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Submitted by:

HOST: The Rotary Club of Kyiv-Capital, Ukraine and INTERNATIONAL: Rotary Club of Babcock Ranch, FL, USA



Left: Rotary Club of Kyiv Capital President (2023-2024) Krystyna Famova. Center Left: President Vasyl Perepadya, President (2024-2025). Center Right: Rotary Club of Babcock Ranch President Priya Ahluwalia (2023-2024), Secretary Pat Strong (2024-2025). Right: President Pat Ronyak (2023-2025). WE ARE GRATEFUL TO OUR PARTNERS AND CO-SPONSORS:



National Technical University "Kharkiv Polytechnic Institute"



## **SOLAR FOR MATERNITY HOUSE KNP** **Building Resilience in Chernihiv, a Hero City\***

### **Executive Summary**

This is a grant application to install a solar system with battery backup on Maternity House KNP, one of four critical infrastructure facilities in the City of Chernihiv that our Rotary Clubs have been asked to assist.

*\*Hero City of Ukraine is a Ukrainian honorary title awarded for outstanding heroism during the 2022 Russian invasion of Ukraine.<sup>[1]</sup> It was awarded to 10 cities in March 2022 including Chernihiv.*



**Maternity House KNP**  
Colorful and bright, the maternity ward in Chernihiv still bears the scars of war on its walls. © European Union, 2023 (photographer: Oleksandr Ratushnyak)

In this Global Grant, we will accomplish these two key goals:

We will use a Request for Proposal process and a committee of solar subject matter experts to select a Ukrainian solar installation company to install a 130 kW solar system on Maternity House KNP, a 200-bed hospital owned by the municipality of Chernihiv.

At the same time, our Ukrainian partners will recruit and train a small cohort of veterans for a solar installation course that will prepare them for solar careers.

This project has been developed as part of a larger request from the City of Chernihiv for assistance with installation of solar on four municipal buildings—two hospitals and two schools..

Our two Rotary Clubs are working with the [Net Zero World Initiative](#), (NZW), a flagship international initiative of the U.S. Department of Energy (DOE), implemented by DOE's national laboratories, led by the National Renewable Energy Laboratory ([NREL](#)). NZW works closely with the Ministry of Energy of Ukraine; its distributed energy line of work (see below; "citywide engineering analysis,") is co-funded by NZW and USAID (through an NREL contract).

Estimated start and completion dates:

1. Q1 2025—Q 3 2025 Solar Installation.
2. Q1 2025—Q2 2025 Launch of the Solar Heroes job training program by Atmosfera Academy, a Kyiv-based training academy for solar.

### **WHY INSTALL SOLAR DURING A WAR?**

Any Community Assessment for solar installation during a war must begin by asking, "Does this make sense?" Solar industry thought leaders have given a great deal of time to this question and a growing body of war-zone evidence supports their views. To wit:

"Solar systems can provide a reliable energy source during emergencies such as power outages caused by natural disasters or conflicts. But more importantly, they can be used for a long-term energy supply," [says Bartosz Majewski, CEO at PV distributor Menlo Electric](#).

"The essential advantage of solar systems during the targeted attacks on energy infrastructure in a centralized energy system is their decentralized nature. Solar systems, especially hybrid or off-grid ones, provide a stable energy supply that can operate independently of the primary grid and are more resilient against missile attacks. The most telling example for me was how household solar stations saved the lives of residents of surrounded Mariupol, allowing them to cook food. I wish it would not be an exception, and more people could survive because they had access to electricity," said Majewski.

### ***Recent Attacks Make Renewable Energy More Necessary Than Ever***

Solar panels are a necessity in Ukraine, since the invaders aim not just to conquer the country, but also to deprive its population of normal livelihoods and electricity, water and heat. Today, ordinary Ukrainians are forced to buy expensive generators that run on petrol and require ongoing funds to maintain. During this conflict, [there are hundreds of stories of families](#) in Ukraine's energy system suffering significantly due to continuous missile and drone attacks on the energy infrastructure. This Rotary project will be a model for future public and private adoption of solar.

On the night of 22 March, 2024, [Russia launched the largest-scale attack on the energy sector in recent memory - the enemy launched more than 60 "Shaheds" and almost 90 missiles of various types at Ukraine](#). A similarly devastating attack occurred August 26, 2024.

The explosions were heard in Kharkiv, Zaporizhzhia, Kryvyi Rih, Dnipro, Kropyvnytskyi, Khmelnytskyi, Vinnytsia, Sumy, Ivano-Frankivsk and Lviv regions. The Zaporizhzhya Nuclear Power Plant was once again on the verge of blackout, and Dnipro HPP, thermal power plants and main substations were attacked. Emergency power cuts were introduced in a number of regions.

