Project Information Document/ Identification/Concept Stage (PID)

Concept Stage | Date Prepared/Updated: 06-Feb-2023 | Report No: PIDC268121

BASIC INFORMATION

A. Basic Project Data

Project ID	Parent Project ID (if any)	Environmental and Social Risk Classification	Project Name
P179377		Substantial	Namibia Renewable Energy Scale Up Support Project
Region	**Country**	**Date PID Prepared**	**Estimated Date of Approval**
EASTERN AND SOUTHERN AFRICA	Namibia	06-Feb-2023	31-Mar-2023
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	NamPower	NamPower	

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	4.44
Total Financing	4.44
Financing Gap	0.00

DETAILS

Non-World Bank Group Financing

Trust Funds	4.44
Energy Sector Management Assistance Program	4.44

B. Introduction and Context

Country Context

Namibia is a small country of about 2.6 million people. Political stability and sound economic management have helped anchor poverty reduction and allowed Namibia to become an upper-middle income country. The 2022 Global Gender Gap Index ranked Namibia eight out of 146 and one of the 2 countries in Africa that has closed at least 80 percent of its gender gaps. However, socio-economic inequalities inherited from the past apartheid system remain extremely high and structural constraints to growth have hampered job creation. Unemployment is among the highest in the world at 33.4 percent in 2018. Progress toward

reducing inequality has been slow and as a result, Namibia has one of the highest rates of income inequality in the world. The consumption Gini index was 59.1 in 2015, down from 61 in 2009, and 63.3 in 2003.

Namibia's past steady economic growth has not been enough to deal with the country's triple challenge of high poverty, inequality, and unemployment. After experiencing average annual growth of 4.4 percent between 1991 and 2015, Namibia's economy has been in recession since 2016 and has since struggled to recover. GDP growth stagnated in 2016, before contracting in 2017, in part due to commodity price fluctuations, growth challenges in neighboring countries, declining investment and fiscal consolidation. While continued fiscal consolidation is essential to manage public debt, reducing poverty requires expansion of access to basic infrastructure and services. The weakening of growth since 2016 combined with the COVID-19 (coronavirus) shock setback progress in social development. This has been exacerbated by the shocks related to the war in Ukraine, which have raised pressures on domestic food and fuel prices.

Namibia is rich in mineral resources, including diamonds and uranium, and mining accounts for about 10 percent of GDP. Investments in mineral extraction and government spending have been important pillars of growth. Since independence in 1990, Namibia had achieved notable progress in reducing poverty, with the national official poverty rate dropping by more than half between 2003 and 2015. About 17.4 percent of Namibians lived below the national poverty line in 2016 compared with 37.5 in 2004. In part due to the negative impact of COVID-19 on livelihoods, poverty rates are estimated to have increased in recent years, with the upper middle-income poverty rate projected to stay around 62 percent until 2023.

Namibia's climate vulnerability, proneness to prolonged periods of drought, desertification, land and water resource degradation, and loss of biodiversity pose a risk to the economy. It is the driest country in Sub-Saharan Africa and severe drought conditions experienced in 2019 constrained agricultural output and led to a sharp decline in harvests. The reduction in precipitation also affected the broader economy through lower electricity and water generation, with repercussions on industrial production. While Namibia enjoyed good rains in 2021, severe drought is a persistent threat for economic performance and for the welfare of farmers.

Namibia aims to become the first zero emissions country in Africa, playing a vital role in fighting and adapting to climate change. Namibia's second Nationally Determined Contribution (NDC) makes an ambitious commitment to avoid 91 percent of Business -as-Usual (BAU) emissions by 2030 and achieve net zero emissions by 2050, representing an increase in ambition from its first NDC. Climate goals are also integrated in national plans. The Harambee Prosperity Plan II, launched in March 2021, is Namibia's presidential socioeconomic development plan, which articulates Namibia's plans for low carbon growth.

