infrastructure, site sensitivity in relation to the IBA boundary, encroachment of invasive species and water consumption for cleaning of the PV panel are some of the issues.

11. EGP's capacity and future commitment to implement its Environmental and Social Management System (ESMS), contractor management to their social, environmental and safety performance and engagement with project stakeholders; assurance of fair, safe and healthy working conditions for all workers during construction and operations; and management of community health and safety, are some of the major issues that can be mentioned.

12. Key social issues: The project key social impact is expected to be: the physical and economic displacement of 562 households with an estimated total population of 3,380 persons and 524 economic displacement of those outside the project footprint but having agricultural and/ or grazing land to be affected due to the project activities. Results of the census enumeration and property registration surveys revealed that a total of 38 residential houses and related structures with an estimated 228 persons are currently located within the project site will have to be relocated/resettled.

13. These project-affected households comply with the criteria outlined in PS7 and therefore the project has asserted Free Prior and Informed Consent following Good-Faith Negotiation in line with the respective requirements in this PS. Labor influx will add pressure on public services including health, water supply and sanitation, and increases the risk of increased prevalence of HIV/AIDS, other infections/diseases, and gender-based violence. Other potential adverse social impacts include: increased health risks for communities due to increased dust and traffic during construction and operation periods, malaria, and water-borne diseases; infrastructure and services due to population influx to the area and conflicts between local people and migrants.

14. Metehara Scaling Solar project is screened as a Category B project due to the general nature of the Solar PV projects which are considered to have low environmental and social risks and impacts comparing with many other energy or industrial developments. This relates to their short construction phase and insignificant emissions to air, water and soil during operation. However, grid-scale PV facilities require large areas of land for the installation of solar modules and associated infrastructure. Project siting is therefore the most important aspect related to impact avoidance and mitigation.

15. **OP/BP 4.03 World Bank Performance Standards (PS) for Private Sector activities are applied for this specific project.** These are:

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labor and Working Conditions;
- PS 3: Resource Efficiency and Pollution Prevention;
- PS 4: Community Health, Safety, and Security;
- PS 5: Land Acquisition and Involuntary Resettlement;
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- PS 7: Indigenous Peoples; and
- PS 8: Cultural Heritage.

Key Information Sources

16. **The key documents reviewed by the World Bank team included:**

- Environmental and Social Management Framework¹, final report April 23, 2019, prepared by EEP, Environment and Social Office.
- Resettlement Policy Framework, final report April 23, 2019, prepared by EEP, environment and Social Office.
- Preliminary Environmental and Social Impact Assessment (PESIA), June 2018, prepared by EEP environment and social experts, EHS & Q.
- Environment and Social Impact Assessment² dated 23, April 2019, prepared by Multi-consult Norge AS in association with Shebelle Consult PLC;
- Resettlement Policy Framework³, final report dated 23, April 2019, prepared by Multi-consult Norge AS in association with Shebelle Consult PLC;
- Resettlement Action plan⁴ final report dated 23th April 2019, prepared by Mid-Day International Consulting engineers

17. **As part of the World Bank due diligence process, Environmental and Social safeguards specialists visited the project site and selected resettlement areas 15-17th March 2019.** Based on this review and due diligence, the project is expected to comply with Bank Performance Standards and relevant WBG Environmental, Health, and Safety Guidelines (EHSGs).

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

¹ http://www.eep.gov.et/index.php?option=com_content&view=article&id=144:draft-resettlement-policy-framework-rpf-for-ethiopian-scaling-solar-and-wind-development-program&catid=12&Itemid=249&lang=en

² http://www.eep.gov.et/index.php?option=com_content&view=article&id=143:ethiopian-renewable-energy-guarantee-program-regrep-environmental-and-social-management-framework-esmf-final-draft&catid=12&Itemid=249&lang=en

³ http://www.eep.gov.et/index.php?option=com_content&view=article&id=148:draft-resettlement-policy-framework-rpf-for-ethiopia-scaling-solar-and-wind-development-program&catid=12&Itemid=249&lang=en

⁴ http://www.eep.gov.et/index.php?option=com_content&view=article&id=147:metehara-solar-power-pv-plant-environment-and-social-impact-assessment-final-report&catid=12&Itemid=249&lang=en

18. **A detailed Environmental and Social Impact Assessment (ESIA), incorporating an Environmental and Social Management Plan (ESMP) and a Resettlement Action Plan (RAP),** were prepared by a qualified independent international consulting firm, i.e. Multi-Consult of Norway jointly with local Shebelle Consult, submitted to the Ministry of Water, Irrigation & Energy; subject to local disclosure and consultation as per national law and World Bank Performance Standards. The documents are disclosed also on the EEP website under the following web address: *www.eep.gov.et*. In identifying, assessing, and managing environmental and social risks and impacts, the ESIA and the RAP take into consideration both national laws and regulations and the World Bank's Performance Standards. A site visit by the World Bank's environmental and social team confirmed that the ESIA and the RAP have adequately identified likely impacts and risks in the project's area of influence. As currently proposed and designed, the project does not involve third party obligations for significant project components or for environmental aspects of the project. The ESIA, EMP, and RAP are designed at a level commensurate with the assessed risks.

