Introduction to PIN Ukraine

PIN has been operational in Ukraine since 2003 and since 2014 has been delivering humanitarian assistance and recovery programming in Luhansk and Donetsk oblasts. Following Russia's invasion in February 2022, PIN leveraged its operations in Kyiv and extensive presence and networks in the east to be one of the first full scale responders. PIN's track record with civil society and government authorities enabled PIN to rapidly expand its humanitarian activities throughout Ukraine's regions, including difficult-to reach communities. PIN operates in close collaboration with civil society and the Government of Ukraine to ensure programming is needs-based and responsive to the evolving needs and priorities.

People In Need Organization (PIN) is a **SAG** (Strategic Advisory Group - WASH cluster) member, District Heating Strategic Working Group (DH-SWG) member, and one of most active actors in WASH sector restoring the infrastructure for public services (water, sewage, SWM) in a wide geographical area, including energy infrastructure for public service stations (electricity/gas), PIN is **1 of 15 humanitarian actors** supporting the essential service of district heating throughout Ukraine. PIN **co-leads** the Renewable Energy Technical Working Group under the WASH Cluster and co-chairs the **Energy Coordination Group**, leading the efforts to promote and integrate **backup and renewable energy solutions** (solar, wind, biogas) into the humanitarian and recovery response, while fostering **knowledge exchange and best practice sharing** among partners and actors.

Background:

In Ukraine, the need to restore access to basic public services remains critical, and the gap between available and required funding continues to widen. According to **RDNA4**[1], approximately US$ 0.7 billion in damages occurred between December 2023 and December 2024, bringing the total to US$ 6.4 billion since February 2022. The **Ministry of Energy (February 2025)** noted that Ukraine lost **10 GW** of generating capacity since the beginning of the invasion. The attacks on energy infrastructure are repetitive and affect the daily life of millions across the country. in **September 2025**, HRMMU[2] reported that, the energy infrastructure of Ukraine was attacked at least 31 times, causing civilian casualties and outages, for example, in October.2025, only in the Shostak district (Sumy), the city of Shostka and 38 settlements of the community (**nearly 72,000 people**) lost access to electricity (Shostka Mayor), affecting access to all public supplies and the functionality of vital institutions, later the access to water and energy is restored for few hours a day, while the full restore is challenging.

The thermal power plant following a series of explosions in Kyiv, Ukraine, October 2025 (CNN)

This includes Combined Heat and Power (CHP) stations, which caused significant losses in both electricity and district heating for affected communities. These heating and electricity shortages disrupted the functionality of **vital social institutions**, such as hospitals, schools, IDP collective/transitional centers, elderly care facilities, as well as public infrastructure like water and sewage stations, interfering with access to public services. Additionally, the impact severely affected the residential conditions of the affected populations, potentially leading to **further displacement**, as households can't survive without such services during harsh winter conditions in Ukraine.

[1] Rapid Damage and Needs Assessment (RDNA4)

[2] The United Nations Human Rights Monitoring Mission in Ukraine

Current Programming Areas and Opportunities:

1: District Heating Rehabilitation

PIN supports the **rehabilitation of district heating systems** across war-affected oblasts in Ukraine. The intervention targets **communal-level systems** and **institutional facilities level** such as schools, hospitals, elderly care centers, orphanages, and IDP centers—ensuring access to essential heating services during the harsh winter season. This support covers systems **damaged by conflict**, **non-functional system due to tear, or highly inefficient systems** which will also be considered in close coordination with the **WASH Cluster**, **local authorities**, and other actors.

The damage to district heating infrastructure is extensive, caused by both the war and long-term wear and tear. Attacks on energy infrastructure, such as **Combined Heat and Power (CHP)** stations, have significantly impacted access to heating services as well. This situation is further worsened by inefficiencies in energy and fuel use, old equipment, as well as the absence of effective leakage detection and control mechanisms, resulting in significant resource losses and placing additional strain on the financial sustainability of this critical service. Moreover, considerable support is needed to implement local decentralization or cogeneration plans, aiming to enhance the resilience of district heating infrastructure against future attacks.

