



Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: February 22 2020 | Report No: PIDISDSA27134



BASIC INFORMATION

A. Basic Project Data

Country Pakistan	Project ID P167843	Project Name Additional Financing For Dasu Hydropower Phase I Project (Transmission Line)	Parent Project ID (if any) P121507
Parent Project Name Dasu Hydropower Stage I Project	Region SOUTH ASIA	Estimated Appraisal Date 24-Feb-2020	Estimated Board Date 31-Mar-2020
Practice Area (Lead) Energy & Extractives	Financing Instrument Investment Project Financing	Borrower(s) Islamic Republic of Pakistan, Ministry or Water Resources	Implementing Agency Water and Power Development Authority (WAPDA), National Transmission and Despatch Company

Proposed Development Objective(s) Parent

The overall project development objective is to facilitate the expansion of electricity supply of hydro-power in Pakistan. The Project would also improve access to socio-economic services for local communities in the project area and build WAPDA’s capacity to prepare future hydropower projects. This would be achieved by installing a 2,160 MW hydropower plant on the main Indus River, which can be expanded to 4,320 MW in future at very low cost. The Project is a “high-risk-high reward” operation aimed at providing low cost non-carbon renewable energy.

Components

Component A: Construction of the Main Hydraulic Structure on the Indus River (of which IDA \$10.0 million)

Component B: Power Generation Facilities

Component C: Preparatory Works (of which IDA \$183.9 million)

Component D: Transmission Line (of which IDA \$15.0 million, IBRD \$700 million)

Component E: Implementation of Social and Environmental Management Plans, and Glacial, Sediment River Monitoring (of which IDA \$266.5 million)

Component F: Construction Supervision, Monitoring and Evaluation of the Project Impacts and Social and Environmental Management Plans (of which IDA \$53.0 million)

Component G: Project Management Support, Capacity Building of WAPDA, Technical Assistance and Training (of which IDA \$60.0 million)

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

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Total Project Cost	782.10
Total Financing	782.10
of which IBRD/IDA	700.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	700.00
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Non-World Bank Group Financing

Counterpart Funding	82.10
Borrowing Agency	82.10

Environmental Assessment Category

A-Full Assessment

Decision

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Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Pakistan, the sixth most populous country in the world, is at a crossroads.** The economy accelerated with a gross domestic product (GDP) growth rate of 5.3 percent in fiscal year (FY)18 and slowed down to 3.5 percent in FY19 as fiscal and external imbalances persisted.¹ The country ranks low on the 2018 Human Capital Index (HCI), at 134 out of 157 countries. Gender disparities continue, and female labor force participation was only 26.5 percent in 2018. After the onset of another boom and bust cycle, a US\$6 billion International Monetary Fund (IMF) program commenced in July 2019. Growth is expected to pick up as structural reforms take effect and macroeconomic imbalances are addressed. Over the medium to long term, Pakistan needs to invest more and better in human capital, raise more

¹ World Bank Group. 2018. Pakistan Development Update 2018 – At a Cross Road.



revenue, simplify doing business procedures, expand regional trade and exports, and manage its natural endowments sustainably, as articulated in Pakistan@100: Shaping the Future.²

2. **Pakistan has made important strides in poverty reduction, but it remains an unfinished agenda.** Poverty declined from 64.3 percent in 2001 to 24.3 per cent in 2015, lifting more than 23 million people out of poverty over the past 15 years. However, there are significant disparities in poverty rates between rural (30.7 percent) and urban areas (12.5 percent), with poverty having declined faster in urban areas. Pakistan’s poverty reduction efforts have been widely documented. Remittances, safety net transfers and resilience of a large informal economy have contributed to poverty reduction. However, the challenges of poverty reduction are exacerbated by climate change and disaster-risk related vulnerabilities. In addition, inequalities in service delivery and low investment in the social sectors impede accumulation of human capital.

Sectoral and Institutional Context

3. **In the early 1990s Pakistan was one of the first countries to reform its power sector.** The first stages of reform aimed to attract private investment into the generation segment and were initially highly successful. The Government also unbundled the Power Wing of the Water and Power Development Authority (WAPDA), which had been a publicly owned, vertically integrated monopoly with responsibility for generation, transmission, and distribution: four thermal generation companies and eight distribution companies were formed, and the large hydropower assets remained with WAPDA. The National Transmission and Dispatch Company Limited (NTDC) was established as the transmission network owner and system operator. The National Electric Power Regulatory Authority (NEPRA) was also set up, with responsibility for licensing, determining tariffs, creating standards, and monitoring sector performance. Under the 18th Amendment to the Constitution, the provinces may generate, transmit, and distribute power within their territorial jurisdiction, although their use of these powers has so far been limited.