19. **Environmental and Social Assessment and Management System:** As this is a greenfield project, the EGP currently has no specific ESMS in place for the construction or operation of the project. For its international operations, the company has a generic ESMS, which the EGP for each specific project will review, update, and adopt for the project. EGP has developed and adopted an integrated safety and environmental management system in accordance with the international standards ISO 14001 EMS and OHSAS 18001 for its international operations. It is structured on a risk-based assessment of project-related activities and tasks, identifying appropriate risk mitigations and management actions for each activity or task, as well as assigning responsibilities for implementation. It also includes a grievance tracking and management system. Enel disclosed that the Environmental Management System adopted by EGP, which was assessed in the new ISO 14001 certification, places sustainability at the center of environmental management, evaluating not only the actions that aim to protect the ecosystem, but a company's attention to the interests and needs of administrators, stakeholders and local authorities with respect to production sites. In its policy⁵ EGP considers compliance with the standards and the laws in force, in each of the countries in which it operates, a prerequisite for successful implementation of the Integrated Management System.

20. **Therefore, EGP is required to develop and implement the ESMS for construction and operation of this project suitable to its scale and meeting the requirements of applicable Ethiopian laws and WB Performance Standards.** The ESMS will include policies, plans, manuals and procedures aligned with ISO 14001. The ESMS will incorporate the Environmental and Social Management Plan (ESMP) developed for the project as well as aspects related to construction covered in the WBG General Environmental Health and Safety (EHS) Guidelines. The ESMS will be updated to reflect the Equator Bank Performance Standards and the new WBG EHSs for the energy sector. The ESMS, as noted above, identified responsibilities for managing identified risks for each of the specified tasks and activities. This has allowed the project enterprise to identify training needs for all staff, either at the "awareness" or "competency" level and develop training schedules.

⁵https://www.enelgreenpower.com/content/dam/enel-egp/hubgroup/about-us/documents/eng/EGP_QSE_Quality-Safety-and-Environment-Policy_EN.pdf

21. **EEP with local authorities will complete a security risk assessment before construction begins.** Mitigation measures to be formulated accordingly will be included in the Community Health, Safety and Security Action Plan, and resources will be made available for implementing these measures. All components of the RAP and ESMP will be detailed and updated as necessary.

22. **Environmental and Social Permitting Process, Community Engagement and Monitoring:** The draft ESIA developed in January 31st, 2019 was submitted to Ministry of Water, Irrigation and Energy and received the feedback and later approved on April 15, 2019. As per the Council of Ministers Regulation No.405/2017, Disclosure of Information for Public Interest requires the general public to be informed about the project, and local level disclosure of the ESIA at the woreda and Kebele level. Complete version of the project ESIA is disclosed at EEP Website on April 23, 2019. Communities were informed by EEP and local officials about the duration and objectives of the disclosure and locations where the documents are disclosed. Non-technical summaries are disclosed at Gelcha Kebele. Such summaries will also be translated into local language(s) and disclosed in an adequate manner to ensure wide knowledge on the ESIA by the local communities and other stakeholders.

23. **Regarding the resettlement and livelihood impacts, social and economic surveys were carried out on 19-4th March 2019 to establish the baseline data. 04th April 2019 is therefore considered the cut-off-date, which has been disclosed to the local community.** Households moving into the project area after the cut-off-date are not eligible for project benefits. In case households claim to have been left out from the census prior to the cut-off-date, they have to raise their case via the grievance redress mechanism. A preliminary initial environmental and social examination was carried out in 29 April 2016 by EEP Project Implementation Unit (PIU), with representatives from the affected communities and local authorities who were established to discuss/negotiate the resettlement and compensation options. Several formal meetings with the Woreda representatives were carried out between April 2016 to June 2018, included in ESIA and RAP annexes. However, with continuous consultations with the woreda administration and the community, additional update on the scoping study has been carried out on 29, June 2018 due to the adjustment of the previous site selected. Later, the Woreda Valuation Committee has identified compensation payment based on the best available practice and RAP performed. A Memorandum of Understanding (MoU) (including compensation rates, house types, land affected) was signed with Valuation Committee (VC) at the end of the negotiations process on 5th March 2019.

