



**UKRAINE:**

**RENEWABLE ENERGY DEVELOPMENT**

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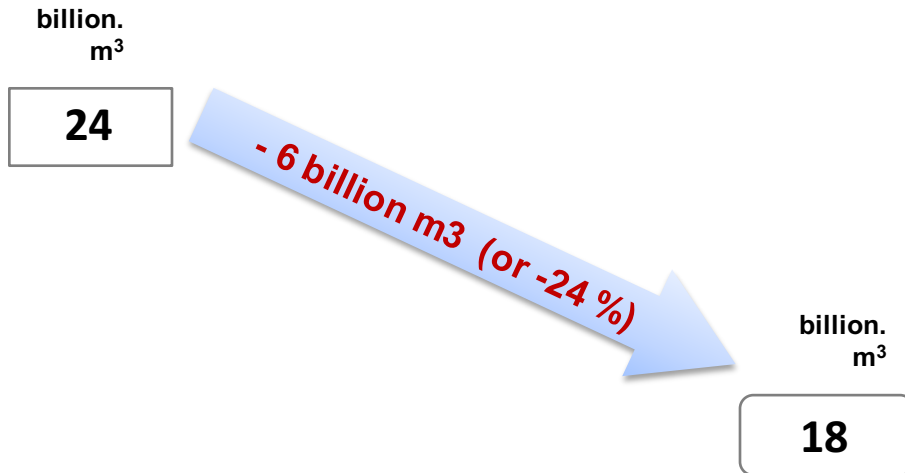
State Agency on Energy Efficiency  
and Energy Saving of Ukraine



## DECARBONISATION

### DEVELOPMENT OF RENEWABLE ENERGY = LOWERING NATURAL GAS AND COAL CONSUMPTION

Dynamics of natural gas consumption in 2014-2018\*



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

Coal 35,58mtoe (2014) lower to 24,6mtoe (2017)

\* [P Statistical Review of World Energy](#)

## Achievements in 2014 - 2018:

### RENEWABLE ENERGY:

**2 173 MW** of new heat capacities

**500 million €**

**1 307 MW** of new renewable energy capacities

**1,2 billion €**, including:

**7 450** private households installed Solar PV with total capacity – **157 MW**

**151 million €**

+ *Decentralized electricity generation*

+ *Local consumption*

**Total investment in Ukrainian  
energy projects 2014-2018**

**Σ ≈ 1.7 billion €**





# 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

At least € 30 bln are WANTED for the next 15 years

## Potential directions for investment



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** – solar panel production plant Vinnytsia (2019)



