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Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 30-Dec-2022 | Report No: PIDA35126

**BASIC INFORMATION****A. Basic Project Data**

Country Ukraine	Project ID P180332	Project Name Restoration Project of Winterization and Energy Resources Ukraine	Parent Project ID (if any)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date 21-Nov-2022	Estimated Board Date 30-Dec-2022	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Government of Ukraine	Implementing Agency Ministry of Energy	

Proposed Development Objective(s)

The project development objective (PDO) is to enable the restoration of essential energy services in Ukraine

Components

Urgent emergency relief
Emergency equipment for the electricity transmission infrastructure
Emergency equipment for the heating infrastructure
Technical Assistance and Project Management

The processing of this project is applying the policy requirements exceptions for situations of urgent need of assistance or capacity constraints that are outlined in OP 10.00, paragraph 12.

Yes

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	500.00
Total Financing	200.00
of which IBRD/IDA	0.00
Financing Gap	300.00

DETAILS**Non-World Bank Group Financing**



Trust Funds	200.00
Ukraine Multi-Partner Trust Fund for Peacebuilding	200.00

Environmental and Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **The war in Ukraine has exacerbated vulnerabilities and heightened economic, social, and health risks for women and girls.** The full-scale invasion causes civilian casualties and destruction of civilian infrastructure, forcing people to flee their homes seeking safety, protection, and assistance. The Office of the United Nations High Commissioner for Human Rights recorded 17,595 civilian casualties in Ukraine as of December 18, including 6,826 deaths and 10,769 injuries.¹ At least 1,218 children in Ukraine have been killed or injured since the war escalated nine months ago ², on average over four children are killed or injured each day. The gender impact of the armed conflict depends on the country's demographic profile, which includes large numbers of older women, women and girls with disability, as well as internally displaced and refugee women and girls. Since the onset of the Russian invasion, nearly one-third of Ukrainians have been forced from their homes. As of December 5, approximately 5.9 million people have been displaced within Ukraine, 57 percent of whom are women (2 percent are pregnant or breastfeeding women) (IOM, December 5, see Figure 1 for further information)³. A high share of IDP households report vulnerabilities - a quarter report at least one member with a disability, 42 percent report having at least one older person (aged 60+) present, 39 percent report having at least one person who is chronically ill, 3 percent report have at least one infant, 14 percent report having at least one child aged 1-5 and 42 percent report having at least one child aged 5-17 (IOM, December 5)⁴. As of December 13, over 7.8 million people have fled their homes to the neighboring countries (UNHCR)⁵. Ninety percent of refugees are women and children, while most men aged 18–60 are required to stay behind under martial law. Ukraine has a large number of people with disabilities (over 2.7 million), of whom more than one million are women and girls.

¹ <https://www.ohchr.org/en/news/2022/12/ukraine-civilian-casualty-update-19-december-2022>

² <https://www.ohchr.org/en/news/2022/12/ukraine-civilian-casualty-update-19-december-2022>

³ International Organization for Migration (IOM), Ukraine Returns Report, December 2022

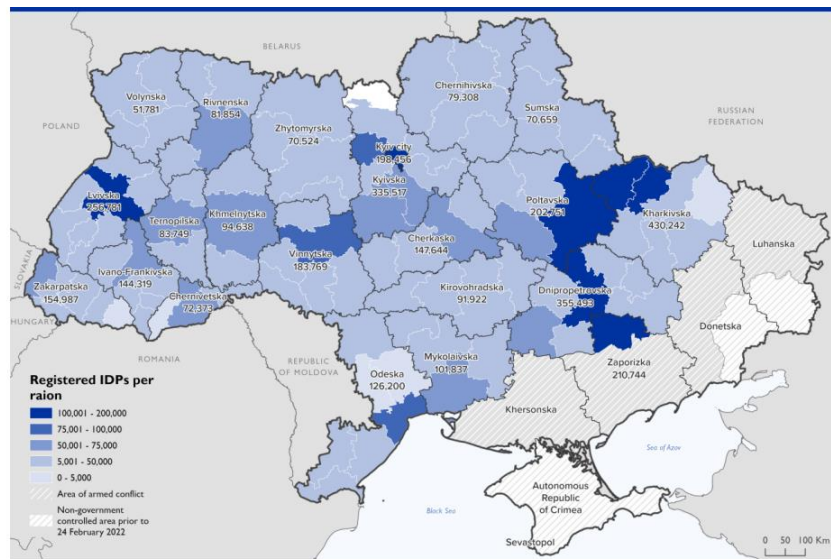
⁴ International Organization for Migration (IOM), Ukraine Returns Report, December 2022

⁵ <https://data.unhcr.org/en/situations/ukraine>



Rapid Gender Analysis conducted by the UN Women and CARE revealed that women are facing immense hardship when it comes to health, safety, and access to food as a result of the war.

Figure 1: IDP presence in Ukraine per region



Disclaimer: The data in this report was sourced from official IDP data recorded by hromada officials. As such, it likely represents an undercount of those who have been forced to flee their homes.

Source IOM, Round 16, November 2022

2. **The protracted war in Ukraine has had substantial economic, social, and poverty consequences and the ongoing assault on energy infrastructure has put millions of lives at risk in advance of heating season.**⁶ The contraction in gross domestic product (GDP) in 2022 is projected to be around 35 percent year-on-year. The downside risks are high, related to the unpredictability of the protracted war and high potential for further large-scale damage of infrastructure and negative social and poverty impacts. Based on the global poverty line of US\$6.85 per day (2017 purchasing power parity), poverty is projected to increase from 5.5 percent in 2021 to 25 percent in 2022. Headline inflation hit 24.6 percent in September 2022, with high food price inflation hurting the poor. Yet, despite the war, the Government has continued to deliver basic public services and the financial sector is functioning normally, stabilizing the foreign exchange market. However, the intense attacks to energy infrastructure since mid-September are challenging the ability of the government to keep providing energy and water supply in many regions, putting millions of lives at risk and substantially hindering economic activities in most of the country.

3. **Public revenues are under immense stress, while war-time expenditures are growing.** Before February 2022, the fiscal deficit was expected to narrow over the medium-term to just under 2.5 percent of GDP by 2024, helped by a recovery in tax revenues. However, since February 2022, the Government has made strategic decisions to reduce the tax burden on the population (both individuals and businesses) during a time of crisis, resulting in a sharp decline in tax revenues. Specifically, tax collection has been deferred for key businesses, land and municipal taxes have been suspended for the duration of the war, and the Government has shifted to a simplified tax regime for extended categories of taxpayers. In

⁶ All statistics in this and subsequent sections are estimates by World Bank Staff based on official statistics of Ukraine’s public authorities.



addition, overall war-related declines in economic activity (including due to out-migration) and the inability to collect taxes in conflict areas also contribute to constrained tax revenues. The Government has made efforts to cut non-essential current expenditures and capital spending and has reached an agreement with external creditors regarding a two-year debt deferral. Nevertheless, fiscal financing needs – consisting of the deficit (excluding grants) and debt repayments - are expected to grow from US\$4 billion per month in the first half of 2022 to US\$4.5 billion per month in the second half of 2022 (including US\$2 billion of non-military needs). In addition to non-military monthly financing needs, starting from September 2022, the Government could also face the high costs of gas purchases by Naftogaz for the heating season (US\$2.2 billion) and funding of the most critical reconstruction needs (US\$3.4 billion).

