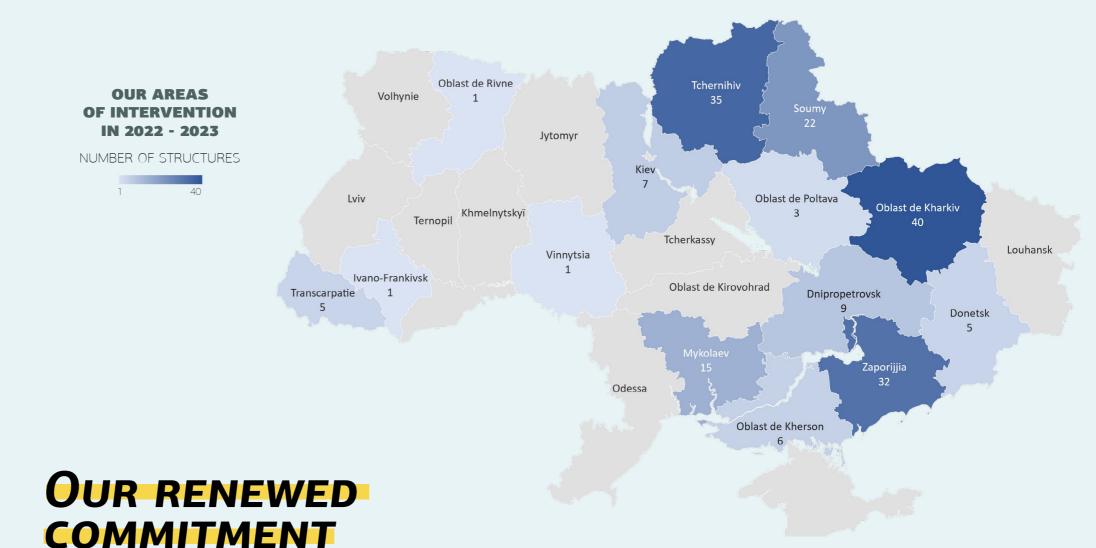


OUR COMMITMENT IN UKRAINE

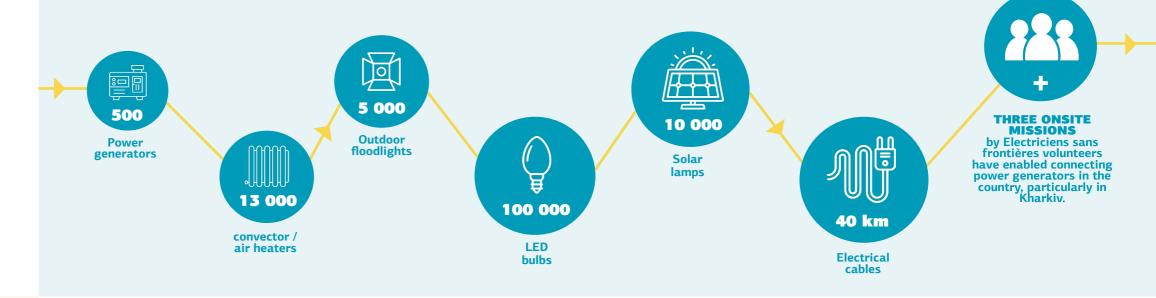


During winter 2022-2023, Russia's attacks on Ukraine's energy infrastructure intensified, resulting in widespread destruction and leaving nearly 12 million Ukrainians without access to electricity and heating¹. Since November 2023², Russia has stepped up its bombing campaigns aimed at saturating Ukrainian air defenses and retargeting energy facilities.

According to a January 2024 report by the International **Energy Agency, more than 50%** of electricity infrastructure has been damaged since the start of the war³. Despite significant efforts by the Ukrainian government to strengthen energy security ahead of winter, the full restoration of all facilities has proved impossible due to the new attacks that have resulted in further damage. This undermines the security of the country's electricity supply and tests the resilience of Ukraine's electricity system. **Companies and households** are thus forced to turn to auxiliary power generators.



