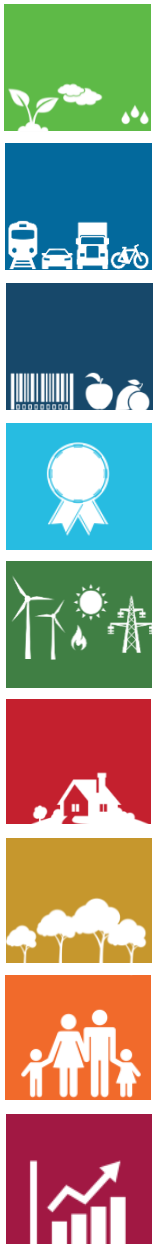
UNECE

Online Capacity-building Workshop on Sustainable Renewable Energy Investment and Deployment

Peer-learning dialogue on Water-Energy Nexus - Focus on the Caucasus, Central Asia and Eastern and South Eastern Europe

Welcome!
We will be starting shortly



Housekeeping rules

Select your language channel: English, Russian, Armenian

Mute your microphone if you are not speaking

Switch off your camera if you are not speaking

Use “Raise hand” function to request the floor

Use “Chat” function to ask questions and share comments

Capacity-building Workshop on Sustainable Renewable Energy Investment and Deployment

14:00 **Introduction**

14:15 **Presentation: UNECE Toolkit for integrated water and energy planning and project development**

14:30 **Panel discussion with experts from the Caucasus, Central Asia and Eastern and South Eastern Europe**

15:30 **Q&A**

15:50 **Wrap up & Next Steps**

Introductory Remarks

Oleg Dzioubinski

Regional Advisor, Sustainable Energy Division, UNECE

Annukka Lipponen

Environmental Affairs Officer, secretariat of the Water Convention, Environment Division, UNECE

UNECE Toolkit for integrated water and energy planning and project development

Lucia De Strasser

Water – Energy Specialist, Co-author of the toolkit

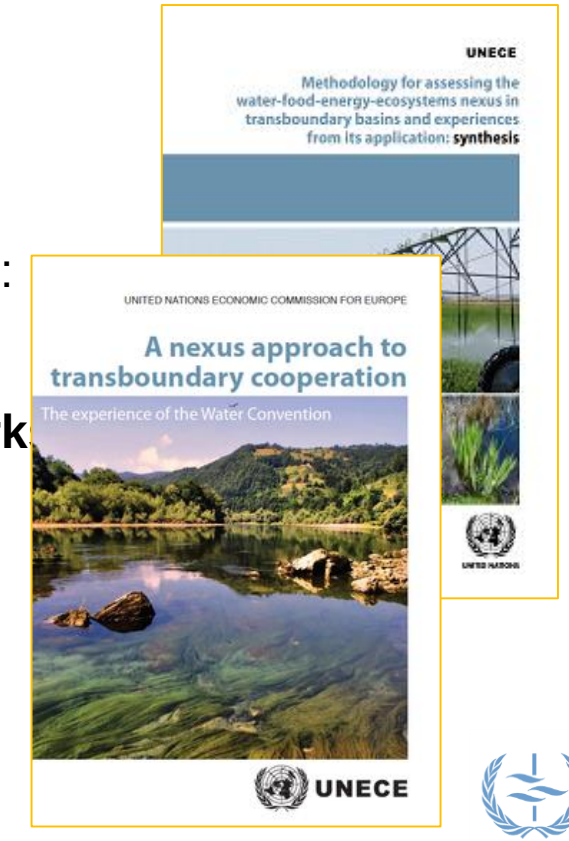
Water Convention (*Convention on the Protection and Use of Transboundary Watercourses and International Lakes*)

- Supports transboundary cooperation through:
  - A legal framework
  - An institutional framework
  - Projects on the ground *(e.g. nexus assessments of transboundary basins)*

- Global convention (open to all UN member states - 44 parties today), secretariat hosted by UNECE in Geneva

Rationale of nexus work under the Water Convention: Promoting transboundary cooperation by…

- **Overcoming "silos thinking"** in policy making and natural resource management:
  - reduced friction between sectors and countries
  - reduced economic losses from inefficiency
  - enhanced sustainability
- **Co-optimizing the use of** existing and new **infrastructure**:
  - benefits to different sectors
  - lower resource use intensity
- **"Nexus-proofing"** legal, institutional, and policy **framework**
- Motivating **information sharing and consultation in transboundary contexts**, and considering alternatives
- Highlighting the **broad benefits** of intersectoral and transboundary **cooperation**



Nexus activities under Water Convention

Exchange of experience in the **Task Force on the Water-Food-Energy-Ecosystems Nexus** (22-23 October 2020); **policy support and tools**

Assessments of the water-food-energy-ecosystems nexus; assessment **methodology** (flexible and adaptable framework, participatory process in close cooperation with Governments, involving different sector Ministries)

Nexus solutions and investments' synthesis (2021): how to realize them through **cooperation, consultation, and exploration of co-financing opportunities** (across sectors, countries)

* United Nations administered territory under the UN Security Council Resolution 1244 (1999)

Water-energy coop. focused on Renewable Energy

- Why? All RE has transboundary impact, and hydro competitiveness needs to be better understood
- Cooperation between **Environment** and **Sustainable Energy** Divisions at **UNECE**

➢ Policy Brief on RE, nexus and SDGs (UNECE, 2017)

- **"Hard Talks"** on energy, considering water and environment (follow-up to **Drina Nexus Assessment** 2016)
  - ✓ Bosnia and Herzegovina 2018
  - ✓ Serbia 2019

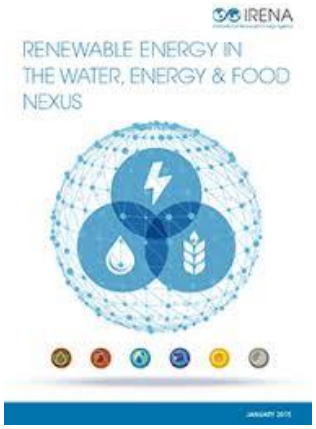
➢ Sustainable RE Deployment – a toolkit for Policy Makers (UNECE, 2020)