The COVID-19 pandemic has had an unprecedented impact on Namibia's economy and has exacerbated preexisting structural challenges. Real gross domestic product (GDP) contracted by 8.0 percent in 2020, the sharpest decline since independence. From a low base, the economy posted a partial rebound of 2.7 percent in 2021, largely underpinned by stronger output in mining and the tertiary sector. The mining sector, which is an important earner of foreign exchange, expanded by 10.1 percent boosted by a recovery in global demand. While tight pandemic-related restrictions were in place in parts of 2021, the gradual reopening allowed for improved activity in the hospitality sector and trade services. Namibia's economic performance is expected

to improve in 2022-23, premised on waning effects of the pandemic and strong prospects for the mining sector. GDP growth is projected to accelerate to 2.8 percent in 2022. Short-term risks to Namibia's recovery are dominated by pandemic uncertainties, amid relatively low vaccine coverage, and evolving effects of the war in Ukraine, which have fueled inflationary pressures and raised risks to global growth. Structural policy reforms will be required to raise Namibia's growth potential. The pandemic mostly affected already vulnerable people especially women and girls, which threatens to widen social and gender gaps further and increase already extremely high inequality.

Regional Context: The Southern Africa region is resource rich but energy poor. Namibia has natural gas and abundant and excellent solar and wind potential. Recently, Namibian offshore oil and gas have been discovered. South Africa and Botswana have significant coal reserves, the Democratic Republic of Congo has globally leading levels of hydropower, Zambia has hydropower, and Mozambique has large potential for hydropower and coal as well as globally significant quantities of natural gas. Even then, the SADC region[1] as a whole has an access rate of 50 percent – driven by extremely low levels of access in certain countries. Such mismatch between demand and supply centers can be smoothened with regional trade - aggregation of loads with different load profiles; efficient use of energy resources by exploiting large-scale power generation schemes that are viable on the basis of large, multi-country markets; and managing the risks of climate-related power shortages in hydro-dependent countries.

[1] The Southern African Development Community (SADC) is an inter-governmental organization for 16 countries in southern Africa – Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe.

The SADC member countries have created the Southern African Power Pool (SAPP) - an Intergovernmental Memorandum of Understanding (IGMOU) to set up the SAPP was signed in 1995. The utilities of 12 Southern African countries were the original members of the SAPP. Currently there are 17 members in SAPP with three private sector entities (Copperbelt Energy Corporation, Ndola Energy Corporation and Lunsemfwa Hydro Power Company) and two special purpose vehicles (HCB and MOTRACO) as members. The main grid systems of Botswana, the Democratic Republic of the Congo, Lesotho, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe form the existing regional network. While Malawi, Angola and Tanzania are not yet connected and are therefore not able to benefit from regional trade. For those that are connected, there are two market mechanisms used to promote regional trade across the SAPP: medium to long term bilateral power purchase agreements; and the SAPP trading platforms where intra-day, day-ahead, weekly, and monthly contracts are actively traded. South African coal-based power dominates the SAPP interconnected system.

Sectoral and Institutional Context

Nearly half of Namibia's population does not have access to electricity. The electricity access rate is around 55 percent, and the government aims to achieve universal access by 2040. Namibia's installed power capacity is 654 MW. NamPower owns and operates a 347 MW run-of-the-river hydropower station, 20 MW of solar PV, a 120 MW coal-fired power station that was commissioned in 1973 and a 22.5 MW Heavy-Fuel Oil (HFO) fired power station. Since Namibia has no significant coal resources of its own, the plant relies on coal-based electricity imported from South Africa, which is expensive. The plant also has very limited emission control equipment, leading to high levels of air pollutants from its operation. In June 2021, NamPower launched procurement for the 50 MW Anixas II HFO power plant in Walvis Bay. In addition, the country has 126.5 MW of solar PV and 5 MW of wind capacity through independent power producers (IPPs), as well as customer-owned solar PV capacity.[2]