4. **Many reforms in the sector have been achieved since the 1990s and about 11,000 MW of generation have been added in Pakistan since 2013, but supply deficits persist and will increase in the future.** Although Pakistan had increased its installed capacity to 35,870 MW for the national grid system, in June 2019, the firm generation capability is only estimated to be 26,877 MW³. Peak generation demand in July 2019 was 28,800 MW, considering losses in the transmission and distribution, showing that the supply-demand gap remains. In addition, the demand projections are suppressed, at 500 kWh per capita Pakistan’s electricity consumption is about one-fourth of that of middle-income and one-seventh of the upper middle-income countries. If Pakistan is to reach middle-income country status as guided by Pak@100 study, its electricity supply not only needs to be increased by about 10 percent⁴, it also needs to be reliable and cost-effective. The Government plans to add about 18,000 MW by 2028. However, it will need about twice as much to meet the 10 percent growth in demand while in parallel retiring the high-cost old inefficient thermal plants.

² World Bank. 2019. Pakistan at 100: Shaping the Future. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31335> License: CC BY 3.0 IGO.

³ State of Industry Report, 2018, NEPRA

⁴ According to NTDC’s supply demand forecast – high growth scenario, for every 1 percent growth in GDP electricity supply increased by about 1.4 percent.



5. **Arrears in the power sector has added to fiscal vulnerability but are now being addressed.** Pakistan’s estimated cost of generation in FY20 is over US\$8.5 cents/kWh (with 21% from imported LNG-based plants at US\$13 cents/kWh and 22% from imported coal plants at US\$11 cents/kWh). Annually, the power sector incurs substantial losses due to the heavy reliance on costly imported fossil fuels, unbudgeted subsidies, lack of timely determination and implementation of tariffs, and the poor performance of the electricity distribution companies (DISCOs). The overall power sector debt (circular debt) as of June 2019 totaled PKR1.6 trillion (around 4.2 percent of GDP), and a large share of this debt will eventually become a fiscal liability that the government will have to settle. The increasing level of arrears has affected not only generation but also the investments needed to upgrade and expand additional generation needed and the transmission and distribution network, thus compounding the problem. The government has now emerged on power sector reforms to reduce the deficit of the sector through a Circular Debt Reduction Plan. In addition, the Government intends to accelerate the development of Renewable Energy, including hydropower, to reduce the cost of power generation and the dependence of imported fuel.

6. **Power sector’s foreign currency requirements are increasing pressure on the foreign currency reserves affecting the country’s economy.** Pakistan’s electricity mix has become more reliant on imported fossil fuels, thus rendering the sector more vulnerable to price volatility and foreign exchange risks. More than 70% of the additional capacity added in recent years is based on imported fuels, mainly coal and liquefied natural gas (LNG), while use of cost-effective indigenous renewable energy sources like hydropower, wind and solar remain limited. In FY19, 40% of the electricity power generated (and over 60% of thermal generation) was through imported fuel, requiring US\$4 billion in foreign currency in fuel payments for power generation. This is affecting the balance of payments and adding to the current monetary crises Pakistan’s economy is facing. Pakistan needs to have at least base load generation on from domestic sources for which hydropower development is vital.

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C. Proposed Development Objective(s)

Original PDO

The overall project development objective will remain to facilitate the expansion of electricity supply of hydro-power in Pakistan. The Project would also improve access to socio-economic services for local communities in the project area and build WAPDA’s capacity to prepare future hydropower projects. This would be achieved by installing a 2,160 MW hydropower plant on the main Indus River, which can be expanded to 4,320 MW in future at very low cost. The Project is a “high-risk-high reward” operation aimed at providing low cost non-carbon renewable energy.

Current PDO

There will be no changes to the PDO.

Key Results

D. Project Description

7. DHP is run-of-river project located on the Indus River about 240 km upstream from Tarbela dam. It is about 8 km from Dasu Town, capital of Upper Kohistan District of Khyber Pakhtunkhwa Province (KP), and about 350 km from Islamabad. The total project of 4,320 MW is being developed in a staged design. DHP-I, currently under implementation, has an installed capacity of 2,160 MW and will generate over 12,000 GWh of renewable low-cost energy for supply to the central grid. Stage II will add another 2,160 MW and 6,000 GWh of electricity



per year and would be undertaken in future as Stage I nears completion⁵. DHP is essential for addressing the key issues faced by Pakistan's power sector by adding renewable generation at lower cost (lowering overall cost of generation in Pakistan and making electricity more affordable) and reducing the foreign currency requirements by using domestically available hydropower.

8. The Proposed Additional Financing (AF) would cover cost of construction of a 255 kilometers (km) long, 765 kilo-Volt (kV) High Voltage Alternating Current (HVAC) transmission line from DHP-I to the Islamabad West Substation, and a substation at Mansehra (**Component D of the Parent Project**). The geography of the line route (Dasu-Mansehra-Islamabad) is dominated by high mountains, varying in elevation from 1,000 to 3,200 meters above sea level, entailing hazards, such as earthquakes, steep slopes, landslides, river scouring, flooding and avalanches. Therefore, extraordinary level of technical work was given in designing the TL, its alignment and subcomponents.

9. **Component D1 (US\$654 million): Constructing a double circuit 765 kV transmission line from Dasu to Islamabad and a substation at Mansehra, to evacuate power from the Dasu hydropower plant.** Subcomponent D1.1 would support the construction of an HVAC 765 kV double-circuit transmission line (installed on a single tower) from DHP-I to Islamabad West Substation, and subcomponent D1.2 would support construction of a substation at Mansehra that would not only have capacity to carry power generation from DHP but also for future expansions of lines to other parts of the country.