Since March 2022, we have sent over **170 TONNES** of equipment to beneficiary structures :



More than 50% of electricity infrastructure has been damaged since the start of the war

In 2023, to pursue Electriciens sans frontières' commitment to helping civilian populations while decarbonizing its humanitarian emergency actions, **Electriciens sans** frontières teams have drawn up a new project with

their partners. The aim of our project is to meet the needs of the Ukrainian population, via a hybrid electricity generation solution to supply power in buildings.



TOWARDS A SUSTAINABLE ENERGY FUTURE: INTRODUCING HYBRID SOLUTIONS IN 2024

More than two years after the start of the conflict, Ukraine still faces challenges in terms of energy supply and environmental sustainability. To meet these challenges, it is essential to develop hybrid, decentralized, sustainable and lower-carbon energy solutions that support utilities while reducing greenhouse gas emissions. Since the early months of 2023, we have been working with the Ukrainian Ministry of Energy and local communities to raise awareness of the importance of deploying renewable solutions and the benefits they bring. This has resulted in the Hybrid Solutions 2023-2024 project, which aims to solve energy supply problems in Ukraine's healthcare and hospitality facilities, while enhancing their sustainability and efficiency.

This project has two main objectives:

- Assess energy needs ahead of winter 2023-2024: completed.
- ▶ Supply energy via a hybrid power generation solution to health and hospitality facilities (hospitals, health centers, reception centers, schools, etc.): in progress.

Assessing Ukraine's energy needs



In collaboration with Groupe URD and the Crisis and Support Center of the French Ministry of Europe and Foreign Affairs, we first carried out a crucial mission in Ukraine in September 2023. This mission covered various oblasts and cities, including Lviv, Kiev, Kharkiv, Dnipro, Kherson and Zaporijja.

The main objective of the mission was to assess the country's energy needs and learn from actions already taken to increase Ukraine's energy resilience in preparation for winter 2023-2024. We **assessed pre-existing energy installations** on sites strategically selected by our partners, ckecked the proper functioning of installations previously installed by Electriciens sans frontières, and carried out an **inventory of current energy needs**.

This assessment covered a variety of infrastructures such as pumping stations, hospitals, schools, single-family homes and maternity wards, and included interviews with influential figures such as mayors, representatives of the French Embassy in Ukraine, local partners, Ukrainian energy distributors, representatives of the Ministry of Industry, companies and foundations.

By carrying out a precise diagnosis of the country's energy needs, we are able to direct our actions towards a lasting and significant impact, and to continue our support for Ukraine in its quest for energy independence.

Following this assessment mission, a report was written with the aim of sharing the lessons learned from our analyses and thus improving humanitarian responses in Ukraine.





DEPLOYMENT OF HYBRID ELECTRICAL EQUIPMENT/FACILITIES

The installation of hybrid solutions - coupling electric generators with photovoltaic panels - is planned at some fifty pre-identified sites: hospitals, schools and pumping stations. To date, according to the priorities identified by our partners, the installation of hybrid systems will begin in March in sixteen schools in the Chernihiv, Rivne and Kharkiv oblasts.

This first phase will be closely followed by further installations on additional sites, in particular clinics and pumping stations supplying drinking water to villages with thousands of people.



These installations will be made possible by sending generators of different power capacities - 20 kVA for schools, between 7 and 12 kVA for pumping stations - in parallel to certain sites whose current capacities do not allow for optimal hybrid installations (no power generator or presence of insufficiently powerful generators).

Furthermore, Electriciens sans frontières volunteer experts will be on hand in spring to **provide training for Ukrainian technicians and practitioners**. The training courses will focus on the maintenance of the new facilities, encouraging the transfer of skills and capacity-building for local players.

