



**UKRAINE ENERGY:  
destruction and renewal, decarbonization**

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# RATE OF DEVELOPMENT

**2019**

Ukraine entered the TOP-10 countries in the world in terms of the pace of development of green energy

**2020**

Ukraine is in the TOP-5 European countries in terms of the rate of development of solar energy

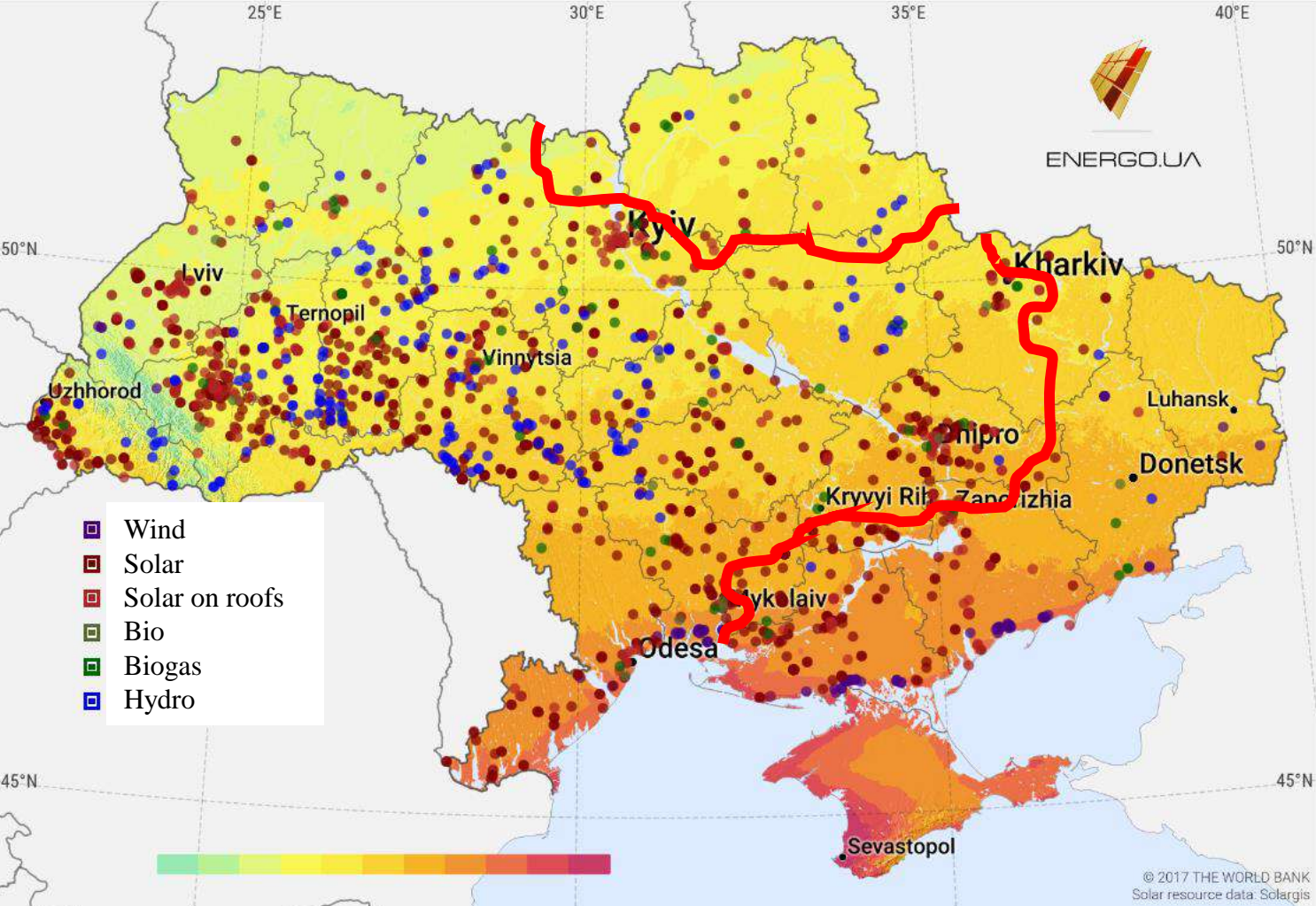
**2022**

The total capacity of green energy facilities at the beginning of 2022 reached 9,656 MW