The scope of rehabilitation includes the **provision** of critical components such as boilers, circulation and hot water pumps, pipelines, thermal insulation materials, valves, water treatment systems, operational support (consumes), and electrical equipment for boiler houses and networks, in addition, **co-generation units where needed.** The **decentralized solutions** will be done, then attacks may damage one of several smaller systems, affecting one part of the community, rather than one centralized system for the whole city, which enhances resilience against military actions and potential attacks

Implementation follows a **two-stage approach**:

- **Stage 1 (During winter):** Focus on urgent repairs and system reactivation to ensure the continued operation of district heating services.
- **Stage 2 (Post/before winter):** Concentrate on the replacement of outdated or inefficient equipment to strengthen long-term reliability and resilience of the heating infrastructure.

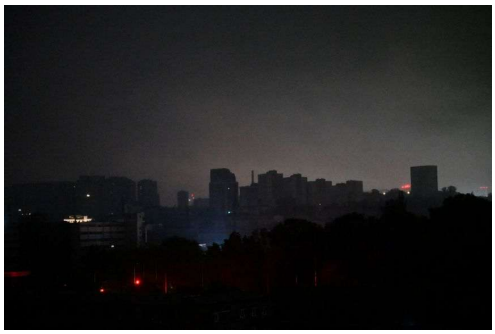
A functional district heating system is critical to ensuring that key institutions, such as hospitals, schools, collective centers for IDPs, and care facilities for the elderly and people with disabilities, can continue providing services to affected populations. Furthermore, investing in district heating infrastructure is fully justified in both short- and long-term responses, as it is **an essential service that helps reduce displacement** from affected communities, while also decreasing reliance on individual household winterization support, providing a **more stable and efficient solution for war-affected communities**.

PIN District Heating Support in East of Ukraine (2025)

2: Energy Infrastructure Repair for Public Services

PIN will continue and expand its support for the **rehabilitation and repair of electricity infrastructure serving essential public facilities and institutions in front-line and war-affected oblasts** of Ukraine. The intervention will target electricity grids, substations, transformation stations, and related electricity infrastructure, aiming to restore and stabilize the electricity supply to critical public institutions and facilities.

This directly benefits a wide range of essential facilities, **including** schools, hospitals, IDP centers, orphanages, and WASH stations (water stations, sanitation stations, district heating plant or boiler houses, solid waste management facilities)**,** ensuring the continuity of essential public services for all people in targeted communities.



Kyiv during a blackout following Russian drone and missile strikes. October.2025. (CNN)

The main focus is on **restoring the access after attacks or failures** that severely affect the functionality of the essential public station/facility, while operational and maintenance support is considered for areas with **repetitive attacks/shelling**. The support includes the **provision** of key rehabilitation components as well as operation and maintenance materials required to restore operational functionality, such as electrical cables, transformers, switchgears, circuit breakers, gas regulation valves, and maintenance toolkits.

Implementation is closely coordinated with relevant clusters, local authorities, and relevant actors, including the national **Energy Coordination Group**, to ensure complementarity, alignment with ongoing efforts.

3: Backup Energy and Renewable Solutions for Critical Public Services

Since the onset of the war, repeated attacks on Ukraine's energy infrastructure have resulted in a significant loss of power generation capacity. This led to scheduled power outages and other conservation measures, affecting millions across the country (**INSO**, 2024). Also, more than **70%** of surveyed WASH utilities reported a lack of backup energy sources (**UNICEF**, 2024). With rising fuel prices, the **fuel-based backup energy generators have become a burden on the shoulders** of public institutions and facilities rather than helping them overcome the energy outages due attacks or lack of energy generation, while **hybrid backup and renewable energy solutions offer cheaper and feasible solution** for continuity of public institutions/facilities functionality during energy cuts. This aligns with the advocacy led by cluster, Technical Working Groups, and several actors.[3]

PIN Solar Power for Water System in Remote Villages. Southern Ukraine (2025)

Under this activity, **PIN** will expand its ongoing efforts to provide backup and renewable energy solutions for essential public services, including **WASH facilities, and other critical public institutions** such as hospitals and IDP facilities. The aim is to ensure **restored and stable access to the essential public services** through provision of backup and renewable energy, all those systems are hybrid and equipped with batteries serve as storage to be used during energy outages, besides it positive impact on operation cost reduction and environment. Those batteries are chargeable through renewable method (solar power, wind, mixed) and grid.

