

Community Assessment: Solar Resilience for Chernihiv General Hospital 2 /Global Grant 2567312



Executive Summary

This Global Grant application is a joint project of the Rotary Club of Babcock Ranch, FL and the Rotary Club of Kyiv-Capital with our partner, the nonprofit Blue-Yellow Cross of Cologne, Germany. It proposes the installation of a solar photovoltaic system with battery backup at Chernihiv General Hospital #2, one of the largest medical institutions in northern Ukraine, with 600 beds, 1,700 employees, and over 230,000 patient visits annually.

The project has two primary goals:

1. Install a 284 kW-DC solar PV system with a 60 kW / 300 kWh battery, as recommended by the U.S. National Renewable Energy Laboratory (NREL).
2. Support workforce development by training a cohort of building managers and electrician students at the Chernihiv Lyceum of Railway Transport, providing skills for employment in

the solar industry.

This project directly responds to the City of Chernihiv's request for resilient power at its critical health facilities. It follows our Rotary Club's earlier initiative at the Maternity House and advances a larger vision of renewable-powered community resilience in Ukraine, as memorialized by the Ukraine government's stated goal of converting to 25% renewable energy by 2030. The nation is pivoting toward solar in the wake of the widespread damage to their electric grid due to the full-scale Russian invasion.

Community Overview

Chernihiv, located in northern Ukraine near the Belarus and Russian borders, is the administrative and cultural center of Chernihiv Oblast. With a population of 267,361 (as of 2022), the city has endured extensive war-related destruction — more than 1,000 buildings have been destroyed since the 2022 full-scale invasion.

Chernihiv General Hospital #2 is a regional referral center, providing comprehensive medical care:

- Emergency Services: ~20,000 ER patients annually.
- Specialized Services: cardiac surgery (including open-heart), oncology, rehabilitation for adults (including veterans) and children, and palliative care.
- Facilities: 15 operating rooms, modern diagnostic equipment (MRI, CT, angiographs, X-ray, endoscopy, ultrasound).

The hospital serves both Chernihiv City and surrounding oblast communities, making it an essential lifeline for health care, especially during wartime.

The 600-bed Chernihiv General Hospital #2, below.



Collecting Community Assessment Data

Assessment data was collected through:

- Consultations with city officials, hospital administrators, Rotary Club (Kyiv-Capital), NGOs, solar industry experts, and NREL engineers.
- Methods: Community Zoom meetings, hospital site visits, technical studies, surveys, and interviews with stakeholders.
- Hospital Director Vladyslav Kukhar, with 30 years of medical leadership, provided detailed operational and energy-use information, guiding the NREL feasibility study.
- Discussions between our clubs and the City of Chernihiv have been ongoing since January 2024 through September 2025.



The rooftop area identified for the 284kW solar installation is outlined in green.

Target Population

Direct beneficiaries:

- Patients: Over 230,000 annual patient visits; ~20,000 emergency visits; ~15,000 surgeries annually.
- Hospital staff: 1,700 employees who require reliable power for life-saving operations and diagnostics.
- Veterans: This general hospital has become a regional hub for rehabilitation services for veterans
- Electrician students at the Lyceum of Railway Transport and building managers.

Indirect beneficiaries:

- Residents of Chernihiv Oblast, who rely on the hospital for advanced medical care.
- Ukrainian solar industry, which gains skilled workforce and demonstration projects.

Benefits of the Solar Installation and Training

- Energy security: Backup power to critical hospital loads (60 kW) during outages.
- Economic savings: ~\$52,000 annual energy cost reduction.
- Reduced risks: Less dependence on diesel/gasoline generators and stored fuels, lowering fire hazard.
- Environmental benefits: Reduced CO₂ emissions and local pollution.
- Workforce development: Training for veterans and displaced persons to join Ukraine's expanding solar sector.

Background and Feasibility

Hospital #2 was built in 1992 and underwent major energy renovations in 2019. Current backup: diesel/gasoline generators with 7-day fuel storage (insufficient for long-term resilience).

The [NREL pre-feasibility study](#) recommends:

- 284 kW PV system
- 60 kW / 300 kWh battery
- \$400,000 estimated cost (not including solar job training program at the Lyceum of Railway Transport)
- 7.3-year payback; 16% IRR

This design ensures redundant power for critical loads and aligns with Ukraine's renewable energy goals.

Community Strengths, Needs, Priorities, and Design

Strengths:

- Highly skilled medical staff.
- Modern diagnostic and surgical facilities.
- City commitment to renewable energy and resilience.
- Community resilience and strong partnerships with NGOs and Rotary.

Needs:

- Stable electricity to sustain surgeries, intensive care, and diagnostics.
- Reduced dependency on vulnerable centralized grid and costly diesel.
- Enhanced training for local workforce in solar installation and operations/maintenance (O&M).