24. **Environmental and Social safeguards specialists from the World Bank met with project affected people and members of the Fentale Woreda Valuation Committee (VC) during the site visit on 15-17th March 2019.** The meeting confirmed that local people are well informed about the project impacts and the resettlement packages. Community consultations during the preparation stages of the ESIA and RAP have been sufficient and culturally appropriate. As noted above and in more details below, through Good-Faith-Negotiations the project has established Free Prior and Informed Consent of the community towards the project development.

25. **EGP is committed to ongoing community engagement during construction and operations, and for annual reporting to the concerned bodies on the project's social, economic and environmental**

impacts. In addition to its own internal auditing, EGP will make arrangements for independent auditing of its environmental and social performance on an annual basis and expects to use local experts in the Enel Community Liaison Unit to help communicate the monitoring results to local communities in a culturally appropriate and understandable manner.

26. **Stakeholder Engagement Plan (SEP):** The development of the proposed solar PV facility will require the involvement of a range of stakeholders in project planning, land acquisition, grievance management, construction works, and operation and maintenance. In addition, the implementation of the proposed environmental and social mitigation measures will require a multi-sectoral approach to be able to achieve the intended objectives. For this reason, a stakeholder engagement plan has been prepared as a guiding framework for ensuring proper coordination and management of all the stakeholder interests and concerns. The stakeholder engagement strategy will apply to the planning, construction and operation phases and to all project components.

27. **Grievance Redress Systems:** Consultations with the affected communities in the project site revealed that community-based systems for grievance redress are already existing. These structures are through the Kebele leadership and council of elders. However, not all cases will be resolved within the traditional system; so, judicial system will be used as a last resort for the unresolved cases. Priority will be given to the community-based approach (CBA), and efforts will be made to ensure that all complaints are resolved at that level.

28. **A Project GRM with a register of resettlement/compensation-related grievances and disputes will be established, with well-defined conditions of access to this register prior to commencement of compensation payments and civil works construction.** The GRM will also address grievances that may arise on other issues such as access to resources and community benefits. On the other hand, for workers participating in project related activities, the contractor will provide a grievance mechanism for workers to raise reasonable workplace concerns and ensure that all workers are informed about the grievance mechanism and that it is accessible. The Developer will provide respective resources to ensure functioning of the Project GRM. Statistics on the GRM will be provided as part of the quarterly progress reporting.

PS2: Labor and Working Conditions

29. **EGP will develop an Employment Action Plan in line with the provisions outlined in the ESMP to maximize local participation** in the direct and indirect employment opportunities provided by the project during construction, operation and decommissioning phases. Particular objectives of the plan are to (i) engage relevant stakeholders, including the valuation committee, to ensure transparency in employment; (ii) provide training to local people and thus maximize local employment and reduce labor influx to the project area; (iii) maximize participation by local and [national] contractors and vendors (establish a local supply chain); and (iv) develop partnerships with educational institutes for development of skills required by the project among local residents.

30. **The plan shall be in compliance with national labor regulations including proclamation No. 377/2003: Labor Proclamation and PS2 requirements.** During construction, EGP's contractor will employ

approximately 500-700 personnel at peak construction period comprising both direct and indirect workers. A permanent staff of 70 people are expected during the operation of the power plant. Employment during construction will generally be made through short-term contracts. The project enterprise will endeavor to maximize local employment. All project contractors will be required to give preference to local residents in the available employment opportunities. Other than this preference, hiring will follow a non-discrimination principle regarding gender, language, ethnicity, etc. The project enterprise will also ensure relevant requirements of Performance Standard 2 are met to all non-employee (contracted) workers.

31. **Code of Conduct:** EGP and the Contractors shall interact with local communities and their representatives in a manner that maintains and promotes a good relationship. A Code of Conduct (CoC) shall be prepared covering the main rules of interaction with local communities and the rules of conduct in case of conflict situations. The Code of Conduct shall include prevention and strong sanctions on gender based violence (GBV), sexual abuse and exploitation of child labor in the workplace, especially related to project affected communities.

32. EGP has a general Code of Ethics targeting the members of the Board of Directors, of the Board of Statutory Auditors and of the other control bodies of the organization and of the group of companies that it controls, as well as managers, employees, and associates linked with the group by way of contractual relations of any type, including occasional and/or solely temporary contracts which is applicable in various countries in which EGP operates, with due regard for the cultural, social and economic differences. https://globalprocurement.enel.com/content/dam/enel-gp/en-gb/doc/useful-documents/code_of_ethics_newcover_NEW-edit.pdf.