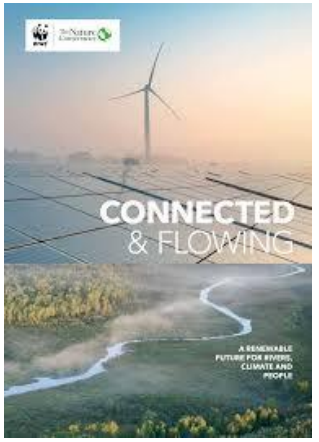
Increasing demands of water, food, energy – pressure on (transboundary) ecosystems

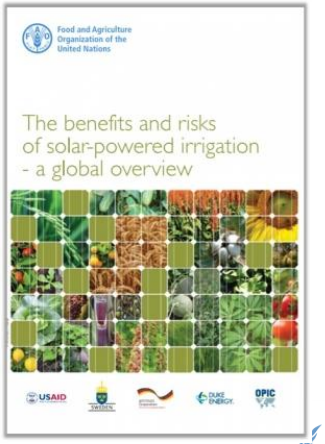
Demand of resources by 2050 and water-energy-food-ecosystem nexus

*"**energy**-related objectives can be achieved more effectively through integrated and consultative planning in **synergy with environmental and other sectoral objectives**, notably those of the water and agricultural sectors"*

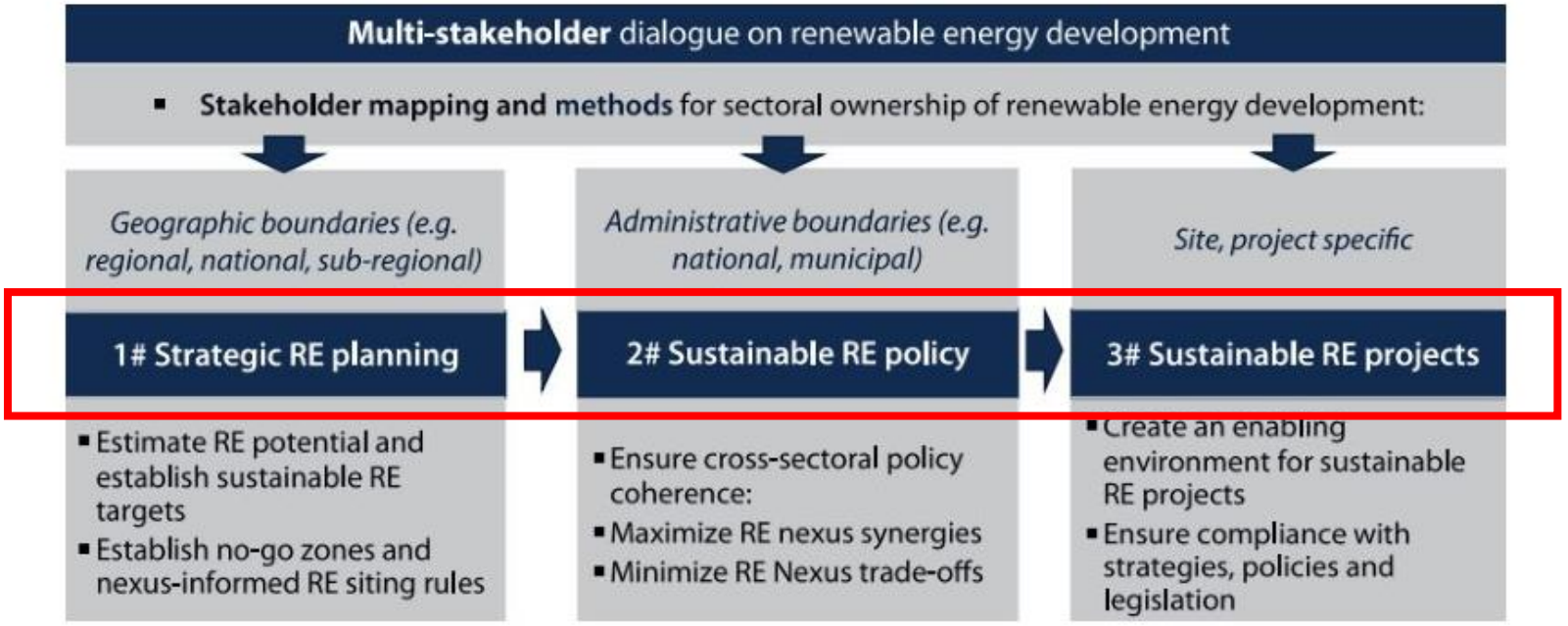
Same conclusion from different perspectives on RE deployment:







Sustainable RE deployment along 3 tracks

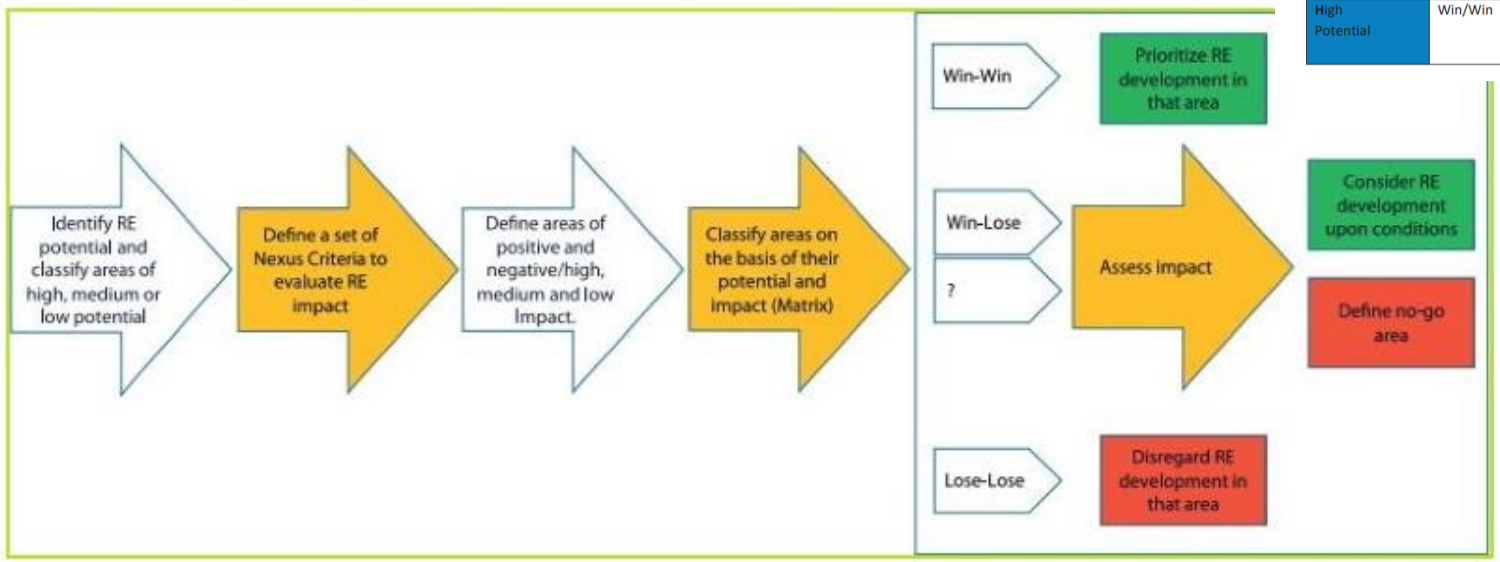


Multi-stakeholder dialogue and the three tracks of sustainable renewable energy development: planning, policy and project

#1 Sustainable RE strategy

Table 2: Potential/Impact Matrix

	Low Positive Impact	Medium Positive Impact	High Positive Impact	Low Negative Impact	Medium Negative Impact	High Negative Impact
Low Potential	Uncertain	Uncertain	Uncertain	Lose/Lose	Lose/Lose	Lose/Lose
Medium Potential	Win/Win	Win/Win	Win/Win	Win /Lose	Win /Lose	Win /Lose
High Potential	Win/Win	Win/Win	Win/Win	Win /Lose	Win /Lose	Win/Lose



Step-by-step process for strategic planning. The steps that require strong involvement on the part of cross-sectoral stakeholders are indicated in yellow.

#2 Sustainable RE policy

Figure 8: Step-by-step process for sustainable renewable energy policy development

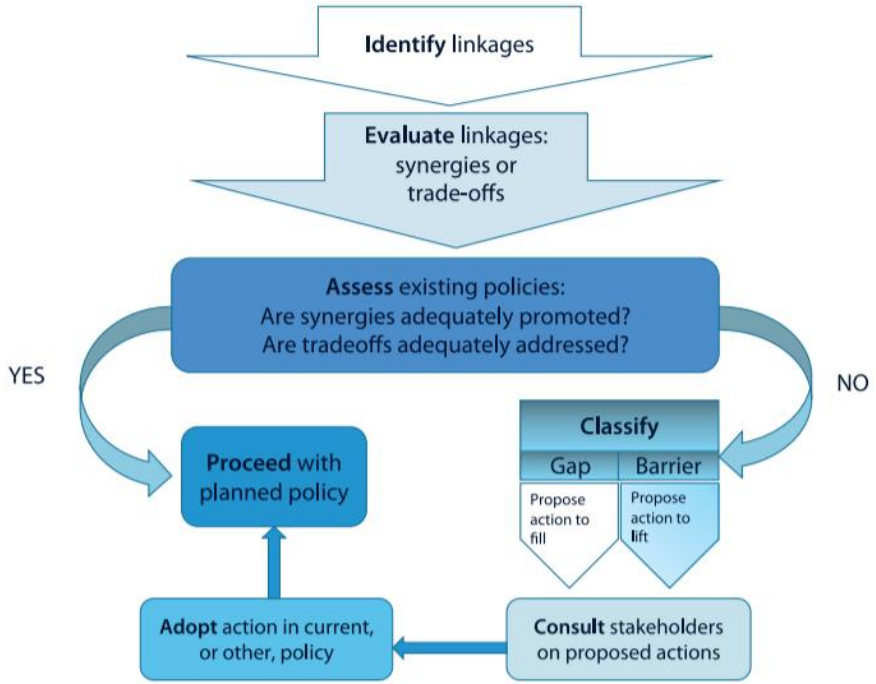


Table 4: The Sustainability Assessment Matrix

Nexus sectors	Synergies		Trade-offs	
	Identification	Assessment	Identification	Assessment
Water				
Water supply/services				
Water management				
Water infrastructure				
Agriculture and Forestry				
Land availability				
Land quality				
Rural development				
Agroforestry				
Ecosystems				
Natural environment				
Wildlife/habitats				
Indirect environmental impact of renewable energy				
Cultural impact				
Transboundary aspect				
Transboundary impact on water				
Transboundary impact on food/agriculture				
Transboundary impact on ecosystems				

#2 example

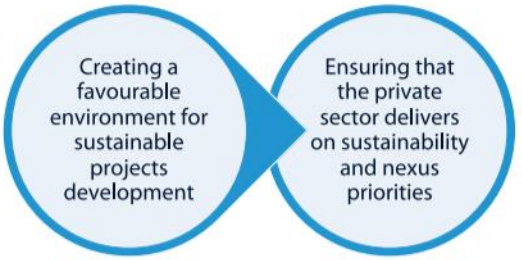
- Identification and assessment (gaps & barriers) of Synergies and Trede-offs between RE deployment and Agriculture through:
  - land availability
  - land quality
  - rural development