4. **Similarly, the war has generated immediate balance of payments pressures.** Exports have fallen as the Black Sea ports were closed from February until July 2022. Despite some resumption of agricultural exports under the deal brokered through the United Nations (UN), their capacity is limited. Beginning in May 2022, imports recovered quickly. On the capital account, pressures have emerged from the withdrawal of foreign exchange by Ukrainian refugees. Since February 2022, the National Bank of Ukraine has spent around US\$12 billion on currency interventions. This has eroded international reserves, which declined from a pre-war level of US\$29 billion to US\$22.4 billion at the end of July 2022. In August 2022, reserves improved to US\$25.4 billion thanks to donor support.

5. **Continued attacks on energy infrastructure are expected to exacerbate existing economic pressure as well as external imbalances.** Quantifying the aggregate economic impact of the targeted attacks on infrastructure is complicated by an absence of up-to-date data on the economic structure and the location and duration of electricity interruptions. On a qualitative basis, the impacts on the economy can be grouped into five categories. First, electricity is the key production input in select sectors that drove Ukraine's GDP prior to the war. These include transport, basic metal production and mining, where the loss of electricity as an input is likely to exacerbate additional constraints imposed by the war. Second, electricity is also used in the production of output in Ukraine's two leading sectors: wholesale and retail trade and agriculture. While the share of electricity among all inputs used in these sectors is comparatively low, anecdotal evidence suggests that blackouts can cause bottlenecks, e.g. in maize production, that affect aggregate output. Third, prior to the war Ukraine had started to export electricity to eastern EU countries and Moldova. Export revenue from these peaked in August 2022, earning the country export earnings of US\$73 million, but has since dropped to zero as the authorities instated a moratorium on exports. As export earnings per month accounted for less than 1 percent of total current account credits earned, the impact on the country's foreign exchange balance of the halt of electricity exports is likely manageable in the short term. However, estimates by the authorities suggest that potential electricity export revenues could reach about US\$200-250 million per month in the longer term. The attacks put these export revenues at risk. Fourth, reports have suggested that blackouts may lead to increased fuel imports to generate electricity in a decentral manner. This would add to an already high import bill for refined petroleum products, which amounted to US\$900 million in August 2022. Considering this scale and the amount of destruction, an on-going substitution from centralized to decentralized electricity production poses substantial balance of payments (BoP) risks. For instance, the back of the envelope calculation suggests that replacing only 1 percent of average monthly consumption with generators could generate an additional fuel import bill of US\$0.5 billion. Finally, recent strikes on infrastructure have also impacted banks' operations, undermining the functioning of a payment system that had been running smoothly since the beginning of the war. According to the NBU, around 77 percent of bank branches were



operational as of November 29, 2022, representing some decline following the recent attacks.

6. **The Government's proposed 2023 budget is austere with substantial compression of social and other non-military expenditures and the World Bank's contribution so far has been to ensure delivery of essential administrative expenditure.** The public sector wage bill (including health and education) will be cut by 10 percent, the minimum wage and subsistence minimum income (based on which social transfers are calculated) have been frozen in nominal terms, and capital expenditures have been minimized (US\$700 million), leaving most recovery and reconstruction needs unfunded. Even after these cuts in social expenditures, fiscal needs are estimated at US\$3-4 billion per month. The World Bank has been in the forefront of supporting the Government's ability to pay pensions, healthcare, and essential administrative expenditures, through the PEACE Project that has mobilized \$13 billion as of December 20, 2022.⁷

7. **The funding needs for recovery and reconstruction are gigantic.** Just taking into account the damages till the beginning of June 2022, funding needs were estimated at approximately US\$349 billion, which is more than 1.6 times Ukraine's 2021 GDP.⁸ About one-third of this amount (US\$105 billion) was estimated to be needed in the immediate- and short-term to address the most urgent needs, including social infrastructure (such as schools and hospitals), preparation for the upcoming winter through winterization and restoration of heating and energy to homes, urgent repairs, gas purchases, support to agriculture and social protection, and restoration of vital transport routes. However, these estimates did not include the recent attacks on the energy infrastructure, that have damaged over 50 percent of the energy assets and whose massive impact on losses and needs are under evaluation.

8. **Recovery and reconstruction investments will need to lay the groundwork for Ukraine to restore services to the population and economic activity and consolidate its development path towards a more modern, low-carbon, climate resilient and inclusive country that is more closely aligned with European standards.** Before the war Ukraine had made impressive commitments on mitigation measures to addressing climate change. Ukraine ratified the Paris Agreement in 2016 and submitted an ambitious updated National Determined Contribution (NDC2) in July 2021 with the target of an economy wide net GHG emission reduction of 65 percent by 2030 compared to the 1990 level. The country had also committed to reaching carbon neutrality by 2060. In January 2020, the government had published a draft concept of its Green Energy Transition of Ukraine until 2050, which aimed at increasing renewable energy share in the national energy balance up to 70 percent by 2050.⁹ The country has reiterated recently these commitments despite the war. Beyond mitigation, reconstruction investments will also need to consider Ukraine's vulnerability to the impact of climate change. This includes vulnerability to wildfire, droughts, high temperatures, heatwaves, heavy precipitation, mudslides, and floods. The ongoing war significantly exacerbates the climate risks in the country and weakens the capacity to manage climate-related vulnerabilities.

⁷ <https://www.worldbank.org/en/country/ukraine/brief/world-bank-emergency-financing-package-for-ukraine>

⁸ World Bank, Government of Ukraine, and European Commission. 2022. Ukraine Rapid Damage and Needs Assessment, August 2022. Washington, DC: World Bank.

⁹ Concept of "Green" Energy Transformation by 2050.