Energy Minister [Herman Galushchenko described what happened on the night of 22 March as "the largest attack on the Ukrainian energy sector in recent times"](#). Judging by the scale of the attack, which was later announced, the Russians were trying to cause a large-scale blackout in the power grid.

"The morning attack on the power system by Russians was the largest ever, characterized by the use of combined weapons," said Ukrenergo CEO Volodymyr Kudrytskyi. The consequences of the latest attack are very large-scale. Though the power grid has not lost its integrity, in many regions the damage to generation and distribution facilities is very serious," he said.

A representative of one of the state-owned energy companies said that during the attack, the Russians shut down about 2,000 MW of generation, of which 1,500 MW is covered by emergency aid.

## **COMMUNITY OVERVIEW**

***Describe the characteristics (such as geographic information, main sources of income, population size, and access to education and health services) of the specific community where this project will take place.***

Located in the north of Ukraine near the Belarus and Russian borders, Chernihiv is the administrative, industrial and cultural center of Chernihiv Oblast (region), situated on the banks of the Desna River. In March, 2022, after the Russian full-scale invasion began, Chernihiv suffered a tragic loss of life and infrastructure and was awarded the title Hero-City of Ukraine for heroism and resilience. Since 2022, more than 1,000 buildings have been destroyed. Sporadic attacks on people and infrastructure have continued.

As of January 1, 2022, the population of the city was 267,361 people. The city of Chernihiv is 150 km from Kyiv, the nation's capital, and from the international airports Boryspil and Kyiv (Zhulyani), as well as next to the international highway, E-95 Europe-Asia.

The special value of the Chernihiv urban environment is the presence of a significant number of historical Middle Ages and cultural monuments, unique architectural treasures that are inextricably linked with the landscape, which gives the city uniqueness and originality.

Prior to the full-scale invasion, the city was characterized by a high level of attractiveness for investment, according to Moody's credit rating service (Last data available 2021-2022).

As of today, the City of Chernihiv operates 52 kindergartens, 31 schools; three hospitals, two clinics and a maternity hospital. Every community resident has free access to the city's medical and educational services.

The nation generated 11 percent of its electricity from renewable sources in 2020, according to the International Renewable Energy Agency, although more than half of its electricity came from nuclear power plants, which have a low carbon footprint. The country's goal is to build capacity for 30 gigawatts' worth of clean electricity by 2030, which would cover about [half of Ukraine's needs](#).

### **COLLECTING COMMUNITY ASSESSMENT DATA**

***When you conducted the assessment, who in the community did you speak to? At least two different community representatives and beneficiaries who are not involved in Rotary (such as teachers, doctors, or community leaders) should be included in the discussions.***

In order to prepare this Community Assessment, the City of Chernihiv and the Rotary Club of Babcock Ranch have had more than a dozen discussions via Zoom since October 19, 2023, with representatives from local government, small businesses, the utility company, NGOs, medical and education experts, the solar industry and the polytechnic institutes of the national university system. The City representatives have included the Head of International Relations and Investment, City Councilwoman Nataliia Kholchenkova, City Energy Manager Roman Movchan, and representatives from the local heating and hot water utility, Oblteplocomunenergo (OTKE).

Since January 12, 2024, Rotary Club of Kyiv-Capital has hosted a weekly meeting so that Babcock Ranch Rotarians could gain additional information from Ukrainian solar industry experts, veterans, investors, and others. The Babcock Ranch Rotary also met weekly with a group of Rotarians from Wichita KS, Denmark and the UK, specifically for our Club to learn from their pursuit of medical equipment Global Grants in Ukraine. We participate in monthly calls organized by a Rotary Club of Denver member to discuss current issues with Ukrainian Rotarians, teachers and NGO representatives. We also met with Rotary District 6970 Governor John Tabor in early May, 2024, to learn about his long standing support for Ukraine and gain his advice.

***When in the last year did the discussions occur?***

The last discussion was held August 15, 2024.

***What methods did you use to collect information from community members (such as community meetings, interviews, or focus groups)?***

To collect information we used several different methods: community meetings via zoom between Rotary and representatives of NGOs, local municipal representatives and from educational and medical spheres. Also questionnaires were distributed and returned, and focus groups with city residents were organized.

### **TARGET POPULATION**

***Who will benefit directly from the project? List the groups that will benefit (such as schools, hospitals, vocational training centers, cooperatives, or villages).***

Employers in the Ukraine Solar Energy Association will benefit from the opportunity to compete for this work. The public at large will benefit because the Government of Ukraine has prioritized the adoption of solar energy. The maternity patients of Chernihiv Oblast will surely benefit; some 30,000 of them used Maternity House during 2022-2023 (inpatient and outpatient). The hospital staff has a strong desire for increased resiliency during power outages and thus will benefit. A small cohort of veterans will benefit from the solar job training to be delivered by [Atmosfera Academy](#).

