



# **Renewable energy and energy efficiency policy: Azerbaijan's experience and strategic view**

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# State Agency on Alternative and Renewable Energy Sources - AREA

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Central executive body carrying out followings  
in the field of RES and EE:

- ▶ State policy and regulation
- ▶ Efficient organization of activity and coordination
- ▶ State control



# State policy on RE

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- ▶ State support to the sector
- ▶ Improvement of legislation
- ▶ Development of private sector
- ▶ Financial support and subsidy policy
- ▶ Adoption of modern technologies
- ▶ Research & development, information exchange
- ▶ Education, training and promotion of the green energy

# Goals and targets of strategic development

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State Strategy on Use of Alternative and Renewable Energy Sources (2012-2020) was prepared by the Decree of the President of Azerbaijan Republic dated 29 December 2011.

- Determination of main directions for 2012-2020 on electric and thermal power production by using alternative and renewable energy sources;
  - Enforcement of legislative framework;
  - Stimulating measures;
  - Implementation of alternative and renewable energy sources in economic sectors.
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## Azerbaijan 2020: strategic view

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- ▶ Implementation of stimulating measures in order to accelerate the use of renewable energy sources
- ▶ Scientific and technical capacity building
- ▶ Continue training of specialists
- ▶ Awareness raising for energy consumers
- ▶ Promoting the active participation of the private sector
- ▶ Flexible regulation of energy tariffs
- ▶ Enforcement of legislative framework

# Action Plans

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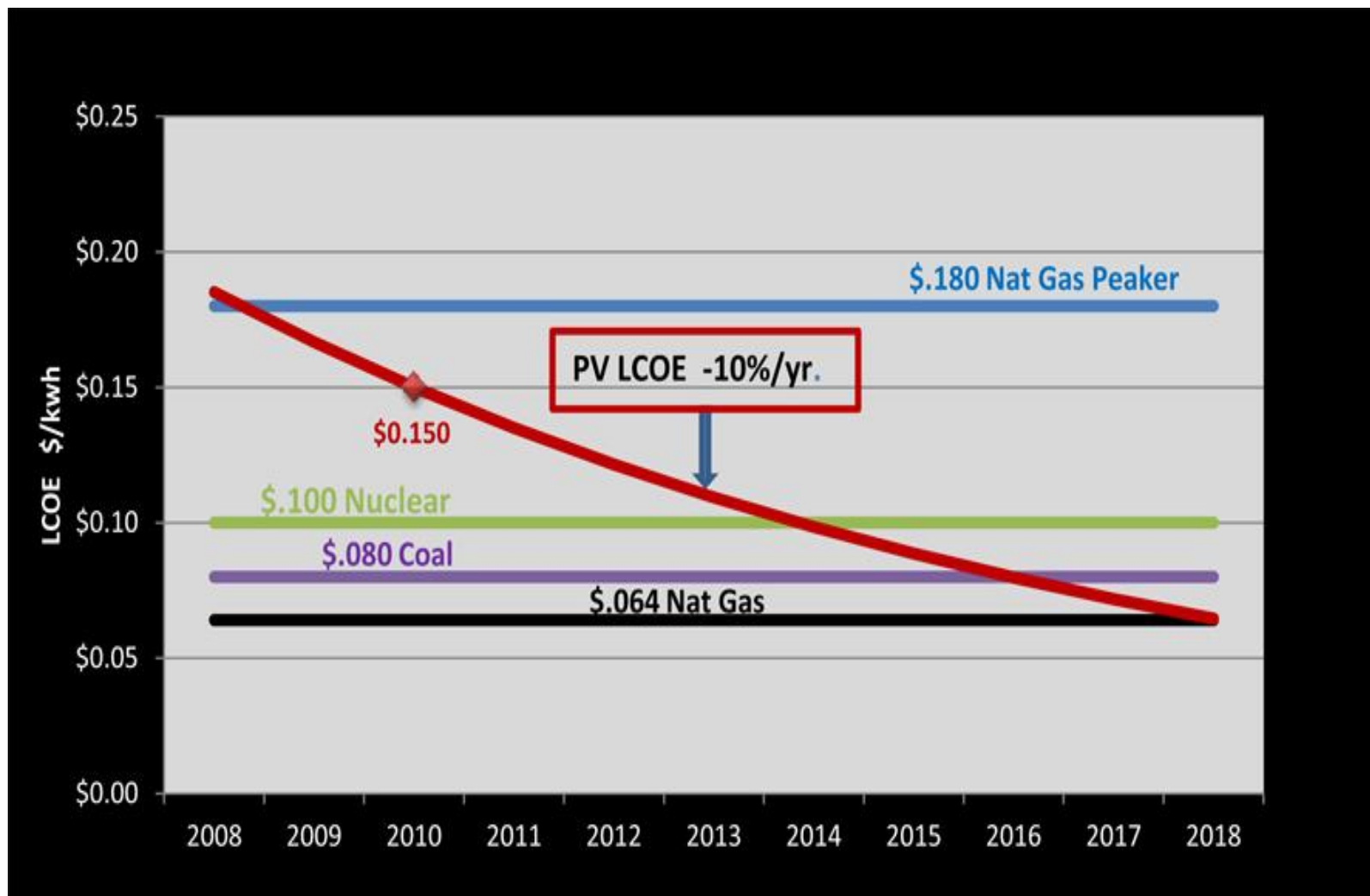
- ▶ State Program on Use of Alternative and Renewable Energy Sources (2004)
- ▶ State Program on Ensuring Reliable Population in the Republic of Azerbaijan in Food Provision (2008-2015)
- ▶ State Program on Socio-economic Development of Regions (2014-2018)
- ▶ State Program on Poverty Reduction and Sustainable Development for the Republic of Azerbaijan (2008-2015)

