



Ukraine Facility Platform

**REBUILDING ENERGY
SYSTEM IN UKRAINE**

- Addressing critical challenges
- Implementing effective approach

**Kyiv-Brussels
November 2024**

r.vybranovskyy@uafp.eu
www.uafp.eu

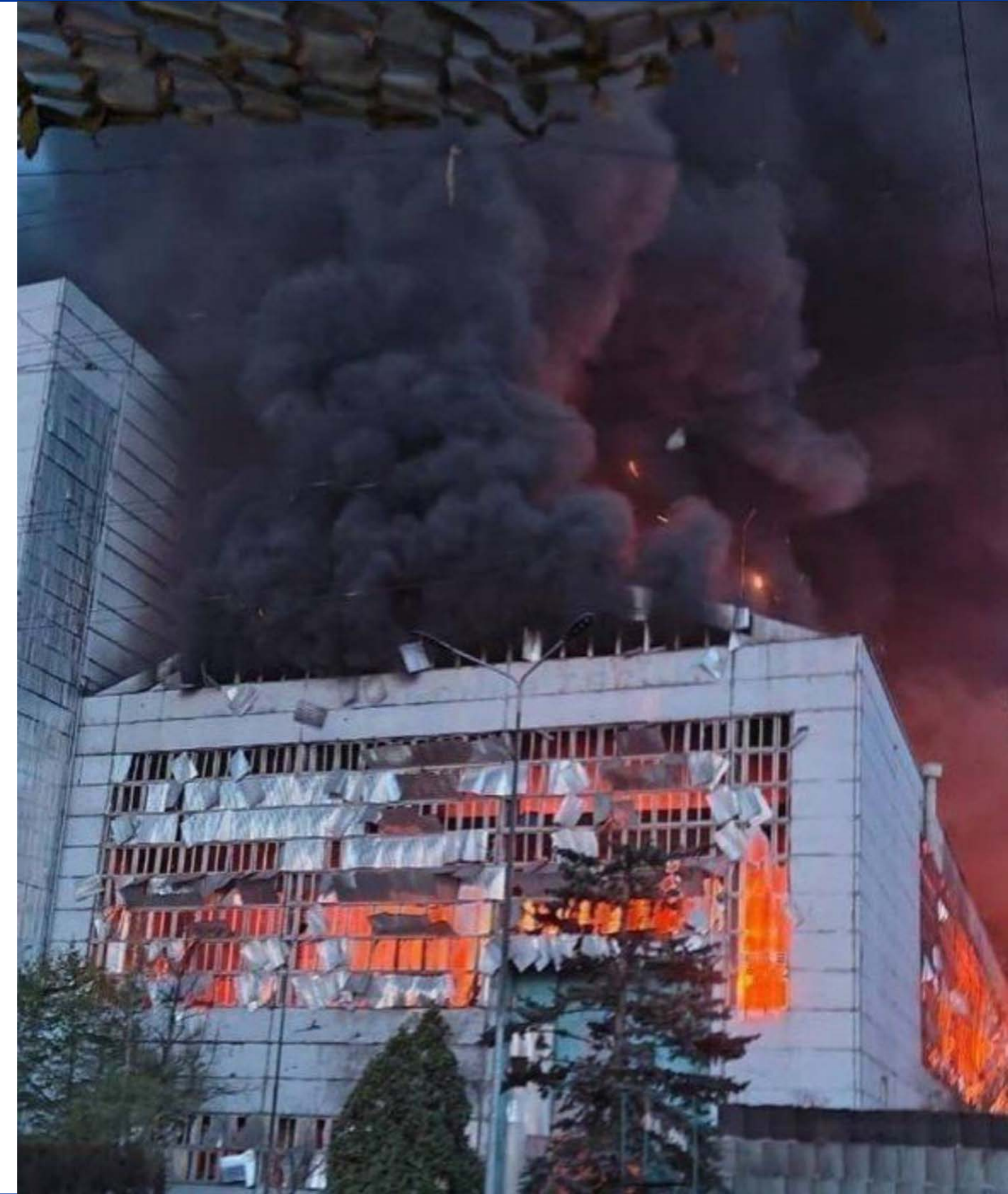
Rebuilding energy system in Ukraine

FACING THE CHALLENGE

12–18 hours without electricity per day for businesses and households (July, December, January, February)

3–5 GW additionally required to cover consumption during the pick hours

25% of the consumption is dedicated to critical infrastructure (including heating in winter)