10. **Component D2 (US\$25 million): Supporting project management, technical assistance, training strategic studies, additional systems studies, and analytical work, pilot projects, preparation of future investments; and capacity building for NTDC as agreed with the Bank.** Subcomponent D2.1 would support project management, remaining design for the transmission line, technical assistance, training, strategic studies, additional systems studies, analytical work, for addressing technical, construction, financial or management issues, mitigation measures, as well pilot projects and preparation of investments as agreed with the Bank. Subcomponent D2.2 would support construction designs, construction supervision, contract management, project management, activities to advise and support NTDC and increase its capacity on OHS matters, activities to increase NTDC's capacity needed with respect to the rapid expansion of the network, including training for operation and maintenance and activities designed to strengthen the policy and legal framework for the development of transmission lines and substations (including a comprehensive review of current laws and regulations, and the drafting of proposed amendments to be proposed for approval by the appropriate authorities).

11. **Component D3 (US\$36.3 million): Implementing the environmental and social measures required under Safeguard Instruments for the Project.** Subcomponent D3.1 would support land and property acquisition and payment of compensation. Subcomponent D3.2 would support preparation of social and resettlement management plans, including revision of safeguard instruments, monitoring, training and capacity building activities. The implementation of the environmental management plans are the responsibility of the Contractors and budget for this is allocated under Component D1

12. The Government of Pakistan (GoP), through letters from the Economic Affairs Division (EAD), of April 6, 2016 and October 18, 2017, has requested the Bank to proceed with this stage of the Project. The closing date for the AF would be July 31, 2024. The closing date for the parent project would be extended from June 30, 2022 to July 31, 2024.

⁵ Stage I and II each would have two power tunnels and 6 power units of 360 MW each.



E. Implementation

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Institutional and Implementation Arrangements

13. **Project Steering Committee (PSC).** A PSC for Dasu AF will be established and will work in tandem with the PSC under the Parent Project to provide planning and strategic guidance for project implementation as well as facilitate the inter-agency coordination at the highest level. The PSC would be chaired by the Secretary, Ministry of Energy (MOE), with Secretaries of Water, Planning, Finance, Economic Affairs Division (EAD), Chairman WAPDA, MD NTDC, Chief Secretary KPK, Additional Chief Secretary Development KPK, Commissioners of Hazara Division, and Malakand Division (Shangla), Deputy Commissioners of all eight districts through which TL will traverse Upper Kohistan, Lower Kohistan, Shangla, Battagram, Mansehra, Abbottabad, Haripur in KPK and Attock Punjab⁶. The Project Director of Dasu TL would be the Member-Secretary of the PSC.
14. **National Transmission and Dispatch Limited (NTDC)** will be responsible for Additional Financing Project implementation i.e. development of Dasu Transmission Line. NTDC was established in 1998 to take over from WAPDA its transmission and dispatch functions and all related assets and to be exclusively responsible for these functions in the whole country except in Karachi area. NTDC is responsible for development and O&M of Transmission lines above 132 kV. The company is governed by a Board of Directors consisting of 10 members appointed by the Ministry of Energy (MoE). The Board of Directors has the power to appoint or dismiss the company MD after getting clearance from the MoE. Within NTDC Project would be executed by the General Manager North under whom a Project Management Unit (PMU) has already been established that is working for carrying out detailed design of the Project, surveys, investigations and preparation of environment and social plans. PMU headed by a Project Director (Chief Engineer) has been staffed (technical, procurement, social and environmental management staff) already and an office has been established in Islamabad. The staffing level would be increased during the construction phase by adding construction and contract management as well as social and environment management staff. The Mansehra office would be enhanced and upon completion would be taken over by O&M staff. Further field offices may be established during construction period along the line such as Battagram, Besham and Dasu that would be closed or downsized after construction is completed.
15. **Project Supervision and Monitoring.** PMU for the TL would be supported by the Design and Supervision Consultants for TL (DSC-TL) that are already working in preparing of detailed design of all components of the Project, TL, Mansehra Station and Islamabad West Substation⁷. DSC-TL would continue for construction supervision, monitoring and support to the PMU for project and contract management, and other management aspects of the Project as required. For civil works contracts, the Project Director (PD, head of PMU) would serve as the Employer's Representative, and the DSC-TL would serve as the Engineer for construction supervision. At the site, Resident Engineers, appointed by the DSC-TL, together with a team of specialists and inspectors, would supervise the contractor. DSC-TL would also carry out the supervision of the equipment and installation contracts (like and Engineer) and check quality, quantities, and payment certificates etc. and carry out contract management. DSC-TL would make design of any changes required during construction, and also, provide support and assistance in the implementation of the RAPs, ESIA and ESMP, and project related implementation activities.