33. **Health and Safety Plan.** A work place health and safety plan will be developed consistent with PS2 and relevant guidelines, covering all workers and subcontract labor involved in the project for the construction and operation phases. The health and safety plan objectives include (i) identifying all major health and safety issues at the project site and related to the project, (ii) designing a health and safety training for all employees, evaluation of training materials, (iii) requiring annual assessment of health and safety awareness, (iv) ensuring that all workers are fit for work for which they are conducted through a pre-employment medical examination and annual medical re-evaluations with counseling, (v) ensuring access to adequate healthcare facilities for its employees. EGP will contract an occupational health and safety team to assess occupational health and safety risks at the project site and evaluate compliance with occupational health policies and health assessments periodically. The OHS team will have the mandate to stop site-specific works at any time in case of immediate risk of harm towards workers, community, or nature.

34. **Incidents reporting and investigations:** EGP and the Contractors are required to identify, investigate, record and report all incidents including accidents, near misses, diseases, and environmental incidents. The findings and conclusions of every investigation shall be reported to the site manager without delay. The contractor shall notify the site manager immediately when any accident occurs whether on site or off site in which the contractor is directly involved which results in any injury to any

person whether directly concerned with the site or a third party. Such initial notification may be verbal and shall be followed by a written comprehensive report within 24 hours of the accident. The purpose of this requirement is to comply with WB PS 2 and to determine the cause of the accident and make recommendations to prevent further re-occurrence. All reports of injury must be filed.

35. EGP and Contractors must immediately tend to injuries/ incidences and then report for any injury, illness or accident caused as a result of Metehara Solar PV project operations to EEP, accordingly to the World Bank. Once the accident is sustained, EGP/Contractor is expected to cover cost of medication including the cost for any necessary prosthetic or orthopedic appliances. Hence, for work related injury, the employer is required to cover medical cost and further obligated to provide disability benefit to the employee and pay dependent's benefit to the dependents of the deceased in cases of death.

PS3: Resource Efficiency and Pollution Prevention

36. Although EGP has developed a procedure for the choice criteria of suppliers & contractors including the communication and control of environmental requirements for suppliers of goods and services, EGP is required to perform the environmental and social management of the suppliers and manufacturers⁶.

37. **Pollution Prevention and Resource Conservation. According to the local authorities, Fentale Woreda struggles with acute water supply challenges.** Access to safe water supply is generally difficult in the project area due to the high concentrations of fluoride as well as pollution from the upper catchments of Awash River and from the sugar plantations. Therefore, the project shall make arrangements for water supply that are independent from the public utility in order to avoid exerting additional pressure on such services.

38. The project's water storage facility will be designed to minimize the loss of stored water to evaporation and percolation. The design shall include recognized international industry practice as found in relevant WBG EHSs.

39. The highest amount of resources and materials will be consumed during the construction phase. Energy for the construction phase of the project will be supplied by diesel/petrol generators. During operations, the energy supply will be drawn from the energy generated by the project. Another potential source of water pollution is from the workers' camp. It will generate sanitary effluents which are potential sources for microbiological and organic pollution of surface and ground water. Details will be outlined in the site-specific ESMP which shall follow the guidelines outlined in the ESMP.

40. **Contaminations.** Solar PV panels during the operation and decommissioning phase of the project will also produce localized areas of soil contamination with heavy metals and other chemicals which will have an impact on the soil and ground water. The project will result in these areas of contamination being processed and properly disposed of in a secure storage facility, as described in the

⁶ http://web1.sssup.it/users/himmelmann/mains/images/marcozzi_enelgreen.pdf

ESIA. In addition, the project should make arrangements for water supply that are independent from the public utility in order to avoid exerting additional pressure on such services and may look additional alternative water sources from nearby Awash River.

41. **Emissions.** Dust generation and emissions from the land preparation and vehicles are of particular concern. The scarcity of water discourages widespread use of water in dust control and Incremental increase in dust will be closely monitored. The power plant is designed to produce 100 MW. A report from Power Africa Transactions and Reforms Program (PATRP), 2016, mentioned that, using the USAID Clean Energy Emission Reduction (CLEER) Tool, the reduced Green House Gas (GHG) emissions are in the order of 1,162 tones CO₂ equivalents. The relocation of local residents to resettlement sites are well managed from the project site, and predominantly away from prevailing wind directions, would significantly reduce the incremental risk of significant health impacts or nuisance effects from dust and air emissions generated by the project.

42. **Noise pollution.** Noise pollution is expected from the project during construction and operation phases. The baseline noise assessment conducted during the ESIA indicated that there were no major sensitive receptors within 500m of the project site. However, because of the relative distance between the main installation areas and the nearest noise receptors and as those receptors are already exposed to traffic noise from the highway and town, the construction noise is not expected to cause a significant nuisance to the public, at least not with standard mitigation measures in place. Measures to minimize noise impacts have been identified in the project ESMP. Available data on noise generation by PV plants during operations indicates noise at source could be up to 60dB. With attenuation, noise impacts are expected to be minimal.

