

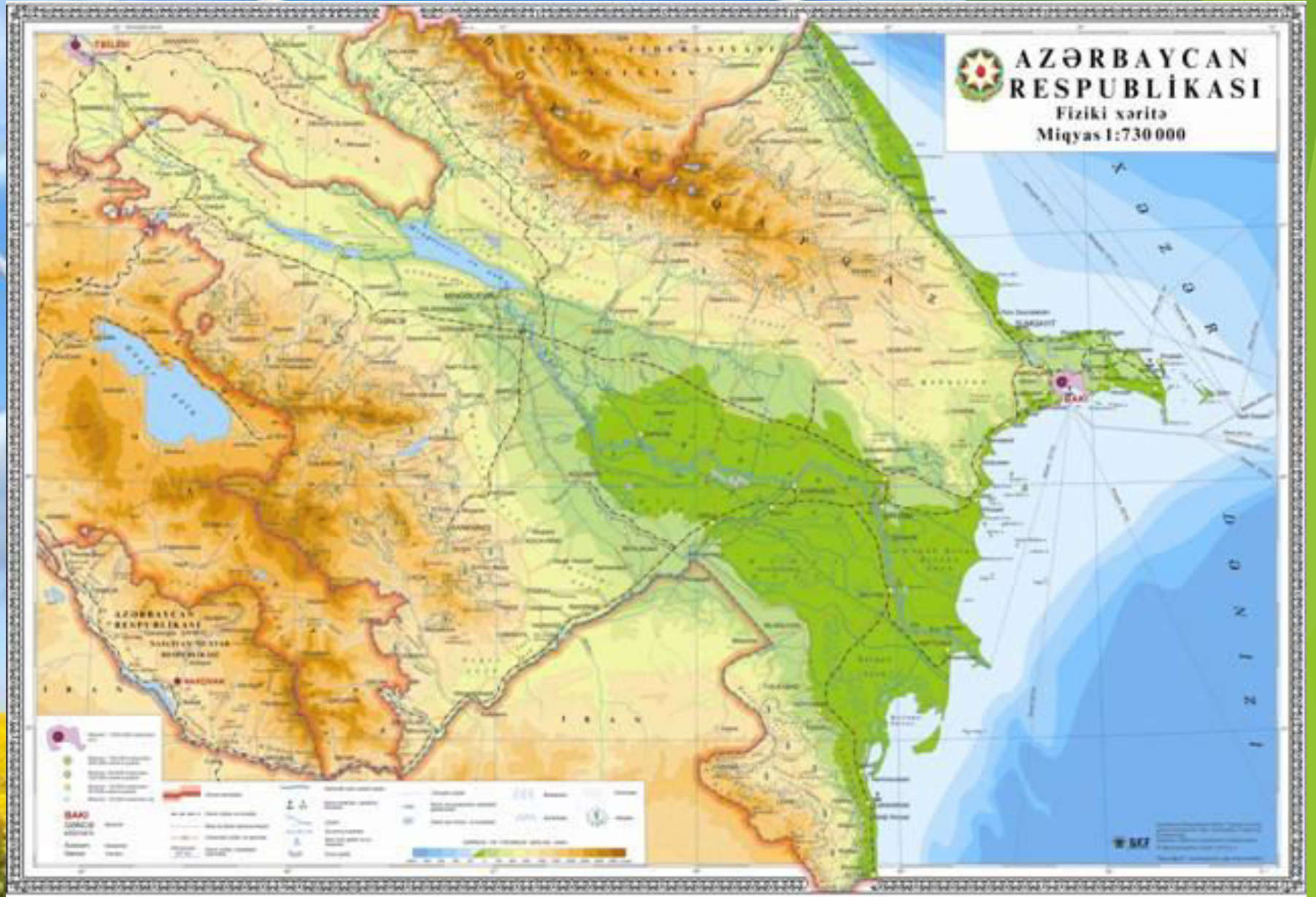


Ministry of Energy
of the Republic of Azerbaijan

**Long-Term Capacity Expansion Planning with a
High Share of Renewables in Azerbaijan Republic**



Azərbaycan Respublikası
Territory: 86 600 sq. km
Population: ~9,8 million
GDP : \$ 41.256bilion
(2017)
GDP per capita : \$4.295
(2017)