# GREEN ENERGY

# LOCALIZATION



**43%** or **3,980 MW** of green energy generating capacities were located in the temporarily occupied territories of Ukraine

GREEN ENERGY

# SOLAR ENERGY



**The total installed capacity** of industrial solar power plants in Ukraine is **6,226.9 MW**

About **60%** of industrial solar power plants are concentrated in the southern and southeastern regions of Ukraine, where active hostilities are taking place, amounting to about **3,700 MW**



**30-40%** of power plants in the regions affected by the Russian invasion **were affected, -1,120 - 1,500 MW** of installed capacity



GREEN ENERGY

**SOLAR ENERGY**





GREEN ENERGY

# SOLAR STATIONS of HOUSEHOLDS



in Ukraine, 1.2 GW of solar power plants of private households were put into operation by the **beginning of 2022**

it is estimated that it was destroyed close to **280 MW (24%)** of the installed capacity



GREEN ENERGY

# SOLAR STATIONS of HOUSEHOLDS





## GREEN ENERGY

# WIND ENERGY



In Ukraine, the total capacity of installed wind power plants is **1,673 MW**

According to the Ukrainian Wind Energy Association, **more than 2/3 of wind generators** in Ukraine **have been stopped** due to Russia's military aggression.



Currently, **1,162.5 MW** of installed capacity is not working, and remains in operation **372.5 MW**, concentrated mainly in Odesa and Lviv regions

GREEN ENERGY

# BIO ENERGY



Enterprises that generate electricity and thermal energy from biomass in Ukraine have installed capacity **224.5 MW** (of which biomass – **119.1 MW**, biogas – **105.4 MW**)

Up to **15%** of capacities were affected





# THERMAL POWER PLANTS



**14** thermal power stations were destroyed by rocket fire and occupied. The total capacity is **1.2 GW**

This constitutes **14%** of the total energy balance of Ukraine, which leads to a permanent energy deficit and the need to export expensive electricity from Europe (**which is three times higher than the Ukrainian green tariff**)



## GREEN ENERGY

# GRIDS



The average number of damages on high-voltage lines **on a 100-km section reaches 50 cases**. Works are underway to restore **11 high-voltage lines and 17 substations**. At the moment, up to **600 km of 110 and 150 kV** grids, more than **1000 km of 35 kV** networks, more than **20 substations** with a voltage of 110 and 35 kV have been damaged.





# UKRAINE NEEDS ENERGY RECOVERY



Until **2050**, Ukraine has the potential of networks to increase the capacity of green generation<sup>^</sup>

- ✓ Wind generation - up to **140 GW**
- ✓ Solar energy - up to **94 GW**
- ✓ Bioenergy - up to **30 GW**
- ✓ Small hydropower – up to **9 GW**
- ✓ Energy storage – up to **38 GW**

SOLAR GENERATION, LLC

# GREEN ENERGY FOR THE FUTURE

Solar Generation, LLC - a private Ukrainian energy company working in the field of generation and transmission of clean green energy.

The company was founded in 2011 by Ukrainian entrepreneurs.

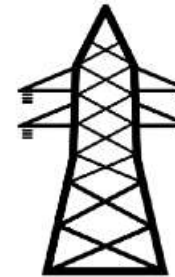
Today, Solar Generation is one of the largest national owners of industrial solar power plants.