[https://mepr.gov.ua/files/images/news_2020/14022020/eng_pdf_%D0%B7%D0%B5%D0%BB%D0%B5%D0%BD%D0%B0%20%D0%BA%D0%BE%D0%BD%D1%86%D0%B5%D0%BF%D1%86%D1%96%D1%8F%20\(1\).pdf](https://mepr.gov.ua/files/images/news_2020/14022020/eng_pdf_%D0%B7%D0%B5%D0%BB%D0%B5%D0%BD%D0%B0%20%D0%BA%D0%BE%D0%BD%D1%86%D0%B5%D0%BF%D1%86%D1%96%D1%8F%20(1).pdf)



Sectoral and Institutional Context

Energy sector context between February – September 2022

9. **Until mid-September 2022, the energy facilities including electricity distribution network within cities had been damaged because of attacks to cities, but core energy infrastructure had not been the main target of hostilities .** The World Bank’s Rapid Damages and Needs Assessment (RDNA), as of June 2022, included the power sector (US\$1.4 billion), district heating (US\$0.7 billion), gas sector (US\$0.5 billion), transport fuel sector (US\$0.4 billion), and coal mining (US\$0.1 billion) – out of the total damages valued at US\$349 billion. It was estimated that US\$0.9 billion in damages and losses were incurred at the largest Zaporizhzhia nuclear power plant. Among the lost assets, the Okhtyrka, Chernihivska, Kremenchuk, and Azovstal combined heat and power (CHP) plants had already been destroyed by early June 2022. Control over the largest private distribution company (DTEK)’s coal power plant in the Luhansk region was lost. In Donetsk and Luhansk regions, the CHP plants in Lisichansk and Sievierodonetsk were recently destroyed, as was the Vuhlehirska TPP in Svitlodarsk. The transmission sector had suffered damage in some substations, but most damage was at the distribution level. In the district heating sector, the heating networks in Donetsk region were damaged at an estimated loss of US\$471 million. The gas sector damages were estimated around US\$500 million, which comprised US\$330 million in damage to gas distribution infrastructure reported by the largest operator of gas distribution networks, the Regional Gas Company, as well as almost US\$150 million reported by the Gas Transmission System Operator. Further, damages to 28 fuel depots in early June was estimated at around US\$250 million and to fuel stations at around US\$150 million.

10. **Ukraine’s electricity system had maintained stable operations and managed to export electricity to Europe.** Emergency synchronization with the European network (European Network of Transmission System Operators, or ENTSO-E) helped Ukraine maintain the power grid stable and ensure electricity supply despite the war and subsequent disconnection of the largest nuclear power plant of Zaporizhzhia. Ukraine has also exported electricity to ENTSO-E countries, which generated additional revenues for the electricity sector and helped Europe diversify its energy supply sources. The electricity trade capacity between Ukraine and ENTSO-E was initially restricted by ENTSO-E due to grid stability issues, but with more technical measures implemented, the trade capacity has been increased to 300 MW by the end of September 2022. Ukrenergo (UE) has been implementing necessary measures for expansion of the electricity trades capacity including the procurement of STATCOM¹⁰, which will be financed under the ongoing World Bank financed Second Power Transmission Project with a grant under the Ukraine Second Power Transmission Project Co-financing Single-Donor Trust Fund with a contribution from the German Government.

11. **The sector financial losses were partly being compensated for by electricity exports.** Electricity consumption decreased significantly in March and April 2022, about 35 percent less than consumption in the previous year, with the collection rate dropping around 65 percent, on average. In fact, total electricity consumption during the first half of 2022 was reduced by 20 percent

¹⁰ STATCOM is one of smart grid technologies to regulate reactive power.



compared to 2021. Various analyses estimated financial deficits for the electricity sector at US\$1–1.2 billion for the period March to June 2022 (around US\$220–295 million per month). While all sector stakeholders were affected, UE and Energoatom accumulated the highest deficits, even if some of their financial obligations could be deferred. With the increase in electricity exports, UE earned UAH 4.4 billion (equivalent to US\$120 million) from June till September 2022. With the planned further increase in electricity exports, UE had expected to receive the additional revenue of UAH 2 billion (equivalent to US\$54 million) per month on average.

Energy sector context September 2022 onwards

12. The recent targeted attacks to civilian energy infrastructure have hit critical points of the power network, causing devastating damages and leading to supply disruptions in all regions in Ukraine.

Intensified missile strikes and shelling conducted since early October 2022 have damaged more than 50 percent of Ukrainian power infrastructure, including at least 10 thermal Power Plants (TPPs)¹¹, 39 UE's extra high- and high-voltage transmission substations, and most hydro power plants (Kakhovka HPP dam was mined and Kyiv, Dniepr, Kremenchug, and Serednedniprovska HPPs were severely damaged). In addition, 90 percent of wind and 45-50 percent of solar capacity has been either damaged or disabled. Moreover, without electricity, the coal mines stopped their operation and cannot supply coal to power plants, leading to further generation disruptions. UE's substations in the western regions of Ukraine as well as Kyiv and Kharkiv have been particularly impacted. The most critical damages are on high voltage transmission substations, more precisely extra high voltage (750/330/220/110kV) transformers and switchgears. Damages on the transmission network, particularly transformers in transmission substations owned by UE, have led to disruptions in the electricity supply, as the transmission network functions as hubs in the power system between power plants and distribution networks. With the transmission network damaged, supply disruptions will have to continue even if generation capacity is sufficient and distribution networks are restored.

13. Despite efforts to restore connections and stabilize the electricity system, millions of Ukrainians remain without access to electricity and many areas have only a few hours of supply per day and export revenues have halted completely.

The loss of critical equipment within transmission substations has forced UE to implement scheduled outages throughout the country¹². In October 2022, the deficit of electricity supply in Kyiv has reached 30% – available supply capacity at 600-800 MW while the needs in Kyiv are at 1,000-1,200 MW, more scheduled outages are expected with consumptions increasing in the colder season. Repeated attacks in November temporarily left millions of people without access to electricity: 4.5 million consumers were left without electricity supply after the attack on November 3, 2022, almost 1 million customers after the November 5, 2022 attacks, and about 10 million Ukrainians in the city of Kyiv and 17 regions were disconnected after the attacks on November 18, 2022. More recently, a partial system blackout on November 23, 2022 left the majority of electricity consumers in all regions of Ukraine without electricity. As a result of non-stop restoration efforts by energy technicians, the power systems had been partially restored and most power plants were connected back to the grid, but their

¹¹ Damaged TPPs include Burshtynska (the largest TPP in Ukraine), Ladyzhynska, Kryvorizka, Kyiv (owned by private company DTEK), Trypil'skaya, and Zmiiv'skaya (owned by Centrenergo).

¹² Schedule outages were implemented in the city of Kyiv, the Kyiv, Chernihiv, Cherkasy, Zhytomyr, Sumy, Kharkiv, Poltava, Dnipropetrovsk, Zaporizhzhia, and Kirovohrad regions.



output remained very constrained due to significant damages to transmission substations, leading to scheduled load shedding and outages in most regions. The electricity export was halted due to the government's decision to ensure all remaining resources are focused on providing energy services to the local population.

14. **Disruptions in electricity supply have led to disruptions in water supply in major cities and grain exports.** Water supply in many cities had to be halted periodically. On October 31, 2022, two 330 kV substations were hit in the Kyiv region, which led to disconnection of 16 substations of 110 kV, including two substations of water supply (SE Kyivvodokanal), causing the ceasing of water supply to several districts in Kyiv. The population has had to wait in long lines to receive bottled water since then. The Bank is providing a number of diesel generators for water pumping stations through the recently activated CERC component under the Second Urban Infrastructure Project (UIP2) project (P132386), but significant additional support for the water sector is required. Furthermore, the energy infrastructure damages in Odesa region prevented further operation out of the port thereby putting grain exports at risk.