Rebuilding energy system in Ukraine

FACING THE CHALLENGE

Situation aggravated by:

- Unrealistic recovery plans
- Insufficient level of the energy generation protection
- Electricity import constraints
- Lack of natural gas and risk of gas supply disruptions
- New generation development failure
- Nuclear power inefficiency
- Debts on the electricity markets
- Management inefficiency



Rebuilding energy system in Ukraine

CURRENT EFFORTS

- Restoration of the old generation
- Emergency delivery of power generators

Not sustainable, will not cover the consumption gap of 3–5 GW and might result in installation issues (leaving expensive equipment non-functional)

- Nuclear power generation development

Not a solution for the mid-term and requires enormous investments

- Development of diverse, CO₂-neutral power generation distributed across the country

The only sustainable solution capable of covering urgent needs while building a resilient energy system



DECENTRALIZED GENERATION IS THE SOLUTION

Resilience to missile/drone attacks while not only addressing community needs but also ensuring:

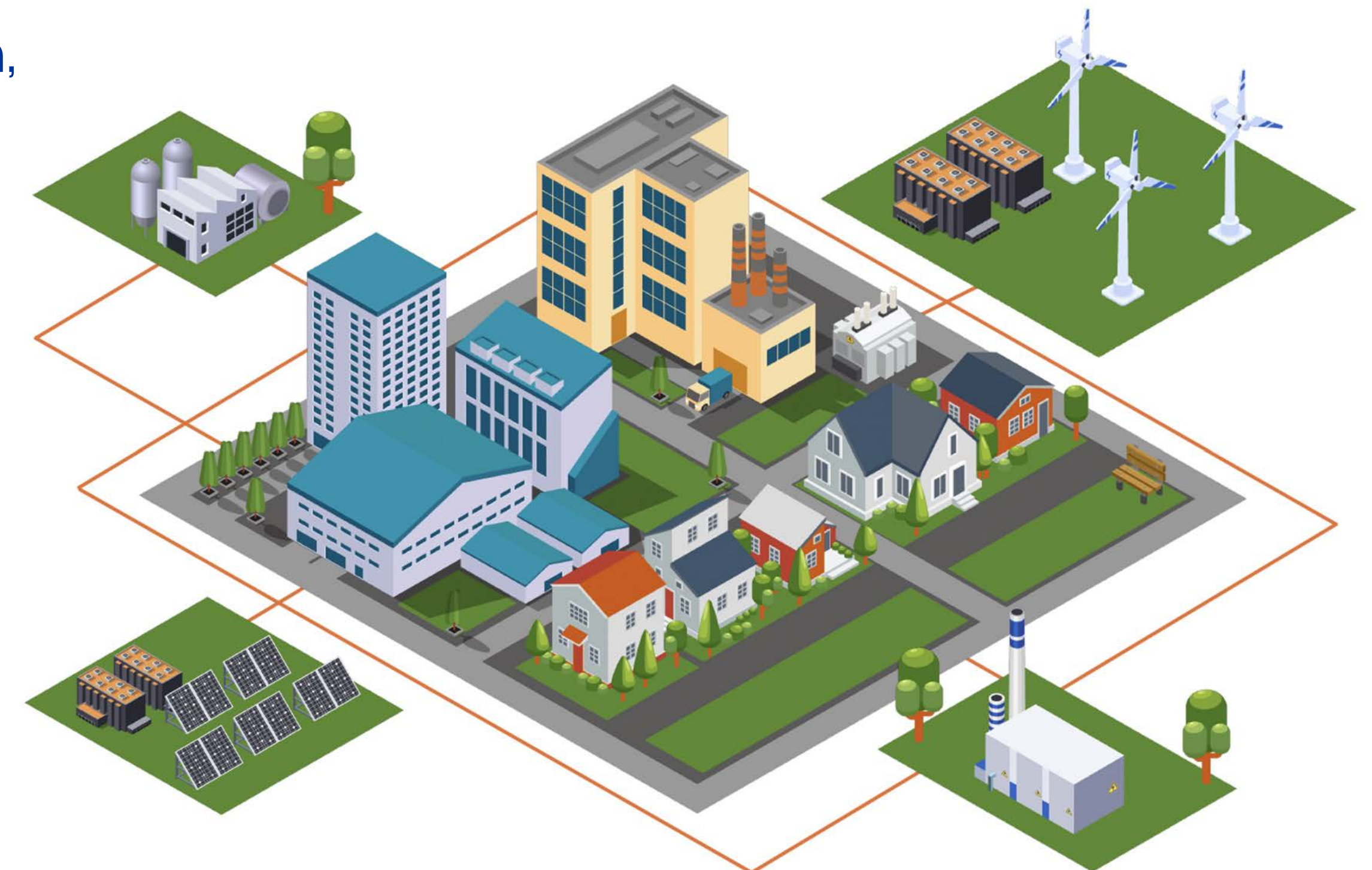
- Local recovery and economic revitalization
- Reform of Soviet-era communal service systems
- Improvement of adjacent systems (sewage, waste management, etc.)
- Reduction of CO2 emissions and advancement of the green transition
- Engagement of the private sector and scalable models for PPPs
- Foundations for technology transfer and investment from G7 countries
- Establishment of a competitive and robust electricity market
- Strengthening of local corporate governance systems