Namibia remains heavily dependent on electricity imports. In 2020, Namibia imported 67.4 percent of its annual electricity consumption from the regional market, down from 71 percent in 2019 due to a drop in demand on account of the COVID-19 pandemic.[3] This has created an import dependence and a vulnerable electricity supply. Although imports from South Africa have so far remained reliable and of high quality, there is a potential risk of disruption in the future if sector conditions deteriorate in South Africa (RSA), or if the bilateral contracts for import of electricity, such as those with Eskom (RSA) and Zambia are not renewed in 2025. The relatively high import prices place a burden on the balance of payments. About 25 percent of Namibia's electricity imports come from South Africa (92 percent coal based), and one-third is purchased from the Southern African Power Pool (SAPP) market. Namibia also has Power Purchase Agreements (PPAs) in place with utilities in Botswana, Zambia, Zimbabwe, the Democratic Republic of Congo, and Mozambique. During peak hours – when coal fired electricity is highest – Namibian imports can rise to 90 percent. In this context, energy security has emerged as a key priority for the Government of the Republic of Namibia (GRN) in addition to electricity access.

The GRN has taken an important policy decision to increase domestic supply and reduce electricity import-dependency through the procurement of public and private investments in electricity generation and transmission. The GRN and NamPower have committed to reduce the current dependence on electricity imports by building more domestic generation capacity. The fifth National Development Plan (NDP5) for 2017/18 – 2021/22 outlines the importance of secure and reliable electricity provision to improve the country's competitiveness through lower import costs whilst accelerating rural electrification and underscoring the promotion of the role of IPPs and acceleration of investments in solar, wind, and biomass resources. NDP5 further set a target of 755 MW of locally generated energy capacity by 2022 (that remains to be achieved) and provision 70 percent of electricity needs from renewable resources by 2030. The National Renewable Energy Policy (NREP) adopted in 2017 aims to drive emerging technologies that substitute existing higher emission technologies with cleaner, more efficient technologies and signals the commitment of the government to a clean energy future powered by renewables. Similarly, Harambee Prosperity Plan II (HPP-II) for 2021-2025 identifies energy supply security through Renewable Energy (RE) resources as a key priority to achieve the intertwined economic and energy goals of the country. The Economic Recovery Programme, Green-Blue Namibia Economic Advancement Pillar published in December

2020 further underscores the role that Namibia's extensive RE resources will play in underpinning the economic recovery, whilst following principles of strong environmental stewardship and economic inclusion.

Substantial progress has already been made in recent years to accelerate the development of renewable electricity generation projects in Namibia. As part of the efforts to increase renewable domestic generation, NamPower commissioned a fourth turbine at the Ruacana hydropower plant in 2012. It is able to generate an extra 92 MW of power during the high-flow season – in addition to the 255 MW already installed. However, in recent years, Ruacana's operating capacity has been adversely impacted by droughts, and there is a need to ensure resilience of the electricity system, including through the diversification of supply sources. In 2015, the Namibian Renewable Energy Feed-In Tariff (REFIT) program was initiated in collaboration between Ministry of Mines and Energy (MME), the Electricity Control Board (ECB), and NamPower which led to the construction of 13 solar PV plants and one wind power plant with a cumulative capacity of 70 MW (5 MW each). In recent years, a strategic change in procurement has been implemented for large solar projects, which are now procured from IPPs via competitive auctions instead of feed-in tariffs.