# Different types of instruments

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- ▶ Capital subsidies
- ▶ Feed-in-tariff schemes
- ▶ Tax breaks
- ▶ Portfolio standards, quota obligations
- ▶ Green pricing schemes, trading of certificates
- ▶ Net metering
- ▶ Premium schemes
- ▶ Self-consumption schemes
- ▶ Combinations of the above

# Levelized Cost Of Energy





# Factors for using renewable energy in Azerbaijan

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## **Global factors:**

- ▶ environmental benefits;
- ▶ reliable energy source;
- ▶ lower prices for renewable energy equipment and ability to compete with conventional energy sources.

## **Country factors:**

- ▶ rehabilitation of oil-polluted areas;
- ▶ effective use of free territories along the roads, building roofs and utilization of industrial and municipal wastes;
- ▶ development of other economic sectors – industry, agriculture and construction.



# AREA – Projects classification

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- ▶ Solar and Wind Power Plants, Biogas Power Plants and Concentrated Solar Power Plants
- ▶ Energy efficiency projects
- ▶ Agro-energy complexes

# Hybrid Power Plants

## **Gobustan Experimental Polygon and Training Center**

Total capacity – 5.5 MW

- ▶ Wind PP – 2.7 MW
- ▶ Solar PP – 1.8 MW (additional capacity is being installed)
- ▶ Biogas PP – 1 MW

Was put into operation in 2011



# Solar Power Plants

## Solar Power Projects

Re-cultivation of ecologically poor lands

- ▶ Pirallahy SPP
- ▶ Total capacity: 2.8 MW
- ▶ Surakhany SPP
- ▶ Total capacity: 2.8 MW



# Energy efficiency projects

## **1 building – 1 power plant**

- ▶ Projects in more than 10 schools, 2 medical centers, 2 sport complexes
- ▶ Project at secondary school in Turkan (Baku city) was implemented by the grant of the Centre for Renewable Energy Sources of Greece