Priorities (as stated by local stakeholders):

- Guarantee life-saving care under blackout conditions.
- Harden critical facilities against infrastructure attacks.
- Expand renewable energy adoption citywide.

Program Launch & Timeline

Fundraising completed 12/31/25

Engineering Study completed 2/28/26

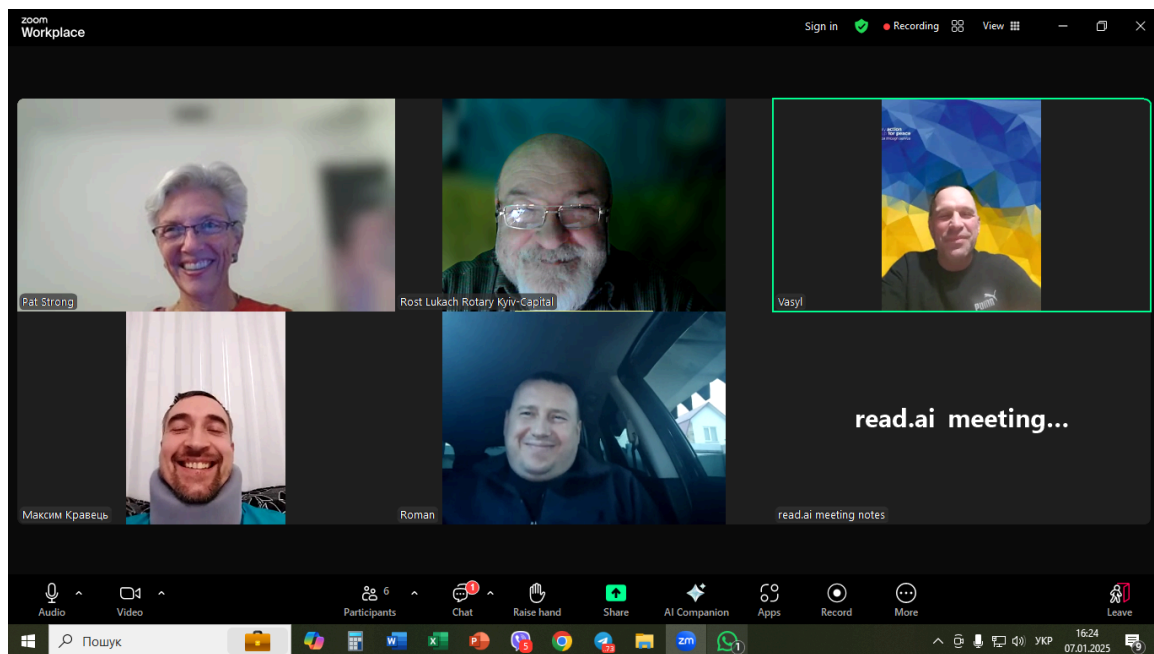
Request for Proposals completed 3/31/26

Bid award and construction commences 4/30/26

Installation and commissioning 5/31/26

Oversight

Rotary Clubs of Kyiv-Capital and Babcock Ranch will share oversight duties. Rotary Club of Kyiv-Capital has hired a dedicated solar installation project manager who is currently overseeing the “sister” installation at the Chernihiv Maternity Hospital. He will also take on this project. Maxim, the project manager, is pictured below left.



Financial Plan

Rotary Club of Kyiv-Capital will continue its work to make transparent phased payments to the installer and training provider, mirroring the Maternity House project. We will comply with all Rotary International requests for financial and other data.

Summary

This project will equip Chernihiv General Hospital #2 with solar and battery storage, protecting essential health services for hundreds of thousands of patients annually. It also

creates a model of resilience for other Ukrainian hospitals, while training young trades men and women for renewable energy careers.

The Rotary Clubs of Kyiv-Capital and Babcock Ranch, in partnership with the City of Chernihiv, are committed to delivering sustainable, life-saving energy solutions for Ukraine's future.

(See next page. Here we have gathered photos of the extraordinary people who are giving their time to this project. They include Canadian, American, European and Ukrainian Rotarians, the City of Chernihiv staff, the U.S. National Renewable Energy Laboratory team, and energy experts and social science academics from the national Polytechnic universities at Chernihiv, Kharkiv and Poltava.)

The Partners

Global Grant 256 7312 Team



From top left: Nataliia Kholchenkova, Rost Lukach, Vasyl Perepadia, Roman Movchan, Ana Sakharova, Yevhen Babak, Ana Pavelieva, Khrystyna Famova, Pat Strong, Terri Driver, Ellen Greenberger, Jan Wallace, Nazar Kholod, Dan Olis, Laryssa Milalova.