INCLUDED IN TOP-10  
OF UKRAINIAN  
COMPANIES -  
PRODUCERS OF GREEN  
ELECTRICITY



110 MW -  
INSTALLED  
CAPACITY OF  
SOLAR POWER  
PLANTS



20+ KM OF POWER  
LINES  
VOLTAGE OF 110 KV

3 PRIVATE  
TRANSFORMER  
STATIONS OF 35 KW  
AND 110 KW

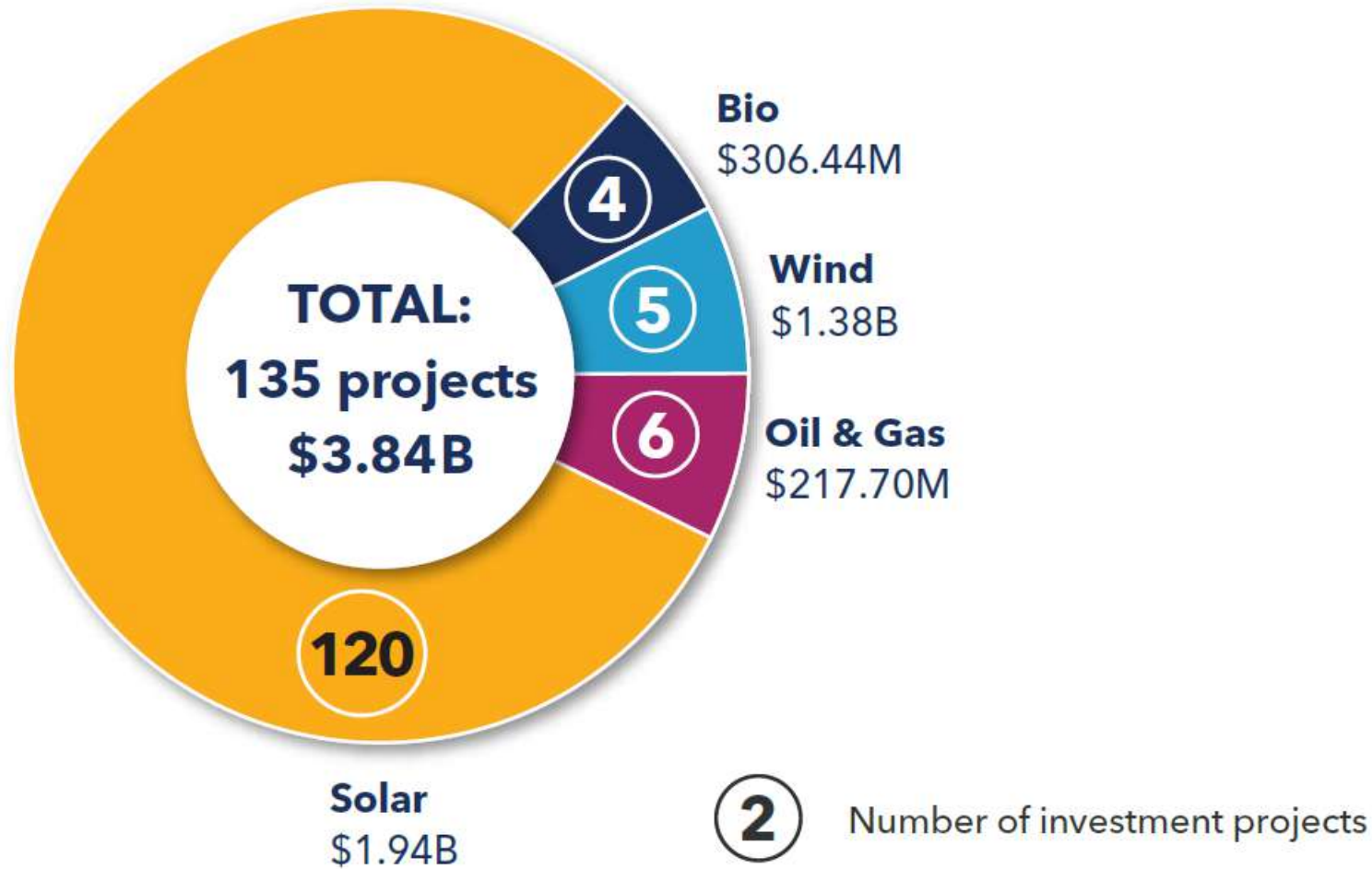


150+ KT / YEAR  
REDUCING CO2  
EMISSIONS IS OUR  
CONTRIBUTION TO  
MAINTAINING A  
CLEAN ENVIRONMENT



# ENERGY PROJECTS IN UKRAINE

## CURRENT INVESTMENT PORTFOLIO



# SOLAR PV PROJECTS IN UKRAINE

## CURRENT INVESTMENT PORTFOLIO



**TOTAL CAPACITY**

**2.6**  
GW

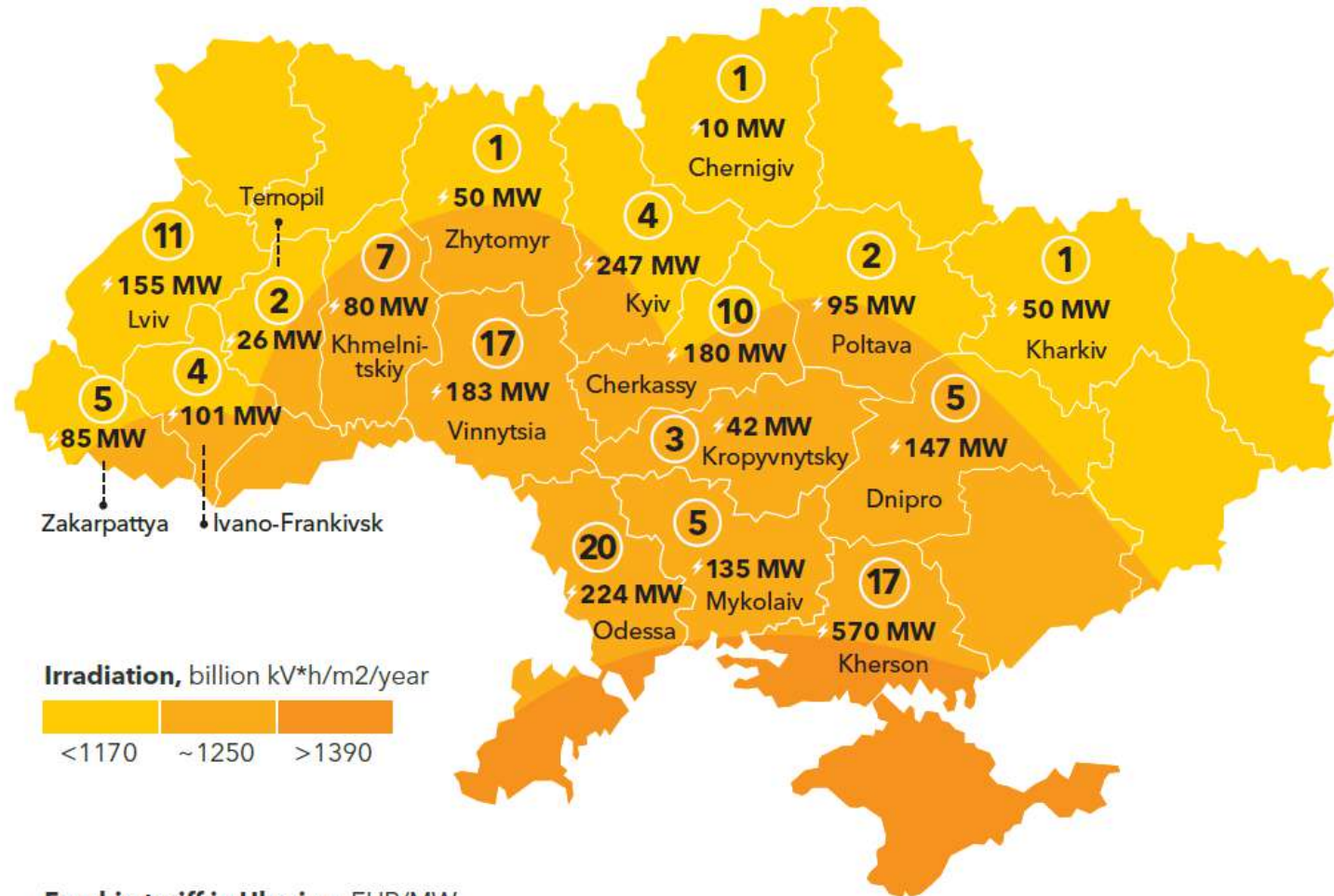
**TOTAL PROJECTS**

**120**

**68** RTB

**40** Operating

**12** Greenfield



**Feed-in tariff in Ukraine, EUR/MW**

Technology/commiss. Year	2019	2020	2021	2022	2023-2024	2025-2029
Solar (ground based)	150.25	112.55	108.78	105.01	101.24	97.47



# WIND POWER PROJECTS IN UKRAINE

## CURRENT INVESTMENT PORTFOLIO



SOLAR GENERATION, LLC

# DEVELOPMENT

- Search for potential land plots
- Land allocation according to the Ukrainian legislation
- Geology and geodesy works
- Technical conditions approval
- Stage P preparation
- Project design works
- Permit for construction approval
- Pre-PPA signing