# Agro-energy complexes



## **Samukh Agro-Energy Residential Complex**

Implementation of alternative and renewable energy sources in economic sectors

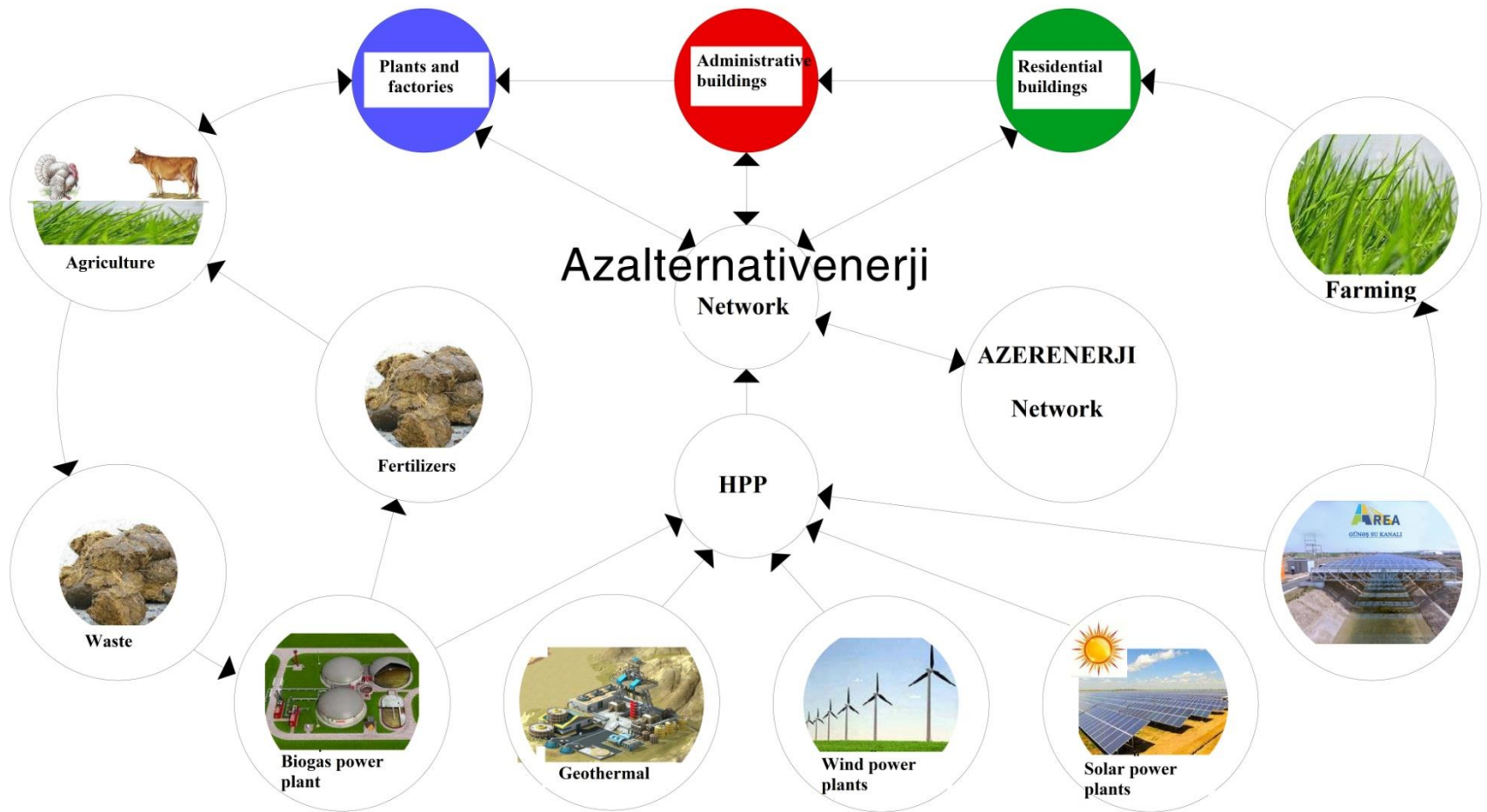
- ▶ Total capacity:  
31 MW electric,  
48 MW thermal

Installation of solar component (2.8 MW) has already begun

Project period: 2014-2018



# Agro-Industrial Energy Residential Complex



Cycle Concept

# Power Supply Scheme of Samukh Agro-Energy Residential Complex

## Wind Power Plants

5000 kW  
7,6 mln kVt/saat (1 ilde)



## Solar Power Plants

5000 kW  
9,5 mln kVt/saat (1 ilde)



## Biogas Plants

1000 kVt  
7 mln kVt/saat (1 ilde)



## CSP

50000 kVt  
379 mln kVt/saat (1 ilde)