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

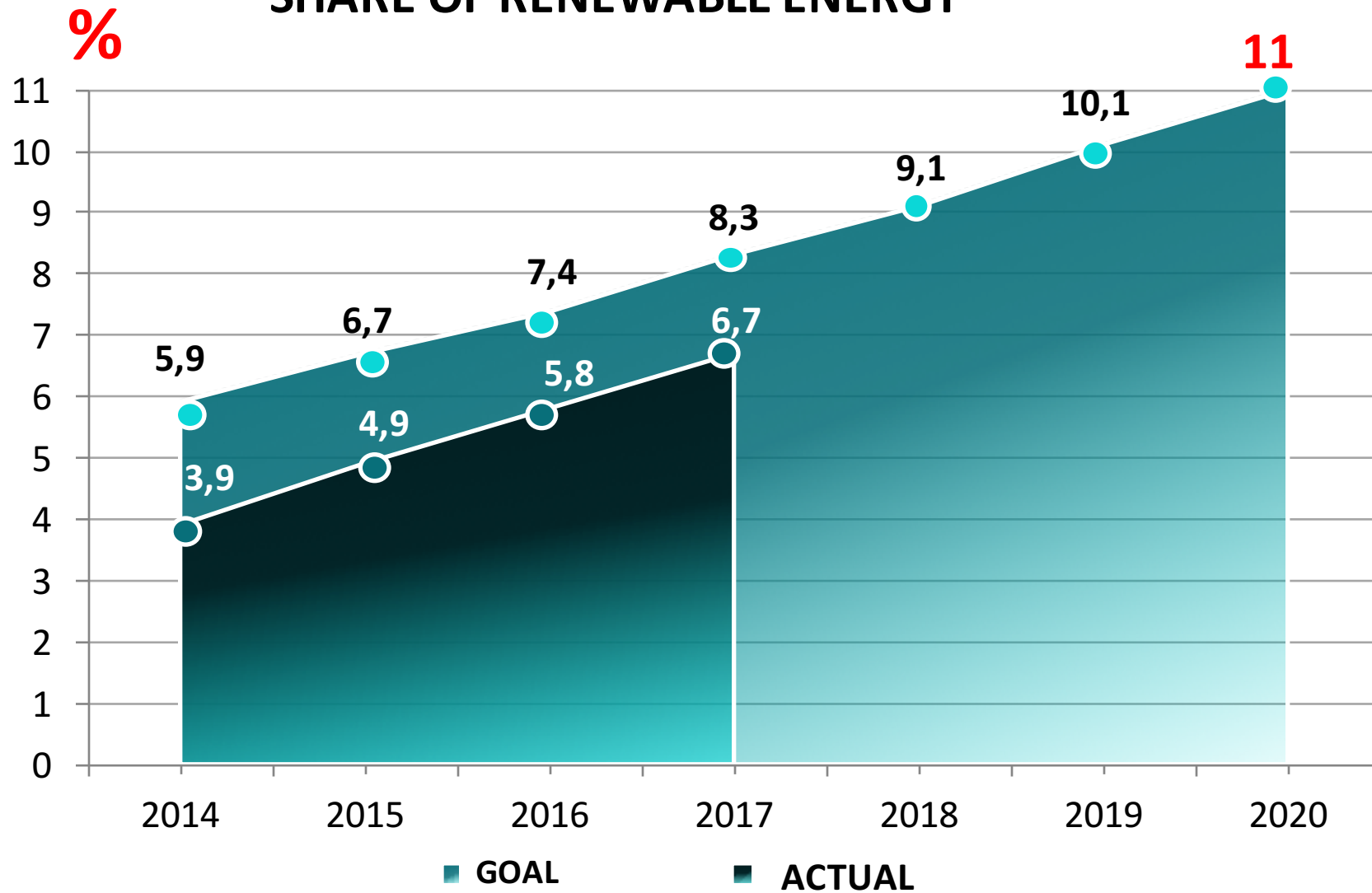


growing of **energy crops**





## SHARE OF RENEWABLE ENERGY

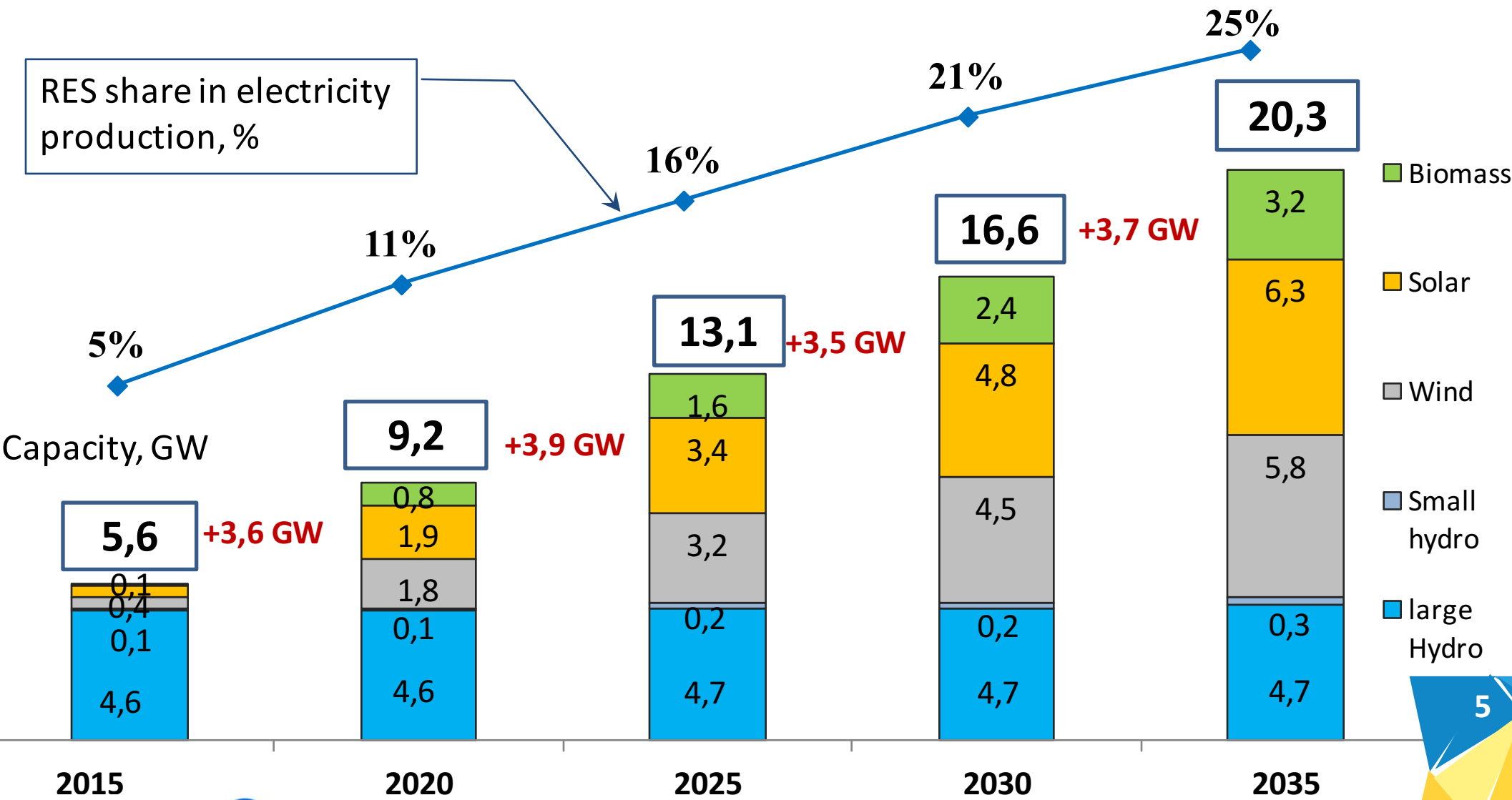