⁶ The total length of TL is about 255 km jurisdiction of 8 districts: Upper Kohistan, Lower Kohistan, Shangla, Battagram, Mansehra, Abbottabad, Haripur in the Province of Khyber Pakhtunkhwa, and Attock in the Province of Punjab.

⁷ Design and construction supervision of the Islamabad West Substation is being designed by the same consultants DTL, however, the investment would be coming from the National Transmission Modernization Project Phase I.



F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

DTL passes two provinces, Khyber Pakhtunkhwa (KP) and Punjab. Administratively, Project area involves 8 districts - Kohistan; Shangla; Battagram; Mansehra; Abbottabad; Haripur; and Attock. MGS will be constructed at village Sawan Maira, approximately 17 km from Mansehra City. The site is accessible through Mansehra main road to Lassan Nawab road and at Terralla Chowk to Village Sawan Maira. Most of the ethnic groups are Maiya, Pashto, Hindko, Kohistani, Gujri, Bahasa Melayu, Punjabi, Kashmiri. There are more than 50 major caste groups and tribes settled along the DTL route. No indigenous peoples are affected by the project alignment.

The project passes through mostly rural areas. More than 91.9% of the population located within RoW is rural, while the remaining is urban and semi-urban. Poverty is dominant in the project area, as 44% of the households earn less or close to the Official Poverty Line. Access to potable water supply is also low at approx. 30%. Farming is the major source of income, while others include government and private services, business and remittances. Land is the major determinant of farm income and big holding size is the symbol of dignity and honor in the rural set up. Women’s participation is reported high in child caring (82%) and household activities (91%). Women’s participation in farming (7%) and livestock management (9%) is low, and so is their participation in business and commerce.

Physiography of the DTL route comprises of snow-clad high-altitude mountains to low relief mountains. Deep valleys provide space for human settlements and fields for terraced agricultural practices. The maximum height of the DTL route is about 1,449m masl and average height is 930 masl. The low relief mountains are mostly covered with vegetation, of which thickness varies and is composed of grass, bushes, and small trees. Some pine tree population also exists on the high relief peaks. The area of the transmission line is highly disturbed due to the presence of settlements, livestock, KKH, and local roads. Prime habitats which host large mammals are available deeper in side valleys. There are no protected areas along the project corridor. However, 4 community managed game reserves (Khawajgan, Sheikh Abad, Jaliyo, Bhali Ghatti, and Lassan Thurkal) and one government managed game reserve (Mang). Out of the 215 species found in the area, 4 species are listed as Threatened: Sociable Lapwing, Steppe Eagle, the Common Pochard, and the Western Tragopan.

G. Environmental and Social Safeguards Specialists on the Team

- Chaohua Zhang, Social Specialist
- Imran-ul Haq, Social Specialist
- Takeaki Sato, Environmental Specialist
- Ahmad Imran Aslam, Environmental Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The policy continues to be triggered as the project has a potential to cause widespread and significant impacts hence this OP is triggered, and project is assessed as Category A.



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Performance Standards for Private Sector Activities OP/BP 4.03	No	
Natural Habitats OP/BP 4.04	Yes	This policy continues to be triggered since the DTL route passes through some diverse and sensitive habitats and the project has a potential to affect these habitats, associated key species, and also migratory birds. In response to the requirements of this OP, detailed baseline studies have been carried out along the DTL alignment, detailed assessment of potential impacts on these resources has been carried out including Avian Risk Assessment as part of this ESIA, and appropriate mitigation as well as control measures included in the ESMP.
Forests OP/BP 4.36	Yes	This policy has been triggered because of the parent project and the team will continue to retain it as it is as a precautionary measure for the transmission line project as well. Under the DTL project, artificially planted trees are expected to be felled. These are spread thinly along the 255 km stretch and are not likely to cause any significant changes in the health or quality of plantation or management, protection or utilization of plantations, or affect the rights of people and their dependence. The Eucalyptus plantation, a fast-growing invasive species in Pakistan were planted under the government’s Billion Tree Tsunami at Mansehra Grid Station and any loss will be replaced by native species.
Pest Management OP 4.09	No	This OP is not triggered since no agro-chemicals will be procured and or used as part of this project. NTDC does not use pesticides/agro-chemicals for clearing ROW of TL. Also, agriculture intensification is not part of CSP.
Physical Cultural Resources OP/BP 4.11	Yes	This policy has been triggered because of original DHPP. There are no known PCRs in the study area of DTL and MGS, nor were any identified during the field investigations and consultations. However, the Chance Find procedures are included in the ESMP.
Indigenous Peoples OP/BP 4.10	No	There are no indigenous people identified in the project area. The indigenous people exist only in three



valleys of Kalash which are outside of the area of project scope.

Involuntary Resettlement OP/BP 4.12

Yes

OP 4.12 continues to be triggered due to the potential need for permanent land acquisition needed for grid station and the existence of physical structures that might have to be removed.

Because the precise locations of the Mansehra Grid Station (MGS) and tower footings and alignment of the DTL were not known during the parent project, Land Acquisition and Resettlement Frameworks (LARF) prepared by NTDC were approved as a condition of World Bank appraisal to guide the land acquisition/resettlement planning process. Now, as the exact alignment and tower spotting is known for DTL and site demarcation has been done for MGS along with design, the RAPs have been prepared for DTL and MGS.