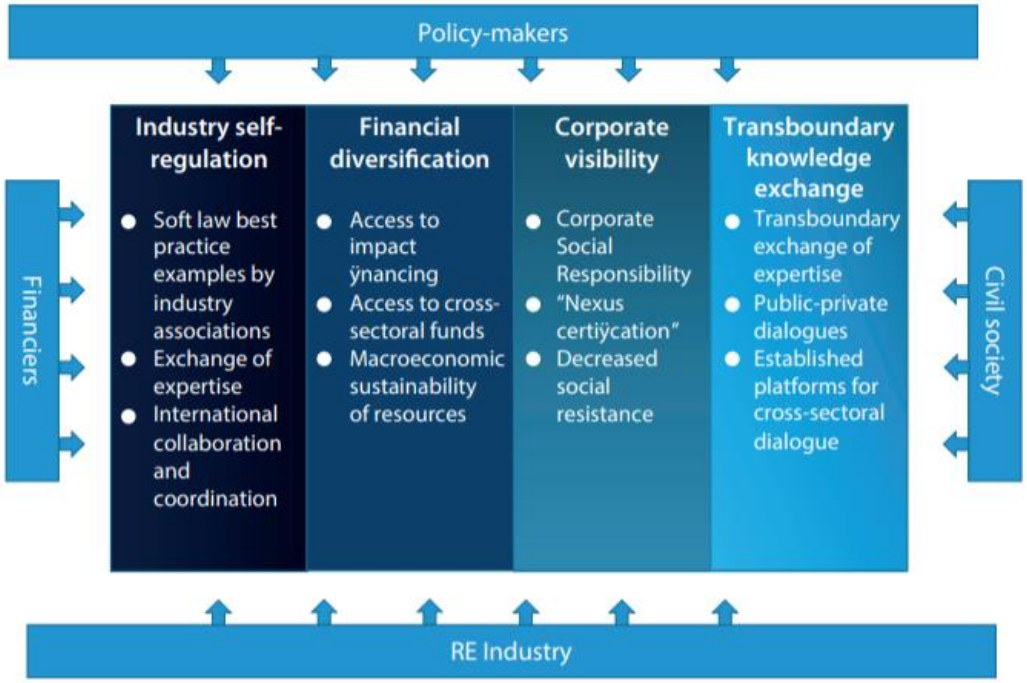
Nexus sectors	Synergies		Trade-offs	
	Identification	Assessment	Identification	Assessment
Agriculture				
Land availability	**IDENTIFIED**: Solar PV technologies exist that allow for elevated panels for farming, and also display synergies with increasing bee populations.	**GAP**: The policy can incentivize usage of elevated PV technologies for maximizing benefit from land usage. **BARRIER**: Land zoning rules that prevent Solar PV on farmland should include an exception for PV plants that use elevated technology.	**IDENTIFIED**: New PV installations will use land that could be exploited for farming, etc.	**ADDRESSED**: Zoning rules allow the installation of PV on lands already available for industrial usage or for integrated farming solutions.
Land quality	**NOT IDENTIFIED**	–	**IDENTIFIED**: PV plant parts and, particularly, storage equipment can adversely affect soil if improperly disposed after decommissioning	**GAP**: Obligation to recycle at decommissioning /after a fixed amount of years.
Rural development	**IDENTIFIED**: Small solar PV can provide alternative revenue sources and increased financial security to farmers.	**GAP**: A clause should be included in the proposed policy that makes permitting simpler for farmers that install small (<100 KW) PV plants. **BARRIER**: A tax law provision exists that does not allow farmers to enjoy certain tax exemptions if they have alternative revenue from non-farming activities.	**IDENTIFIED**: Easier income due to solar subsidies can disincentivize local agricultural populations from becoming involved in more physically demanding and financially unstable agricultural professions. **IDENTIFIED**: Local communities often react to large-scale RE installations.	**GAP**: Increase the living standards of agricultural workers, and promote the modernization of farming activities through incentives for modern equipment and supply chain processes. **GAP**: Include a requirement for all projects above a certain size to pay contributions to local communities/ municipalities

Example of implementation of the Sustainability Assessment Matrix

#3 Sustainable RE projects

Figure 9: Two-step process for sustainable renewable energy project development (policy-maker perspective)





Multi-stakeholder involvement

including through transboundary dialogue

Concluding remarks

- RE deployment with water and environment benefits can effectively deliver on climate action (climate action = mitigation + adaptation)
- Action is needed at many levels, coherence and synergy between different policies, many stakeholders need to bring their perspective. Inclusive and effective public participation is crucial
- Transboundary cooperation could contribute to facilitate RE deployment at regional level – sustainably and efficiently
- Interest to implement the tool-kit in specific basins? To further discuss the topic and refine the toolkit?
- Upcoming Water Convention events to keep discussing transboundary nexus:

  -> Nexus Task Force meeting 22-23 October 2020 – focus on Nexus Solutions and Investments; renewable energy will feature as a theme & this webinar will be reported on

Panel discussion with experts from the Caucasus, Central Asia and Eastern and South Eastern Europe

Moderator

Iva Brkic
Economic Affairs Officer, Sustainable Energy Division, UNECE

Panelists

Kostiantyn Gura
Acting Head of the State Agency for Energy Efficiency & Energy Saving of Ukraine, Chair of the UNECE Group of Experts on Renewable Energy

Margalita Arabidze
Deputy Head of Energy Policy Department, Ministry of Economy and Sustainable Development of Georgia, Vice-Chair of the UNECE Group of Experts on Renewable Energy

Miloš Banjac
Assistant Minister, Sector for Energy Efficiency and Renewable Energy, Ministry of Mining and Energy of the Republic of Serbia, Vice-Chair of the UNECE Group of Experts on Renewable Energy

Tatiana Vedeneva
President of the Center for Renewable Energy and Energy Efficiency Development, Kyrgyzstan

Furugzod Usmonov
IEA Energy Expert for EU4Energy project & project CASA-1000 country coordinator, Tajikistan

Aliya Shalabekova
Director, Transboundary Rivers Department, Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan

UNECE GROUP OF EXPERTS ON RENEWABLE ENERGY (GERE)