- calculated according to the Directive 2009/28/EU



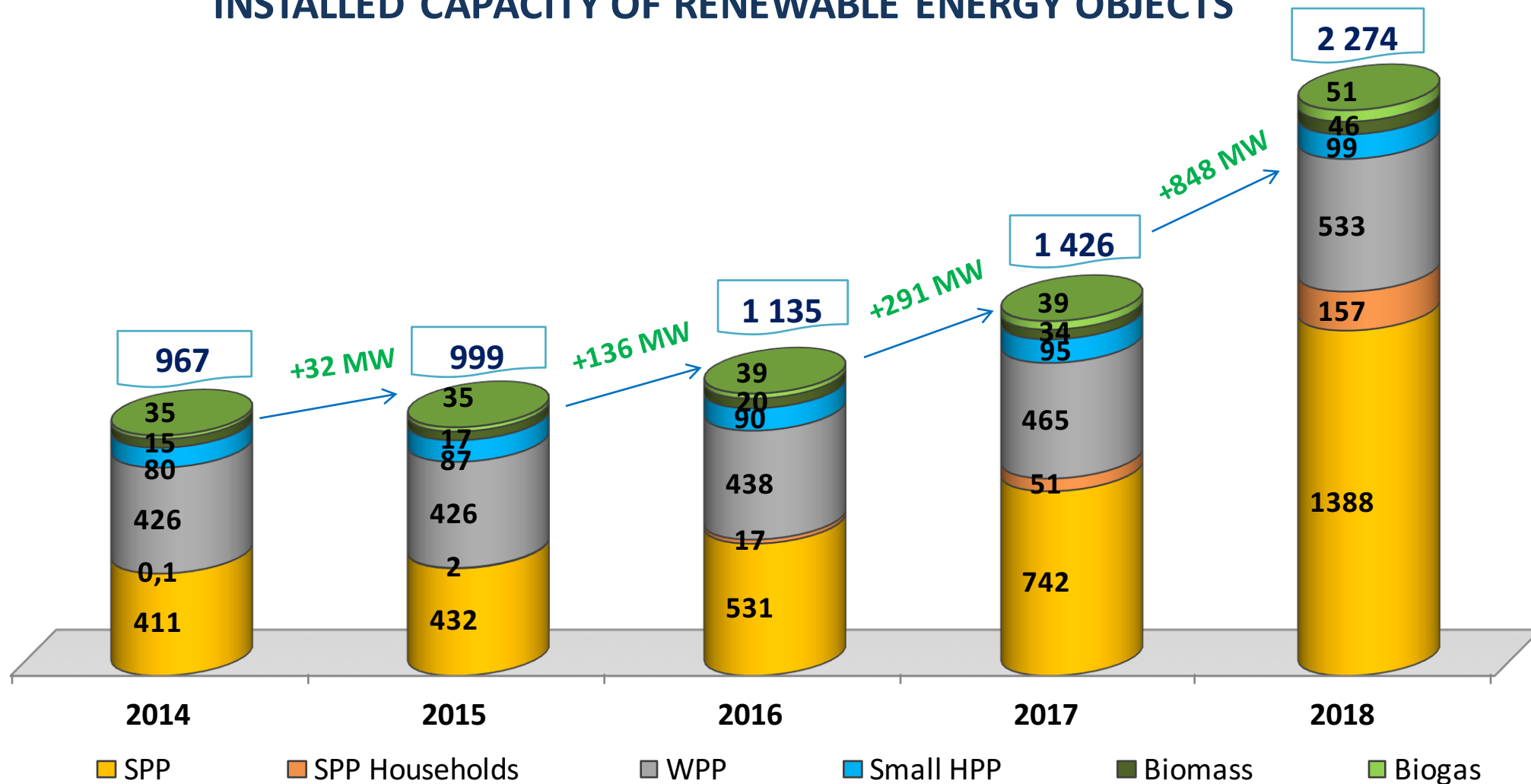


# ENERGY STRATEGY by 2035





## INSTALLED CAPACITY OF RENEWABLE ENERGY OBJECTS



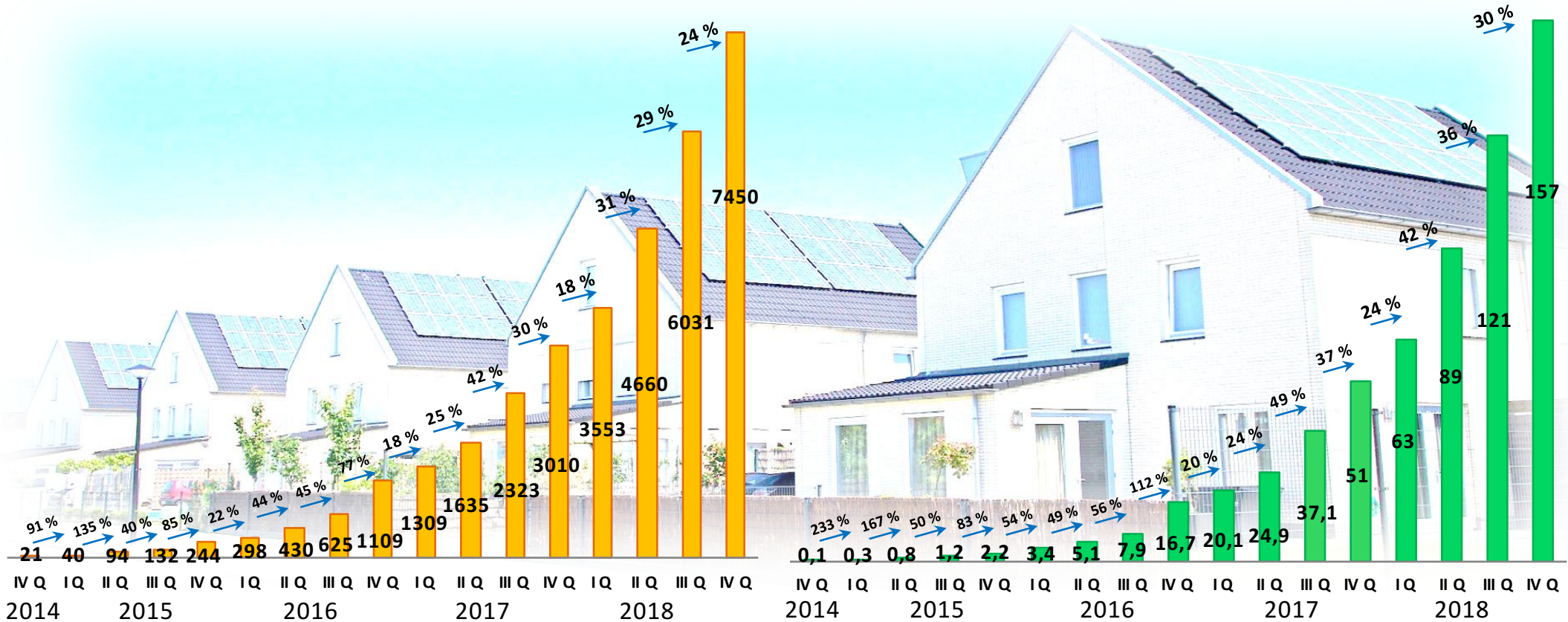
Since 2015 around 1 307 MW were announced  
and around € 1,2 bln were invested



# DYNAMICS FOR SOLAR PV INSTALLATIONS SUPPORTED WITH "FEED-IN" TARIFF

Number of private households

Installed capacity, MW



Already nearly **150 mln EURO** invested

The amount of private households eligible for solar PV installation is 6,5 mln, the problem is financial resources.