Despite Namibia's excellent renewable energy resources, installed renewable capacity in the country is approximately 30 percent of total generation. Namibia has one of the highest solar irradiation levels in the world, at nearly 3000 kWh/m2 over a large part of the country and more than 300 sunny days in a year, as well as excellent wind resources. While renewables have been incorporated into the domestic supply mix in Namibia, to date this has only been on a small-scale. In addition, the absence of adequate levels of storage affects grid stability. However, the MME has prepared a revised version of the 2016 National Integrated Resource Plan (NIRP) to update underlying assumptions and in order to incorporate changing market conditions, specifically; reduced technology prices of renewables and storage (wind, solar PV, concentrated solar power or CSP, and energy storage). The decreases in global prices of solar and wind – associated with the exceptional availability level of the wind and solar resources in the country - offer an unprecedented economic opportunity for Namibia to diversify its generation mix and address the twin challenges of electricity access and energy security. Renewable energy development can reduce spending on electricity imports, expand domestic job creation, expand access to reliable and low-cost electricity, and help the country achieve its climate goals .

The draft 2022 NIRP makes commitments as large as 2850 MW of planned RE generation capacity until 2040 plus 650 MW of Battery Energy Storage Systems (BESS) in the context of an expected (mid-case) peak demand that the draft NIRP projects will grow to 1,243 MW in 2040 (up from 737 MW in 2021). Moreover, with grant funding from Kreditanstalt für Wiederaufbau (KfW), NamPower is currently endeavoring to develop the first pilot utility-scale storage facility in the country, to demonstrate that the battery storage technology can play a critical role in accelerating integration of variable renewable energy (from solar and wind), while also managing reliability of imports and a growing national peak electricity load. While paving the way on the technical front, such demonstration projects could also address concerns regarding perceived affordability and dispatchability of renewables and contribute to a developing a regulatory environment for the deployment of storage.

Namibia has set ambitious goals to become a regional leader in renewable energy deployment and the Namibia's National Renewable Energy Policy (2021) signals the government's commitment to a clean energy future for its people powered by renewables. The national renewable energy policy sets out objectives to (i) make renewable energy a vehicle for expanded access to affordable electricity in Namibia; (ii) create an enabling environment for renewable energy development; and (iii) enhance value chains to enable greater participation of Namibians in the sector.

The Government of Namibia also adopted a new market structure, the Modified Single Buyer (MSB) Model, which will allow certain electricity consumers and independent power producers (IPPs) to transact with each other directly and allow private generators to build new capacity specifically for export. However, concerns surrounding the implementation of the MSB Model, including the misalignment in timing with the revision of the NIRP and uncoordinated procurements for individual renewable energy projects by local authorities, remain to be addressed by the updated NIRP. Until the updated NIRP is finalized, it is likely that investors will focus on small-scale solar PV generation.

Namibia is part of the Mega Solar initiative, a partnership between the Governments of Namibia and Botswana, the African Development Bank, IBRD, IFC and the African Union Development Agency-New Partnership for Africa's Development ("AUDA-NEPAD") developed under USAID's Power Africa initiative to promote the regional goals of the Southern African Development Community (SADC) and the Southern Africa Power Pool (SAPP). The Mega Solar Memorandum of Intent was signed by the Minister of Mines of Energy of the Government of Namibia in April 2021. The Mega Solar initiative is expected to add large scale dispatchable solar capacity in Botswana and Namibia by 2024 to meet expected domestic demand for electricity; and new large scale dispatchable solar capacity to meet regional electricity demand by 2030.The World Bank is coordinating closely with (i) the Mega Solar partners (including USAID and AfDB) on support to renewables in Namibia and with (ii) KfW and GIZ on support to reach universal access in Namibia. The activities covered under this RETF grant are to be financed only by the World Bank and aim primarily at supporting domestic generation (connected to the grid) to serve domestic needs. AfdB is starting a regional market study under Mega Solar to analyze the export potential of Namibia. We will continue to coordinate closely as all of us are rolling out our support to Namibian counterparts.

[2] Precise figures for customer-owned installations to be confirmed, estimated 13 MW solar PV =/-80 MW rooftop solar PV.