In addition to the other entitlements, NTDC will also pay compensation for land under towers. Losses of some structures, trees and crops during stringing operation will be compensated. Livelihood disturbance allowance, for the period disturbing access to agriculture land during stringing operations, equal to market value of gross harvest of the affected land for 1 year will also be paid in addition to the compensation that they are entitled.

During operation of the TL, the land used for the right-of-way will continue to be cultivated. However, structures will not be allowed to be built within the RoW for safety reasons. For this reason, the CSP has been developed for the affected communities to address this impact.

Safety of Dams OP/BP 4.37

Yes

This OP is triggered in the original DHP project as involved construction of a large dam

Projects on International Waterways OP/BP 7.50

Yes

This OP is triggered in the original DHP project as DHP is on River Indus which is classified as International Waterways

Projects in Disputed Areas OP/BP 7.60

No

The project is not located in disputed territory



KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

As the Additional Financing (AF) scope will not include any changes in PDO and will cover only the financing needed for the construction of Dasu Transmission Line and Mansehra Grid Station, the original safeguard policies will continue to apply and no change to the applicable policies is needed.

At the time of approval of Parent Project, EMAP and SRMP were prepared for the Hydropower Component and approved by the Bank. Those instruments are applicable to activities being financed and undertaken under the AF. EMAP comprises of 8 volumes including overall project EIA and CIA detailed terrestrial and aquatic management plans, PCR management plan and environmental management plan. In addition to EMAP, a separate transmission line specific ESIA including ESMP has been prepared for evacuation of power from DHP. For DTL, NTDC's Land Acquisition and Resettlement Framework (LARF) was reviewed and approved by the Bank since the exact alignment and design of the DTL and Mansehra Grid Station (MGS) were not ready. As the designs of DTL and MGS have now been prepared, the project-level ESIA and RAPs have been prepared by the implementing agency, which have been reviewed and cleared by the Bank and disclosed on the sites of NTDC and World Bank. The project-level ESIA/ESMP provides guidance for detailed management plans to be prepared by the contractors (including OHS Plan, Emergency Response Plan, Traffic Management Plan) before the start of the TL construction and approved by the Bank.

The potential significant environmental impacts during the construction phase on physical and biological environment could include rock fall and land sliding particularly in the mountainous and hilly areas having steep slopes, dust emissions caused by blasting as well as operations of machinery and running vehicles on earthen tracks within the RoW and along the access routes, management of spoils at tower locations especially at high altitude and steep slopes, collision of birds during stringing operation, loss of natural vegetation and trees in the RoW, vegetation clearance and felling of about 50,000 trees, fragmentation of habitat, disturbance to wildlife species by hunting, trapping, and or catching of wild species by the project personnel.

Occupational health and safety (OHS) hazards for the construction staff and other project personnel during construction phase include transportation and storage of explosives, impacts of drilling at tower location; risks associated with blasting, transportation of heavy loads in difficult mountainous terrain, working at height especially along the slopes for tower erection, handling of SF6 and grid station assembly, stringing conductors at road, river, and existing transmission line crossings.

The potential hazards of the transmission line during the operation and maintenance stage are limited to collision of migratory birds, OHS hazard risks of handling of faulted SF6 in circuit breakers and transformers maintenance and electrical contact and potential hazards of working in close proximity of live wires.

An Emergency Preparedness Plan for the dam will be prepared and public awareness/training will be undertaken closer to the time that the dam becomes operational.



The direct impacts of the project in terms of land taking, resettlement, loss of structures, crops and trees, decrease of access to land, will take place in the project corridor within the Right of Way (RoW) and the footprint of MGS.

DTL will involve construction of 674 towers over 66 acres of land, about half of which is barren land. It will traverse through a corridor having Right of Way (RoW) of 80 meters width spanning over 250 kms length. This will cover an area of 4,886 acres, mainly comprising 2,282 acres of cultivated and 2,160 acres of barren rocky lands. These lands belong to 1,088 households, of whom 412 will lose two seasons of crops and 510 will lose trees during the line stringing phase. The towers and line stringing will also affect 50 structures belonging to 29 households. Most of these are farm houses often used in busy harvest seasons. All the households have their regular residential houses in their villages. There will be some restriction on the land use under the DTL RoW such as no construction of permanent structures. The impact on livelihood for DTL will be temporary and will only be for two seasons due to loss of crops during stringing phase.

The main social impact of MGS is land taking. MGS will require an area of 158 acres at the grid station site. Most of the lands are barren, with only 2.63 acres of cultivated lands. This will affect 293 households. Six (6) households will lose only crops and 147 households will lose trees. Surveys indicate that most of the households have other non-farm incomes sources and the impacts of land loss, mostly unproductive, will not cause significant impacts on their income and livelihoods. There are no structures which will be impacted under the MGS.