▶ TESTIMONIAL

Our partner Medical Aid Committee in Zakarpattya (CAMZ)

"Since the start of the Russian military invasion, the Medical Aid Committee in Zakarpattya has expanded the scope of its humanitarian aid. Under difficult security conditions, the issues of energy efficiency, access to alternative sources of electricity and the creation of additional opportunities to support the viability of institutions remain very important. Given these circumstances and the experience of Electriciens sans frontières, the synergy of our efforts enables us to provide the fastest, most effective and most targeted assistance to affected civilians."

HUMANITARIAN SUPPLIES

Daily exchanges with our partners keep us up to date of progress and current events in Ukraine. In addition, our partners regularly report their needs for equipment, which Electriciens sans frontières teams try to meet as effectively as possible by calling on our network of partners in France.

To this end, and in parallel with the progress of the studies of the sites identified as beneficiaries of the next hybrid installations, around 32 tons of equipment - including at least 5,000 outdoor floodlights, 2,500 convectors, 12 electric generators from 20 to 100 kVA - have been sent to the beneficiary structures since the start of winter **2023-2024**. Over 5,000 solar lamps, 150 unit heaters and thousands of convectors will also be sent in the coming weeks. This is made possible by our local partners such as the Fortechnyi Foundation, Nadiia Ukraini, Comité d'aide médicale and Nadyia Espoir. We are also continuing our exchanges with JSC Khmelnytskoblenergo. This humanitarian hub coordinates, with the Ukrainian Ministry of Energy, all shipments of materials from the energy sector in Ukraine, particularly those destined for state-owned energy companies such as Ukrenergo, with whom we work regularly.





Around 93% of Ukrainians faced interruptions to essential **services** such as electricity, heating and water supply



FRENCH COMPANIES AT THE HEART OF UKRAINIAN ENERGY RECONSTRUCTION

According to the UNDP, during the winter of 2022, around 93% of Ukrainians faced interruptions to essential services such as electricity, heating and water supply, as a result of Russian attacks on Ukraine's energy infrastructure.

Power generation capacity in Ukraine is now down by almost 50% compared to pre-2022 levels⁴.

In response to this emergency situation, several French energy companies partners of Electriciens sans frontières (ENEDIS, RTE, SPIE, Intuis, Kohler, Legrand, the EDF Foundation, SOCALEC, MIIDEX Lighting...) have taken steps to provide concrete support by supplying quality electrical equipment to ensure reliable electricity distribution: hundreds of high-power generators, 5,000 outdoor floodlights, 100,000 LED bulbs, etc.

Electriciens sans frontières has also been supporting the Ukrainian energy sector, working with energy distributors such as Ukrenergo and Dtek. The aim of this collaboration is to strengthen the country's electricity infrastructure.

The mobilization of major French energy companies has been essential for this. In September 2022, over 41,000 meters of Nexans and Prysmian cables (reels and coils) were delivered to the Ukrainian distributors DTEK and Ukrenergo to guarantee a reliable supply of electricity and enable them to rebuild war-affected areas. In March 2023, a 400 kVA generator donated by EDF was delivered to power a strategic Ukrenergo substation. In April 2023, four generators, ranging from 80 to 225 kVA, donated by Enedis and RTE, reinforced the state energy distribution companies.

En partenariat avec





FONDATION GROUPE **edf**

















OUR LOCAL PARTNERS AT THE HEART OF THE ACTION

We are in regular contact with the local authorities as well as with our local partners:



Fonds AICM France - Ukraine:

(Association Internationale de Coopération Médicale) is an international humanitarian foundation set up in Ukraine in 2006, which implements large-scale projects to help communities improve healthcare through

decentralization and healthcare reform.



Fortechnyi Charitable Foundation launched The «Heat is where you are» initiative for the benefit of the Ukrainian population affected

by the conflict. With long-term relationships with companies and public institutions in the Chernihiv, Sumy and Kharkiv regions, the foundation is directly involved in the distribution and connection of generators to residents of the Northern region and social institutions.