***Describe how the beneficiaries were identified.***

For the solar job training: Consultations were held with the [Ukraine Solar Energy Industry Association](#), [Atmosfera](#), [EcoClub](#), [National Technical University "Kharkiv Polytechnic Institute"](#), [National University "Yuri Kondratyuk Poltava Polytechnic"](#), National Technical University "Chernihiv Polytechnic institute," and solar project developer Myroslav Tabaharnyuk of MT-Invest Mergers & Acquisitions. At this writing, the Rotary Club of Kyiv-Capital has chosen to limit the job training component of this project to a small cohort (4 veterans and the City's energy manager or his designee) and one provider, Atmosfera Academy, due to limited funds and time constraints.

For the solar installation: The City's Energy Manager Roman Movchan, in consultation with the City Council and the Mayor's Office, chose four strategic buildings that it seeks to make resilient: Chernihiv City Hospital No. 2, the City Maternity Hospital, Public School No. 11, Preschool Educational Institution No. 4.

Our Rotary Clubs have decided to focus **first** on the maternity hospital. We hope to submit subsequent Global Grants for the other facilities.

Chernihiv Maternity House KNP provides high-quality obstetric and gynecological care to women, pregnant women, women in labor, and newborns from the city of Chernihiv and other communities in the region. More than 1,000 children are born in the hospital every year. The maternity hospital is a vital medical institution for the region, because in addition to maternity services, complex surgical operations are performed.

City officials have said that it is critically important to harden these facilities so that the hospitals, school and kindergarten can function autonomously (via battery backup) during blackouts and during air raid alerts in shelters. These institutions provide a large share of the city's social services, both medical and educational. This project will increase the community's capacity for energy autonomy and will allow for a reduction in energy consumption in these critical community facilities.

The four building locations are:

Kindergarten #4, 134 Pukhova Street, 2 stories

Secondary School #11, 137 Myr Avenue, 3 stories

City Hospital #2, 168 Mykhaila Hrushevskoho Ave., 9 stories

City Maternity Hospital KNP, 172 Mykhaila Hrushevskoho Ave., 5 stories



## BENEFITS OF THE SOLAR INSTALLATION AND TRAINING PROGRAMS

This application includes a Memorandum of Understanding with our two Rotary Clubs, the City of Chernihiv, and Atmosfera Academy, which are the organizations that will coordinate the solar installation and job training, pending Rotary approval.

We would like this initial training program to lead to subsequent global grants that reach a larger group. The target workforce development audience would be threefold:

- Veterans. Ukraine's active-duty military is an estimated 2.2 million people and another 1.2 million are in the reserves. Upwards of 30,000 women serve in the military, in all roles including combat.
- Municipal building managers. Ukraine has 461 cities, 27,190 villages and 24 oblasts (states), all of which employ municipal building and maintenance staff who can benefit from learning how to maintain solar energy systems. This sector typically will be concerned with fire safety, utility interconnection, and maintaining and repairing the systems in the wake of any damage.
- Internally Displaced Persons (IDPs). There are an estimated 3.7 million IDPs in Ukraine at this time, creating a great need for job opportunities.

## BACKGROUND



*In the midst of the early 2022 hostilities, the Maternity Hospital KNP not only continued to work but also provided shelter for more than 100 local residents who were hiding from the shelling. © European Union, 2023 (photographer: Oleksandr Ratushnyak)*

### PRE-FEASIBILITY STUDY FROM NREL

We were fortunate to attract the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) in Denver, CO as a pro bono partner in this project.

Maternity Hospital KNP is the subject of an NREL draft pre-feasibility study (using NREL's RE-Opt software) and shared with our Rotary Club for comments between May 2 and August 15, 2024. NREL plans to publish this study to make it a public learning tool later this year. The study can be found in the Attachments to this submission.



Our publicity for this project will describe Rotary’s collaboration with NREL, which, among many other tasks, designs software that allows engineers and solar installers to create a software model of an existing building that has been brought to peak energy efficiency, using solar. We will describe how our solar trainees will be familiarized with these NREL tools as well as publicly available tools such as Google Earth, which NREL

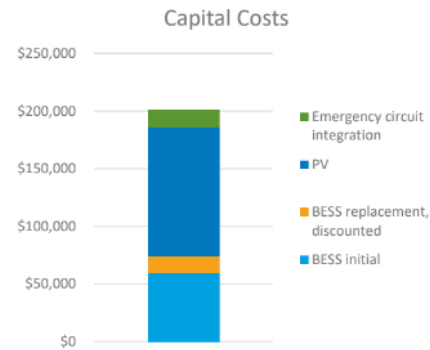
used to determine the likely system size that the Maternity Hospital KNP roof can accommodate. This will be confirmed by the installer’s own feasibility study.