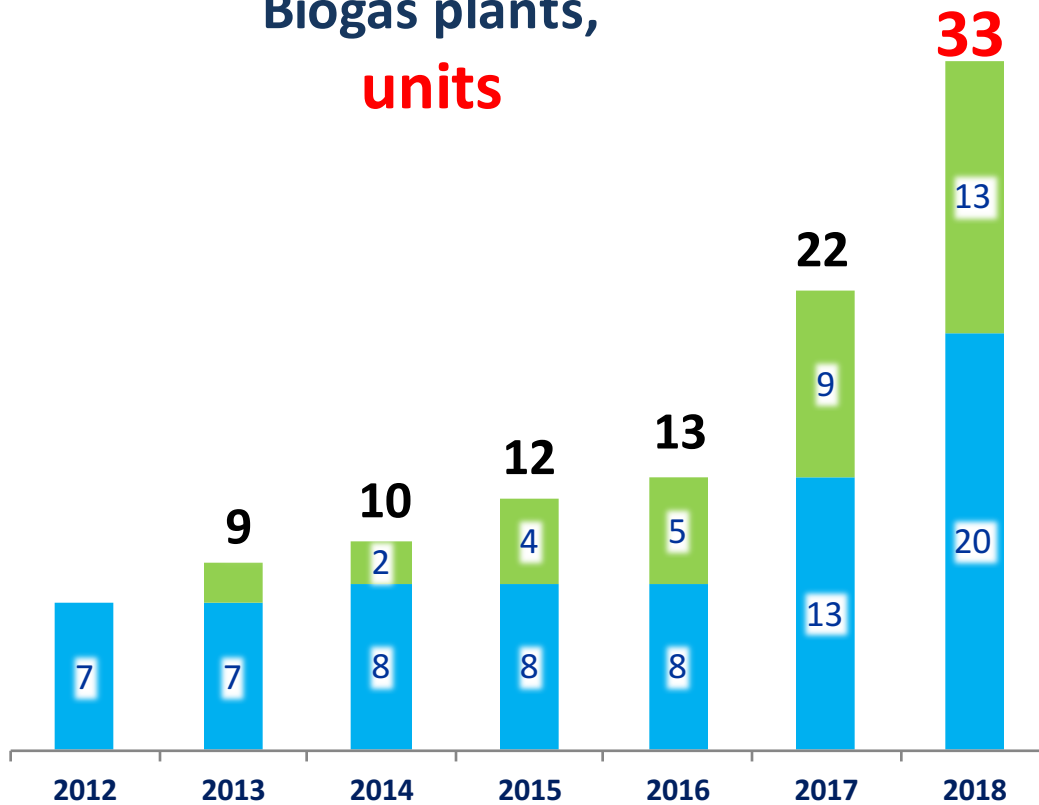




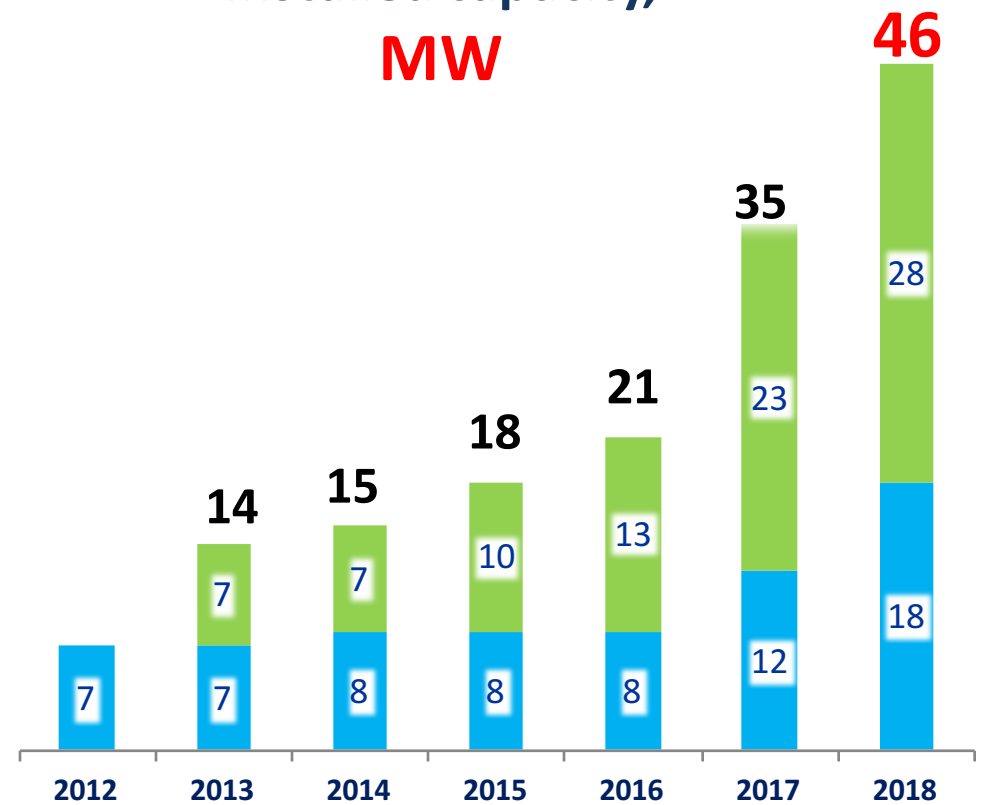
# BIOGAS CAPACITY INCREASES significantly