15. **The banking sector has been also severely affected by electricity supply disruptions.** While the payment system has been operating smoothly since the start of the war, recent strikes on infrastructure have shown vulnerabilities in banks' operations. Rocket attacks on cities and damage to energy infrastructure during October-December 2022 and ensuing outages of electricity and communication had a disruptive effect on the work of banks. Around 84 percent of bank branches were operational as of mid-December, representing a slight decrease since the start of these massive strikes on infrastructure. In a recent National Bank of Ukraine (NBU) survey, most banks note that power outages negatively affect the work of more than half of their branches. As of the beginning of December 2022, in almost half of the surveyed banks, less than a fifth of branches could work autonomously during the working day.

16. **As a result, NBU – jointly with banks - announced a plan to ensure continuity of the banking system amid possible long-term blackouts.** Systemically important banks have identified a list of 760 regular branches located in Kyiv and in 275 settlements in 22 oblasts, which will provide uninterrupted financial services to clients even in conditions of long-term power outages. These branches are supposed to be furnished with all the necessary backup electricity supply equipment and communication channels designed for continuous operations when there is no power. Plans are also being implemented to ensure the resupply of these branches with additional staff, cash register equipment, ATMs, and cash. In addition, several measures have already been taken including the cashback option at POS – essentially allowing cash withdrawal at merchants alongside a purchase - as well as preserving data security by transferring banks' IT systems to cloud-based solutions.

17. **Gas and district heating networks have also suffered important damages in the past two months.** The preliminary assessment is that overall damage to the district heating (DH) infrastructure has doubled, and it is estimated that the value of the immediate needs for the DH sector has already exceeded US\$500 million. By recent attacks, 580 boiler houses and heating substations were damaged, 253 of which have been repaired while the remaining are being repaired where possible. Kharkiv region is the most affected. Combined Heat and Power (CHP) facilities were also damaged (three of them in Kyiv) and its operation was limited by coal supply limitations. While some of the affected facilities have been fully restored, most are undergoing emergency restoration. District heating services, including Domestic Hot



Water (DHW) were severely impacted. About 40 percent of the population living in multifamily apartment buildings in urban areas are connected to DH with no other viable alternative. Therefore, the urban population are the most vulnerable group in case of no gas supply or destroyed DH infrastructure. The population living in individual family houses (mostly in rural and peri urban areas) have access to woodstoves, coal stoves, and electric heaters, and it might be easier for them to use wood and other solid fuels for heating.

18. The Government of Ukraine and energy utilities have reacted swiftly to mitigate the impact on the population, but the needs are staggering, and temperatures are falling below zero in most of the country. UE introduced a schedule of emergency outages of consumers in many regions¹³, while the Government called on Ukrainians to reduce electricity consumption¹⁴. Also, a decision was made to completely suspend the exports of electricity from October 11 onwards. The government has simplified the imports of some energy equipment by a separate protocol decision of the Cabinet of Ministers to ensure smooth customs clearance and some exemption from taxes and import duties. The State Customs Service has published guidelines regarding the need for declaring imports of generators to Ukraine. Oschadbank launched an interest free business lending program for the purchase and installation of equipment for uninterrupted operation of the power system. This enabled the import of 136,000 small generators of various types during the month of November.¹⁵ In the heating sector, the government committed to compensate district heating companies (DHCs) for the difference in tariffs¹⁶ and allocated 563 million UAH (equivalent to US\$15 million) to eight regions for purchasing firewood for free distribution to households in territories with a significant risk of repetitive damage due to hostilities. This included the transfer of 6,000 cubic meters of firewood and 6,000 potbelly stoves to residents of the areas of the Kherson region most affected by the hostilities. The Ministry of Environmental Protection and Natural Resources increased firewood stocks for the heating season by 1.5 times compared to last year. This should help prevent illegal logging and reduce deforestation risks. In the areas that are back under government control, the restoration of DH facilities continues. Residents in those communities where district heating was damaged and cannot be restored, are being advised to evacuate. Algorithms for evacuating the residents of each region have been developed, together with a network of protected winter shelters called “invincible points” where inhabitants can warm themselves and charge their electronic devices.

19. While mobile emergency energy solutions and alternative heating options can help alleviate the situation for the population, the provision of high voltage transmission equipment is critical to restore the electricity network and prevent further partial or total blackouts. The recent military attacks have severely damaged critical equipment such as extra high- and high voltage transformers and switchgears both in the transmission substations and power plants’ substations. Due to extensive damage, most of the equipment cannot be repaired and must be replaced with new one. UE submitted a list of urgent equipment which includes 750/330/220/110 kV transformers and switchgears. Such extra-high voltage equipment, particularly autotransformers, is specifically designed for and used in the transmission

¹³ Includes the city of Kyiv and the Kyiv region, the Cherkasy and Chernihiv regions, as well as the city of Zhytomyr. Outages usually last around four hours, though the number of shutdowns varies. In Kyiv, blackouts can last up to 12 hours.

¹⁴ According to Ukrenergo, residents of Kyiv region reduced peak consumption by 26.5 percent as an emergency response.

¹⁵ with a total customs value of almost US\$88 million

¹⁶ 14 billion UAH (equivalent to US\$370 million) is provided in the state budget; according to Naftogaz (NAK), arrears of district heating companies owed to NAK exceed 63 billion UAH (US\$1.7 billion).



networks in the former Soviet countries and hence not easily available with European manufacturers or with the Transmission System Operators in Europe¹⁷. Only a limited number of manufacturers can produce such equipment and its production could take from six to eight months. With additional substations damaged due to the most recent attacks in November, the total needs for urgent equipment for UE is estimated at US\$400 million. Without the replacement of damaged autotransformers with new ones, UE would need to continue rolling blackout and consumption restrictions due to the limited transmission capacity caused by the damages, which will severely threaten the supply of other critical services in winter. DSOs and generators also have urgent needs including medium voltage transformers and switchgears, as well as large generators, repair parts, and mobile equipment to restore electricity supplies quickly.

20. At this moment, per the Bank team’s estimate based on the available information, the need for urgent repairs and equipment for the electricity and heating sectors is estimated to be US\$900 million. Given the high risk of repeated attacks in both undamaged and recently repaired energy infrastructure, the provision of additional equipment beyond the current needs has been considered when assessing the funding gap. In addition, there are clear constraints in terms of availability of equipment, logistics as well as the ability of energy companies to install equipment and perform repairs under severe shelling. These constraints must be considered when determining the funding needs over time, as well as the project implementation period for the Bank to be able to verify the installation of equipment by end beneficiaries.

21. The equipment to be procured under the proposed project and its locations will be identified and prioritized by MoE, UE, and Ministry of Community and Territories Development (MCTD) to maximize impact on the population. In general, a power system is designed to withstand loss of one or two elements at the same time during peak time in order not to cause electricity supply disruptions. The current situation of Ukraine power system far exceeds the design standards given that dozens of elements of the power system, meaning transformers and feeders, are damaged and hence lost. In this situation supply disruptions are unavoidable. While all damaged facilities will have to be restored as quickly as possible, UE will prioritize more critical substations based on the magnitude of supply disruptions and the criticality of substations from the perspectives of nation-wide electricity transmission and local supply. UE has prepared a priority list and requested the WB to fund the most urgently needed equipment. Bank analysis has confirmed the need for the requested equipment.