## Summary of Techno-Economic Results

On-site feasibility study will improve cost estimates and estimated financial outlook.

DRAFT FOR REVIEW

Component or Metric	Value
Existing Emergency Generator (kW)	80
PV Capacity (kW-DC)	131
BESS Power Capacity (kW)	25
BESS Energy Capacity (kWh)	125
PV Curtailed (%)	19%
Utility Bill Savings, Year 1 (\$)	\$20,139
CAPEX, Total Initial (\$)	\$186,050
CAPEX Emergency Circuit Integration (\$)	\$15,000
CAPEX PV (\$)	\$111,350
CAPEX BESS (\$)	\$59,700
CAPEX in Year 10 for BESS replacement (\$)	\$41,825
Net Present Value (\$)	\$43,297
Internal Rate of Return	13%
Simple Payback (years)	8.6



NREL | 6

## Possible Courses of Action for Electrical Integration

This information will be used to inform the bid ("tender") document that we will work with the City of Chernihiv to create, with NREL's help. We will use a NREL template for the bid document and will distribute the tender to the solar installation companies in Ukraine that have the capacity for this job. NREL has created a list of such companies and we have a list from the Ukraine Solar Energy Association. Our committee of solar subject matter experts will review the bids and work with our Clubs to designate the winning bidder.

**Describe any challenges and gaps in the community's behaviors, skills, and knowledge.**

As a result of the war, the unstable power grid and the possibility of blackouts remain as top concerns. (In a small way, Rotary Club of Babcock Ranch offered assistance when it sent 27 solar cell phone chargers to Chernihiv, to help keep cell phones charged during blackouts.)

Another challenge is that the widespread use of diesel generators, which are necessary to provide power in the case of power outages, leads to an increased risk of fire, since the fuel for the generators is stored indoors. The solar installation will be accompanied by a mobile battery system that will be an alternative to diesel generators, and will be sized to provide backup emergency power to critical loads in the hospital.

Another challenge is the air pollution caused by the existing Combined Heat and Power (CHP) fossil fuel plants, as well the war-related increase in the number of vehicles in the city, which increases emissions of harmful pollutants.

As a result of the Russian invasion, there are areas where the soil is contaminated with land mines and other explosive objects. Despite the fact that the city operates a de-mining program, the risk remains.

**What issues will the project address, and how does the community currently address those issues?**

The Government of Ukraine is committed to adopting renewable energy, and hospitals are a priority for solar system installations. Despite a number of NGOs working to provide solar to hospitals, only a few so far have benefited from this new emphasis.

The solar installation project will help solve several important issues, including an improvement in energy security during the war, increasing the sense of day-to-day security among city residents, as well as among employees of medical and educational institutions, while also reducing energy consumption and costs. The community currently is in a constant state of anxiety about its unstable power supply, with its attendant pollution and fire risks posed by diesel generators. The air is polluted also by the increasing number of vehicles in the city, which increases emissions of harmful gasses.

**Describe the long-term plan for the project (such as oversight, financial responsibilities, and expected behavior change) after Rotary's involvement ends).**

After the end of Rotary's involvement in the project, the City of Chernihiv will maintain the solar energy systems. In addition, the City will share its experience in implementing and using solar energy with other communities in Ukraine. The City maintains an active social media presence and will publicize the project extensively by working with Rotary to host a conference/workshop for municipal solar implementation, to promote technology transfer.

### ***Oversight***

The Rotary Club of Babcock Ranch Secretary, Pat Strong, has oversight capabilities due to many years supporting the solar and wind industries, state and federal government agencies that promote the adoption of renewable energy, and local governments that are working to implement federal and state renewable energy policies. Pat will work closely with the proposed Project Manager that Rotary Club of Kyiv-Capital propose to hire, to ensure that all deliverables and reporting deadlines are met. In addition, Khrystyna Famova, immediate past president of the Rotary Club of Kyiv-Capital, is a lawyer and is willing to oversee the project from a legal perspective. She created the Memorandum of Understanding that is attached, with Pat Strong.

### ***Financial Responsibilities***

The Rotary Club of Kyiv-Capital will hold the purse strings. Rotary Club of Babcock Ranch's leadership team includes several individuals who have had extensive grant management experience. They will offer assistance as needed. RC of Babcock Ranch will have the primary reporting responsibility, working in tandem with the Kyiv Club to send timely reports to Rotary International.

*Installation Project:* Payment will be made to the installation company. We will suggest 1/3 down, 1/3 at construction completion and 1/3 when system commissioning (hand-over of the system to the hospital, with sufficient Operations & Maintenance training) has been completed.