Electric Energy indicators of Azerbaijan

Percent of population among the world population : $10/7100=0,14\%$

Indicators	Azerbaijan	World	Azerbaijan /World, %
Installed power	7,550 GW	7 100 GW	0,11
RE installed	1,268 GW	2 000 GW	0,06
Part of RE	16,8%	28,2%	59,6
Electric Energy production	23,074 TWh	26 000 TWh	0,09
From REs	2,142 TWh	5 000 TVh	0,04
Percent of REs	9,28%	19,2%	48,33
CO2 emission	51 mln ton	30 billion ton	0,16
CO2 per capita	5,2 t	4, 22	123



Azerbaijan INCD: 35%
voluntary
contribution



By the Degree of the President of Azerbaijan Republic was created
Governmental Commission on Sustainable Development Goals

In 2017 was prepared First Report of Azerbaijan on SDG

Affordable and Clean Energy



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Targets

- By 2030, ensure universal access to affordable, reliable and modern energy services
- By 2030, increase substantially the share of renewable energy in the global energy mix
- By 2030, double the global rate of improvement in energy efficiency
- By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
- By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

Azerbaijan's climate change ambitions and priorities

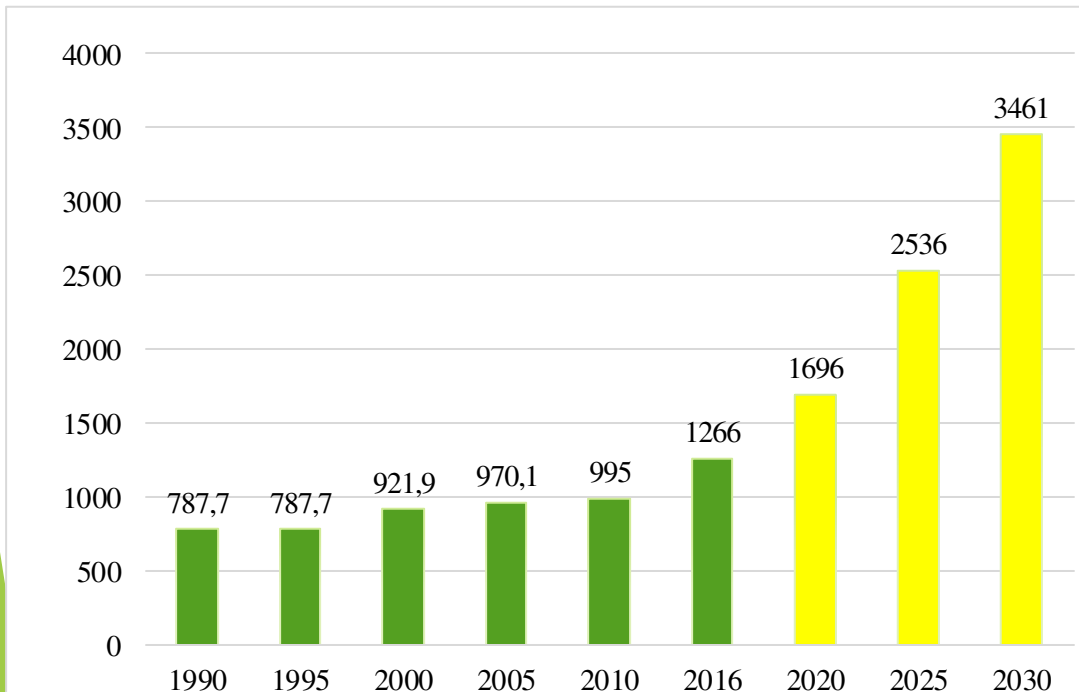
Green Climate Fund Structured Dialogue with Eastern Europe and Central Asia