COMMUNITY CENTERED APPROACH

Modernization of the local critical infrastructure and development of new generation mix in communities:

- Ensures coverage of the critical infrastructure consumption, allowing for more energy for general population needs
- Creates additional income generation for the community
- Facilitates decrease of tariff burden for population
- Contributes to consumption reduction
- Increases resilience
- Supports job creation
- Unlocks investment flow and IFIs funds

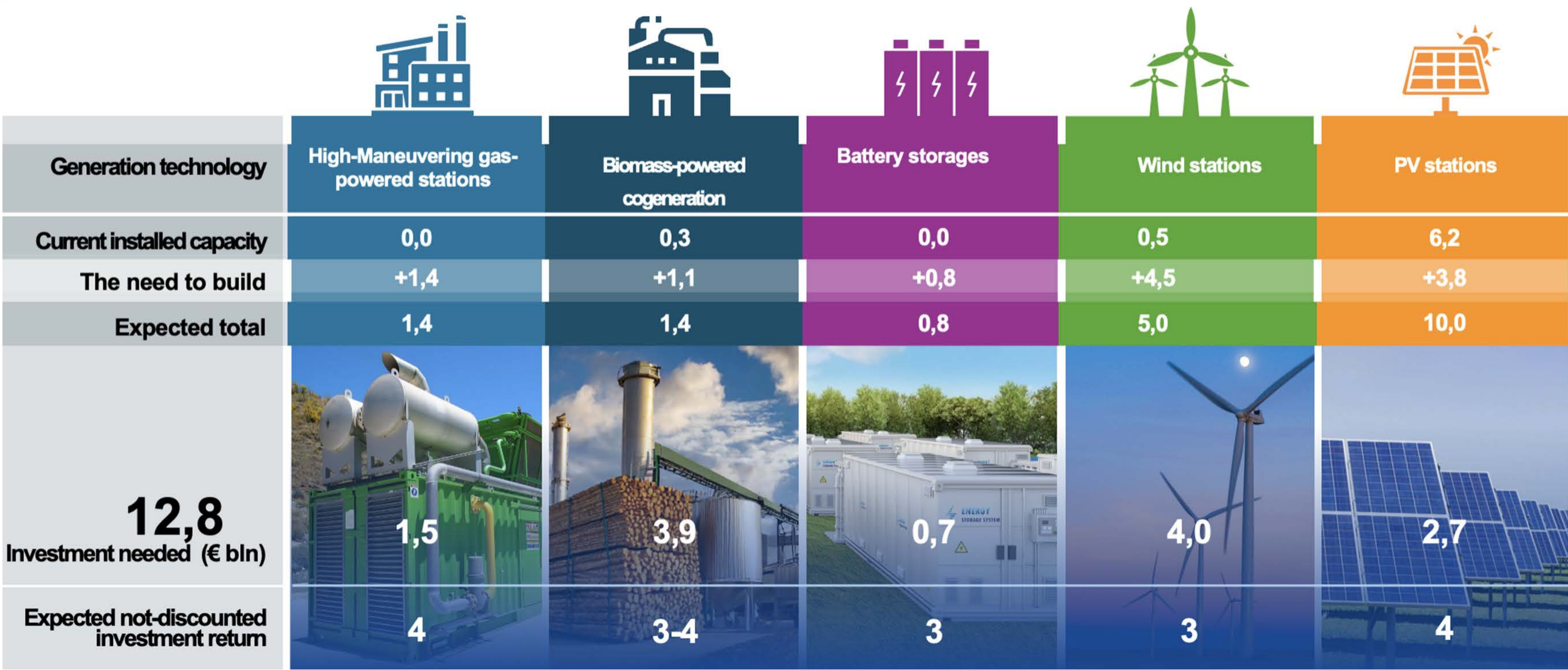


Rebuilding energy system in Ukraine

NEW GENERATION MIX

According to the adequacy report, Ukraine needs significant amount of the new generation with a focus on the diversity of technologies.