Nadiia Ukraini Association, founded in 2022, aims to carry out humanitarian actions for the Ukrainian people. It helps deliver supplies to the Dnipro region/oblast, and in particular to the hospital and town hall in Pavlograd.



Nadvia Espoir Association, based in Mulhouse and founded in 1994, aims to provide technical, material and financial support to people in need in Ukraine: orphans, large families, widows, etc. From 2014 and following the war waged against the country's eastern oblasts (Luhansk

and Donetsk), the association reoriented its activity with the aim of helping victims of the war. This reorientation was confirmed in 2022 when Russia invaded Ukraine, leading the association to provide aid to refugee families in France, to wounded soldiers and to those affected by bombings.



• Energy Act for Ukraine Foundation is a Ukrainian charity established in 2022 in response to the emerging energy poverty crisis in Ukraine, a consequence of the largescale Russian invasion. The foundation focuses primarily on providing solar solutions to schools

and hospitals. As such, a partnership with Electriciens sans frontières has been established to help provide a targeted and effective response to high-need establishments.



Le Comité d'aide médicale (CAM) et Medical Aid Committee in Zakarpattya (CAMZ)

The association began its activities in 1996, working in partnership with the Comité Français d'Aide Médicale until 2005. It then pursued its work in other areas, such as the reform of public institutions in the field of protection for children and adults living with disabilities, and the promotion of civil society development in Ukraine. Initially based in Uzhgorood in the Transcarpathian region/oblast, CAM and CAMZ have extended their area of competence to other regions/oblasts.



BACK TO OUR INITIAL PROJECT IN UKRAINE: SHIPMENTS OF HEATING UNITS WINTER 2022-2023 AND ENERGY RESPONSES IN NEIGHBORING COUNTRIES

SUPPORTING NEIGHBOURING COUNTRIES

Electriciens sans frontières reacted swiftly to the first months of the war in Ukraine, mobilizing to support Ukrainian refugees in neighboring countries. Supported by the Crisis and Support Center of the French Ministry of Europe and Foreign Affairs, our interventions in Moldova and the dispatch of equipment to Slovakia aimed to ensure continued access to healthcare for the civilian population and refugees, despite power cuts.

The assessment of energy needs of Moldovan hospitals reported by the authorities to the French Minister of Foreign Affairs led to the installation of generators, most of them donated by Enedis, in facilities whose power supply was

precarious or insufficient to accommodate Moldovan and foreign populations. 29 hospitals in the country requested an in-depth technical analysis, and 22 of them benefited from the connection of generators to power their emergency services. Our actions, supported by the Crisis and Support Center, strengthened the resilience of the hospitals while ensuring continuity of care. Electriciens sans frontières was thus able to set up a reliable and secure source of energy, guaranteeing uninterrupted access to electricity.

Electriciens sans frontières also provided training sessions for technicians in generator maintenance and operation.

OUR ACTIONS IN THE FIELD'



MEETING THE ENERGY CHALLENGES OF WAR-TORN UKRAINE

Electriciens sans frontières, in collaboration with the Crisis and Support Center of the French Ministry of Europe and Foreign Affairs, has been mobilized since 2022 to meet the urgent needs of the Ukrainian population, particularly in the face of the energy challenges of the first winter (2022-2023), exacerbated by the context of war.

To accurately assess the needs of key structures, such as hospitals and reception centers, Electriciens sans frontières has maintained close collaboration with national and local authorities and partners in Ukraine such as AICM France-Ukraine, the Comité d'aide médicale, the Nadiïa Ukraïni association and the Fortechnyi Foundation. Between October 2022 and June 2023, we supported more than 488 structures and households in 18 regions/oblasts, representing almost two million beneficiaries.

In all, 22 convoys and almost 130 tons of equipment were dispatched to our 5 operational partners in Ukraine, for a total of 450 generators, 7,200 convectors, 6,700 solar lamps and 400 mobile unit heaters. In addition, electricians were trained and equipment maintenance was monitored.