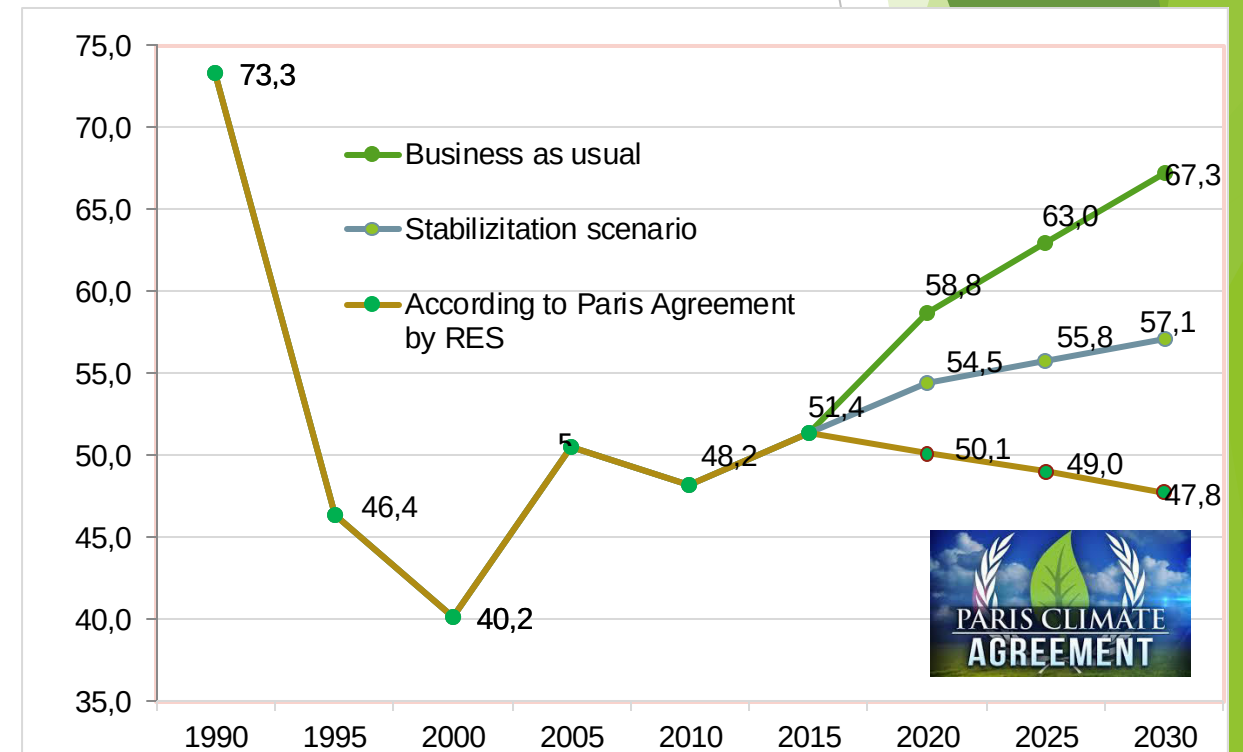
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- ❖ Azerbaijan has set high *ambitions* to combat climate change. Our voluntary Intended Nationally Determined Contribution after COP21 in 2015 (United Nations Climate Change Conference) held in Paris is 35% reduction of CO₂ levels by the year 2030.
- ❖ In 2016 president Ilham Aliyev signed a decree to approve “Strategic Road Maps for the National Economy and Main Economic Sectors” (SRM), which outlined the short-, medium- and long-term goals for the development of the economy and eleven key sectors. Our *priorities* for the development of the renewable energy sector were reflected in the roadmap.

Renewable energy installed capacity (as per SRM), MW



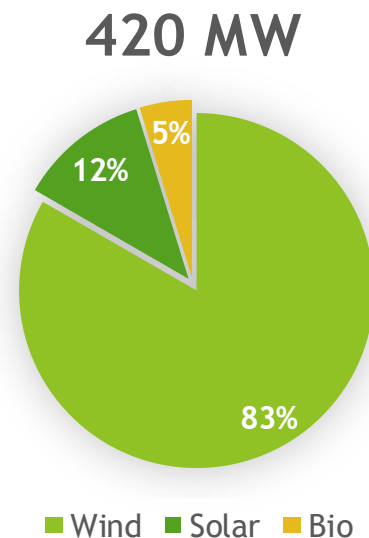
CO₂ emission scenarios, million tones



Action plan for SRM

- ❖ Considering the growing demand and planned decommissioning of existing power plants, availability of another energy sources (hydro, wind, solar, bioenergy etc.) other than natural gas allows *diversification of electricity supply* and *ensures consistency in the supply*.
- ❖ Therefore action plan of the SRM forecasts creation of new 420 MW generating capacities thanks to renewables until 2020. This will lead to:
 - 70 million AZN increase in GDP (50 million AZN directly, 20 million AZN indirectly)
 - Natural gas savings up to 390.0 mln cubic meters
 - Creation of 270 new jobs