43. **Waste Management.** Waste management shall be based on a hierarchy that considers prevention, recycling and reuse, treatment and disposal. Waste shall be removed on a regular basis in order not to store more than 100 m³ of non-hazardous waste and no more than 20 m³ of hazardous waste, and if not exceeding this quantity, no more than 3 months for hazardous and 6 months for non-hazardous waste. Broken PV panels must be segregated and collected as waste of electric and electronic equipment (WEEE) paying particular attention to avoid dispersion in the environment of any fragments. EGP is therefore advised to inquire whether any of the potential suppliers or manufacturers provide recycling services such that PV panels can be returned if they are damaged or broken.

44. Other hazardous waste, such as spent solvents and oily rags, empty paint cans, used lubricating oils, used batteries, lighting equipment, etc. shall be stored in containers, with proper bunds, which are able to prevent spillage or leakage of the hazardous wastes into the environment. The containers of the hazardous wastes shall be clearly labelled for identification and warning purposes. Only contractors that are licenses for this purpose shall be allowed to collect, transport and dispose of such hazardous waste.

45. Emergency response plans and teams have been established to address reagent and fuel spills, fires, and accidents requiring medical attention.

46. **Decommissioning.** Decommissioning of the Metehara solar power PV plant and removal of all equipment and materials will restore the affected land to its pre-project state. Although, the ecological value of the project site is limited, this will have a positive impact on the ecosystem and affected habitats, at least until the land is developed for another purpose (e.g. expansion of Metehara town).

47. While solar PV modules can last up to thirty years, a significant quantity of material needs to be disposed of at the end of the life of the modules. Many components of solar PV modules are recyclable and some solar module manufacturers provide recycling of the panels with purchase. Recycling will greatly reduce potential adverse impacts associated with panel disposal. EGP is therefore advised to inquire whether any of the potential suppliers or manufacturers provides recycling services such that PV panels can be returned if they are damaged and/or at the end of the project life. EGP shall be committed to ensure safe disposal of all hazardous waste, concrete and similar non-recyclable construction materials, and recycling of scrap metal. EGP will prepare a decommissioning plan before the start of the decommission operations, taking the applicable legislation and baseline conditions prevailing at that time into account.

PS4: Community Health, Safety, and Security

48. **Hazardous Materials and Infrastructure Safety.** The project will require the transportation of construction materials and equipment, fuel, reagents, and other supplies from Djibouti to the project site.

49. **Traffic Management.** Increased traffic associated with the project, in particular during the construction phase, may pose some safety risks to the community. The local community will be exposed to the risk of traffic accidents involving project vehicles and trucks on public roads. Construction traffic will be connected to the main Addis Ababa – Djibouti highway, which is already a busy road with high traffic volumes including trucks and public transport. Careful planning and management of construction traffic and transportation schedules will be required to minimize the risk of traffic accidents and disruption of road traffic.

50. The implementation of measures identified in the ESMP is expected to reduce any potential impacts due to traffic associated with the project. In addition to the traffic safety requirements set out in the ESMP for construction works, design the take-off from the highway should be designed in such a way that there is minimal disruption for the other road users and minimal risk of traffic accidents. Traffic Management Plans and other safety information will be disseminated to the communities through campaigns in schools and public areas.

51. **Community Exposure to Diseases.** Exposure to dust, water related diseases, malaria, HIV and other sexually transmitted diseases due to labor influx (in-migration of workers and job seekers) pose health risks to communities and will be mitigated via a range of measures summarized below. A Community Health, Safety and Security Action Plan will be drafted and includes the following specific objectives/components: designing and implementing HIV/AIDS, road safety strategy, hazardous material management strategies, and a plan for emergency response; developing and improving health services

and health indicators in the project area in connection with the Community Action Plan; ensuring the project facilities are operated in accordance with relevant occupational health and safety guidelines.

52. **Gender-based Violence.** Gender-based violence is a risk in the project context; of specific concerns are labor influx and increased local income differences in case male workers are hired over-proportionally. The Community Health, Safety and Security Action Plan will establish a system which ensures proactive engagement in the prevention of GBV (including appropriate setup of workers camps and the signing of Codes of Conduct by project staff and workers) as well as availability of referral services in case of raised grievances.

53. **GBV/SEA Risk Assessment Result:** Based on the proposed project context, Gender Based Violence (GBV) Risk Assessment Tool, the overall GBV risk is found low. EEP and subsequently the EGP should put in place mechanisms to prevent and minimize GBV and Violence Against Children (VAC). Such a mechanism should include working with the Contractors to prevent sexual harassment in the workplace and GBV and VAC in the project-affected communities (for example, through Codes of Conduct), strengthening grievance redress and other monitoring mechanisms to ensure safe and ethical reporting systems to alert cases of GBV and VAC and assure them to access adequate response. The Gender Based Violence (GBV) Risk Assessment result will be updated when the situation warrants. A GBV action plan will be developed commensurate to the current risk level.