[3] NamPower Annual Report (2021). NamPower. https://www.nampower.com.na/public/docs/annual-reports/NamPower%20Annual%20Report%202021.pdf

Relationship to CPF

The proposed Renewable Energy Scale Up Support Project will support Pillar 2 of the World Bank Group Country Partnership Strategy (CPS) for Namibia FY14- FY17,[4] as updated by the Performance Learning

Review FY18–FY 20.[5] *Pillar 2. Private Sector Development - Investments in Production and Infrastructure Program* sets out the objective that Namibia will have in place adequate base load energy to support industry development (DO 5.2) and notes the Government's interest in exploring the viability of deploying a concentrated solar power (CSP) plant. Pillar 2 also notes the World Bank would seek to assist Namibia to leverage the private sector for growth and sustainable development by adopting the "Maximizing Finance for Development" approach. The proposed small RETF can help address challenges associated with the development of bankable projects that can attract private sector investments using the Sustainable Renewables Risk Mitigation Initiative (SRMI) approach, which facilitates the development of sustainable and bankable renewable energy projects while maximizing the associated socio-economic benefits. This is expected to mitigate other risks associated with private sector participation through the development of detailed studies and suitable risk allocation frameworks that effectively leverage private finance.

Moreover, the World Bank conducted a Systematic Country Diagnostic (SCD) for Namibia in July 2021. The SCD will inform the World Bank in formulating its next CPF for Namibia. The SCD identifies extreme vulnerability to climate change as one of the four key binding constraints to inclusive economic growth. More specifically, the SCD notes that large-scale development of solar and wind industries can create jobs, boost growth in remote areas, and reduce inequality. The SCD also notes that the development of the renewable energy sector presents an opportunity to stimulate private investment across the value chain. The project will also be aligned with the World Bank Gender Strategy (FY16-23) which underlines key gender gaps and actions necessary to close existing gender disparities in the renewable energy sector.

[4] Discussed by the Board on June 26, 2013 (Report No. 77748-NA)

[5] Report No. 122699-NA

C. Project Development Objective(s)

Proposed Development Objective(s)

The development objective is to enable renewable energy development in Namibia.

Key Results

Key results include:

- Supporting the procurement of sustainable and bankable renewable energy IPP projects;
- Improved data availability related to renewable resources in Namibia; and
- Empower NamPower and other key stakeholders, as applicable, to attract private sector investments in the electricity sector.

D. Preliminary Description

Activities/Components

The project has five components - . The proposed grant will carry out TA supporting (i) renewable resource assessment, (ii) site studies and E&S studies for solar and wind projects and/or for grid investments needed for integration of variable renewable energy (VRE) as applicable, (iii) feasibility studies for solar/wind projects and/or for grid investments needed for integration of variable renewable energy (VRE) (such as BESS or transmission line) as applicable, (iv) transaction advisors for renewable energy IPP projects, and (v) capacity building to empower key stakeholders on the development of a sustainable and bankable pipeline of renewable energy projects (including on VRE integration aspects).

NamPower is finalizing an Integrated Supply Plan (ISP) outlining plans for the least cost expansion of the country's electricity generation mix. The ISP envisions significant addition of renewable energy capacity. However, due to the low proliferation of renewables in Namibia's grid, ensuring affordability and integration into the grid of electricity generated from large-scale renewable energy plants requires concessional finance. Concessional funding can be applied towards mitigating development and operating risks, such as absorbing upfront costs of site selection or improving infrastructure to absorb renewables in the electricity grid. This would improve the overall risk profile for private sector investors and ensure that expected rates of return on capital are consistent with the delivery of affordable electricity tariffs for consumers. Therefore, NamPower plans to access concessional finance to support renewable energy development.