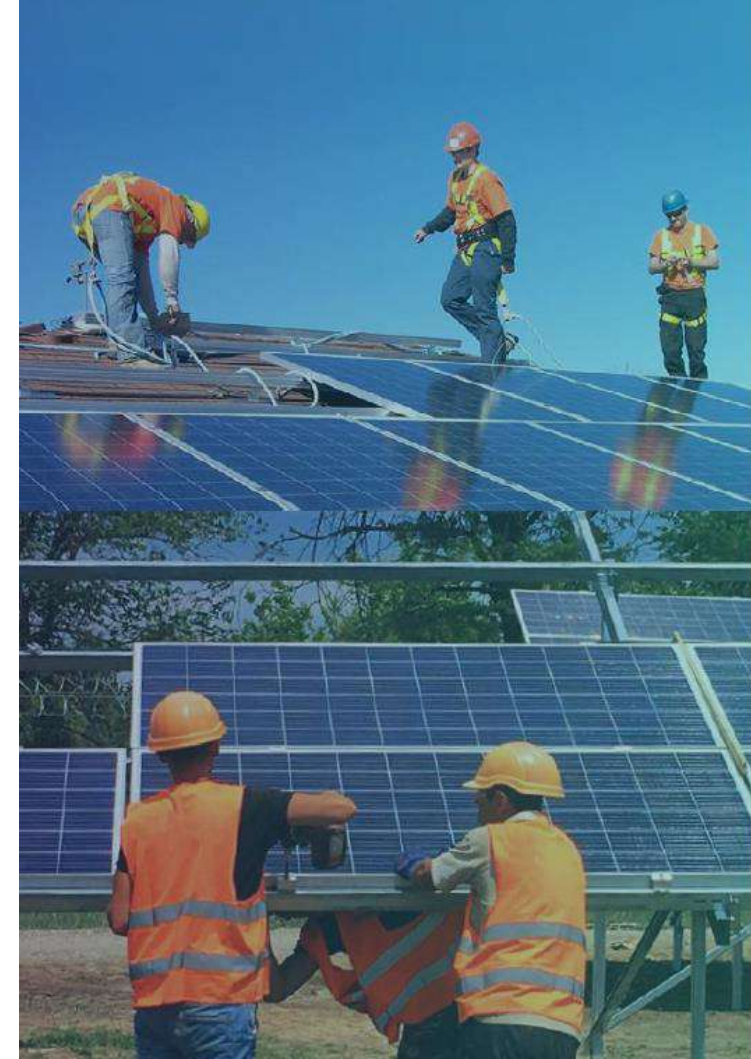




SOLAR GENERATION, LLC

# TURNKEY EPC

- Financial modeling with a guarantee on an approved pay-back-period
- Engineering, procurement and construction as a Contractor or Subcontractor
- Equipment purchase and delivery
- Development and implementation of own methodology of project management at all stages of investment project
- Management and control: schedules, cost control, job-calculation, forecast, reports and risk minimization
- Securing FIT
- Signing PPA
- O&M services



SOLAR GENERATION, LLC

# PROJECT MANAGEMENT

- Providing tailored-made turnkey support for the existing development and operational teams in Ukraine
- Project management, technical, financial, accounting, legal services
- By request assistance on the ground
- Communication with government authorities (GR)
- Communication with banks and financial institutions
- Capital raising





SOLAR GENERATION, LLC

# GREEN ENERGY FOR THE FUTURE

**SOLAR GENERATION** ACTIVELY COOPERATES WITH COMMUNITIES ON THE TERRITORY OF WHICH SOLAR GENERATION FACILITIES ARE LOCATED.

THE BIGGEST SOCIAL PROJECT IS THE CONSTRUCTION OF A ROAD IN THE VILLAGE OF TARASIVCI, CHERNIVTSI REGION.

THE LIST OF IMPLEMENTED **CSR PROJECTS** INCLUDES:

- construction of a playground in the village;
- providing the school with computer equipment for distance learning;
- equipping a house of culture with a multimedia cinema.

THE COMPANY ACTIVELY WORKS TO HELP COMMUNITIES DEVELOP THEIR DEVELOPMENT STRATEGIES.



IN 2018, THE COMPANY RECEIVED THE PRESTIGIOUS AWARD "ECO TRANSFORMATION"



IN 2019, THE COMPANY RECEIVED THE AWARD OF THE EASTERN EUROPEAN GREEN ENERGY FORUM SEF'2019



IN 2020, THE COMPANY'S CEO WAS RECOGNIZED AS UKRAINE'S GREEN ENERGY AMBASSADOR



# Contacts

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