GERE aims

Implement the commitment of the Paris Climate Agreement

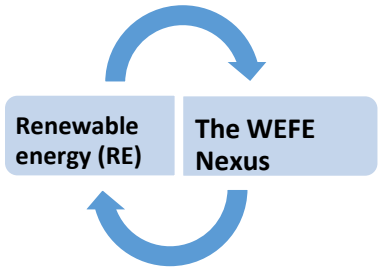
Facilitate regulatory and policy dialogue

Exchange of experiences. good practice and multi-stakeholder dialogues

Work Plan for 2020-2021

- Assess opportunities for more sustainable and environmentally RE through inter-sectoral synergies (nexus)
- Tracking progress in the uptake of renewable energy sources
- Using initiatives to concrete solutions for the reduction of barriers
- Strengthen cooperation between public and private sectors
- Promote information within workshops, seminars, roundtables

The Water-Food-Energy-Ecosystem (WEFE) Nexus



Nexus methodology under the Water Convention

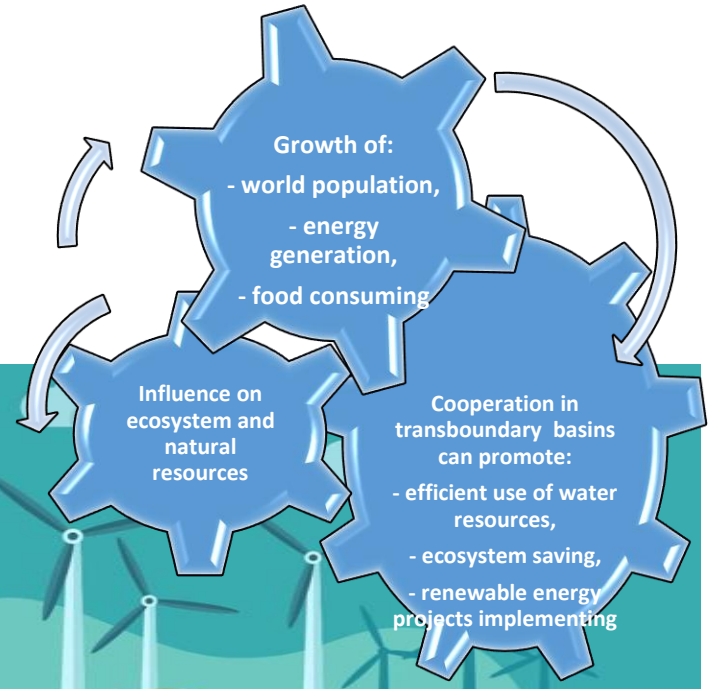
The "nexus approach" aims to increase water, energy and food security by increasing efficiency

GERE contributes:

- Cross-sectoral synergies and benefits
- Cross-sectoral trade-offs
- Transboundary cooperation

Framework under the Water Convention

- Identification of key sectors and stakeholders to be included in the assessment
- Identification of basin conditions and the socioeconomic context
- Identification of intersectoral issues
- Nexus dialogue



Panel discussion with experts from the Caucasus, Central Asia and Eastern and South Eastern Europe

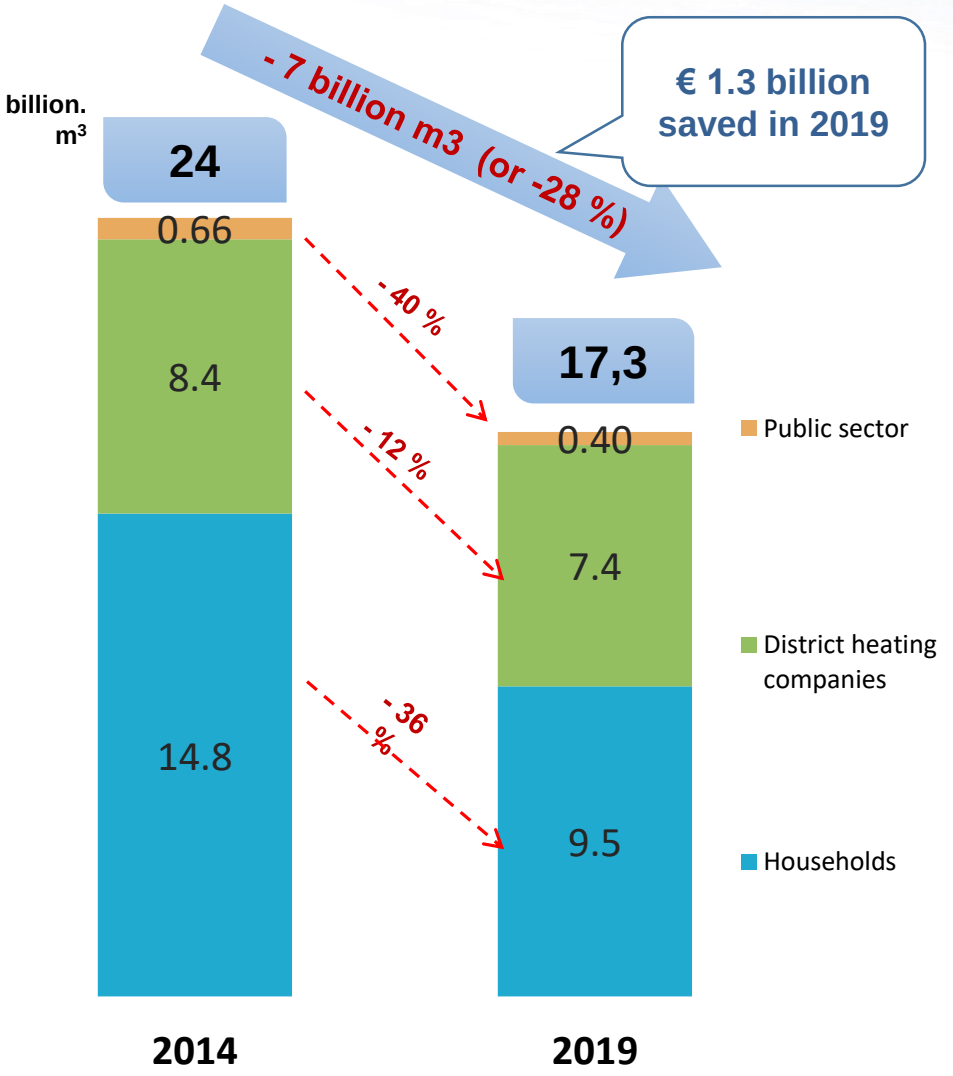
- What is the status of renewable energy (RE) deployment in your country?
- How can integrated planning support sustainable RE deployment?