54. **Security Personnel.** Site security will be managed by a private security firm who will provide trained unarmed security personnel. EGP will assess the risks posed by its security arrangements to communities near the project site and ensure that the security contractor operates in a manner which meets the requirements of this Performance Standard. In making such arrangements, EGP and its EPC contractor will be guided by the principles of proportionality and good international practice in relation to hiring, rules of conduct, training, equipping and monitoring of such workers, and by applicable national law.

55. Security arrangements shall comprise but not be limited to necessary watchmen and other security staff for access control, site guarding and traffic regulations. The site shall be restricted by fencing or otherwise secured to prevent illegal or unauthorized access. Access control to the site shall be arranged to ensure that all personnel can be accounted for. The security measures and operation shall be in accordance with the Voluntary Principles on Security and Human Rights.

56. **Energy Services for the surrounding community.** As part of the Community Development Plan developed in the project's RAP, PAPs and local authorities strongly demanded for electrification of their Kebele and project affected communities in particular. In this regard, The RAP recommended that GoE can and shall do two things in response to rural electrification demands of project affected communities. First, appreciate the community demand for rural electrification and give a priority to these communities during separate and on-going rural electrification programs (e.g., UEAP, Light for All). Second, even though, it is difficult to speculate the time when the rural electrification programs mentioned above would reach the project woredas, an intermediate solution is suggested for pre-electrification using Solar Home Systems (SHS).

57. Prices of modules and accessories have dropped eight to ten folds over the past one decade alone and they are expected to go even further down. In effect, SHS, which were almost a luxury for rural households in the mid-2000s, are now products that even poorer households can afford (e.g., 10-Watt solar kit with three lighting points and a phone charging option is selling for a retail price of less than USD 105/ ETB 3,000 in Addis market). Currently, SHS are not only coming in different shapes and sizes, but also as an integrated simple kit – doing away with the difficult and expensive business of wiring and installation. Therefore, as an interim solution, EGP will provide for the procurement and distribution of basic solar lighting kits (two or three light points with a phone charging option) to all 533 PAPs in all project implementation locations.

PS5: Land Acquisition and Involuntary Resettlement

58. **Affected Assets.** The proposed site (250 ha) has 38 residential structures along its north boundary and in the south-east corner. It also encompasses 217.7 ha of farm land, and 32.17 ha of grazing land. Moreover, one grave/ burial place and one Ethiopian Electric Utility's (EEU) 15 kV poles will be affected as a result of the project's land take.

59. The land is used for rain-fed farming (mainly teff) and livestock grazing (cattle, sheep and goats) in the rainy season. This land has not been cultivated for at least two years because of the persistent drought conditions. This has contributed to the invasion of *Prosopis juliflora*, an exotic weed that has formed almost impenetrable thickets in parts of the project site. A short section of a 15-kV distribution line from Metehara substation (2.2 km north of the site) to Metehara Sugar Factory (1.5 km south of the site) intersects the project site in the north-west corner near Metehara town. The project area may also restrict access to the irrigation waste water for other pastoralists from other Kebeles. In addition, there are graveyards discovered during continuous consultation and discussions made with the project affected people.

60. **Resettlement Action Plan (RAP).** Which also incorporates livelihood restoration plan, has been prepared by EEP. Results of the census enumeration and property registration surveys revealed that a total of 38 residential houses and related structures with an approximately estimated 228 people are currently located within the project site will have to be relocated/resettled. Out of the 38 households, 8 households are physically displaced (lose only their houses) and 30 households are displaced both physically and economically. In addition, out of the total 562 households, 524 households who live outside the project footprint but have livelihood sources, will solely displaced economically. Based on results of the census enumeration (RAP) a total of about 199 PAPs are identified as vulnerable groups in all project affected households.

61. Resettlement principles, policies, procedures, and rates were determined by a multidisciplinary team of the Woreda Valuation Committee (VC). Resettlement options/packages were discussed and agreed on with VC. The project affected house owners will be provided with new houses on residential plots at the designated resettlement sites. A title to these plots will be given in the form of legal document.

62. **Livelihood restoration:** Based on the asset inventory and compensation data from the Rural Land Administration and Use Office a livelihood restoration plan including a target budget has been prepared and integrated into the RAP. The underlying principle is the Bank's requirement of livelihood restoration and measures to be implemented by EGP are scope-based. Accordingly, the livelihood restoration activities shall be continued until it has been verified that the livelihoods of all displaced persons have been restored to pre-project levels.