0.69/20 kVt



0.4/20 kVt



0.4/20 kVt



0.4/20 kVt



HEIS

Dispetçer mərkəzi

TS

110/35/10

35/0.4 kVt



35/0.4 kVt



35/0.4 kVt



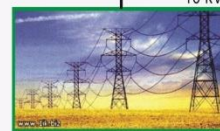
35/0.4 kVt



110 kVt

35 kVt

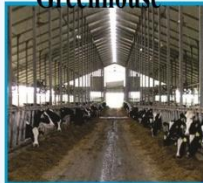
10 kVt



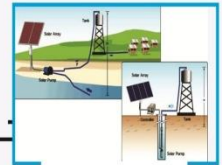
## Sport Complex



## Greenhouse



## Cattle breeding



## Water



## Residential buildings



## Industry zone



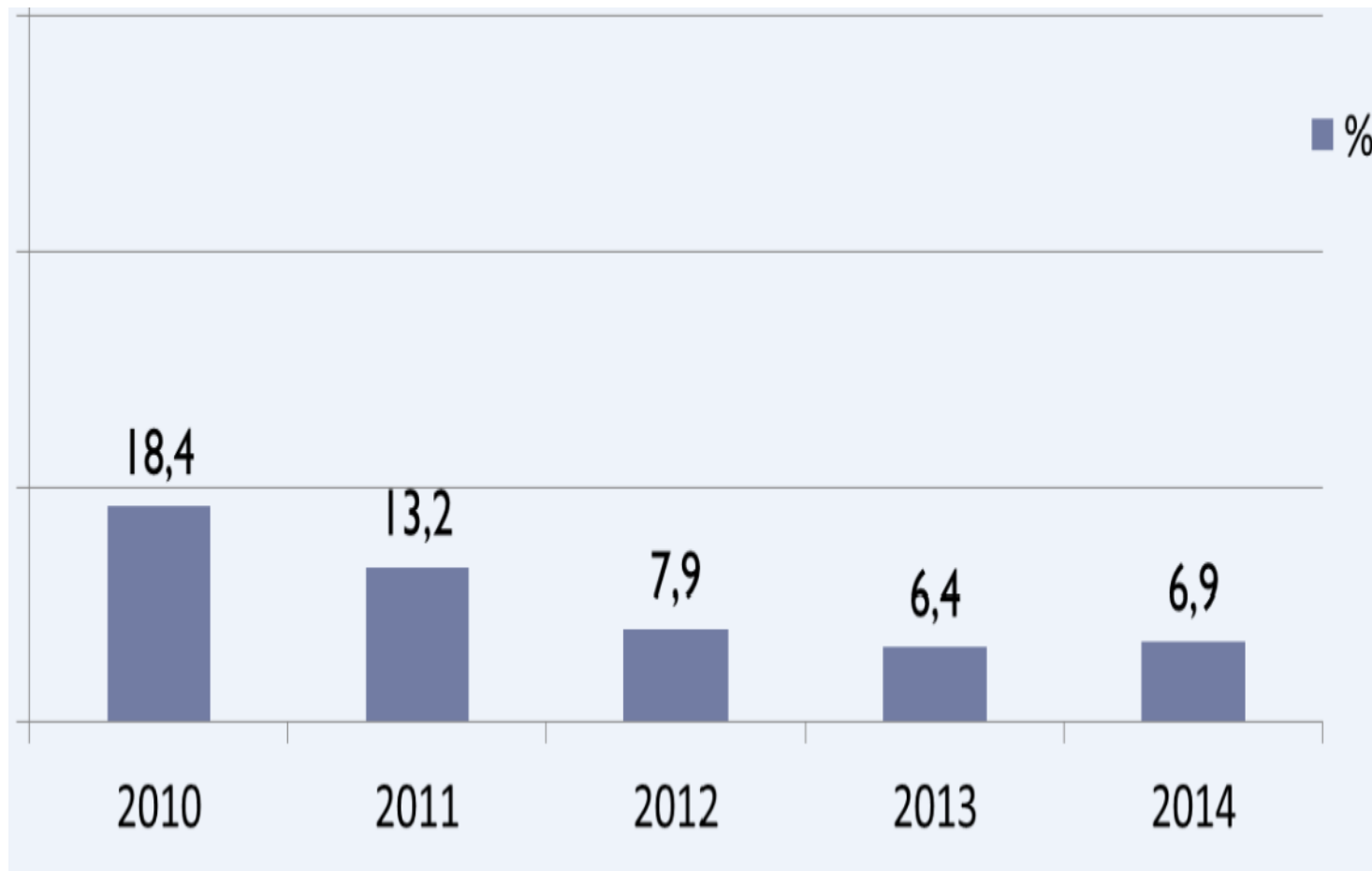
# Large-scale projects

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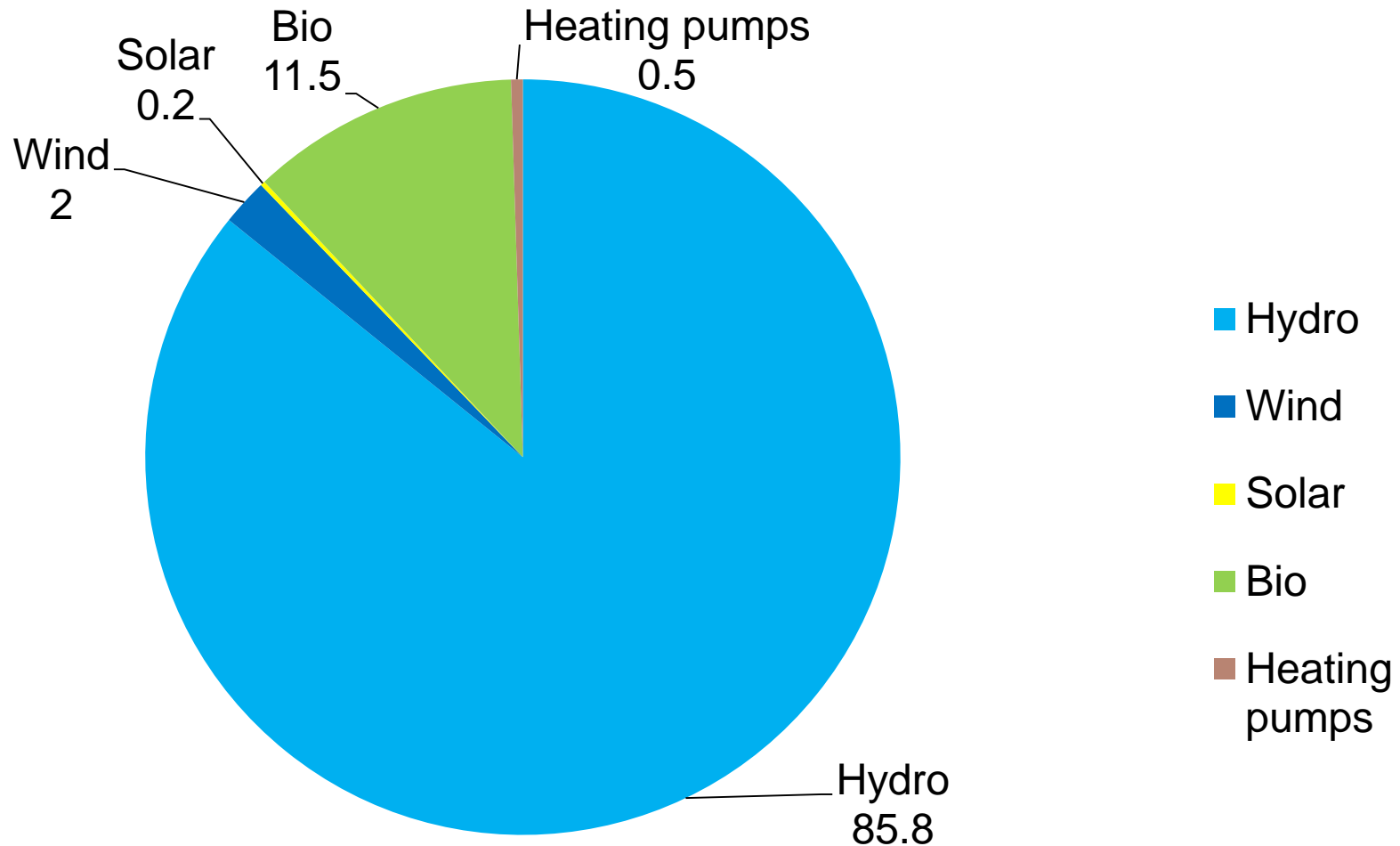
- ▶ Yeni Yashma Wind Farm – 50 MW
- ▶ “Wind Island – 1” Offshore Wind Farm – 198 MW
- ▶ Absheron Wind Farm (with PV component) – 80 MW
- ▶ Power Plants on Biomass – 16 MW