22. Various donors and IFIs have already pledged donations and financial support for the procurement of urgent equipment, but funding is not sufficient to meet the sector’s increasing needs. The Energy Community Secretariat (EnCS), an international organization that supports EU neighboring countries join an integrated pan-European energy market, has established the “Ukraine Energy Support Fund” (UESF)¹⁸ to arrange procurement and donation of emergency energy equipment and fuels. USAID is supporting the UESF acting as a procurement agency in verifying the list of urgent equipment and procuring the equipment. UESF has received financial support from Denmark in the amount of US\$0.5

¹⁷ Main transmission voltages in Europe (ENTSO-E) are 400 and 220kV while the former Soviet countries (IPS/UPS system) use 750, 500, and 330 kV. ENTSO-E TSOs’ equipment is based on IEC standards while IPS/UPS TSOs’ equipment is based on GOST standards.

¹⁸ UESF has arranged donations of equipment equivalent to 900 metric tons and liquid fuels equivalent to 9000 metric tons from 72 companies in 20 countries.

<https://www.energy-community.org/regionalinitiatives/Ukraine.html>



million, while Germany and UK are planning to contribute to the fund¹⁹. USAID will allocate US\$50 million from the ongoing Energy Security Project technical assistance program for urgent heating needs and another US\$53 million for electricity infrastructure repairs, while the Nordic Environment Finance Corporation (NEFCO) is planning to provide US\$50 million for heating at the community level. EBRD plans to allocate USD 150 million of a 300 million EUR loan to UE²⁰ for emergency support (the remaining USD 150 million will provide liquidity support). Ukraine's Ministry of Energy has also requested emergency support to other countries, including Canada, Japan, and South Korea. As the targeted attacks continue, the financial gap continues to increase. Given that the estimated financial need for urgent equipment to restore energy services is at least US\$900 million, there is gap in financing estimated to be at least US\$500 million at the time this project was appraised.

23. **The proposed project is part of an international effort to ensure restoration of energy services but coordination among financiers and equipment manufacturers remains vital.** Given the multiple parallel support initiatives, donor coordination is essential to avoid duplication of work and ensure proper prioritization of funding, supplier capacity and logistics. Immediately after the initial targeted attacks in October 2022, Ministry of Energy and UE compiled a list of urgent equipment and distributed it to foreign government agencies, utilities, and manufacturers. MoE and UE have been receiving responses which include information about when and what kind of equipment can be supplied and in what forms of support. MoE and UE will prioritize support for quick delivery and grant funding. The G7 coordination mechanism is in place to arrange donations and fundings, with the U.S. taking a coordinating role, participated by G7 countries, IFIs and other development partners. Given that the donor communities are responding to the comprehensive list, it is critical to avoid duplications of supply and donations particularly for larger, more costly, and custom-made equipment such as transformers. With support from EnCS and EBRD, MoE is developing a centralized database to track needs, donations received, pledges and equipment under procurement. MoE also organizes weekly coordination meetings inviting all donors. Populating and maintaining this coordination tool and coordinating logistics and communications to donors and IFIs systems will require dedicated resources. The proposed project will support coordination efforts in close collaboration with the EnCS.

C. Relevance to Higher Level Objectives

24. **The Project is strongly aligned with the Government of Ukraine's directions for recovery outlined in the Ukraine Recovery Plan²¹, as well as the World Bank Group's (WBG) approach to supporting Ukraine, as described in the Relief, Recovery, and Resilient Reconstruction approach paper²².** The overarching goals of the Ukraine Recovery Plan are to provide economic, social, and environmental resilience, find efficient solutions for recovery of crucial economic and social processes and

¹⁹ According to the available information, Germany and UK has pledged in providing 56 million EUR and 50 million GBP respectively to the UESF.

²⁰ The loan is expected to be approved before the end of the calendar year. The actual amount to be available for procurement of goods is smaller due to custom tax, VAT and income tax.

²¹ <https://www.urc2022.com/urc2022-recovery-plan>

²²

<https://documents1.worldbank.org/curated/en/099608405122216371/pdf/IDU08c704e400de7a048930b8330494a329ab3ca.pdf>



natural ecosystems, and develop a modernization plan to ensure expedited sustainable economic growth and the well-being of the Ukrainian people. For the energy sector, the main goal is to strengthen integrated energy system resilience – increase ENTSO-E interconnections, link EU oil refineries with the storages in Western Ukraine, and build-up gas storage. The priority programs are to (i) prepare blocks for maximum availability during winter, including mothballed gas blocks; (ii) switch to biomass and biogas for district heating, where possible; (iii) launch an Energy Efficiency program; (iv) progress work on interconnection extension (power, oil products); and (v) build-up gas reserves in storages. Stable electricity supply is fundamental for all listed priorities. The WBG approach to revive Ukraine’s economy includes critical immediate actions to provide the foundation for regaining incomes and reducing poverty in the short-term, while identifying priorities to support resilient, inclusive recovery and reconstruction in the medium- to long-term. During the war (the Relief Phase), the priority is to preserve as much of economic capability as possible by (i) maintaining macro-financial management and the functioning of government; (ii) protecting the population under severe socio-economic stress; (iii) restoring essential infrastructure services; and (iv) preserving productive economic capacity (physical and human capital) as much as is feasible. In the energy sector, the immediate priority is to restore energy services, and over the medium term, harmonizing Ukraine’s energy model to European standards, facilitated by the interconnection to the European electricity transmission network, while maintaining a longer-term focus on resilience.

25. **The Project is also aligned with the WBG goals to end extreme poverty and boost shared prosperity, as well as other key cross-cutting strategies.** By repairing damage to critical infrastructure and restoring energy services, the Project will contribute to reestablishing a stable electricity supply. Access to reliable and quality energy supply can boost productivity and economic activity, which can in turn create opportunities for jobs and incomes. It can also improve public safety, and facilitate the delivery of education, health services and e-governance. The Project is also aligned with the Strategy for Fragility, Conflict, and Violence (2020-2025)²³, particularly Pillar II “Remaining engaged during conflicts and crisis situations”, which is premised on maintaining a development approach in areas where security is sufficient to implement efforts that build resilience, support service delivery, and promote livelihoods and job creation. It emphasizes the importance of well-targeted development interventions in such situations—especially when aid is limited, to restore social capital and collaboration among social groups, support private sector activities, and maintain trust in local institutions. By improving the public and private sector’s ability to deliver energy services, the project will help to strengthen the populations’ confidence in the state and mitigate people’s incentives to flee across borders as well as help to preserve Ukraine’s institutional capacity for a full recovery and resilient reconstruction once the war ends.