This will create a market for the EU-based technologies and equipment suppliers



Rebuilding energy system in Ukraine

PROOF OF CONCEPT



Center for
Human Capital



Ukraine Facility
Platform

Pilot study carried out in Kyiv Oblast by the CHC, funded by UNDP, revealed the following:

- **One-size-fits-all does not exist**, every community requires a tailor-made solution
- Only a **combination of various technologies (batteries, gas pistons, and wind)** can be economically and socially viable
- **Project design should cover** not only critical infrastructure needs but also ensure **attractiveness and profitability for investors**, local businesses, and population
- **Bankability of the project** depends on combination of public, private, and concessional resources



Rebuilding energy system in Ukraine

STUDY RESULTS: KYIV OBLAST



Center for
Human Capital



Ukraine Facility
Platform

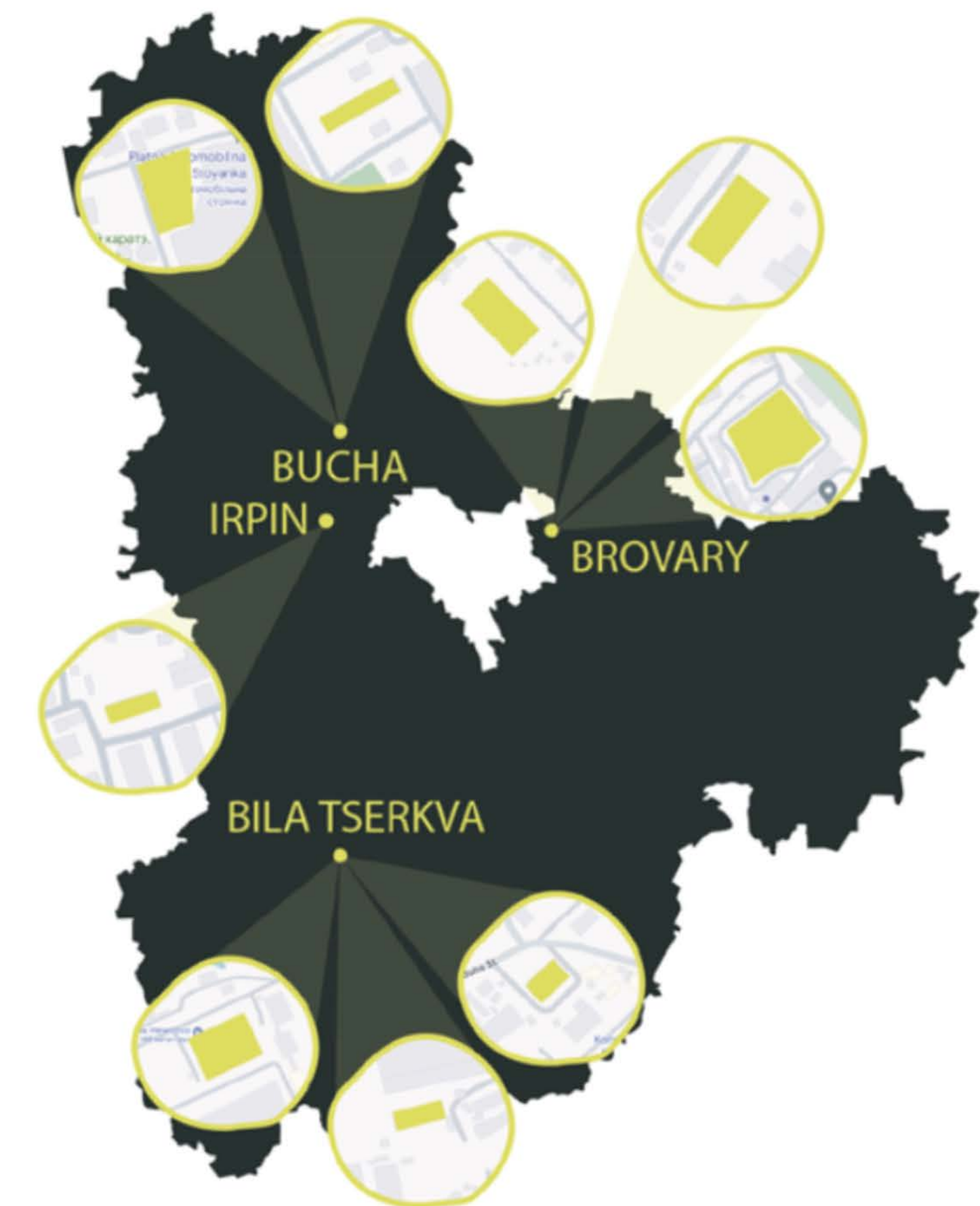
Developed methodology for regional assessment model approach that includes:

- State of utilities and critical infrastructure
- Socio-economic data
- Human capital
- Governance capacity
- Stakeholder maps

Pre-feasibility studies for four communities that show:

- Best technology mix
- Potential partnerships
- Business models
- Calculations of payback periods

- YEAR 1 BATTERY INSTALLATIONS**
4.4 years payback period
- YEAR 2 GAS PISTON COGENERATION**
3.6-4.7 years payback period
- YEAR 4 SYNTHESIS GAS FOR GAS PISTON UNITS**
2.1 years payback period
- YEAR 2 WIND PARKS INSTALLATION**
Additional power on the local level
5.6 years payback period

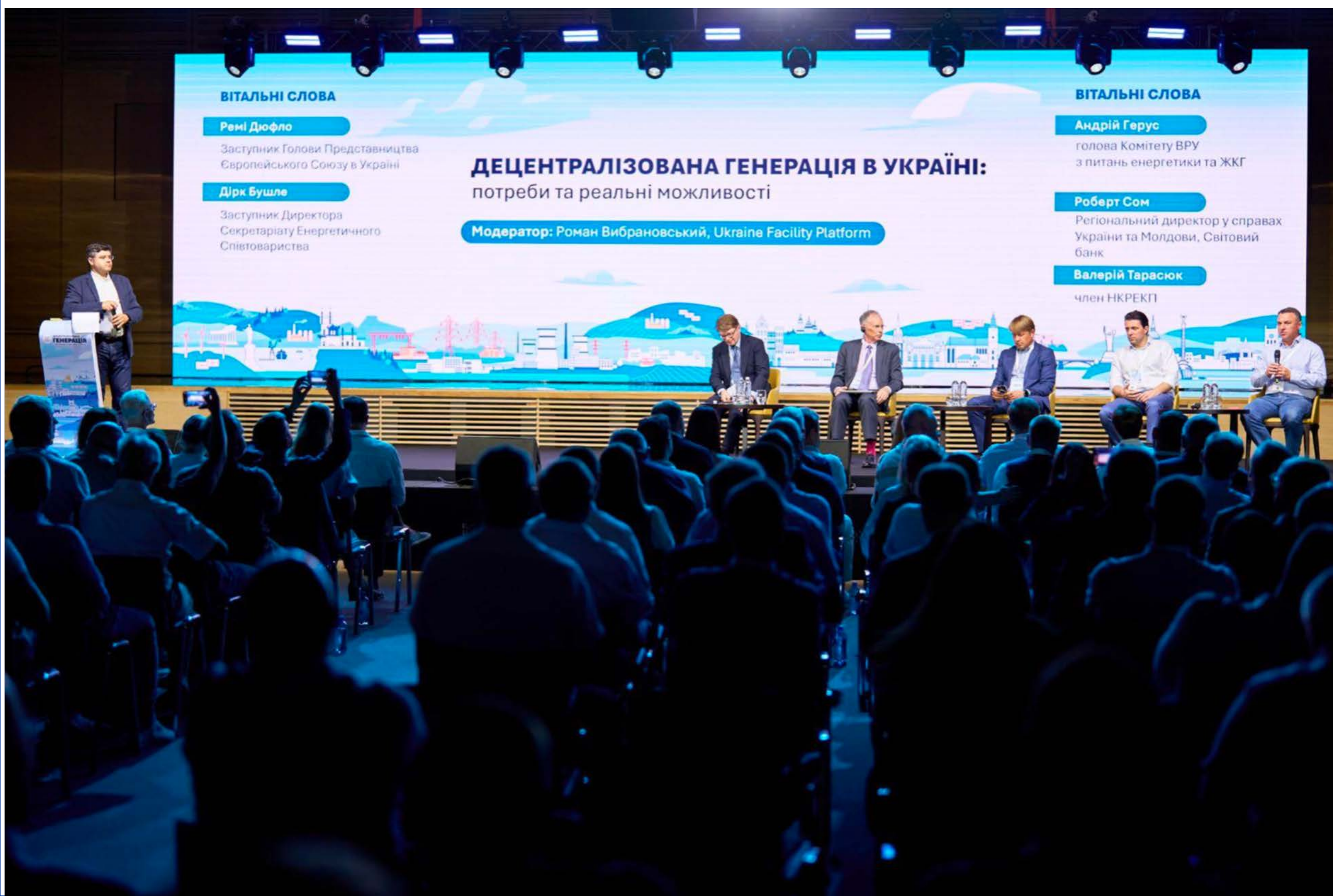


Rebuilding energy system in Ukraine

PARTNERSHIPS ARE KEY

Success can be ensured by:

- Stakeholders partnership: GoU, local communities, regulator, banks, business
- Buy-in of communities and partnerships with business
- Capacity building of Ukrainian communities and banks
- Support by international investors and technology producers
- Policy change that will secure return of investment on the transparent and competitive market

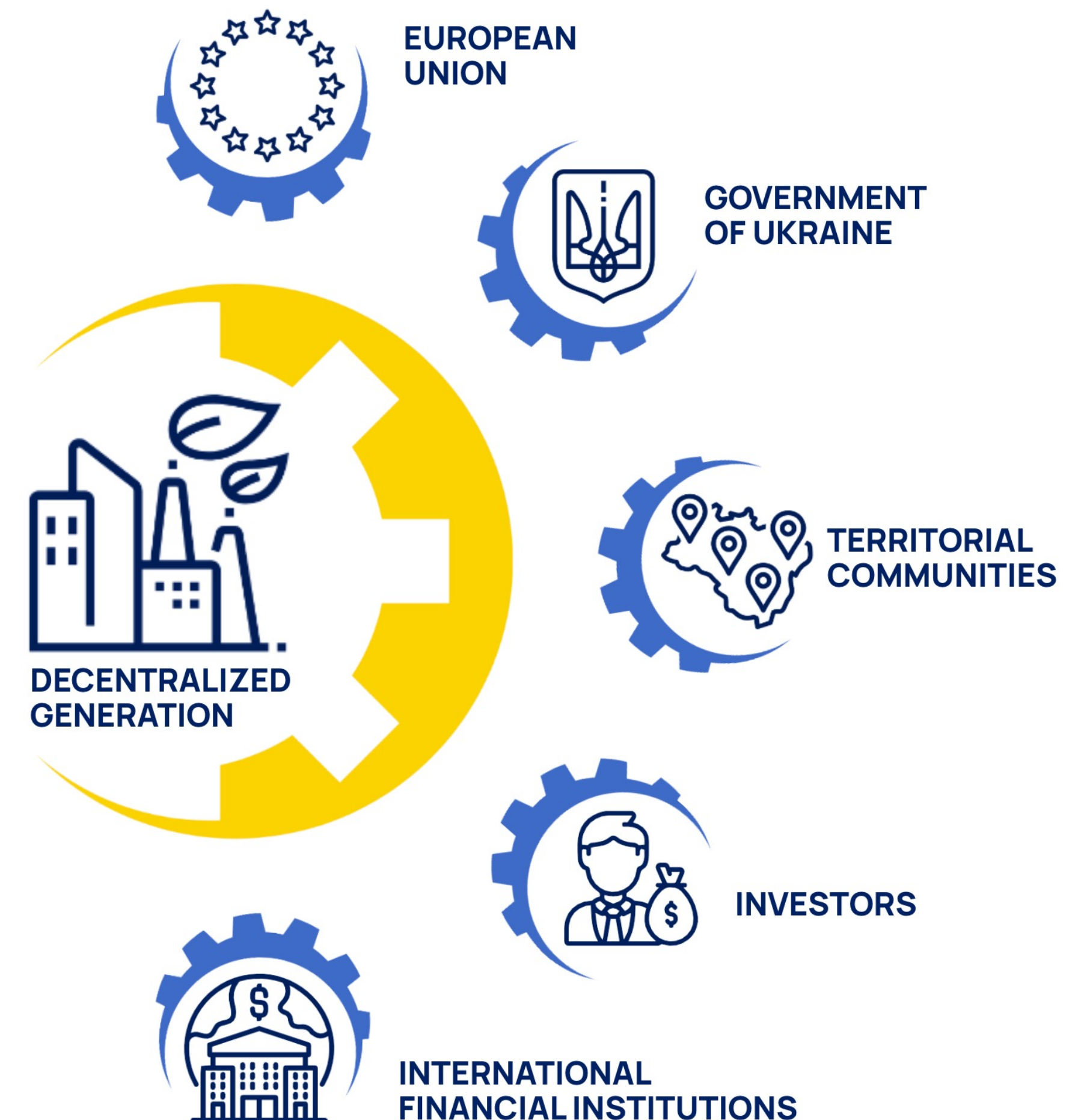


Rebuilding energy system in Ukraine

UNLOCKING OPPORTUNITIES

To enable and accelerate the rollout of decentralized generation projects in Ukraine at scale, UAFP has developed the Collaborative Effort Toolkit:

a set of measures and instruments that **solves the issue of lacking collaboration of all stakeholders** of energy security and sustainability in Europe, and Ukraine as its part, **to address urgent problems and fulfill strategic interests** of each one



Toolkit set:

1. Financial product consisting of:

- ✓ CAPEX coverage
- ✓ Project development
- ✓ Insurance
- ✓ OPEX (biomass, WTE)

2. Framework conditions

3. Implementation steps

Objective:

To accelerate the development of renewables by combining public, private, and concessional resources to leverage the maximum private capital possible while keeping energy tariffs at affordable levels for the population.

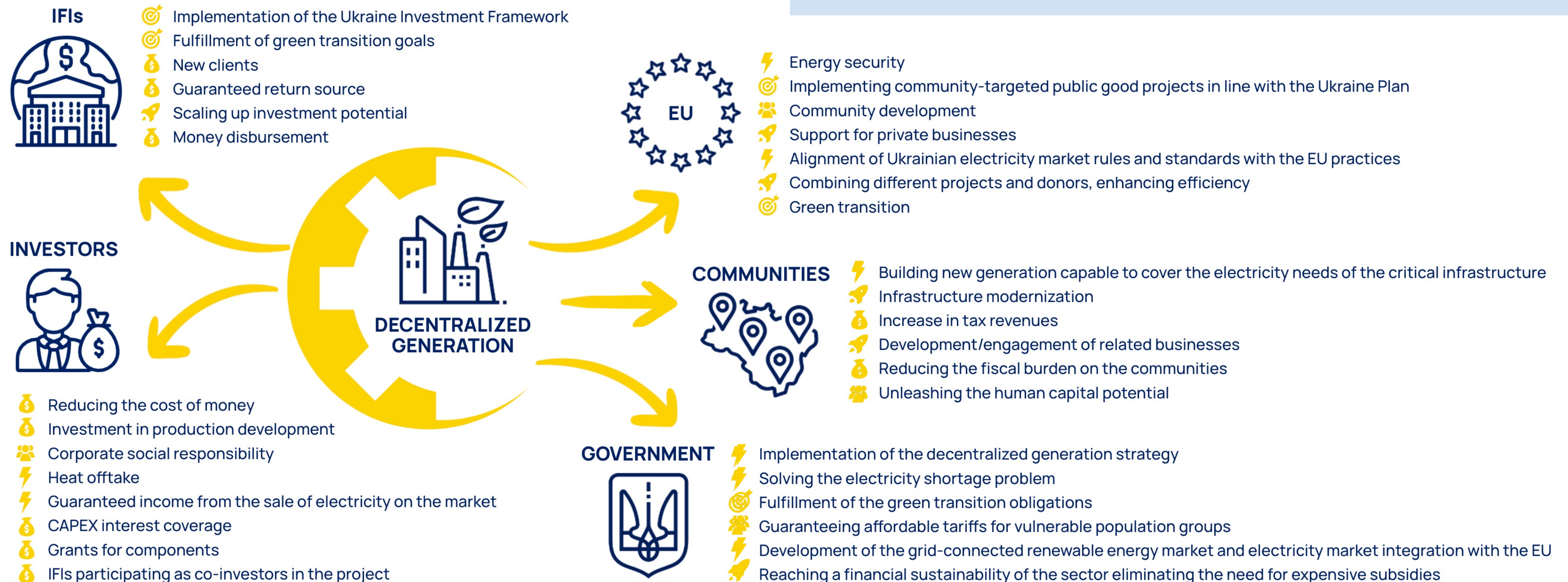
Area of application:

Projects for the development of decentralized generation in Ukraine by private businesses aimed at addressing community needs, identifying optimal technology mixes, and ensuring the proper and transparent functioning of the market for grid-connected renewable energy.