- How are RE projects supporting rural development plans and vice-versa?
- How can RE projects be more sustainable at the regional level to optimize resource availability and take advantage of complementarities?
- How can basin-level planning support RE deployment?

- How can this toolkit be applied in your country / subregion?

MAIN PRIORITY: NATURAL GAS SAVING

Dynamics of natural gas consumption in 2014-2019*



* according to operational data of NJSC "Naftogaz of Ukraine" and PJSC "Ukrtransgas" (without temporarily occupied territories)

Achievements in 2014 – III quarter 2020:

IN RENEWABLE ENERGY:

2 404 MW of new heat capacities

Investments – **510 million €**

7 177 MW of new renewable energy capacities

Investments – **5.9 billion €**, including:

25 660** of families installed SPP with total capacity – **659 MW**

Investments – **522 million €**

Invested in Ukrainian "clean" energy projects

$\sum \approx$ 6.2 billion €

**- data as of 01.07.2020

Practice of basin planning in the World and Ukraine

The best practice includes multi-purpose infrastructure

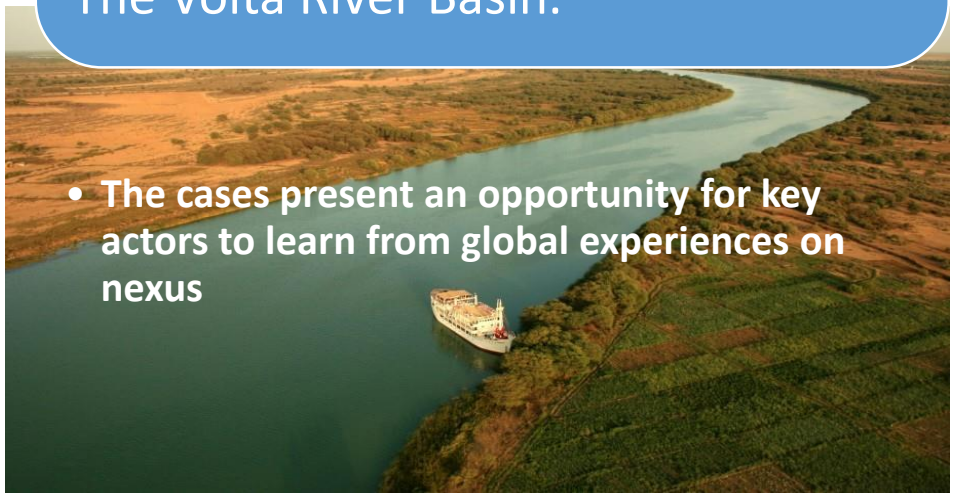
- Examples:

The Senegal River Basin;

The Zambezi Basin;

The Rhine River Basin;

The Volta River Basin.



- **The cases present an opportunity for key actors to learn from global experiences on nexus**

Ukraine

The Tisza River Basin, the project JOINTISZA (in cooperation with Hungary, Romania, Slovakia, Serbia)

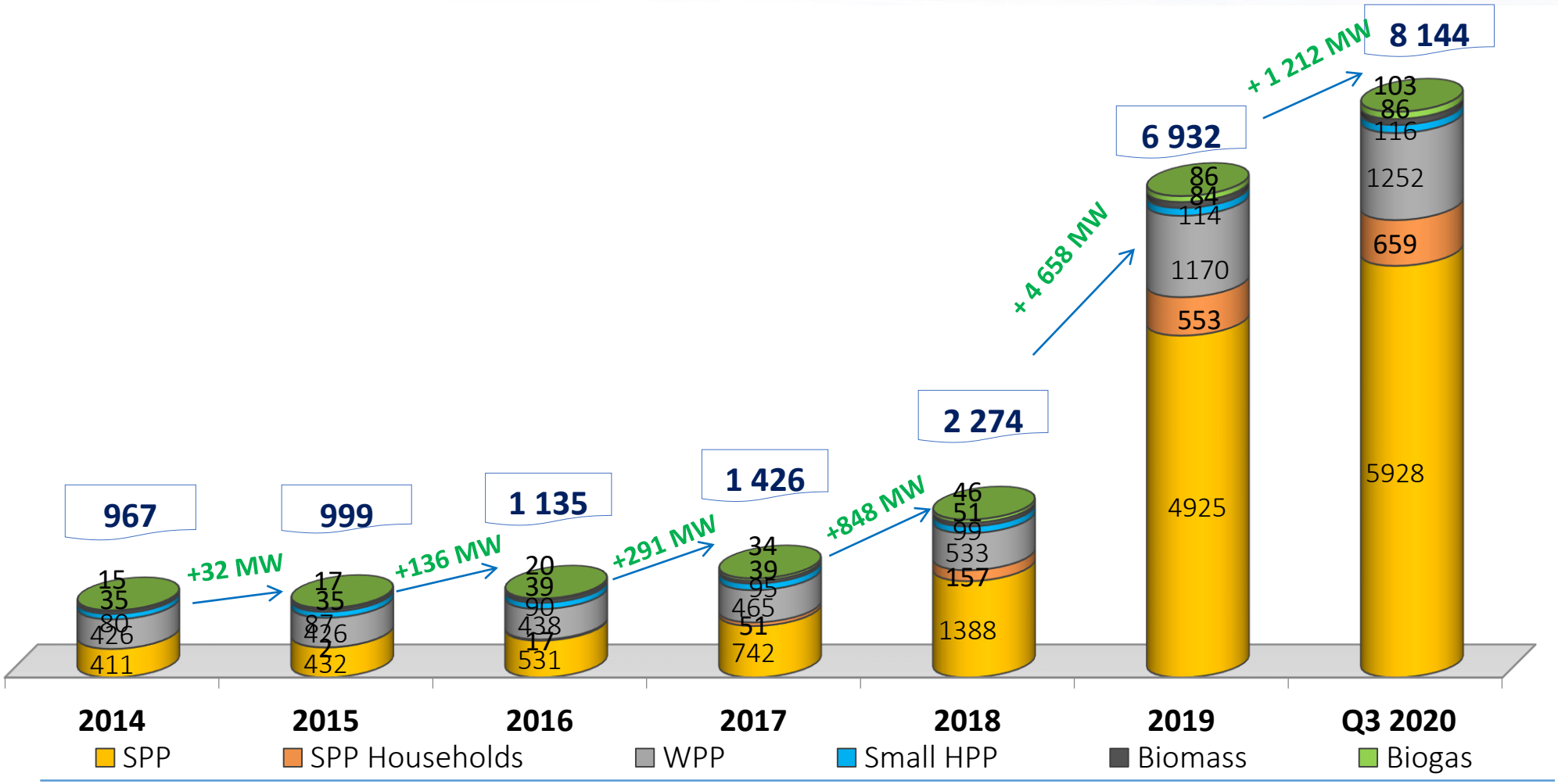
The Dniester River Basin (cooperation with Moldova)