The impacts due to labor influx under the project are not expected to be significant. The project is linear in nature and spreads through 250 km, mostly in remote and less populated areas. The construction force estimated at 1,450 personnel will be spread out through the geographical length and at different phases of the project. By design, the alignment has mostly avoided populated areas. Therefore, interaction between the Project construction labor force and the communities is expected to be limited, particularly with women due to the conservative culture in the region.

Other potential impacts of the project's construction on the local communities include temporary blockage of local routes, project-related traffic on local roads, noise generation from blasting causing nuisance and disturbance to local population, additional load on local resources, inadequate waste disposal and illegal waste disposal, camp related land use, access roads, noise and lights.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The proposed DTL alignment obstructs the fly-way of migratory and local birds. Large flocks of migrating birds follow the Indus valley fly-way with south ward migration starting from September to November and northward migration starting from February to March. An avian risk assessment was conducted under Detailed Ecological and Biodiversity Management Plans (DEBMP) along the DTL corridor. Collision risks are identified as the most pronounced in the vicinity of the Indus River and its tributaries, as many collision-prone species are closely associated with riverine, lacustrine, and wetland habitats. The study identified 12 highest-risk spans with a total length of 14,533 m of transmission alignment that are perpendicular to migration corridors of sensitive species.

Furthermore, the project will also result in permanent clearing of vegetation at MGS site and would restrict growth vegetation along DTL alignment.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.



Different types of alternatives were analyzed during the preparation of the safeguard instruments and the project design including the no project alternative, site/alignment alternatives and technological alternatives.

The analysis of alternatives carried out as part of this ESIA concludes that the 'no-project' alternative is not acceptable since there is no other possibility of evacuating power from the DHP and future hydropower plants that are planned to be constructed along the Indus River in future. There is no other transmission line in the area to evacuate power.

Alternates for the DTL route were considered at two levels. First, two broad routing options were considered. One of these routes started from Dasu and followed the Indus River up to Pattan, and from there it turned east and crossed the Palas valley, passed through Battagram and Mansehra districts, circumvented the Tarbela reservoir and reached the MGS site in Attock district of Punjab. The main advantage of this route was the shortest length of the proposed DTL. However, the Palas valley is an internationally recognized biodiversity hotspot, with good population of Western Tragopan pheasants and other sensitive species and stands of pristine moist temperate forest. The selected alignment avoided the Palas valley and followed the Indus river up to Thakot, from where it also turned east to Battagram and reached to the proposed MGS, from where it followed more or less the same route as for the earlier option and reached the proposed site of Islamabad West Grid Station in Attock district. This route is longer in length than the first option, however, it has been preferred over the first option because it avoids the Palas valley and its important habitat. At the second level of evaluating routing options, the entire route was divided in several segments and for each segment, several options were considered. Here the main criterion for selecting the final alignment was to avoid large settlements and towns. Further, the tower locations were also selected in a way to minimize impacts on houses and farm lands.

The site for Mansehra GS was carefully selected among three alternatives. The location in Sawan Maira was selected due to the availability of required land, and flat terrain, with no resettlement requirements, as the area selected is barren and located away from the settlements.

During the design phase, various voltage levels for the proposed DTL were also considered. On the basis of lesser cost and smaller footprint, the 765kV system has been selected for the DTL. In the case of Mansehra, where the setting is rural and space is available, the Air Insulated Substation (AIS) configuration has been chosen after comparing the Gas Insulated Substation (GIS) and AIS options. AIS also allows for more flexibility.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

NTDC has prepared an ESIA including ESMP and RAPs for the DTL and MGS to mitigate the indirect (labor influx, gender, public health and construction related impacts) and direct (land taking, resettlement and livelihood impacts) social impacts. Both RAPs are based on the findings of the inventory and census surveys as well as meetings and consultations with various Affected Persons (APs) and meet the requirements of the relevant World Bank safeguard policies.

For land taking and resettlement, based on the demands of affected households, NTDC has agreed to adopt a negotiated approach for the land taking and use. Initial round of discussions and negotiations have taken place with the affected communities during the resettlement planning process. Based on the negotiations, land compensation rates have been proposed and agreed. Based on local experiences, these rates appear to be higher than the market rates as assessed following the evaluation procedure under the law. NTDC has also agreed to allow the land owners to continue the use of the land under the towers. In addition, RAPs have provisions for livelihood allowances, training for livelihood restoration programs, special assistance for women and vulnerable groups so that APs can at least maintain their pre-project standards and improve as well. The RAP explains the negotiated approach, process and records the agreed rates



and other agreements from these negotiations. All losses of crops and trees will be compensated at market value for two seasons required for construction. The community support program has been designed to compensate for the restriction in use of land under the ROW.

To address the potentially negative environmental impacts of the project, appropriate mitigation measures have been included in this ESIA. These include implementing properly engineered slope protection and landslide and rock fall control measures at the tower locations where needed, controlled blasting and use of blast mats, water sprinkling to suppress dust emissions particularly near the settlements, using properly tuned vehicles and machinery to minimize exhaust emissions, utilization of spoils generated for back filling and disposal of excess materials to designated locations approved by supervision consultant, and preparing and implementing OHS plans. To compensate cutting trees for the DTL and MGS, the project has assigned more than US\$300,000 to plant five new trees for every cut tree. The planted trees will be indigenous species, which will be done under a tree plantation plan in collaboration with the provincial authorities.