63. **Monitoring mechanisms:** As a basic requirement, it is expected that the contractors shall self-monitor their compliance with the ESMP and their EHS Plan. The contractors will perform routine monitoring inspections using pre-established checklists and prepare monthly reports to the EGP's Environmental and Social Management Unit (ESMU) describing the implementation of the mitigation measures, including key performance indicators, as well as any deviations, incidents or accidents and corrective measures taken. When a non-conformance is detected and is not, or cannot be, immediately resolved, and then a corrective action process will be initiated by the contractor. On completion of the corrective or preventive action, EGP's Environmental and Social Management Unit (ESMU) will confirm and record all the necessary details. In addition to the contractor system will be set up by the Valuation Committee (VC) which will involve in internal monitoring and A Panel of Experts (PoE) will be formed to advise the project enterprise on livelihood restoration strategies and resettlement action plan, and to monitor the implementation of the resettlement and livelihood restoration strategies for external monitoring. In line with the Financial Agreement (FA) with the World Bank, EGP will report any significant environmental or social incident within the timeframe agreed on in the FA.

64. **Community development efforts:** EGP is committed to provide social and physical infrastructure at resettlement sites not worse than the existing ones, and possibly better. Also, HIV/ AIDS awareness and literacy programs already started are appreciated by the project affected people. Community development strategies will be developed through needs assessment and communities' participation. Water supply and sanitation facilities for the new resettlement sites will significantly improve the living conditions of the project affected people. In addition to water, education is among the priorities.

PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

65. **Land use:** The project is located in Oromia region immediately east of Metehara town in the rural areas of Gelcha kebele, Fentale woreda. There are no dominant landscape features within the project boundaries. The only view points from where the whole site can be observed are on the slopes of Mount Fentale with its summit located about 8 km to the north. The vegetation originally consisted of grassland with scattered trees but has in recent years been invaded by the exotic *Prosopis juliflora* forming almost impenetrable thickets in parts of the project site. As per the site assessment and consultation with local authorities, there are no identified ecologically sensitive areas or any protected area with high biodiversity value such as, wetlands, riparian zones, undisturbed natural forests and important wildlife parks and wildlife corridors that would be affected by the proposed solar power project.

66. **Water resource:** Lake Beseka, located less than 1 km west of the project site, is a saline lake i.e., 10.7 dS/m. It has grown significantly in the past half century, from 3 km² in the 1950s to more than 40

km² at present. The reason behind this growth has been attributed to tectonic processes and inflow from irrigation canals and rain water runoff.

67. The main source of water for irrigation and drinking in Metehara is the Awash River located 2.5 km south of the project site. It originates west of Addis Ababa and flows for about 1,200 km before emptying into a chain of interconnected lakes on the border with Djibouti. The Awash basin is thus the drainage basin which has no outflow but converges into lakes that equilibrate through evaporation. The river is affected by water abstraction for irrigation and by pollution, mainly from industries in the upper catchment and also from Metehara Sugar. The water supply for Metehara town is sourced from the Awash River, and local herders from around the project site also take their livestock to the river for drinking.

68. All surface water in the project area is seasonal. Aquatic life, therefore, consists predominantly of species that emerge, grow, and reproduce swiftly upon commencement of the first rains, but then quickly form resistant eggs, seeds, or other life stages towards the end of the short rainy season that remain dormant until the next rainy season. Because of the high clay content in the soils, small, perched shallow aquifers are present in the project area. Drainage canal has been excavated from Lake Beseka to the Awash River in order to limit the rise in lake water level. There are no permanent water bodies within the boundaries of the project site.

69. **Wildlife biodiversity.** With the proximity of the project site near a large urban setting, wildlife biodiversity is generally low, decreasing and stressed. On the other hand, being close to one of the oldest and biodiversity rich National Parks in the country, there happens to be rare incursion of wildlife into the project site. Wildlife migrations used to be more regular on this side of the park two or three decades ago. This has become more irregular and arrested with the growth of urban and agricultural development at Metehara town and the adjacent Metehara Sugar Factory.

70. The Awash National Park IBA is categorized as an “IBA in Danger” due to human/livestock encroachment into the park, pollution of the Awash River and Lake Beseka, and the presence of the highway road and railway which bisect the park. Based on the IBA criteria assessment done in 1996 (Bird Life International 2018), the Awash National Park IBA has 53 IBA trigger bird species, including one endangered (EN) bird species (Yellow-throated Seedeater *Crithagra flavigula*) and five near threatened (NT) species.

71. While the park is essentially an IBA by virtue of its protected area status, it also fulfils standardized criteria including the presence of biome assemblages and threatened species within its bounds. With the proximity of the park to the project site, it is presumed that threatened fauna share the similar ecosystem. Awash and its environs are categorized as Somali-Masai Biome and the birds found in this kind of biome would be the most likely to cross over and use the similar environment found at the project site.