The system and capacity is tailored to the needs of each targeted facility, ranging from tens of KWs **to 1 MW**, especially for centralized or city-level WASH or district heating stations, mixed solar and wind energy solutions equipped with batteries will be considered, offering more stable energy over different seasons, while biogas through wastewater treatment or bio waste digesting will be considered for electricity and/or

[3] https://drive.google.com/file/d/1OQUJkSi_inlmJtMW-rVKY5gXPhtMYDwf/view

heat generation where feasible. This will also serve as **decentralized** energy solutions, **enhancing resilience against attacks on national energy infrastructure**, as public stations/facilities will have their own energy source where needed.
This support includes the backup energy and renewable system, generators, and operation and maintenance materials. Operational materials could include fuel and spare parts where other efficient solutions are not feasible.

4: Community-Level Electricity Infrastructure Support

People in Need (PIN) will support the rehabilitation and stabilization of community-level electricity infrastructure to **restore access to reliable power for both residents and essential services within targeted communities**. The intervention aims to address **damage caused by conflict** and to repair systems that have become non-functional due to **technical failures** or wear and tear.
The support will include the rehabilitation of electricity grids, transformers, gas scheme (for energy generation), and operational materials for sub/stations that serve the entire community in the targeted area. Spare parts and maintenance equipment will be considered in areas closer to the front line or those with repetitive shelling. This will help people to have restored access to electricity, living in war-affected oblasts.
The major support for **CHP** (Combined Heat Power) plants will be done under this activity, as such plants **are repeatedly attacked**. The support under this activity ranges from tens to hundreds of thousands as needed, considering the technical assessment case by case.
Where feasible, PIN builds on the quick repair and initial emergency response through more comprehensive rehabilitation of the electricity infrastructure. This aims to improve the reliability and efficiency of the systems by replacing old or inefficient equipment and enhancing the overall stability of electricity supply.
This is carried out in collaboration with electricity providers, local authorities, and relevant coordination mechanisms, ensuring complementarity and alignment with other's efforts.

5: Holistic Approach for Energy Stability and Efficiency in Critical Public Facilities

People in Need (PIN) will continue its ongoing initiative, conduct a comprehensive assessment and upgrade of outdated electrical systems and equipment at **critical public institutions and WASH stations**.
PIN aims to support essential public facilities and stations, **improving their function reliability and energy efficiency,** and helping to ensure stable access to essential services for people living in war-affected oblasts.
In most public facilities, electrical and mechanical equipment are very old, **often dating back to the 1970s or 1980s**, and still remains in use today. These systems are typically inefficient, unreliable, and prone to repetitive failures, frequently leading to interruptions in service provision. Their high energy consumption places a heavy operational and financial burden on the management of public institutions and utilities, **resulting in unstable access to essential public services and supplies** for the surrounding communities.


PIN Water Supply System Support in Ukraine (2024)

PIN will replace old and inefficient electrical equipment, including pumps, electrical control cabins, boilers, and outdated generators, with modern, energy-efficient, and automated systems. This intervention aims to increase energy efficiency, enhance reliability, reduce operational costs, and stabilize the delivery of critical services at the community level.

The activity is closely linked and synergized with other interventions under this project, particularly the backup and renewable energy solutions and energy rehabilitation for public services. Together, these complementary efforts will contribute to **greater energy stability** and **resilient access to essential services** across targeted communities.

Additional PIN Added Value

- **Seasoned local partners with experience:** Collaborations with EcoClub, Ecoaction, and New Way bring specialized local expertise in renewable energy, climate policy, and green WASH solutions.
- **Expert knowledge in country:** PIN's country office houses a robust team of civil engineers, energy specialists, and WASH experts who have worked in frontline and de-occupied areas since 2014, ensuring technically sound and contextually appropriate interventions.
- **Global Technical Advisors:** PIN's global Knowledge, Learning, and Development (KLD) network of technical advisors provide technical expertise and facilitate knowledge sharing between the country program and external stakeholders and sectoral platforms.

Solar power plant for water station in another CP