Rebuilding energy system in Ukraine

STAKEHOLDER BENEFITS

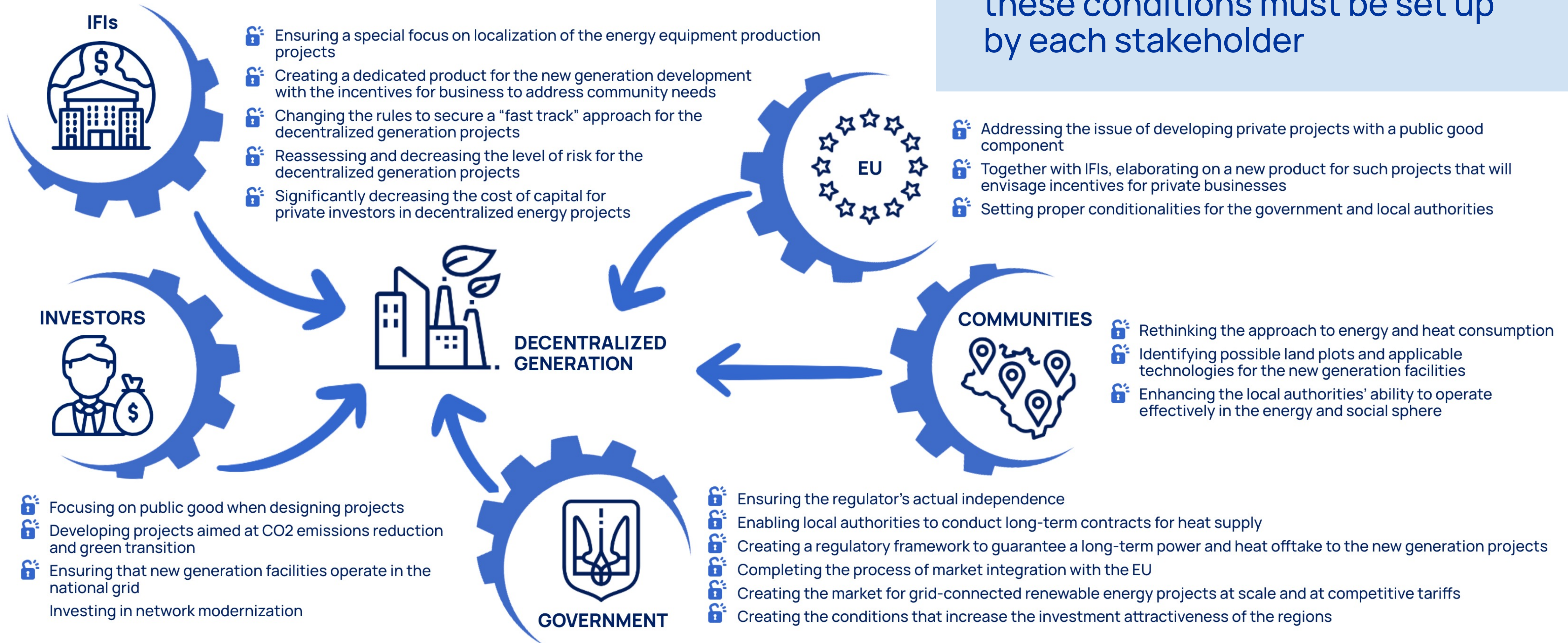
Toolkit implementation fulfills the critical interests of each stakeholder



Rebuilding energy system in Ukraine

FRAMEWORK CONDITIONS

To unlock the benefits,
these conditions must be set up
by each stakeholder



Rebuilding energy system in Ukraine

IMPLEMENTATION STEPS

To-do list to put the Toolkit into practice enabling all stakeholders to collaborate for mutual benefits

- ☐ Develop a financial product
- ☐ Develop a package of regulatory changes at the national level
- ☐ Develop a package of changes to network connectivity considering community interest
- ☐ Create a model of proper and transparent functioning of the market for grid-connected renewable energy
- ☐ Set a legal and organizational framework for business and communities cooperation
- ☐ Develop a blueprint for long-term contracts for heat supply
- ☐ Create a model for pre-feasibility studies with RES-focused technology mix based on the target communities
- ☐ Facilitate the development and implementation of pilot cases in several communities



Rebuilding energy system in Ukraine

PILOTING AND SCALING



To develop a field-proven framework for scaling up win-win solutions as early as possible, UAFP calls for creating a pilot project by providing the Toolkit-based opportunities to:

- **Communities** ready to host new generation to cover the critical infrastructure needs
- **Businesses** ready to partner with communities to build new generation for mutual benefit