The World Bank's SRMI has mobilized concessional resources, including from the Green Climate Fund (GCF), which covers Namibia as one of seven beneficiary Host Countries. The GCF Funded Activity Agreement (FAA) for Namibia comprises an approved funding envelop of USD 33.5 million of concessional financing (USD 20 million loan, USD 10 million guarantee, and USD 3.5 million grant funding). The GCF loan will provide long-term financing at concessional rates and aims to leverage significant amounts of private capital. GCF funds are to be blended with IBRD co-financing. The first investments to be enabled, envisaged at this stage based on the GCF proposal, include: (i) 200 MW solar dispatchable project(s), 200 MW wind project(s), and 200 MWh of battery storage (to be confirmed at a later stage).

The effective use of concessional finance to ensure the viability of renewable energy requires that projects be structured such that they are bankable and sustainable in the long-term, and risks are allocated appropriately between the public and private sector. Mitigating the development risks can further improve the risk profile of the projects, hence making them more affordable for the country (by reducing the risk premium embedded in the tariff proposed by IPPs). This requires preparatory work, such as resource assessments to estimate expected generation based on bankable data, safeguard studies to ensure environmental and social risks are appropriately addressed, feasibility studies to ensure among other that electricity can be evacuated and integrated into the grid from the selected areas, transaction advisory to structure bankable procurement packages for the private sector, and capacity building to empower the counterparts. To carry out such preparatory work, an ESMAP-funded RETF grant of USD 4.5 million has been

mobilized by the Bank. The RETF grant is envisaged to provide technical assistance (TA) to develop sustainable and bankable RE projects and/or to support public investments enabling solar and wind projects, that are critical to unlocking private investments in renewable energy generation.

The proposed grant will carry out TA supporting renewable resource assessment, site studies and E&S studies for solar and wind projects, feasibility studies for solar/ wind projects and/or for grid investments needed for integration of variable renewable energy (VRE) (such as BESS or transmission line), transaction advisors for renewable energy IPP projects, with an aim to develop and procure sustainable and bankable RE projects, and capacity building activities to empower NamPower in RE development. Specifically:

Component 1: Resource assessment study for wind and/or solar (estimated cost at this stage 800k): The study aims to measure and collect bankable data for wind and/or solar in selected areas. The main objective of this assignment is to provide high quality measurement data from multiple sites (covering two concurrent years for wind) to reduce the resource risk and thereby support future development of wind/solar projects at these sites. It is expected to be carried out for specific sites by an international consulting firm. The contract is expected to result with bankable reporting data (after 24 months for the wind sites).

Component 2: Safeguards and site studies for solar and wind projects (estimated cost at this stage 800k): Once the sites are identified for solar and wind projects, site studies and environmental and social studies that integrate gender considerations to ensure all vulnerable groups benefit from the projects, will be carried out and are expected to cover the following list of topics. The full scope of the studies will be finalized through the development of detailed terms of reference.

- Environmental and Social Studies as per the Environmental Social Framework (ESF);
- Topography study;
- Geotechnical studies/Seismic study;
- Hydrological Study;
- Logistic study (wind)

Component 3: Feasibility Studies for Solar and Wind projects and/or VRE integration studies, including transmission line as applicable (estimated cost at this stage 1,000k): Feasibility studies will be carried out for solar/wind projects (targeting at this stage 200 MW solar, 200 MW wind and 200 MWh of BESS). The feasibility studies would identify synergies across solar and wind technologies as well as opportunities for exploring the use of BESS. The scope of work is expected to cover the analysis needed to inform the technical specifications of the solar/wind projects and/or VRE integration studies, including transmission line, as applicable. The feasibility studies will also take into consideration gender impacts pertinent to land resettlement in areas where installation of energy infrastructure will be necessary.

Component 4: Transaction advisory services for renewable energy IPPs (estimated cost at this stage 1,700k): Solar and wind generation capacity are expected to be developed through private sector IPPs. Transaction advisory services will support the GRN in structuring and tendering bankable and sustainable

projects for IPPs. The transaction advisory services are expected to support the specific projects defined during the resource measurement and the feasibility studies stage.

