



The State Agency on  
Alternative and Renewable  
Energy Sources of the  
Republic of Azerbaijan

15th meeting of EPP 3 on energy  
security

**Directions of development in the field of  
renewable energy sources in Azerbaijan**

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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



# Electric and heat power produce by ARES in Azerbaijan

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	2015*	2014	%
Electricity, mln. KW hour	1816,0	1494,3	121,5
of which:			
Hydro	1603,9	1294,0	123,9
Biomass & waste	181,9	174,0	104,5
Wind	25,6	23,4	109,4
Solar	4,6	2,9	158,6
Heat energy (heat pumps), Gcal	6315,3	5448,8	115,9

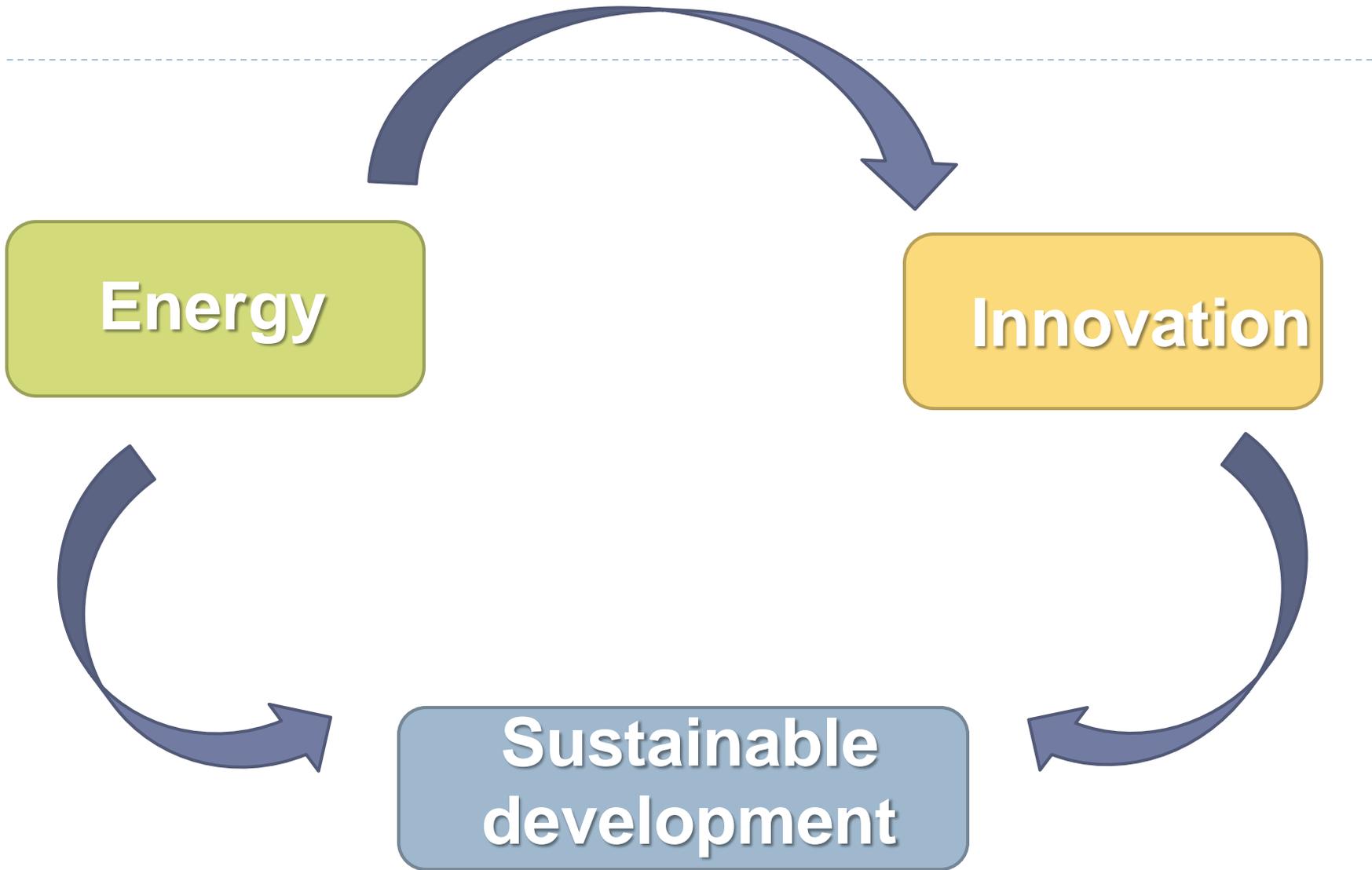
\*Primary data

# Gas savings and carbon dioxide reduction

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<b>Year</b>	<b>Gas (thousand m<sup>3</sup>)</b>	<b>CO2 (t)</b>
2014	437 305,00	778 403,3
2015	465 642,72	828 844,0
2016 (January – March)	108 962,70	193 954,0





# Energy

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## Hybrid PP

- **Gobustan Experimental Polygon and Training Center – 5.5 MWt**

## Solar PP

- **Pirallahy Solar Power Plant – 2.8 MW**
- **Surakhany Solar Power Plant – 2.8 MW**
- **Sumghait Solar Power Plant – 2.8 MW**
- **Nakhchivan Solar Power Plant – 20 MW**

## Wind PP

- **Yeni Yashma Wind Farm - 50 MW**
- **Sitalchay Wind Farm – 3.6 MW**
- **Hokmali Wind Farm – 8.0 MW**
- **Absheron Wind Farm (with PV component) – 80 MW**

## Biomass PP

- **Biomass cogeneration on Oghuz and Agjabedi – 16 MW**



# Gobustan Experimental Polygon and Training Center

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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

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- ▶ Pirallahy SPP
- ▶ Total capacity: 2.8 MW



- ▶ Surakhany SPP
- ▶ Total capacity: 2.8 MW



- ▶ Sumghait SPP
- ▶ Total capacity: 2.8 MW



# Solar Power Plants

- ▶ Nakhchivan SPP
- ▶ Total capacity: 20 MW



# Wind Power Plants

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- ▶ Sitalchay WPP
- ▶ Total capacity: 3.6 MW

- ▶ **Hokmali WPP**
- ▶ **Total capacity: 8.0 MW**

- ▶ Yeni Yashma WPP
  - ▶ Total capacity: 1.7 MW
