



Role of Utility Companies in Decarbonization of Building Stock in the Republic of Azerbaijan

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Azerbaijan 2030 Outlook: Clean Environment and country of “Green Growth”



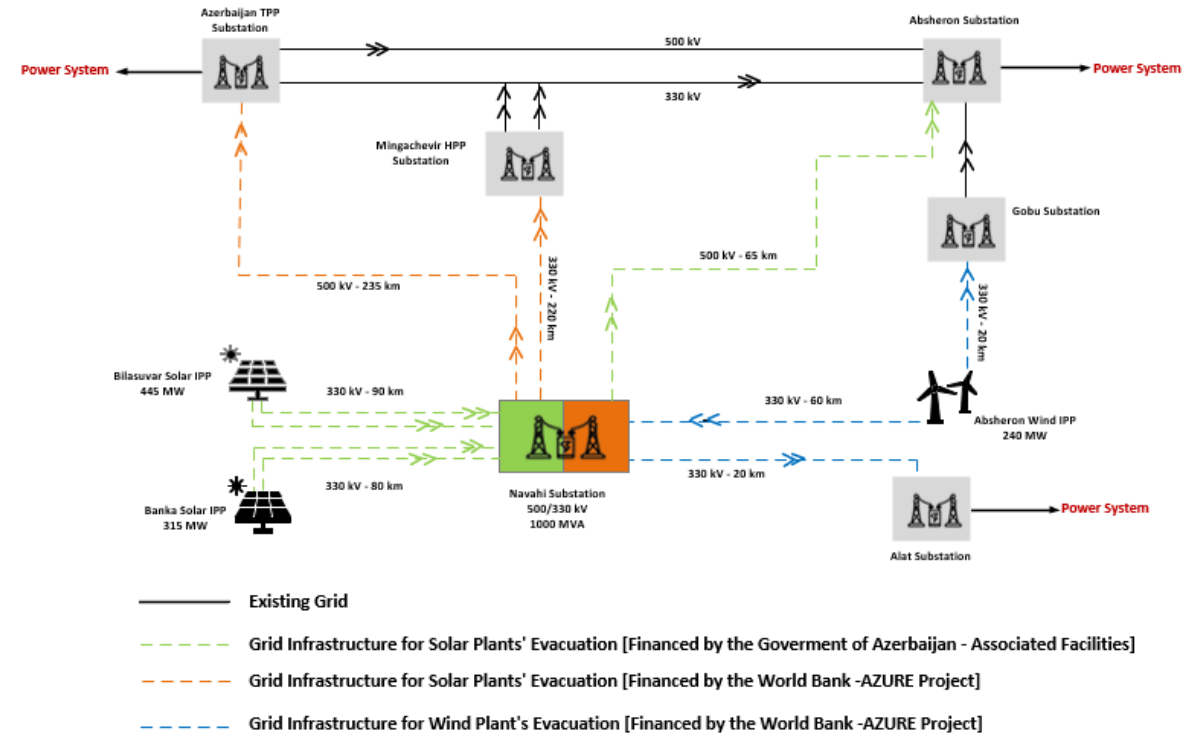
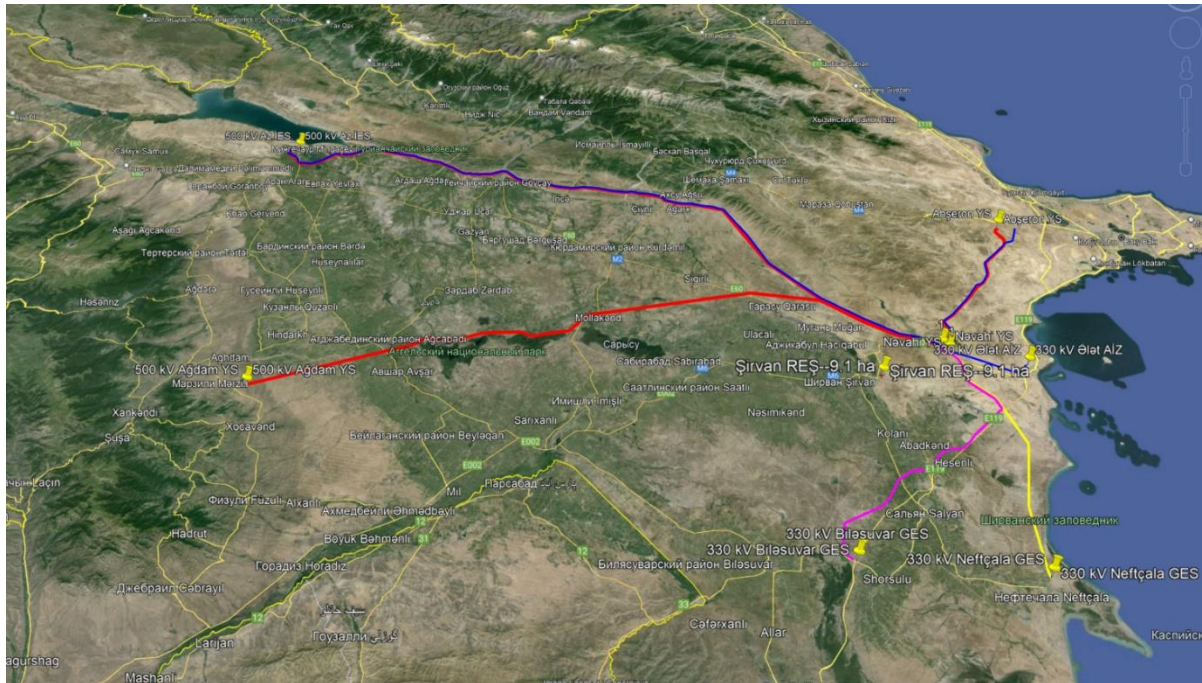
Realization of Green energy zones in Garabakh and Eastern Zangazur Regions: 38 hydro power plants of 307 MW total installed capacity - commissioned, 340 MW utility scale solar power plant is under construction, 7M W rooftop solar panels were installed, 240MW wind power plant is under design stage.