Component 5: Capacity building for GRN for RE development (estimated cost at this stage 200k): Capacity building activities on development and implementation of sustainable and bankable RE projects will be carried out for the Project Implementation Unit (PIU) for the RETF and will involve key public stakeholders involved in the solar/wind bidding process such as the Ministry of Mines and Energy (MME) and ECB in addition to the Utility (NamPower - PIU). This is expected to include the appointment of experts within the PIU to provide implementation support and the organization of south-south knowledge exchanges. It is important to note that the capacity building activities will ensure meaningful engagement of women in various roles during the different stages of the project including training and procurement activities.

The Bank is supporting GRN to mobilize additional resources to complement the RETF. This additional support includes USD 300,000 from ESMAP Trust Fund to support the development of a variable VRE integration study (under procurement), and capacity building for the GRN on the development and implementation of sustainable and bankable solar and wind projects (including a risk allocation workshop to be hosted jointly with IFC).

Environmental and Social Standards Relevance

E. Relevant Standards

ESS Standards		Relevance
ESS 1	Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10	Stakeholder Engagement and Information Disclosure	Relevant
ESS 2	Labor and Working Conditions	Relevant
ESS 3	Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4	Community Health and Safety	Relevant
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
ESS 8	Cultural Heritage	Relevant
ESS 9	Financial Intermediaries	Not Currently Relevant

Legal Operational Policies

Safeguard Policies	Triggered	Explanation (Optional)
Projects on International Waterways OP 7.50	No	
Projects in Disputed Areas OP 7.60	No	

Summary of Screening of Environmental and Social Risks and Impacts

The environmental and social risk is rated as substantial at this stage. The risks that have been assessed are not simply the impacts resulting from the TA activities themselves but also the potential downstream environmental and social implications that may arise from the future investments. The risks and impacts associated with the TA activities are likely to be minimal or negligible. However, the potential downstream impacts may be significant due to the scale of the investments, the limited information available during this stage of project preparation due to the sites not yet being known as well as the institutional capacity constraints. The TA activities include detailed site studies (Type 1) and capacity building (Type 3). The E&S impacts of carrying out the TA activities themselves are likely to be minimal. Potential environmental and social risks and impacts that have been identified for the TA activities are; ESS2 labor and working conditions including minor risks of work place sexual harassment, in addition, conducting research in some geographic areas could require consultations with communities and possibly with Indigenous People, with implications under ESS10 and ESS7. Potential impacts associated with the geotechnical and seismic studies which may include small scale and isolated impact on biodiversity or loss of vegetation (ESS 6), potential soil and ground water pollution due to accidental hydrocarbon spills or leaks from vehicles and generation of small quantities of waste (ESS 3) and occupational health and safety hazards and risk such as noise, dust and interaction with moving machinery/ equipment. ESS4 may also be relevant as the activities may possibly also have an impact on community health and safety, e.g. road safety through increased road circulation, possible spread of communicable diseases and minor risks of Sexual Exploitation and Abuse (SEA) /Sexual Harassment (SH) during the technical investigations. The TA outputs may have potential downstream environmental and social implications that may arise from the future investments. The locations of the study areas are not yet known and therefore the anticipated risk and impacts associated with the downstream development of the solar and wind parks cannot yet be fully assessed, and will only be known once the Environmental and Social Impact Assessment studies have been completed. However, drawing on similar solar and wind projects in the region, in particular, it is anticipated that the land take will be relatively large and as such may have implications relevant to the following standards, ESS1, 2, 3, 4, 5, 6, 8 and 10, and possibly 7 depending on whether Indigenous Peoples are present. These potential impacts will be assessed in the ESIA that is an output of the TA. The PIU capacity to manage E&S risks and impacts has also been considered in the overall E&S risk rating. Although the PIU has limited experience in implementing World Bank funded projects under the Environmental and Social Framework (ESF), it has some in-house E&S capacity and experience with executing large scale infrastructure projects.

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