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# Innovation

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## Energy efficiency

- **The use of solar panels to increase energy efficiency in social buildings**

## Smart grid

- **Gobustan “Smart Grid” system**

## Production facilities and equipment on RE sector

- **“Azguntex” PV modules factory**



# The use of solar panels to increase energy efficiency in social buildings

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Secondary school № 235  
(25KW electric, 40KW heating)



Sports Complex in Beylagan district  
(70 KW electric, 90 KW heating)



Boarding school in Turkan  
(25 KW electric)



Children school SOS  
(20 KW electric, 44 KW heating)



# “AZGUNTEX” PV modules factory

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## Production capacity of the first line:

100 000 modules/year (25 MW)

## Production capacity of the second line:

200 000 modules/year (50 MW)

## Polycrystalline modules:

- The number of PV cells - 60
- Capacity - 36 V 250 W
- Size –997mm/1663mm
- Weight – 20 kg

Was put into operation : 24.04.2012



# Sustainable development

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## RE support for agriculture

- **Samukh Agro-Energy Residential Complex**

## RE support for the solution of infrastructure issues

- **“Wind Island – 1” Offshore Wind Farm**

## Waste energy

- **Waste-to-Energy Plant**



# 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



# “Wind Island – 1” Offshore Wind Farm

“Wind Island – 1” Offshore Wind Park project consists of 4 parts:

- ▶ Wind Power Plant;
- ▶ Transmitter and distributing electricity network;

- ▶ Platforms for mounting of pier and wind turbines;
- ▶ Facilities for service and clean water production through the use of wind energy, facilities for production of H2 from seawater and its storage, and low-powered gas turbines (design, feasibility study and construction and installation works are considered on the next stage)



▶ Total capacity: 198 MW

# Waste-to-Energy Plant

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► Total capacity: 37 MW





Thank you for your attention!

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