*Job training:* Payment will be made to Atmosfera Academy, the industry partner, which will supply instructors. We will suggest 50 percent payment up front and the remaining 50 percent when the trainees have received their certificates and been introduced to employers. The curriculum outline for the two courses is attached.

### ***List any cultural practices that are relevant to the project (such as agricultural techniques or traditions).***

Chernihiv already has experience in solar energy systems. In the fall of 2023, solar panels were installed at two schools in the city by the Energy Act for Ukraine Foundation (EA4U). Its tender has since closed. This time, however, the City is highly focused on learning how to maintain the solar systems, since past installations were done by donors who operated independently of the City.

*What positive and negative environmental changes do you expect to result from the project?*  
We expect only positive changes, as the project will reduce the load on the city's electric plant and, accordingly, reduce CO2 emissions. The project will contribute to the development of green energy and air purification. The community will serve as a role model to popularize the solution of environmental issues through the use of alternative energy sources.

### **COMMUNITY STRENGTHS, NEEDS, PRIORITIES, AND PROJECT DESIGN**

*Describe what members of the community said matters to them during the assessment.*



The priority addressed by this grant, said Chernihiv City Councilwoman Nataliia Kholchenkova (center), “is the need for resilience so that the city can continue to provide medical and educational services. Due to the threat of shelling and blackouts, there is a very real possibility of disconnection from the central power grid, which leads to highly compromised medical services and can threaten health or life. The solar and battery backup system will give the City the means to continue providing critical services during periods of conflict.”

Ms. Kholchenkova is the Head of International Relations and Investment for the City of Chernihiv and an extraordinarily talented coalition builder. She documents all the City’s partnerships on social media and already has posted about this project.

Solar already has proved itself in many localities across Ukraine as a critically important component of medical and educational institutions during the Russian invasion. [Energy Act for Ukraine Foundation](#) (EA4U), a Ukrainian NGO, already has installed solar on Chernihiv Schools No. 3 and No. 19 as well as a Children’s Hospital in Chernihiv Oblast, completing those projects in 2023.



The City of Chernihiv Energy Manager spoke about the positive aspects of the project for school children. *At left: Energy Manager Roman Movchan*

“The absence of power or the threat of power outages in educational and medical institutions entails stopping their work, which negatively affects the quality of city life,” said Roman Movchan, at left. “A typical day might include one or

more trips to the bomb shelter, where it is often unheated and students and others must try to concentrate while they try to stay warm. A separate issue that worries city residents is the impossibility of providing high-quality electricity to shelters during air alerts.”

### Feedback from the Ukraine Solar Industry



One of the founders of the [Ukraine Solar Energy Association](#), Yevhen Babak, at left, told us that last summer his company, Atmosfera, had plenty of solar installation work but lacked workers. He and staff members have created [Atmosfera Academy](#) to teach solar installation to job seekers. They are seeking to expand their academy via grant funding to specifically target veterans and internally displaced persons (IDP).



*An Atmosfera installation in the village of Zaitsevskoye in the Mykolaiv region. Atmosfera’s sub-unit, Atmosfera Academy, is our clubs’ choice as job training provider. Atmosfera, the installation company, will have the same access as a bidder to the solar RFP as all qualified solar companies.*

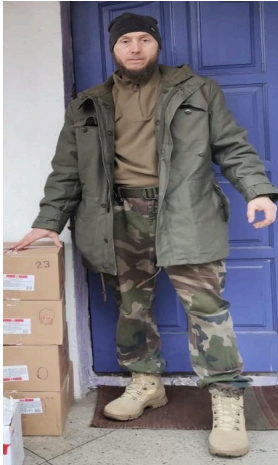
For [Andriy Martynyuk](#), at right, executive director of the Ukrainian NGO, EcoClub, the war has meant a hectic time for their organization. Their Solar Aid for Ukraine project focuses on solar for hospitals and water utilities.

“Our primary objective is to equip as many hospitals and water utilities with a reliable and sustainable source of energy and storage with solar power plants,” says Martynyuk. “This allows medical staff to continue to save lives and treat our civilian population during everyday power cuts.” EcoClub has completed nearly a dozen projects in the Rivne region of Eastern Ukraine. He confirmed the need for more skilled workers in the solar industry.





Similarly, Myroslav Tabaharnyuk, of [MT-Invest Mergers and Acquisitions](#), at left, whom we met through Rotary Club of Kyiv-Capital, told us of the difficulty of finding project managers. Mr. Tabaharnyuk has commissioned a well-developed proposal by [Voltage Group](#) for solar installation on a hospital and school near the frontline. However, he says foreign private investors are unwilling to look at it today, and he does not have the staff resources to make an application to USAID or other government programs.