To implement the WEFE Nexus approach, the following will be essential:

At the national level, nexus perspectives need to be strengthened and incorporated into national policies, strategies and plans

At the regional level, it will be necessary to develop regional development objectives through dialogue and negotiation

INSTALLED CAPACITY OF RENEWABLE ENERGY OBJECTS WORKING UNDER THE "GREEN" TARIFF, MW
(01.10.2020)



From the beginning of 2015, 7 177 MW were introduced and around € 5.9 bln were invested

*- information on SPP households as of Q2 2020

**- small hydropower capacity in 2019 adjusted by 11MW due to the change in the determination of hydroelectric power.

UNECE

Thank you for participating!

Stay in touch with us and engage in our Water-Energy Nexus Activities!

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Oleg Dzioubinski, Regional Advisor, oleg.dzioubinski@un.org

National Renewable Energy Action Plan-2020

11% of Renewables in final energy consumption

Energy Strategy of Ukraine till 2035

25% of energy, produced from RES in the structure of primary energy supply

€ 20 bln

Potential directions of investment attraction

Necessary investments by 2035 for:

construction of **renewable energy facilities** (SPP, WPP, small HPP, CHP, biomass boiler station, biogas facilities, etc.)

construction of capacities for production of **equipment for renewable energy facilities**

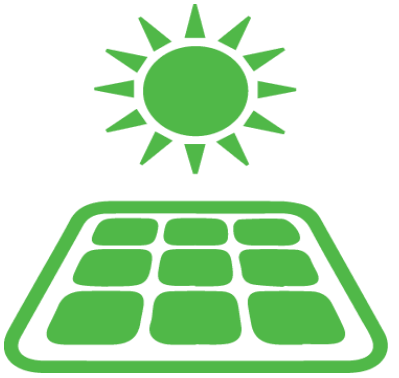
construction of **biofuel production plants** (solid, liquid)

growing of **energy crops**

DYNAMICS OF SOLAR INSTALLATIONS IN PRIVATE HOUSES

Number of private households

Installed capacity, MW



Around **522 mln EURO** invested

The number of private houses eligible for solar panels installation is **6,5 mln**