72. Based on the updated assessment from Birdlife international data zone 2013, it is clearly pointed out that the boundary of IBA was identical with the boundary of Awash National Park (75,240 ha). However, at the reestablishment of the Awash National Park boundary (Regulation 329/2014) which is reduced to 59000 ha, which by default make the National Park within the IBA boundary but not the

project. However, as the project is 3.5 km away from the Awash National park, it is a borderline case to be categorized as a critical habitat. The consultation with Ethiopian Wildlife and Natural History Society (EWNHS) informed that IBA also marked the surrounding area out of the IBA boundary with an interest to conservation in relation with the Park and Beseka Lake in which many species of conservation are found. Therefore, to be more comfortable and avoid any impact on the avian biodiversity EGP is required to identify competent professionals who are able to involve in the bird impact assessment and propose appropriate mitigation and management options.

73. EGP is required to conduct a baseline avifauna survey/ assessment during the preliminary project design mainly at the rainy season (July-August) and bird migration period (September) to serve as a benchmark for monitoring and to give a guide on the development of bird management plan before the construction commences, which also will continue throughout for the project operation. EGP shall also apply all the mitigation options indicated in the ESIA to reduce the impact of avian biodiversity and enhance conservation activity. Based on the WB PS 6 and IFC GN 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources), the assessment on risks and impacts during the project initial and construction stage which EGP is required to implement should be, ongoing as part of the Environmental and Social Management System (ESMS). EGP should refer to good practice guidelines and other relevant reference documents on biodiversity baselines, impact assessment, and management. Flexibility should be built into the EGP's ESMS so that the mitigation and management approach can be adapted based on its performance over time. As the project is located close to critical habitat, i.e. IBA in this case, EGP is required to identify competent professionals who are able to involve in the bird impact assessment and propose appropriate mitigation and management options.

PS7: Indigenous Peoples

74. Based on the information from ESIA and other studies for Metehara Solar Plant, the primary ethnic groups in Gelecha Kebele (where the project activities will be implemented) are the 'Karrayu' and 'Ittu' Oromos. As per the agreement of the Ethiopian Government with the World Bank joint screening in 2013, 'Karrayu' ethnic group is recognized under the category of Underserved People, meeting the criteria of WB PS-7; thus, requires the application of this PS to the proposed Metehara Solar Power PV Plant project. The RAP has the documentation on the process of free, prior and informed consent (FPIC) following good-faith negotiations with the local community. Site specific Social Impact Assessment and Consultation, as part of the ESIA, and the identified mitigation actions will be incorporated in the project design as a Social Development Plan. This plan will ensure that the activities and the implementing IPP (EGP) will respect the dignity, rights, and culture of groups meeting the PS 7 requirements and ensure that these people participate and benefit from the project in a sustainable manner.

75. **Free Prior and Informed Consent.** The project will apply the standard of Free Prior Informed Consent (FPIC) to the Metehara Solar PV Plant project activities in the design and implementation stages as they result in adverse impacts on lands and natural resources that are owned and used by people who meet the criteria of WB PS7. FPIC will also applied as project activities result in the relocation of these groups from lands of the groups in question. FPIC has been established in any given locality through good

faith negotiations between EEP and affected communities. The FPIC process (which has resulted in a documented agreement reflecting the outcome of the negotiation), has been carried out concurrently with the development of the formalized Community Development Plan and other mitigation and compensation packages.

PS8: Cultural Heritage

76. The natural features in Awash National Park as those heritage resources nearest to the project site. These include Mount Fentale, the Awash River gorge and waterfalls, and the hyena cave on the foot southern of Mount Fentale. Lake Beseka is also considered as a unique natural feature. The inventory of affected property during the resettlement action plan study has identified one graveyard site (with only one grave) which potentially require the relocation or removal. Iterative consultations have been held with the family members of the grave yard and a negotiated agreement reached. The negotiation with the family members has considered earlier experiences of grave yard removal in the project area. The RAP indicated a negotiated compensation budget with the family members that is estimated considering (i) the costs for removing the grave stones, (ii) preparing other burial-ground, (iii) transferring and relocating the corpse, and (iv) conducting religious and cultural ceremonies. The procedures followed are consistent with Ethiopian Legislation and WB PS 8 provisions and in consultation with the family members. "Chance Find Procedures" of WB PS 8 will apply during the construction phase and will be incorporated in contractor and subcontractor bidding documents.

53. Access to Client Documentation

77. The ESIA and the RAP have been posted and are available on EEP website at <http://www.eep.gov.et> as well as in

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Please note project documentation will be available on site once the base camp is operational.

Until then, it can be collected in Ethiopia from:

Company Name: Ethiopian Electric Power
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P.O. Box Addis Ababa - Ethiopia
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