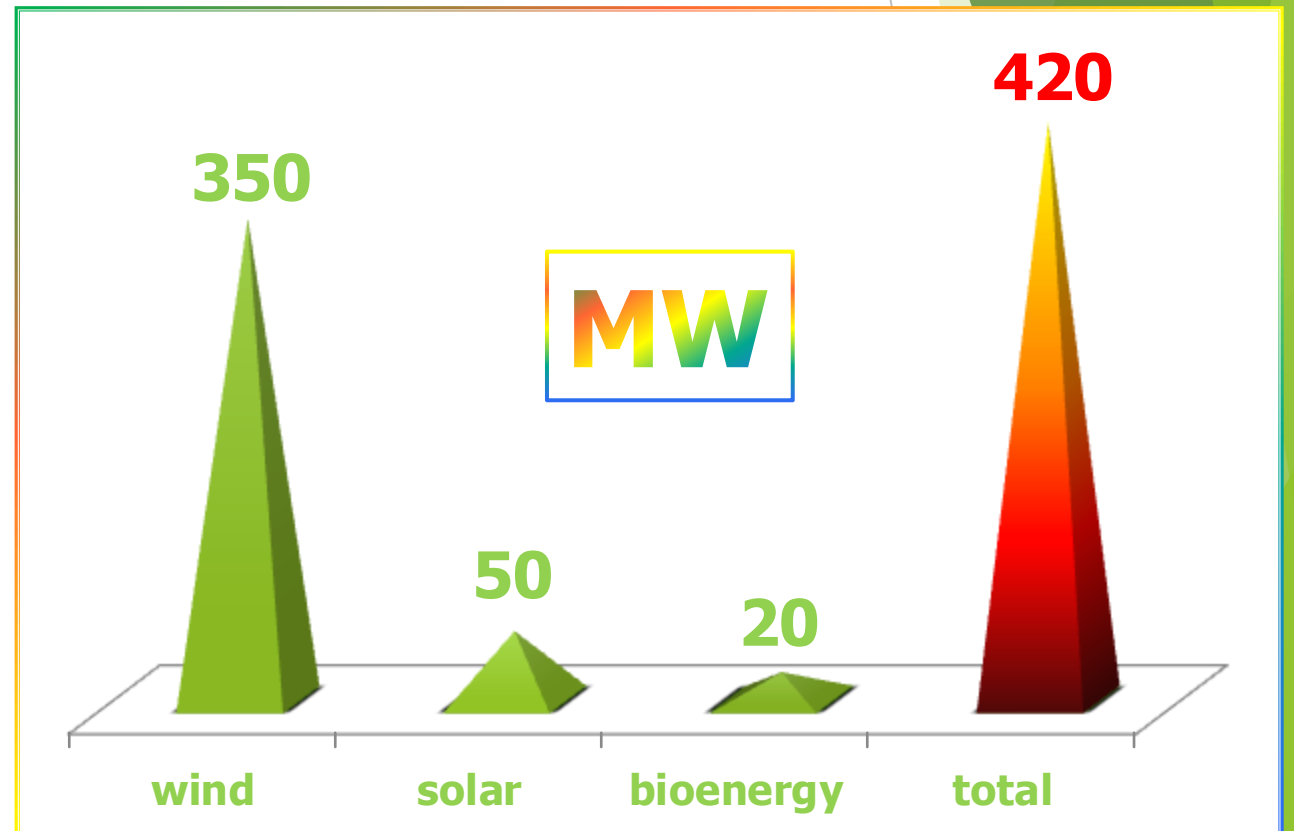
Break down of 420 MW installed capacity:





From 2018 to 2020 established powers

It is planned to create **420 MW** by 2020, including **350 MW** of wind, **50 MW** of solar and **20 MW** of new generating capacities on bioenergy





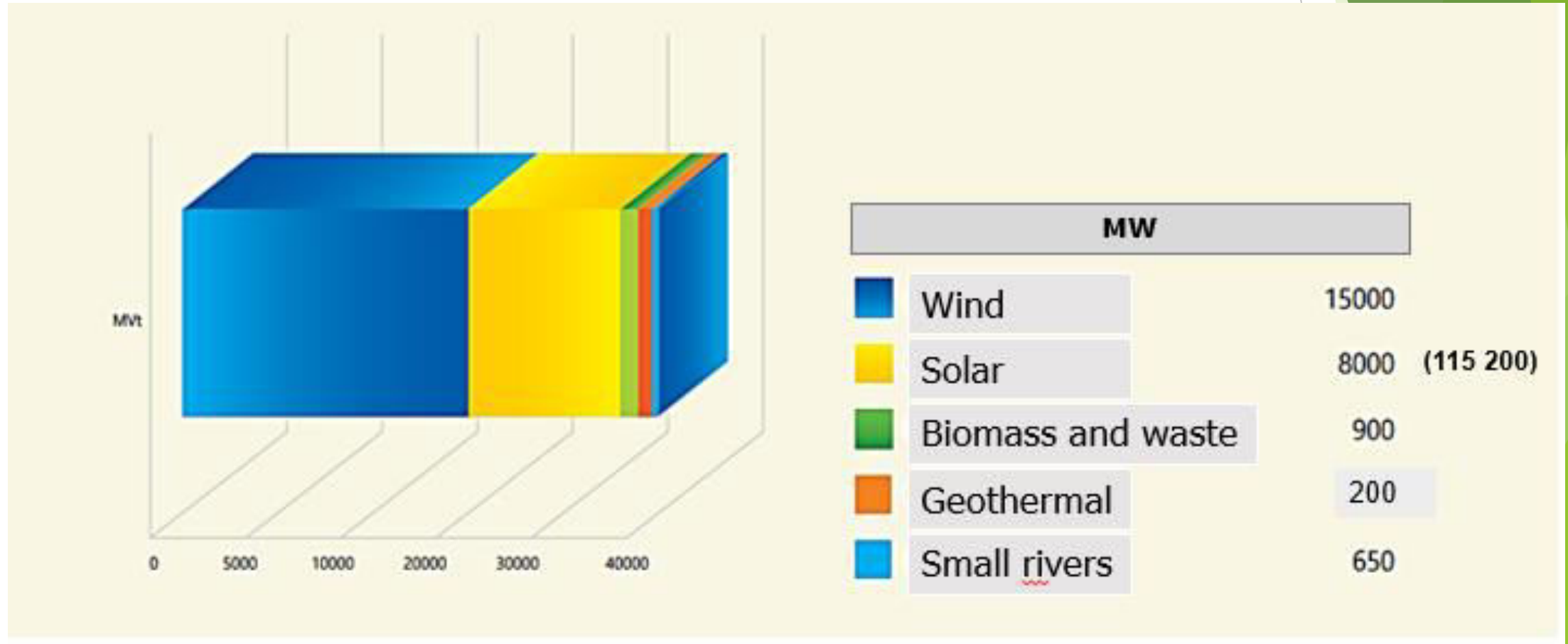
Energy potential for renewable energy sources

Renewable types	Total Power Potential (MW)	Technical Power Potential (MW)	Economic Power Potential * (MW)	Note
Wind	84 262	> 15 000	3000	
Solar	4 300 143	>8000 (115 200)	1600el/1800 heat	
Biomass: -cotton rubbish (1million tons) -straw (1.4 million tons) -biogas -domestic wastes (1.6 million tons)	552 576 280 200	>900	380	Technical potential is estimated by 40% of the total potential
Hydroenergy (small rivers)	1600	> 650	520	The economic potential was taken in the amount of 80% of the technical potential
Geothermal	800	≈200	40	
Total	4 388 413	>24 750	5540el/1800 heat	