26. **While the ongoing war has fundamentally impacted the context for the current Country Partnership Framework (CPF) FY17-FY21, the Project is consistent with the CPF’s long-term development directions, many of which remain relevant.** Specifically, the Project is aligned with the first objective of CPF Focus Area 1 – to improve the quality of infrastructure services, particularly in energy. The Project is also aligned with Focus Area 3 on enhancing the Efficiency and Inclusiveness of Social Service Delivery. Preparation of the new CPF for 2022-2025 began in September 2021, with a Performance and Learning Review but was halted following the hostilities that started in February 2022 and the extended

²³ <http://documents.worldbank.org/curated/en/844591582815510521/World-Bank-Group-Strategy-for-Fragility-Conflict-and-Violence-2020-2025>



conflict.

27. **The Project aligns with the approach outlined in the World Bank Group’s “Relief, Recovery, and Resilient Reconstruction” paper²⁴.** The three key elements of this approach are: (i) prioritizing relief during the war to maintain the operation of the economy and protecting the population; (ii) implementing quick and coordinated actions to stimulate Recovery in the immediate aftermath of cessation of hostilities, effecting a timely exit from sub-optimal wartime policies; and (iii) designing and coordinating a Resilient Reconstruction strategy in the medium term, rebuilding both institutions and infrastructure. In line with this approach, the proposed Project would finance urgently needed physical investments to restore critical energy service which is a fundamental requirement for relief efforts while war remains ongoing. In addition, the project will help strengthen the capability of MoE to ready critical projects up to the standards needed for IFI financing.

28. **The Project supports the outcomes of the Ukraine Relief, Recovery, Reconstruction and Reform Trust Fund (URTF).** Specifically, Outcome 1.2 of the URTF results framework seeks to ensure that the Government of Ukraine “has financial and implementation support to execute critical recovery and reconstruction operations.” The Project’s interventions directly contribute to URTF Output 1.2b that supports this through “enabling emergency relief operations by restoring essential infrastructure.” Similarly, the proposed Project supports Outcome 2.1 of the URTF results framework which seeks to ensure that the Government of Ukraine “has (i) relevant data and analytics; and (ii) needed sectoral planning and project preparation capacity for recovery, reconstruction, and reform.” Component 4 of the proposed Project would specifically contribute to Outputs 2.1b, 2.1c, and 2.1d relating to this objective which cover institutional reforms, project preparation tasks and associated development of capabilities needed for recovery and reconstruction.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The project development objective (PDO) is to enable the restoration of essential energy services in Ukraine

Key Results

29. **To track the achievement of the PDO, the three key indicators will be utilized** (described below).

- Number of generators and distribution network equipment delivered and installed or operational (numbers)
- Number of equipment for the transmission system operator delivered and installed or operational (numbers)

²⁴<https://documents1.worldbank.org/curated/en/099608405122216371/pdf/IDU08c704e400de7a048930b8330494a329ab3ca.pdf>



- Number of heating equipment delivered and installed or operational (numbers)

30. Intermediate indicators:

- Operational generation capacity provided under the project (MW)
- Operational transformation capacity provided under the project (MVA)
- Operational heat-only-boiler capacity installed under the project (MW).



D. Project Description

31. **The Project consists of four components: (i) emergency relief, (ii) emergency repairs for the electricity transmission infrastructure; (iii) emergency repairs for the heating infrastructure; and (iv) project management and monitoring.** While the proposed project would start with an initial funding contribution in the amount of US\$200 million, further contributions are expected²⁵. The Project would finance procurement of mobile equipment for the provision of emergency electricity and heating services, and other energy components to restore critical energy services including transformers, switchgears, and repair parts. The Project will finance only the supply of goods including transportation to sites but not civil works since the beneficiaries of the Project have sufficient capacity and expertise to install, commission and operate the equipment allocated to them. Goods will be procured and transported by United Nations Office for Project Services (UNOPS) (under contract with MoE) till the delivery points designated by the end beneficiaries. Ownership of the assets will be transferred from MoE to end beneficiaries upon delivery, in accordance with Resolution of the Cabinet of Ministers No. 629 dated 28.08.2013.

32. **Retroactive financing would be applicable for Components 1, 2 and 3 subject to the compliance of the World Bank's Procurement Regulations.** The retroactive financing, if used, will have the objective of expediting

33. the delivery of components with long delivery time, that require initial payment of suppliers to initiate manufacturing, but it is expected that the delivery and installation of equipment will take place during the Project implementation and therefore, transportation, delivery and installation will be monitored following the same Project requirements.

34. **Component 1: Fast delivery emergency relief (US\$48.825 million funded; estimated funding need is US\$146.7 million):** The component will fund equipment and machinery necessary for the most urgent repairs in order to quickly restore electricity supply. Under this component the project will procure large and medium size mobile generators, which will enable to restore the electricity supply for critical public services. The component will also fund urgent equipment for the distribution system operators (DSOs), including "inter alia", medium/low voltage transformers and switchgears, specialized machineries and tools, repair parts (cables, wires, insulators, clamps, fuses, etc). End beneficiaries of this component will include public DSOs (such as Kharkivoblenergo, Zaporizhiaoblenergo, Mykolaivoblenergo, Khmelnytskoblenenergo, and Cherkasyoblenergo, among others) and public banks (that will receive medium size generators and satellite internet access terminals).

35. **Component 2: Emergency equipment for the electricity transmission infrastructure (US\$97.65 million funded; estimated funding need is US\$195.6 million):** The component will fund procurement of substation equipment for UE, including, inter alia, autotransformers, transformers, instrument transformers, reactors, circuit breakers, disconnectors, surge arresters, and relay protection devices. These are critical to restore the electricity supply for the entire country. The most urgent need is large autotransformers in the voltage levels of 750, 330 and 220 kV, since loss of these equipment has directly impacted on the electricity supply for the wider regions. While the manufacturing of the large equipment would take several months and the equipment is not easily available in TSOs in Europe due to the difference in the voltage level, various options are being explored for speedy delivery including potential transfers of already manufactured or work-in-progress equipment for UE²⁶ and other customers as well as potential priority production allocation by manufacturers. While international competitive procurements will be conducted, direct contracting could be considered where technical justifications applies. Local suppliers and manufacturers of equipment - inter alia – local state-owned enterprises (SOE manufacturers) could be considered eligible if technical and financial requirements are met and adequate risk mitigation measures are put in place, given the urgent situation and the current market conditions.



36. **Component 3: Emergency equipment for the heating services (US\$46.872 million funded; estimated funding need is US\$144.744 million):** The component will fund the procurement of essential equipment and materials for heating services. Those include mobile heat-only boilers, mobile mini cogeneration units, pipes, fittings and valves, and pumping sets/pumps. The mobile cogeneration units could also help rump up those parts of DH where the power supply is not available because of damaged power transformers. The project could also finance stationary boilers under exceptional cases. The project will also procure essential parts to repair district heating and gas networks, as well as equipment for liquid fuel depot repairs in some municipalities and equipment required to provide alternative heating options such as electric heating and biomass in those areas where the district heating repairs are not feasible. Potential cities covered under the component are Kharkiv, Mykolaiv, smaller cities in Chernihiv region, and Sumy, among others.