Anatolii Mykhaylov, at left, a Chernihiv native now living in Irpin (near Kyiv), is a recently discharged veteran and has experience with solar installation. He has introduced our project team to Atmosfera, a founding organization of the Ukraine Solar Energy Association. Anatolii sees our proposed solar project as helpful to the City of Chernihiv, and can advise on how to recruit students who are veterans. In his experience, the training of rooftop solar installers is not a lengthy process per se, but he agrees that training project managers and small business owners in the industry's more complex functions is a challenging task, particularly with so many people being called into active military service. These functions include solar site assessment, system design, utility data collection and analysis, obtaining municipal permits, adhering to the city building code, large-scale project engineering, insurance, etc. He is optimistic that this project's

engagement with Chernihiv Polytechnic and the other polytechnic institutes will yield positive results.



Wherever possible, Ukrainians are trying to use solar energy, which has undeniable advantages during the war. Chernihiv region is one of the leading regions of Ukraine in this regard, notes [Ana Pavelieva](#), at left, External Communication Coordinator for Eurodoc; PhD, Associate Professor at the [National University "Yuri Kondratyuk Poltava Polytechnic"](#). Professor Pavelieva was an Open World scholar who visited Babcock Ranch in January 2024 under the auspices of Rotary International. Almost from the very first days of Russia's full-scale invasion of Ukraine, part of the Chernihiv region was cut off from the central power supply. For more than a month, local households in one of the communities in the Chernihiv region, have been receiving electricity for lighting, keeping fresh food in refrigerators, powering bomb shelters

and charging mobile phones from the sun.

That is why it is important to start thinking about the sustainable reconstruction of the country now, says Ms. Pavelieva. In the course of reconstruction, it will be necessary to diversify electricity sources as much as possible and reduce the distance from the place of energy generation to the consumer, she and others have contended. This approach will help ensure stable access to electricity during the temporary occupation. Only an increase in the share of renewable energy sources in the energy balance, as well as energy saving measures, will increase the energy independence of communities and meet the goals of overcoming the climate crisis, she notes.

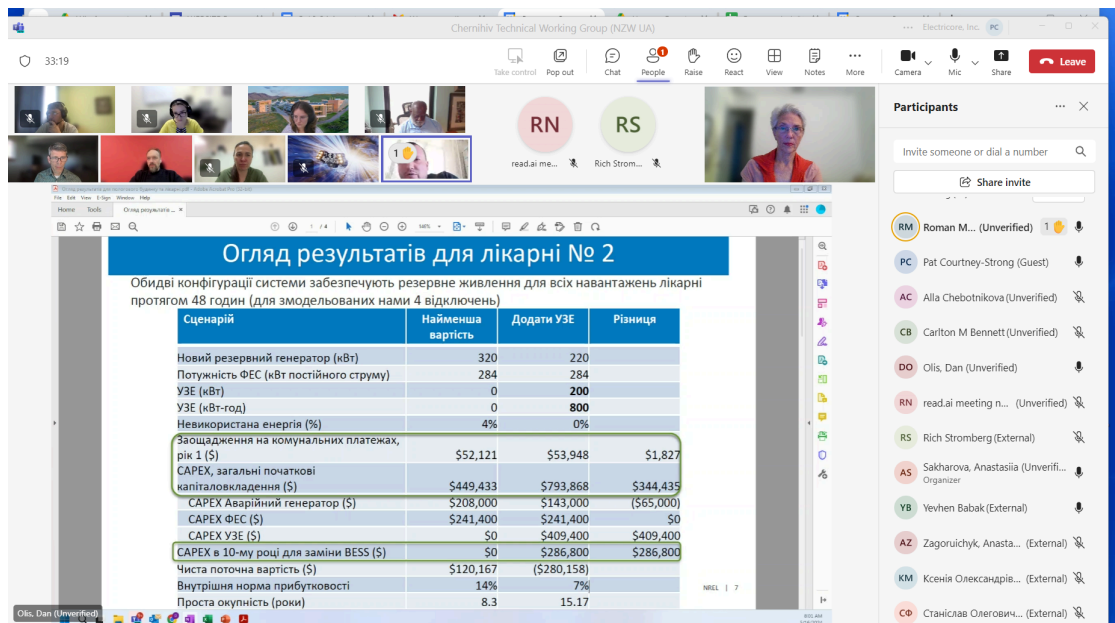
**Describe the community’s strengths and resources.**

- History. The city of Chernihiv has a 1,200-year history, and as such is one of the most ancient cities in Eastern Europe. City officials are dedicated to preservation of its antiquities, despite the hardships.
- Environmental stewardship. The city is actively working on energy efficiency and renewable energy.
- Recreational opportunities. The city has many parks, trees and verdant areas.
- Industrial potential. Dominated by small and medium-sized businesses and processing enterprises, the city seeks to develop its industrial potential. Infrastructure potential exists in the availability of workshops and warehouses that can be renovated for new industries.
- Bravery and optimism in the face of daily threats posed by war.