To address the risk of bird collision and electrocution, bird markers will be installed to the upper wire of the transmission line in 12 high risk spans. Furthermore, the spacing between transmission line conductors has been increased to reduce chances of electrocution of birds found in the area (including migratory birds). During the operational phase, impacts on birds will be monitored and additional mitigation measures will be taken, if needed.

NTDC is the implementing agency for the DTL and MGS and has experience in administering donor funds and complying with donor's requirements regarding environmental and social due diligence, safeguards and oversight. A Project Management Unit (PMU) has been established within NTDC and has been mandated to manage the design, procurement, and construction activities of the DTL and MGS project. The PMU is headed by the Chief Engineer/Project Director and also includes a team of social and environmental professionals. For the implementation of RAP, several entities will be involved including the PMU itself, Environment and Social Impact Cell (ESIC) of the Dasu Transmission Line Project (DTLP) established within PMU, Project Consultants responsible for design and construction supervision of the project, relevant government departments, APs, and others.

NTDC will manage all safeguard related matters through its ESIC-DTLP team based in PMU and sub-teams in Camp Offices (CO) in coordination with local government. Currently the ESIC has the following specialists:

- Deputy Manager, Social and Environment: focal person for EHS, social and resettlement aspects
- Assistant Manager (Social): member;
- Assistant Manager (Environment): member.

Assistant Manager (Occupational Health and Safety) will be hired before commencement of construction works. Since there would be two contracts for construction of the TL and one contract for Mansehra Grid Station (MGS), ESIC will hire three sets of specialists – each including Assistant Manager - Social; Assistant Manager - Environment; and Assistant Manager-OHS.

In addition, the PMU will engage the following specialists, to support the ESIC during project implementation for the review of preparedness of the Contractors with regard to implementation of the elements of ESMP and including dedicated staffing and capacity:

- Independent Review Consultant on Environment, Health and Safety



- Independent Review Consultant on Social/Development Management

ESIC-DTLP will review and prepare safeguard documents (internal monitoring reports and Corrective Action Plan (CAP)) according to approved RAPs. For this reason, the ESIC-DTLP will provide the necessary training and capacity building to field staff including contractor, consultant, Grievance Redress Committee (GRC) and APs.

NTDC has established a grievance redress mechanism. The proposed AF will maintain the mechanism to respond to concerns and grievances of APs related to the environmental and social performance of the program. The grievance mechanism will be managed in a transparent, inclusive and accessible manner. The project will report periodically on grievances received and redressed by the project.

Reflections and Lesson Learnt from Past Experiences on Transmission and Distribution Sector

In this project, based on past transmission line project implementation experiences, the following are highlighted as “lesson learned,” for better management and implementation of the DTL.

Payment of Tower Pads: Under the Telegraphic Act, 1885, which is used for the construction of transmission lines in Pakistan, the land required for the towers pad/foundations is not acquired from the owner(s). Compensation is only paid to the owners for any structure, crop or tree that exists on the land and within Right of Way (RoW). Since there is no acquisition, the Land Acquisition Act of 1894 is not invoked in the case of construction of transmission line in Pakistan. However, the access to land under towers is reduced. The issue of non-payment for this reduced access had been one of the serious concerns raised by the APs and has resulted in delays in tower siting. This has been an experience of NTDC in most of its TL projects. In view of this lesson learned from the previous projects and to avoid delays and ensuing social tension, NTDC has agreed to pay allowance for reduced access to land under towers as a special provision.

Timely arrangement of funds for avoiding delays in compensation payment: Resettlement and land acquisition issues should be dealt with arranging funds for the timely disbursement of compensation payment to avoid protracted delays. The delay in payment of compensation can delay the implementation of the whole TL and can deteriorate the community and implementing agency relationship. NTDC has faced this problem in several of its transmission and distribution projects. Keeping this lesson in view, in the case of DTL, RAP implementation will be financed by WB and funds are earmarked for compensation payment before the commencement of work without any impediment to avoid APs grievances. This should expedite the project implementation tasks.

Direct purchase of private land through private negotiation for the Mansehra Grid Station: For public interest projects, the use of LA Act of 1894 has caused delays due to difficulties in assessing market or replacement value under the Act. Experiences with past project have shown this time and again. Private negotiation of land has proven to be more effective and expeditious in comparison land acquired through eminent domain. Keeping this in view, NTDC has planned to use private negotiations for this project. Accordingly, NTDC has established a high-powered Committee for Land Acquisition for all transmission projects to be funded by international financial institutions such as the World Bank and the Asian Development Bank. The Committee includes a member from the Revenue Department. The negotiated price will be paid through the District Collector’s Office to ensure transparency in the transactions.