(biogas plants operating under the feed-in tariff)

### Biogas plants, units



### Installed capacity, MW



■ - biogas from agricultural waste

■ - biogas from landfills







# LAW OF UKRAINE «ON FOSTERING RENEWABLE ENERGY DEVELOPMENT»

EUR/MWh

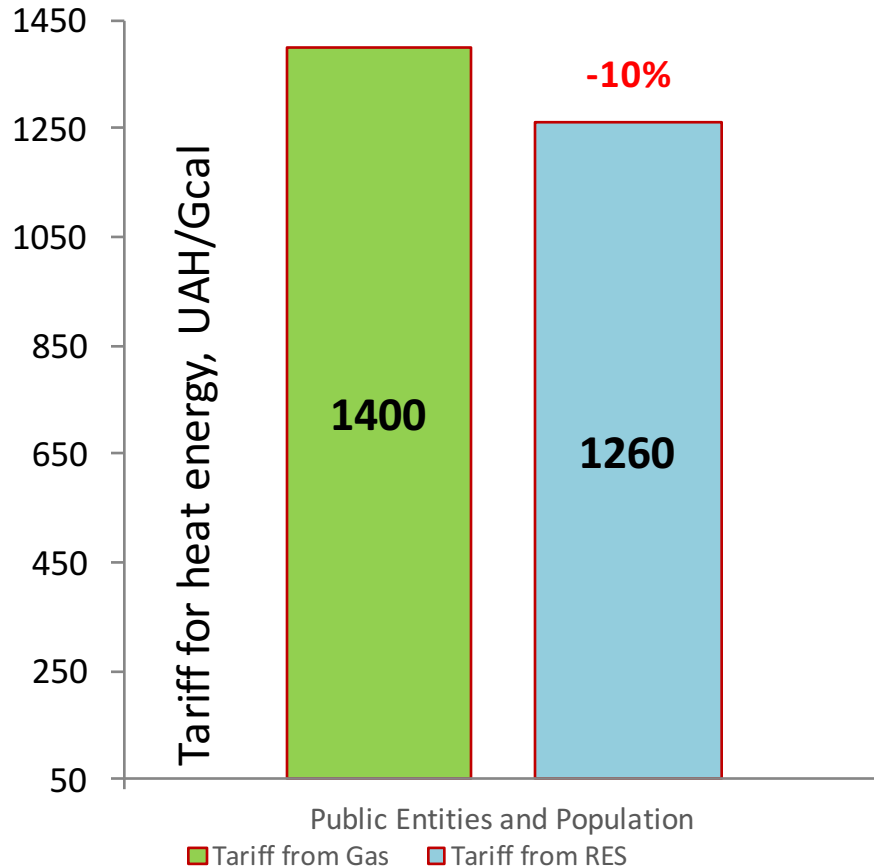
Technology/Comm.Year	2015	2016	2017-2019	2020-2024	2025-2029
Biomass	123.86	123.86	123.86	111.48	99.09
Biogas	123.86	123.86	123.86	111.48	99.09
Geothermal	150.25	150.25	150.25	135.17	120.09
Small Hydro (0.2-1MW)	139.48	139.48	139.48	125.48	111.48
Small Hydro (1-10MW)	104.47	104.47	104.47	94.24	83.47
Solar (ground based)	169.64	159.94	150.25	135.17	120.09
Solar (roof based)	180.41	172.33	163.71	147.56	130.86
Wind (>2MW)	101.78	101.78	101.78	90.47	79.16
Solar (private households)	200.32	190.09	180.94	162.63	144.86
Wind (private households)	116.06	116.06	116.06	104.47	93.16