The project team, made up of professionals from the energy sector, visited several regions of the country to **supervise the installations and train technicians and practitioners**. Follow-up was provided to ensure optimal operation and maintenance of the installations.



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OUR EXPERTISE AT THE SERVICE OF NGOs in Ukraine

Electriciens sans frontières also responded to the call of the NGO Première Urgence Internationale by visiting the cities of Lviv and Kharkiv. On the field, using our technical knowhow, we raised awareness among staff and analysed power generator connections to meet the essential electricity needs of their offices and partner structures hosting displaced people.



BECAUSE THE PROTECTION OF HUMAN LIVES IS THE TOP PRIORITY, THE MOBILIZATION OF ELECTRICIENS SANS FRONTIÈRES WILL BE STRONG AND LONG-TERM

Electriciens sans frontières maintains a strong and enduring commitment at all times alongside the people of Ukraine and our civil society partners, despite the persistent challenges posed by this invasion.

In order to meet a need reported by one of our partners, after assessing the needs, again in collaboration with the Crisis and Support Center, we made two 100 kVA power generators available for a Ukrainian hospital in the Kyiv region. This donation from our partner Enedis testifies to our close collaboration with civil society actors as well as a continuous response to the needs identified by our partners.

Two other generators donated by Enedis were sent to Pavlograd in mid-February, with the aim of meeting the needs of 22 pumping stations of the city's water service via our partners on site.

This action reflects a collaboration where civil society supported by the private sector and government entities converge towards a common goal: to support the resilience of the Ukrainian population.

Electricians sans frontières remains committed to working in synergy with its partners, to mobilize the necessary resources for the reconstruction of Ukraine.

THANKS TO OUR PARTNERS

Our actions have been made possible thanks to the continuous support of the Crisis and Support Centre of the French Ministry for Europe and Foreign Affairs and many partners:

ADEME, Association Energie Durable, Association Graines, Association Peuples Solidaires Ballancourt, Association Partage-Amitié-Solidarité, Bizline, CCAS, Clean Horizon Consulting, Dalkia, Megeve Domaine skiable, Don de chaleur, ecosystem, EDF, Eiffage Energies Systèmes - Infra Rhône Alpes, Enedis, Epexspot, Eucanaid, FFIE, Fondation Alstom, Fondation de France, Fondation du Grand Orient de France, Fondation groupe EDF, Fondation NEXANS, Fondation Rexel, Fondation Schneider Electric, Gimélec, GIVE EUR-HOPE, Groupe Atlantic, Groupe Intuis, Lagazel, Legrand, Mairie de Lyon, Miidex Lighting, Nexans, Office des Echanges Européen et Internationaux de Clichy, Prysmian Group, Q energy, Rotary Club de DOURDAN, RTE, SDMO-Kohler, SERCE, Sicae-Oise, SICECO 21, SIGERLy. S.I.E.L. Territoire d'énergie Loire, Territoire d'énergie Pyrénées Atlantiques, SNF, Socalec, Sonepar France, SPIE, Syndicat Intercommunal d'Energie d'Indreet-Loire, Syndicat de Gestion des Énergies de la Région Lyonnaise, Syndicat Départemental d'Energie de Saône & Loire, Syndicat Départemental Énergies et Environnement de la Gironde, Syndicat Départemental d'Electricité de Meurtheet-Moselle, Syndicat Départemental d'Énergie des Côtes d'Armor, Syndicat Départemental d'Énergie et d'Équipement du Finistère, Syndicat Départemental d'Énergie d'Ille-et-Vilaine, Syndicat départemental d'énergies du Morbihan, Syndicat Mixte d'Energies du Doubs, Union Française de l'Electricité, Union Technique de l'Electricité, World Fuel Services Corporation and many other donors and individuals.

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En partenariat avec



Liberté Égalité Fraternité



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