***Economic potential is estimated at 20% of technical potential (except for hydroenergy)**



Technical capacity of alternative & renewable energy sources in the Republic of Azerbaijan





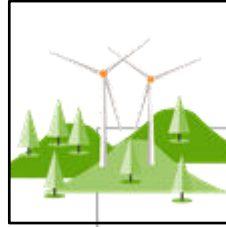
Perspective projects on wind, solar & biomass



Total -50.0 MW

Solar power plants

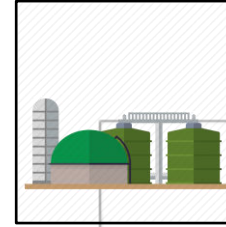
• Surakhani	1.7
• Sumgayit	1.8
• Pirallahi-1	2.2
• Pirallahi-2	7.2
• Samukh-1	0.4
• Samukh-2	7.2
• Gobustan solar	5.0
• Khizi-2 solar	10.0
• Absheron solar	10.0
• Shiyazan	4.5



Total-350.0 MW

Wind power plants

• Khizi-1	56.1
• Khizi-2 HES	69.0
• Khizi-3	135.0
• Absheron	55.2
• Lokbatan	26.7
• Gobustan	8.0



Total-20.0 MW

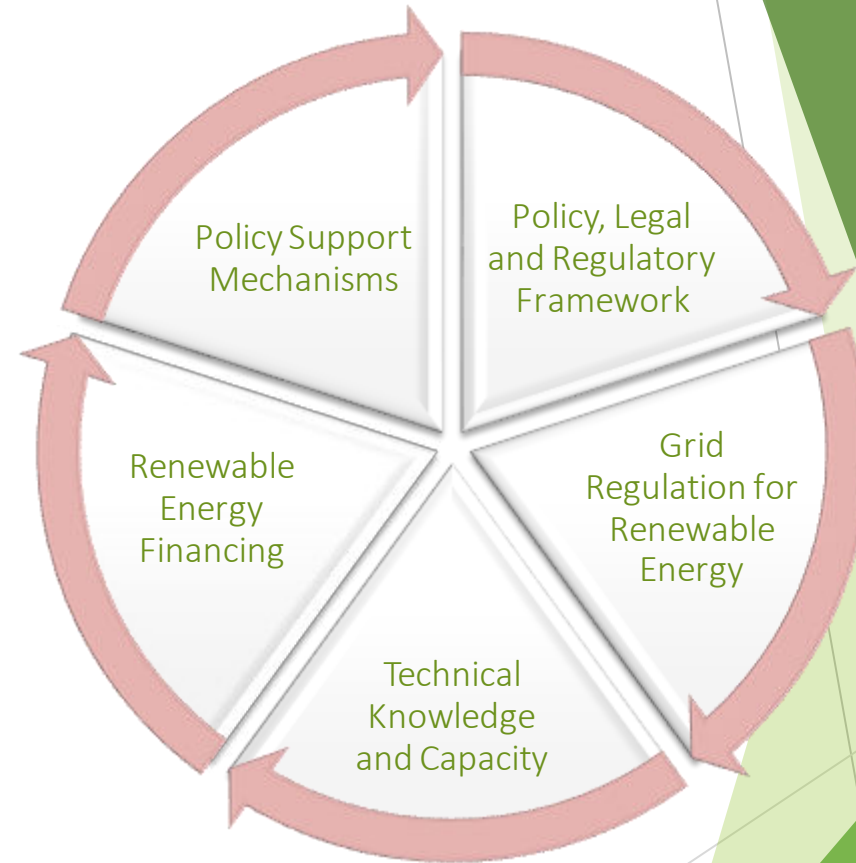
Biomass power plants

• Aghjabedi	8.0
• Shiyazan	3.0
• Govsan	3.0
• Berde	2.0
• Samukh	2.0
• Absheron	1.0
• Yalama	1.0

KEY CHALLENGES AND RECOMMENDATIONS

In September of 2018 the International Renewable Energy Agency (IRENA) presented to AREA the draft report titled, “Azerbaijan Renewable Readiness Assessment”.

The report outlines five key points to be addressed in order to get Azerbaijan completely ready for the new era of renewables.





**THANK YOU FOR
ATTENTION !**