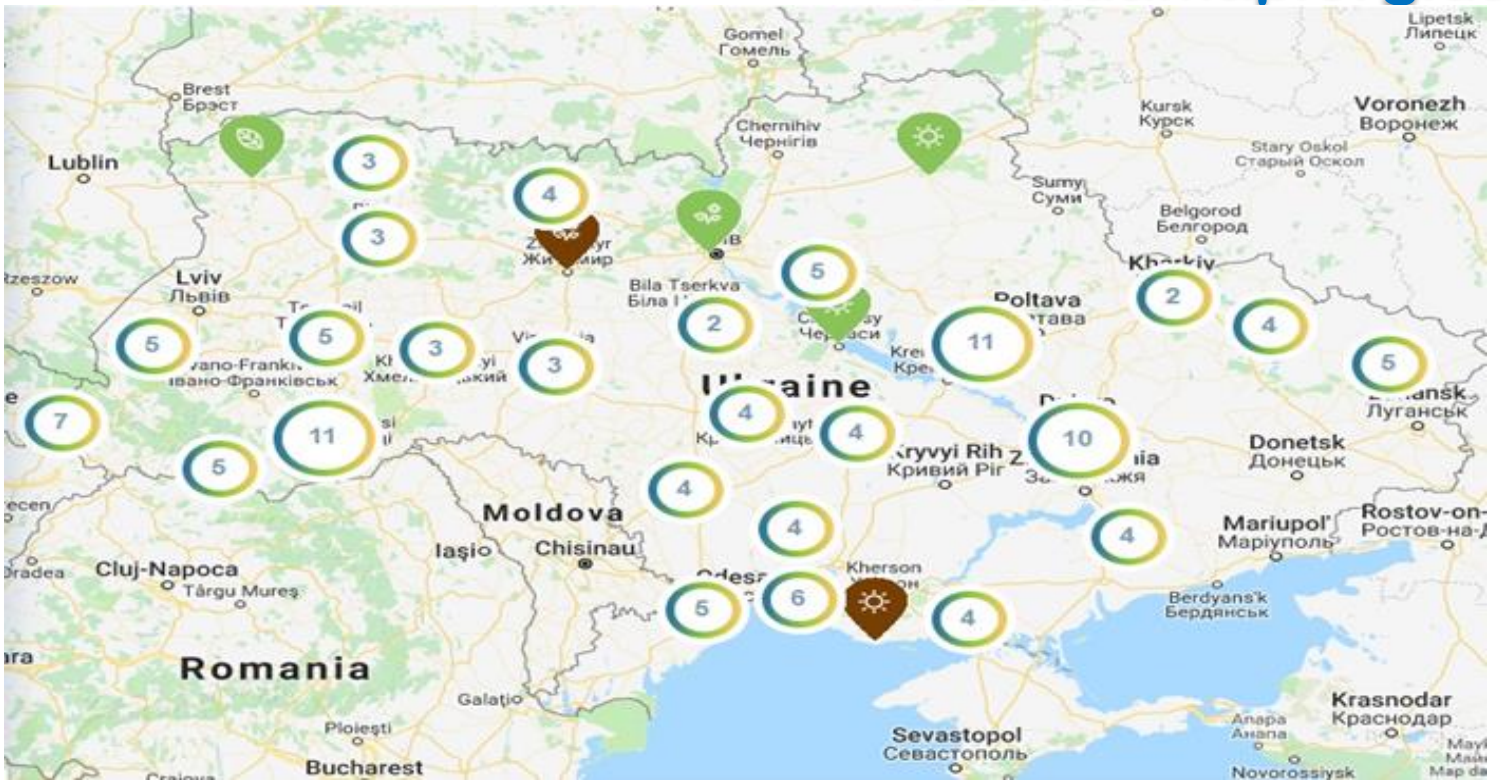
UAMAP comprises detailed information on

135 implemented and
182 potential projects that require investments & soft loans more than

€ 4,9 bln

www.uamap.org.ua

- Hydropower
- Biomass
- Biogas
- Solar power
- Wind power
- Energy efficiency
- Waste energy
- Other



State Agency on Energy Efficiency and Energy Saving of Ukraine

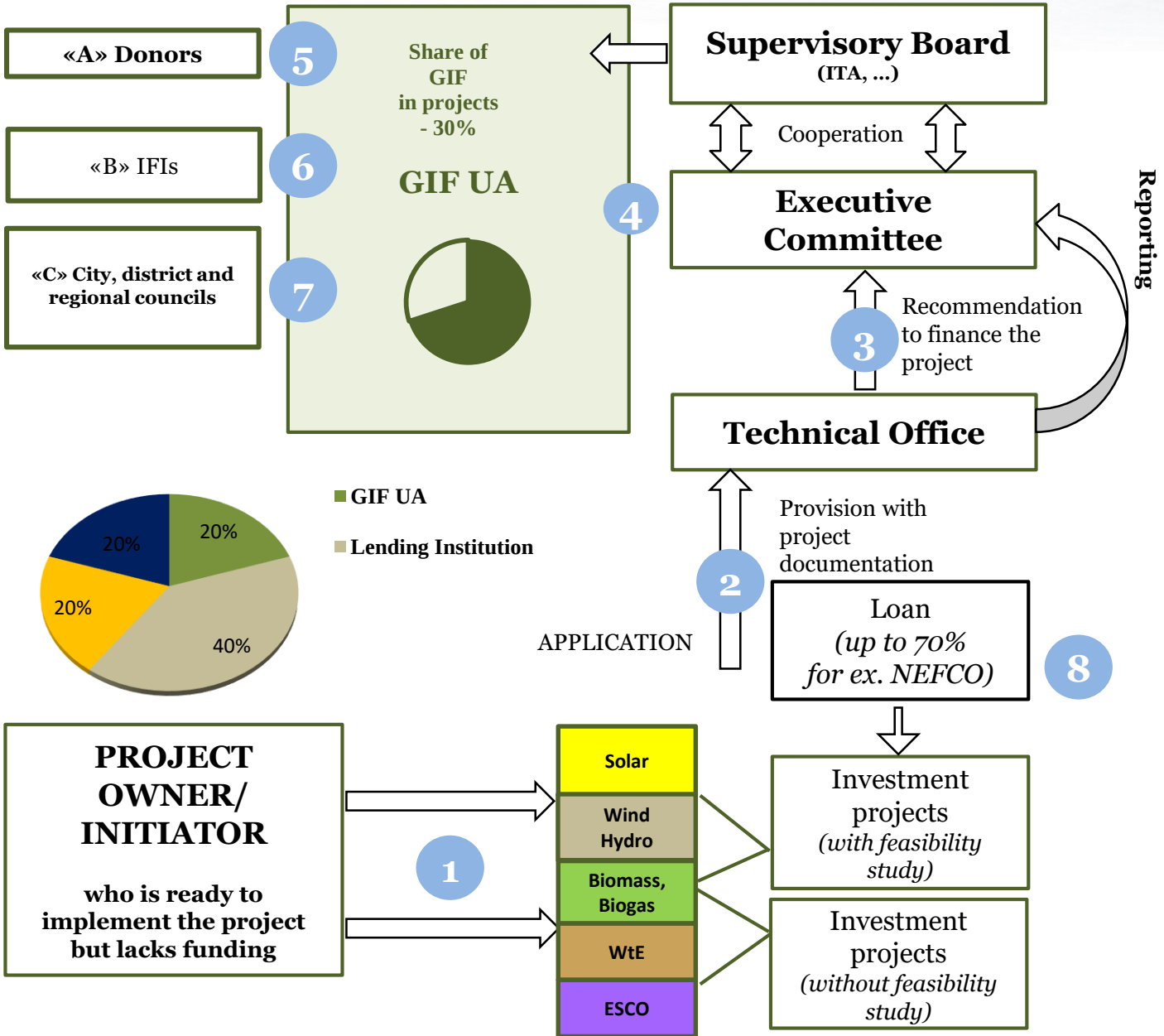
All-Ukrainian Sustainable Development & Investments Agency

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Danish Energy Agency

On behalf of:
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
of the Federal Republic of Germany

GIF UA: SCHEME OF OPERATION IN BRIEF



1 Customer appeals to GIF and selects interesting project(s) or offers his own.

2 Application Form is processed by Technical Office of GIF

3 Decision on the type of financing and interaction model with a project

4 GIF assesses and offers its equity share in RES project

5-6-7 Stakeholders invest in GIF UA

8 Banks give loans to the new projects