37. **Component 4: Project Management and Monitoring (US\$6.653 million funded: estimated funding need is US\$12.956 million):** The component will finance: (i) support for procurement, financial management, environmental and social risk management, monitoring and evaluation, audit and reporting, including support to procurement coordination and logistics among donors and in close collaboration with EnCS ; (ii) recruitment and Training of PIU and technical consultants; and (iii) Operating Costs including UNOPS fees. The PIU under MoE will be initially funded by the Second Power Transmission Project, and then co-funded by the proposed new project once approved. Funding is expected to support the implementation of the whole framework project (US\$500 million). The monitoring and evaluation consultant under (i) will support MoE to verify the equipment is transported, delivered, and installed as intended. The consultant will also help enhance remote supervision capabilities using technologies such as GPS and barcode tracking, and prepare reports on the progress of the project. Another consultant under (i) will support MoE on donor procurement coordination and logistic arrangements, as the procurement of equipment will need to be coordinated with other donors and international financing institutions.

38. **As funds become available within the framework project, the Project will support further procurement of critical energy equipment in coordination with development partners and humanitarian aid.** The current project design covers potential needs that can be covered with the additional funding available, with which the project will further procure same type of equipment, namely mobile generators, transformers, circuit breakers, disconnectors, surge arresters and relay protection for the transmission and distribution system operators, as well as heating equipment for district heating companies. Priorities will be given for the equipment and locations that enable larger impacts for the energy service restoration.

Table 1: Project components and associated financing

<i>Short description of components and main activities</i>	<i>Initial funding</i>	<i>Additional mobilization needs</i>	<i>Total Funding</i>
1: Immediate emergency relief - Large mobile generators - Distribution transformers - Specialized machineries - Distribution switchgears - Other equipment and materials for DSOs	US\$ 48.825 million	US\$ 97.875 million	US\$146.7 million
2: Emergency equipment for the electricity infrastructure - Transmission transformers	US\$ 97.65 million	US\$ 97.95 million	US\$195.6 million

²⁵ Interests expressed by the US, the UK, Netherland and Sweden.

²⁶ 750kV autotransformers are already procured for 750kV Dniprovaska substation, which was damaged by recent attacks.



- Transmission switchgears, namely circuit breakers, disconnectors etc - Relay protection devices - Other equipment and materials for UE			
3: Emergency equipment for the heating infrastructure - Mobile heat-only boilers - Mobile mini cogeneration units - Other equipment and materials for heating services [need to add here on the two HOBs]	US\$ 46.872 million	US\$ 97.872 million	US\$144.744 million
4: Project Management and Monitoring	US\$ 6.653 million	US\$ 6.303	US\$ 12.956 million
Total	US\$200 million	US\$300 million	US\$ 500 million

39. **The initial financing available at the time of Project approval and the large resource mobilization needs may affect the implementation of a subset of Project activities if resource mobilization needs are not realized.** The scope of activities supported by the initial financing is defined, and the project’s PDO can be achieved with initial financing. The World Bank together with the Government will agree on how remaining defined activities are prioritized when further funding becomes available. There is always a risk that resource mobilization falls below the US\$500 million target, which would affect the implementation of a subset of the project activities. The availability and timing of additional resources, as well as their potential impact on delays in future project implementation, will be closely monitored during the implementation Project. If timely resource mobilization looks as if it may become a binding constraint to Project implementation, it will necessitate accelerated efforts to identify further resources for the Project or, alternatively, will require restructuring to scale-down the scope and expected results of the Project, while remaining within the PDO.

Legal Operational Policies	
	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

40. **Standards relevant to the Project include ESS1, ESS2, ESS3, ESS4, ESS5, ESS8 and ESS10.** Energy infrastructure (especially high-voltage substations) were explicitly targeted by aerial bombardment and missile attacks to destroy the network and disrupt electricity and heat supply to communities and businesses. The threat of these attacks remain and may increase at any point, especially following repairs/rehabilitation attempts. The project finances procurement of equipment that will have to be transported, installed and commissioned by the beneficiaries (distribution system operators, district heating companies and UE). The environmental risks associated with the these



activities include usual construction-related risks such as dust, noise, disturbance, repairs-related pollution (including oil spills and leaks from the transformers and relevant facilities) and waste (both construction and hazardous waste, including electrical equipment waste), operation-related pollution (fuel burning by mobile boilers), OHS risks (including electrical safety, working at height, fire safety, emergency evacuation, exposure to PCBs). Social risks and impacts are mostly associated with project-related civil works (for reconstruction/rehabilitation/installation of infrastructure and equipment), lack of workers' awareness on occupational health and safety requirements, such as the use of Personal Protective Equipment (PPE) and safe workplace practices. Additionally, project-related risks may be exasperated by the war-related enhanced occupational health and safety risks, such as potential for community and worker health and safety incidents, targeted aerial attacks on the equipment shipments and the rehabilitated facilities, Explosive Remnants of War (ERW), decontamination and demining concerns.

41. **The PIU will prepare, disclose and consult upon** an Environmental and Social Management Framework (ESMF) in 90 days after Effective Date and prior to start of repair/rehabilitation works (including supply of materials and equipment necessary for such works). The ESMF will include procedures, criteria, and responsibilities for subproject screening for identifying those which might require Environmental and Social Management Plan (ESMP) or simplified ESMP Checklist. The ESMF will describe potential E&S impacts and mitigation measures for common groups of activities, including preparation of additional site-specific ES management plans (such as Traffic Management Plan, Waste Management Plan, etc.), as relevant. The ESMF will provide a monitoring plan format that includes monitoring indicators, timing, methods, institutional responsibilities. The ESMF will include labour management procedures as well as a Code of Conduct addressing risk of SEA/SH incidents and a grievance process for workers with contact details for service providers. The ESMF will also provide guidance on preparation of site-specific Emergency Preparedness and Response Plans which will cover measures to protect the safety and security of project personnel and nearby communities from war-related hazards and other relevant emergencies, including ERW management procedures.
42. **The SEP for the Project has been prepared and discussed** with only relevant stakeholders responsible for operationalization of each component given the sensitivity of the investment. It is not possible to hold public consultations with the broader groups of stakeholders and NGO due to the confidentiality of the Project.
43. **The Project is being prepared rapidly and involves an implementing agency (MoE) with no experience** of engaging with or implementing the requirements of WB ESF. At the same time, the supporting agencies UNOPS, UE and some of district heating companies have experience with WB-financed projects, both under safeguard policies and ESF. Furthermore, safety issues undermine the Borrower's and Bank's ability to supervise the Project activities, thus the Project will have to strongly rely on developed ES instrumental base and ES capacity of beneficiaries. It will be important that a trained environmental specialist is engaged for each the PIU to screen, assess and manage environmental impacts associated with the equipment purchase, transportation, installation and other associated activities, as well as provide ESF-related guidance to beneficiaries.



44. **GRM for the project will be established based on the national complaint system established at the Ministry of Energy.** It will undergo review to ensure compliance with the Bank procedure (including ability to receive grievances related to SEA/SH) and will be reflected in the ESCP. Project Operation Manual (POM) for the project will outline procedures on the GRM procedures and management. E&S Specialist under MoE will be responsible for coordinating GRM handling among DSO/DH/UE.