With overall objective to create 8 GW green energy supply sources, 2 GW will be integrated into the power grid in 2027.

Azerbaijan Renewable Energy Grid Integration Project - AZURE project

Strategic East-West Green Energy Corridors

AZURE project





Green Trends

• In action



Utility scale renewable energy supply sources

- 230 MW Garadag Solar Energy Plant (completed)
- 240 Absheron Khizi MW Wind Park (completed)
- 240 MW Shafag Solar Energy Plant (under construction)
- 50 MW Ufug Solar Energy plant (under construction)
- 50 MW Shams Solar Energy Plant (under construction)

Big companies intend to decarbonize their supply

- SOCAR, BP, Holcim and others (momentum for acting)

ESCO model

- SOCAR GREEN

Energy Storage Batteries

- 250 MW Energy Storage Batteries (commissioned)

- Buildings (residential, commercial and public) takes about 50% of final energy consumption;
- Growing need for buildings

- Development of national renovation program (NRP) with coverage of residential, public and commercial buildings
- National standards for deployment of renewable energy technologies in buildings –still not mandatory for new and reconstructed buildings.
- National standards energy conservation measures at the building context.
- Mandatory energy audits for big energy consumers in buildings.

Residential buildings	Area of residential buildings, m ²
Buildings built before 2000	112,400,000
Buildings built after 2000	123,100,000



Maturity of Business Environment for Prosumers –Time to act



In place legislative framework



Effective operational frameworks



Lessons learned from green zones



For building use

- Rooftop solar energy for electricity
- Solar collectors for domestic hot water
- Heat pumps

Role of Utility companies

Competitive advantage

- Established business for electricity sales,
- Data access for energy use for households and for consumption behaviour
- Lessons learned from the prosumers in green energy zones in Garabakh and Eastern Zangazur region
- Recently launched business in electrification of transport sector -- electricity chargers
- Access to revolving fund
- Qualified specialists for installation and maintenance and training facilities
- Established communications channels with customers
- Paid maintenance services beyond warranty year

Strategy

- Targeting new built settlements
- Operative service team and hot lines
- Demonstration projects and success sharing

Constraints

- Dominant role in the market
- Limiting participation of private companies due to their lack of access to financing



Target customers



Multi-apart building
construction companies;

Multi-apart building
operators;

Commercial buildings

Individual customers
(house owners).

Public Buildings-Priority



Proposed Strategy for Alignment



Effective business and partnerships models for stimulating green energy supply technologies in buildings

Consideration of social mechanisms for mass access

One stop shops such as “Asan Kommunal” (“Easy Utility”) being place for sales

Business Environment for evolution of ESCO companies

Business environment for evolution of new market.

Risk taker role for breaking stereotypes in households for unreliable energy supply

Existing buildings

- Rooftop design architecture
- Grid reinforcement for integration of growing amount of fluctuating load
- Regulatory procedures
- Affordable Micro financing mechanisms (with installments) for households
- Aligning private RE companies into the framework blending with financing solutions with participation of local banks and one stops shops
- Seasonal fluctuations in energy use
- Technology demonstration shops

New buildings

- Mandatory rooftop PV installations - still not applied
- Grid connection infrastructure
- Regulatory procedures
- Energy Efficiency Fund- co-financing construction companies (initial phase)
- Seasonal fluctuations in energy use – increase in load in summer and decrease in winter



Effective Models for operation



Integrated Design-Build-Operate Model

- Technology supply
- Installation
- Training
- Warranty for uninterrupted energy supply
- Maintenance
- Distant Monitoring services
- Payment in installments
- Online support services
- One stop sales shops

Criteria for success

- Affordable price offer at the cost of scaled supply and offer
- Efforts for minimizing|preventing power outage
- Pilot projects and
- Awareness raising events
- Guarantee for technology.
- Room for Technology to grow for complete adaptation – multipurpose technologies- with flexible design



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