**Collaboration and Cultural Adaptation**

Our partner NREL has performed a techno-economic analysis (pre-feasibility study) for the project, and this will save funds that otherwise would have to be spent on engineering for the installation. The photo **below** depicts a Ukrainian-language preview of that analysis. This was taken from a May 16, 2024 NREL meeting with the City of Chernihiv and others, in which we explored whether the addition of a 4-hour battery system was feasible. These meetings are bilingual, as our NREL colleagues include Ukrainian Americans.

Attendees included representatives of the following organizations: Kharkiv Polytechnic, NREL, Rotary Club of Kyiv-Capital, Rotary Club of Lakewood Ranch (retired USAID officer, a volunteer), Rotary Club of Babcock Ranch, Atmosfera Solar, the Ministry of Energy of Ukraine, and the City of Chernihiv.

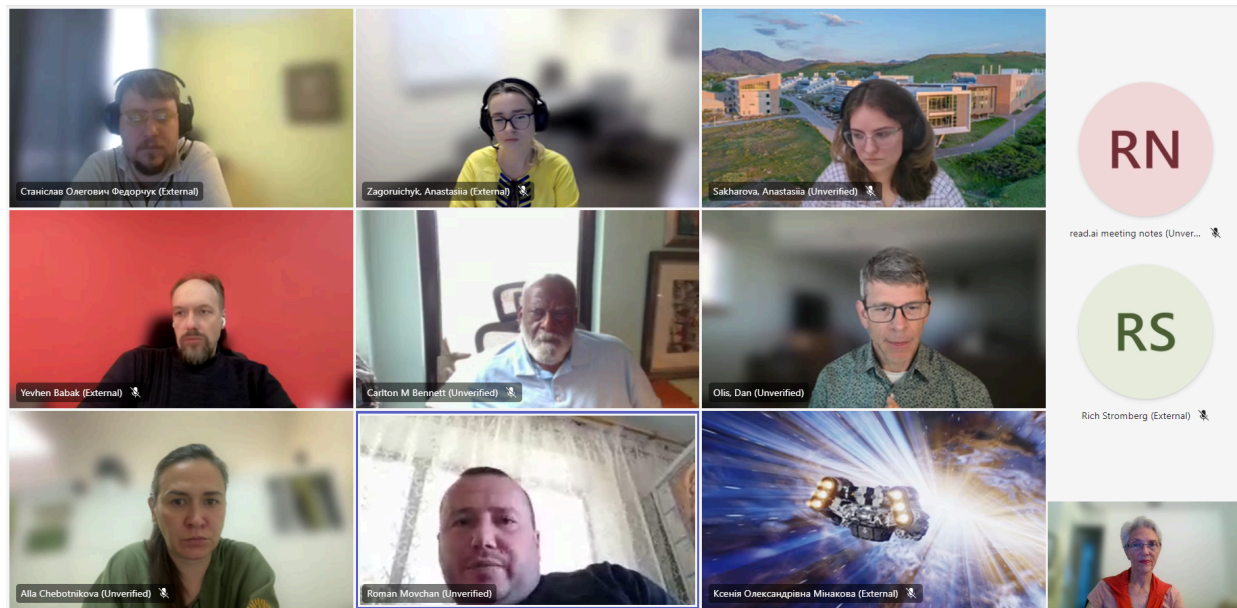




### ***Design of the Job Training Program***

The program will be run by Atmosfera Academy, our Ukrainian solar industry partner. The industry partner will contribute its proprietary curriculum, instructors, and when appropriate, job sites and other venues. Below: a recent bilingual meeting of the polytechnic institutes of Kharkiv and Chernihiv with Rotary Clubs of Kyiv and Babcock Ranch along with solar industry representatives to discuss solar job training initiatives in Ukraine.

Any trainees, apprentices or interns who are invited to observe or participate in the solar installation will be supervised by the installer's safety-certified team members, will be required to use appropriate Personal Protection Equipment (PPE) and must be covered under the insurance policy of the employer or the training academy.



***PHOTO, MAY 2024: Leaders from City of Chernihiv, Chernihiv Polytechnic institute, the U.S. Department of Energy, the Ministry of Energy of Ukraine, and solar company Atmosfera discuss with Rotary Club the creation of a workforce development program focused on veterans.***

We have attached a Memorandum of Understanding that includes Atmosfera Academy and the Kyiv-Capital and Babcock Ranch Rotary Clubs.

Below is a preliminary timeline for the installation project and the pilot job training program.

## RESEARCH PHASE

**October, 2023-May, 2024** - Research was conducted among Ukrainian universities, the Ukraine solar industry, and the City of Chernihiv to determine the stakeholders' views and wishes.