E. Implementation

Institutional and Implementation Arrangements

45. **The Project's Grant Agreement would be signed by the Ministry of Energy (MoE), as the grant beneficiary.** Upon signing the Grant, and per the Ukrainian national legislation, the MoE will register the grant according to the provisions of the Resolution of the Cabinet of Ministers of Ukraine No. 153, dated February 15, 2002, about the creation of a single system of attraction, use, and monitoring of international technical assistance. The same procedure will allow for proper customs clearance and transfer of ownership rights for procured equipment and installations to the final beneficiaries.

46. **MoE would be the single implementation agency responsible for the implementation of the entire project scope.** While the heating infrastructure supported under the project's Component 3 currently falls under the responsibility and mandate of Ministry Communities and Territories Development (MCTD), MoE agreed to take the responsibility for the implementation of the heating component with technical advice from MCTD and any other Ministry responsible for heating sector in the future after the ongoing ministerial re-organization²⁷. MoE already counts with an existing PIU, created under the ongoing WB financed project, the Second Power Transmission Project (PTP2: P146788). The PIU, which has implemented PTP2's technical assistance component, consists of the following full-time staff: head of PIU, who is also a procurement specialist, a financial management specialist, and an information support specialist supported by other administrative staff. The PIU will be responsible for the entire implementation of the project. Given the existing PIU has implemented only technical assistance, its capacity needs to be strengthened by hiring qualified experts including environmental and social expert and coordination consultants to ensure procurement is coordinated with activities from other donors.

47. **The MoE requested to engage UNOPS as its fiduciary agent with implementing role,** in particular to conduct procurement, financial management, sign contracts and process payments for goods supply packages. MoE has been overstretched due to the ongoing war soliciting funds and reaching to various financiers and hence needs help in the implementation of a project of this complexity. Furthermore, foreign suppliers have expressed concerns about payments from Ukrainian authorities/companies due to the war related risks while UNOPS can sign contracts with suppliers and make payments. As the situation in the country evolves, work conditions improve, and the capacity of MoE and its PIU increases, scope and duration of the roll of UNPOS may be reviewed in agreement with all parties involved and agreement of the World Bank The engagement of UNOPS is expected to be a transitory solution to mitigate potential risks and accelerate urgent procurement. The MoE, through its existing PIU, will retain the entire

²⁷ Ministry of Infrastructure is expected to become responsible for the provision of Heating services in the near future.



implementation responsibility, including for the environmental and social responsibilities functions. For that, the MoE will consolidate the capacities of its PIU by initially hiring an environmental specialist and a social specialist in the PIU, and subsequently, any other experts as required. MoE PIU will also coordinate on procurement and transportation of goods with the donor community in close coordination with EnCS.

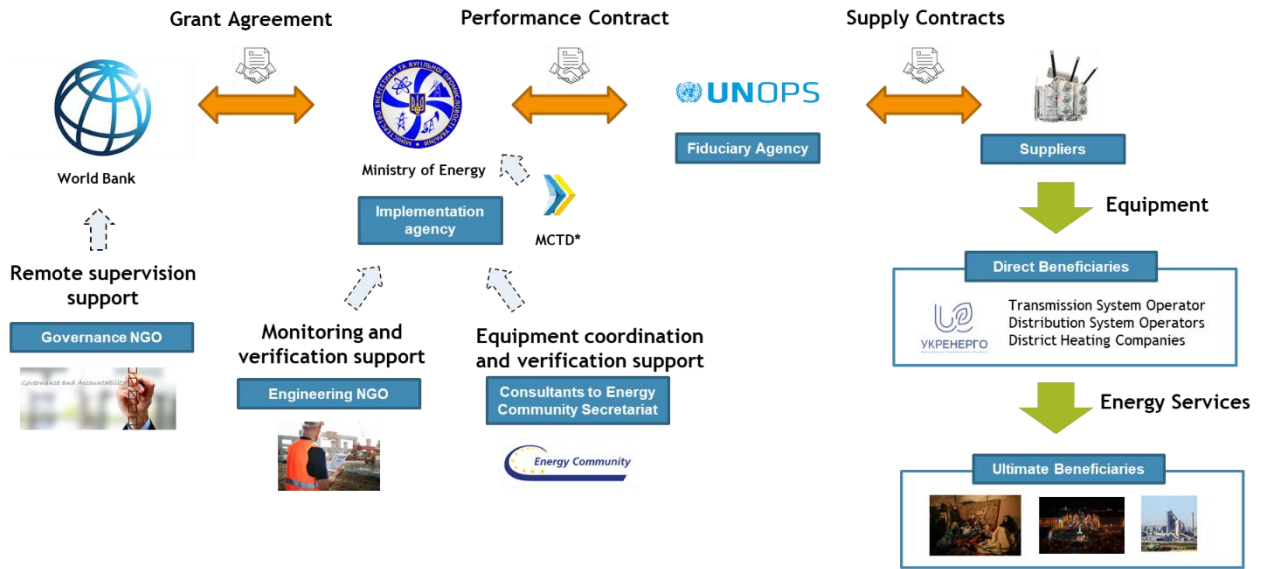
48. **MoE has identified several advantages in engaging UNOPS to support the project implementation.** First, UNOPS has the required technical capacity and knowledge per their prior experiences in implementing energy projects in conflict zones. Second, UNOPS has also developed logistic systems within Ukraine to transport goods, has presence in the ground and is familiar with the local processes. Finally, UNOPS is familiar with World Bank processes and environmental and social framework. Moreover, World Bank and UNOPS have a pre-approved framework agreement for emergency operations that will help to expedite the contractual arrangements. MoE will sign a “Delivery of Outputs Contract”²⁸ with UNOPS. The fees for UNOPS are included in Components 1, 2, and 3 and will be charged by UNOPS as a percentage of the procured packages.

49. **The Project will finance exclusively supply of goods including transportation to substation sites, while the direct beneficiaries, including distribution system operators (regional “Oblenergos”), district heating companies and UE will conduct installation and commissioning of the supplied goods** with help from local construction companies. Suppliers will deliver goods/equipment to hubs in Poland (or the border), while UNOPS will arrange transportation of goods/equipment to final locations using the grant proceeds. The works for the installation and commissioning of equipment will be conducted by the beneficiaries. The MoE PIU will be responsible for the entire scope of the project as well as environmental and social due diligence responsibilities with support from the beneficiaries (oblenergo, DHs, UE). The project will take advantage of bulk procurement and avoid the use of financial services that are increasingly difficult to access in Ukraine.

50. Figure 1 presents an overview of the project implementation arrangement. The detailed implementation arrangement will be described in the Project Operations Manual, which will be adopted within 30 days from the project’s effectiveness.

Figure 1: Implementation Arrangements

²⁸https://wbdocs.worldbank.org/wbdocs/component/drl?objectId=090224b08476926f&Reload=1669677125785&__dmfClientId=1669677125785&__dmfTzoff=-60



* Ministry of Communities and Territories Development (MCTD) will coordinate with MoE on Component 3 (heating)

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