- **Feed-in tariffs are fixed in EUR till 2030;**
- **Premium for Ukrainian-made equipment usage is provided – up to 10%;**
- **Signing of bankable long-term Power Purchase Agreement (PPA);**
- **Stimulating tariffs for heat produced from alternative sources envisaged.**





# THE LAW OF UKRAINE on stimulating the production of heat energy from alternative sources



**Tariff for heat energy** produced from alternative sources is set at the level of 0.9 from the current tariff for heat from natural gas or average tariff for heat in the region

**The average tariff for heat energy** produced from natural gas for the needs of the population and public institutions is calculated by the procedure approved by the Cabinet of Ministers of Ukraine



# DRAFT LAW ON DEVELOPMENT OF THE PRODUCTION OF LIQUID BIOLOGICAL FUELS SPHERE

## GOAL:

Creating legislative basis for liquid biofuel production and use in transport

## Draft Law provides :

➤ Obligatory quotas on the biocomponent share in the volume of sold motor fuel:

### For Gasoline

From January 1, next year after the adoption -  
not less than **5 %** volume (**3,4 %** energy)

From January 1, two years after adoption -  
not less than **7 %** volume (**4,8 %** energy)

### For Diesel

From January 1, next year after the adoption -  
not less than **3 %** volume (**2,7 %** energy)

➤ Responsibility for non-compliance with quotas

➤ From January 1, next year after the adoption, biocomponents must meet sustainability criteria

## In 2018 Energy Resources Import

**9,4 bln \$**

crude oil and refined products

**5,5 bln \$;**

natural gas

**3,9 bln \$**



# DRAFT LAW ON SOLID BIOFUEL MARKET DEVELOPMENT

**GOAL**

**CREATING LEGISLATIVE BASIS FOR SOLID BIOFUEL MARKET ESTABLISHMENT**

## MAIN PROVISIONS:

- creating a market mechanism for biofuels trading (electronic system for biofuels trading);
- assigning the obligation to trade through the electronic system for biofuels trading on designated entities;
- administrative responsibility for non-compliance of obligations on trade in biofuels set.

## EXPECTED RESULTS FROM THE LAW ADOPTION:

Transparent biofuel market



Lower prices on biofuels



Creating new jobs



Growth of the solid biofuel volumes production



Fuels provision for generating facilities



Attracting investments for biofuel production



# Draft Law recommended by the Parliamentarian Committee for II-reading 27.02.19

## NEW RENEWABLE ENERGY INCENTIVES INTRODUCTION

Conducting pilot auctions

Revision of the auctions conducting order

Auctions holding period

2019

6 mths since Law adoption

2020

2030



PPA terms  
**20 years**



**Obligatory participation:**

**from 2020:**



**SPP  $\geq$  1 MW;**



**WPP  $\geq$  5 MW;**

**Other key points:**

**All types of RES** will participate in auctions

Electronic Trading System

Transparent  
**PROZORRO**

Financial guarantee  
**15 000 €** for 1 MW  
**Land and Specifications for accession**

Premium for the use of Ukrainian equipment **5% - 10%** (current law)

Specifications are valid:  
**SPP – up to 2 years;**  
**WPP, CHP on biomass, small HPP – up to 3 years**



## PROPOSALS FOR OPTIMIZATION «FEED IN» TARIFF

	Law in force 2020	Draft law 8449-d			
		2020	2021	2022	2023
SPP	-10%	<b>-25%</b>	-2,5%	-2,5%	-2,5%
SPP households	- 10%	<b>-10%</b>			
WPP	-10%	<b>-10%</b>	-	-	-
Biomass	-10%	<b>The tariff unchanged and staying at the level of 2019</b>			



**THANK YOU FOR ATTENTION!**

**Ukraine NOW** 