Occupational Safety and Health (OHS) management. Implementation of OHS has been a challenge in DHP-I. The difficult geographical landscape of the project site and complex civil works make safety aspects extra demanding. For the transmission line, the stretch along the Indus River will have similar harsh terrain with challenging construction of towers on steep slopes. Therefore, in the design of the TL project, extra care has been taken to ensure OHS will be at a level of



international good practice. Technical Assistance, which is a subcomponent under the TL component, will be used to strengthen NTDC's institutional capacity for OHS. As guided by the legal agreements bidding documents will include requirements for enhanced OHS management by contractors to mitigate the higher risks due to geographical, geological and cultural setting. OHS management for the construction will be ensured by NTDC and the Supervision Consultant for the TL which will be led by an international OHS specialist supported by sufficient inspectors and field staff for supervising the contractors. The supervision consultant will ensure that OHSMP prepared by contractors are complete and follow relevant international OHS standards.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

The primary stakeholders are primarily the affected persons and general public including women residing in the project area - for example, people living in the project area particularly those in the ROW of the DTL and those affected by the footprint of the MGS. These are the people who are directly exposed to the project's impacts though in most cases they may not be receiving any direct benefit from the project. The secondary stakeholders are typically institutional stakeholders – for instance, related government department/agencies, local government, and organizations that may not be directly affected by the project; however, they may influence the project and its design. They include project proponent NTDC, other concerned departments such as WAPDA that may have a role during various phases of the project, regulatory agencies such as EPA, other relevant departments such as Forest and Wildlife, non-governmental organizations (NGOs), the broader interested communities including academia and journalists, and general public.

The guiding principle underlying consultations was that the environmental and social safeguards planning and implementation must follow a consultative and participatory process to ensure success of the project. This was further reinforced by the requirements of the World Bank OP 4.12 and Bank's Access to Information Policy (2010), which give high priority to public consultation and participation in designing and implementation of a socially and environmentally compliant project.

Detailed consultations were carried out through village meetings and focus group discussions (FGDs) with the communities, including women in the project area. Consultations were also carried out through key informants' interviews, structured surveys, informal group meetings and consultative workshops. Separate meetings were held with the institutional stakeholders in the form of one-to-one meetings. DTL & MGS related consultations were carried out in 2016 and 2019 by three separate teams covering social, resettlement, and environmental aspects of the project. Main topic discussed included description of project components, project activities and its impact assessment; land acquisition and resettlement process, eligibility criteria, compensation package, entitlements; grievances redress procedures and general concerns of the APs.

More than 700 people attended the consultations, among which 190 were women. The environmental assessment team conducted consultations in a total of 34 villages of the project area. A total of 170 people participated in these consultation meetings. The social assessment team conducted consultations in 17 villages with a total of 295 community members to obtain feedback particularly on social issues. Separate consultations were held with women in the project area in 17 separate focus group discussions (FGDs) involving 248 participants, making a total of 713 participants.

Special attention was given to make the consultation process gender inclusive and responsive and tailored to the needs of disadvantaged and vulnerable groups. To explore gender related issues, female staff were included in the Social/Environment Team. Formal meetings with women were held to explore their needs, problems and priorities related to project execution. In addition, individual interviews were also held with the affected women to effectively

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integrate their voices in the planning and implementation of the project. Women actively participated in the meetings and showed their support for the project.

The general concerns of the APs were focused on payment of compensation based on the market rates, forms of payment, employment in the construction activities, and adequate mechanism for grievance redress. APs were informed that NTDC will compensate the lost assets on negotiated rates and compensation disbursement will commence once the compensation package is finalized. Similarly, jobs will be provided preferably to local people in the construction activities

The consultations will be continued during the project implementation. To guide this process, a consultation framework has been included in the RAPs. In an effort to ensure effective communication and consultation with project affected people, a communication specialist will also be engaged by the project, who will help prepare implementation plan for communication and strategy to ensure that, among other things, timely and relevant information related to environmental, social, and safety issues are disseminated among APs in a form and manner that is accessible.

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B. Disclosure Requirements (N.B. The sections below appear only if corresponding safeguard policy is triggered)

Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank 7th November 2019	Date of submission for disclosure 22nd November 2019	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors Tentatively Mid February
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"In country" Disclosure
22nd November 2019

Resettlement Action Plan/Framework/Policy Process

Date of receipt by the Bank 1 st November 2019	Date of submission for disclosure 21 st November 2019
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"In country" Disclosure
21st November 2019

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting) (N.B. The sections below appear only if corresponding safeguard policy is triggered)

OP/BP/GP 4.01 - Environment Assessment



Does the project require a stand-alone EA (including EMP) report?

Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?

Yes

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?

Yes

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?

Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?

Yes

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?

Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

Yes

Is physical displacement/relocation expected?

Yes

Is economic displacement expected? (loss of assets or access to assets that leads to loss of income sources or other means of livelihoods)

Yes

OP/BP 4.37 - Safety of Dams

Have dam safety plans been prepared?

Yes

Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?

Yes

Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?

No

OP 7.50 - Projects on International Waterways

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Have the other riparians been notified of the project?

Yes

If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?

N/A

Has the RVP approved such an exception?

N/A

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

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Approved By

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