# Share of RES in total energy production

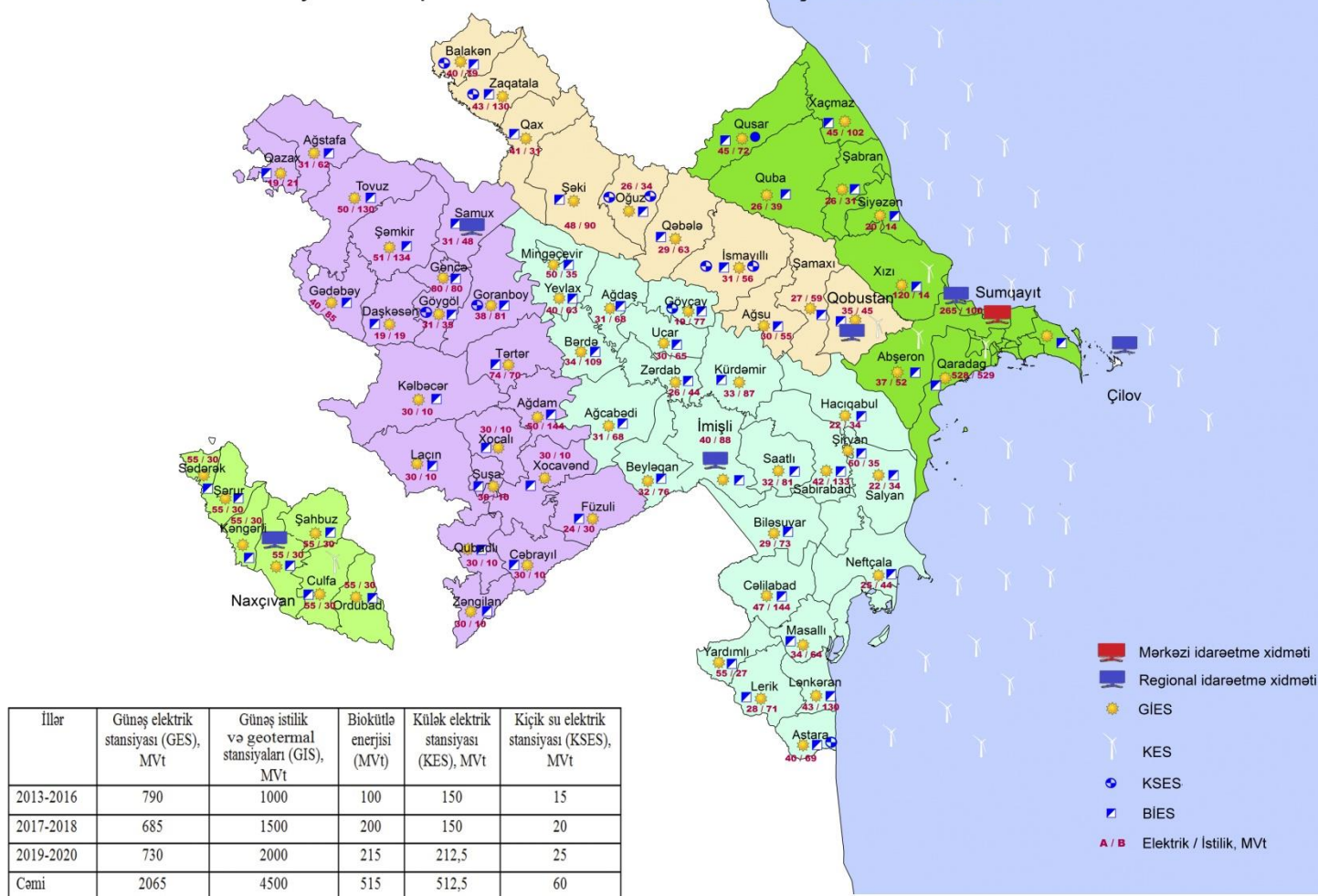


# Share of RES types in RE production, 2014, %



# Development map for RES - 2020

Azərbaycan Respublikasının ABOEM üzrə inkişaf xəritəsi 2020





Thank you for your attention!

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