**March 20, 2024** - An informal Rotary International Global Grants review was conducted, at which time the Ukraine Grants Officer Destiny Nobles-Kim gave a preliminary, non-binding positive review.

**June 27, 2024** - The Global Grant application was submitted.

**August 7, 2024** - The grant was unlocked to permit revisions as per the requests of Olha Novytska, a District 2232 Rotary Foundation Committee deputy chairwoman.

**September, 2024** - The grant will be re-submitted.

Rotary International will formally review the Global Grant and issue a decision (8 weeks)

## PROGRAM LAUNCH

Q1 2025 - When approved, the Rotary Clubs will prepare their program rollout. A detailed timeline is included in our online application. It is replicated here for the convenience of reviewers. We understand that, due to the conclusion of the Hearts of Europe program at the end of 2025, we will need to think of this as not more than a 9-month project period.

## SOLAR INSTALLATION

1. COORDINATION/1 week to prepare and implement. Upon award, the Team will hold an internal kickoff meeting with all members to confirm roles and responsibilities. Financial documentation rules will be re-confirmed. Deadlines for reporting to Rotary Foundation will be reviewed and scheduled. Solar system Operations & Maintenance training will be scheduled.
2. PLANNING/1 week to review NREL work and make edits.: Team will review and approve draft solar installation Request for Proposals, based on NREL template that has been adapted to Ukrainian conditions.
3. OUTREACH/2 weeks. Project manager will develop a list of qualified solar installation companies and circulate to team members in order to eliminate any that pose a conflict of interest. (NREL has developed such a list, which our team will review.)
4. REVIEW/2 weeks: Committee will
  - a. Set schedule of meetings (at least 2)
  - b. Review/edit scoring sheet for use when reading proposals.
  - c. Meet to discuss proposals, choose finalists.
  - d. Project manager will invite top 3 applicants to meet viz zoom with review committee.
5. EXTERNAL KICKOFF/3 days

a. Committee will meet with the installer to discuss schedule, building access, communication, payment, conflict resolution agreements, etc.

6. PAYMENT/1 day

a. Rotary Club of BR will advance funds to RC of K-C for payment to installer. (Preferably: 1/3 payment to start; 1/3 payment at physical completion; 1/3 payment at commissioning of solar system)

7. PUBLICITY/3 months

a. Rotary Clubs of K-C and BR will share social media duties, using Facebook, Instagram and LinkedIn.

b. Press release will be jointly prepared with the City of Chernihiv and shared with Rotary Foundation for input/approval.

8. REPORTING/9 months

a. Project manager will obtain project update information from team members at least one week before reports are due to Rotary Foundation.

b. Reports will be reviewed by relevant team members in advance of filing to ensure completeness and will be filed on time

9. EVALUATION/3 weeks

a. The Kyiv School of Energy Policy will review the project and produce a third party analysis.

**PILOT JOB TRAINING PROGRAM**

1. COORDINATION/2 days: Upon award, the Team will hold an internal kickoff meeting with members to confirm roles and responsibilities. Financial documentation rules will be re-confirmed.

2. PROJECT MANAGEMENT/2 days: Project Manager will produce a short plan detailing the recruitment of trainees, the selection process, the training schedule with Atmosfera, deliverables (such as certificates for the trainees, social media posts, introductions to employers, etc.) Report will include options for how to grow the training program in subsequent years.

3. PROJECT KICKOFF/1 day: Rotary Clubs will meet with Atmosfera to review deliverables, deadlines, etc.

4. PUBLICITY/2 months

- a. Rotary Clubs of Kyiv-Capital and Babcock Ranch will share social media duties, using Facebook, Instagram and LinkedIn.
- b. Press release will be jointly prepared with Atmosfera and shared with Rotary Foundation for input/approval.

5. REPORTING/4 months

- a. Project manager will obtain project update information from team members at least one week before reports are due to Rotary Foundation.
- b. Reports will be reviewed by relevant team members in advance of filing to ensure completeness and will be filed on time

6. EVALUATION/2 weeks

- a. Kyiv School of Energy Policy will review curriculum, recruitment, outreach, etc. and issue a report.

**SUMMARY**

In sum, the Rotary Clubs of Babcock Ranch and Kyiv Capital are eager to move forward with the City of Chernihiv to install solar on Maternity Hospital KNP. We will combine this project with an initial, small, industry-led job training program of the sort desired by the Kyiv-Capital project leaders, one of whom is a veteran who has worked in the solar industry. Babcock Ranch joins Kyiv-Capital in believing that solar for the maternity hospital is a critical first step to achieving energy resiliency in the City of Chernihiv and we would like to help them realize their goal.

The Rotary Clubs of Kyiv-Capital and Babcock Ranch wish to thank Chernihiv City Councilwoman Nataliia Kholchenkova for her invaluable written contributions to this report.