



13TH SE Europe Energy Dialogue

JUNE 16 & 17, 2022



Networks, Energy Storage and Innovations for Higher RES Penetration

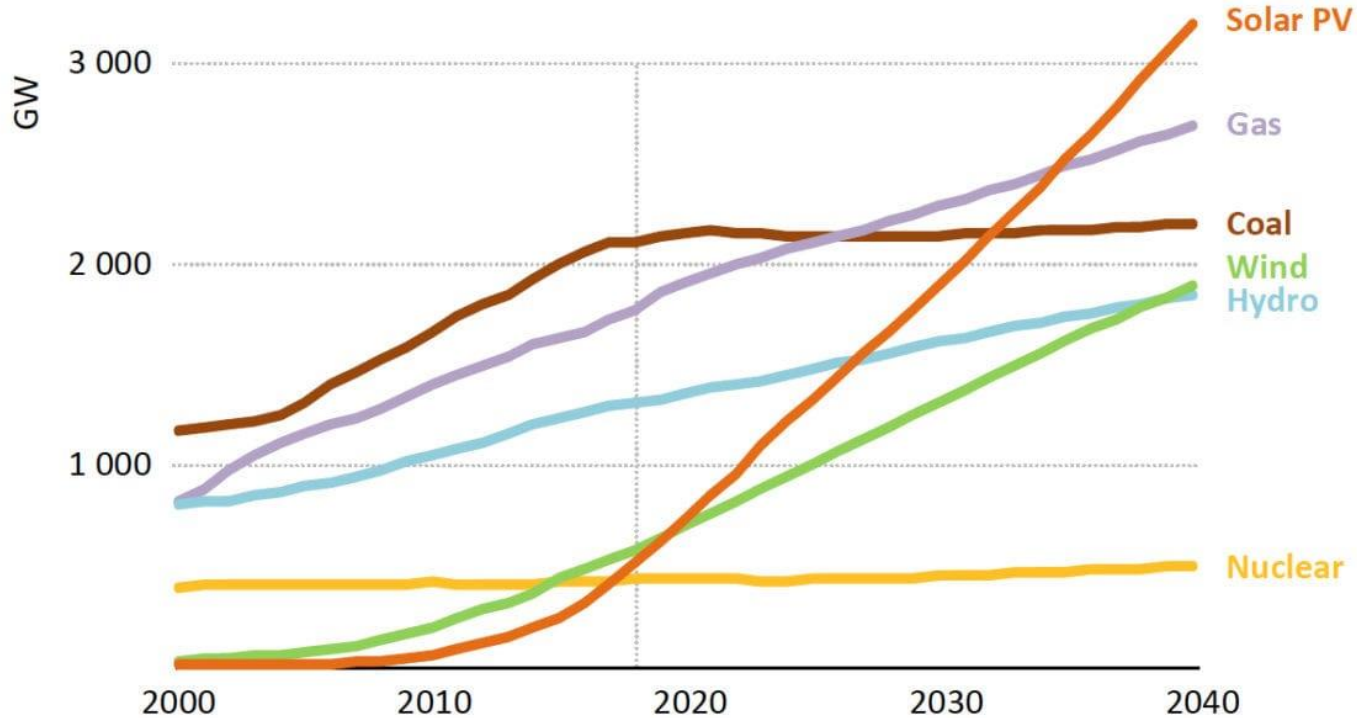
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- The electric grid will be supported by generation from sustainable, low-carbon energy sources
- Share of renewable Energy will increase
- Energy storage at different scales for reliable power supply, grid security, and cost reduction will increase

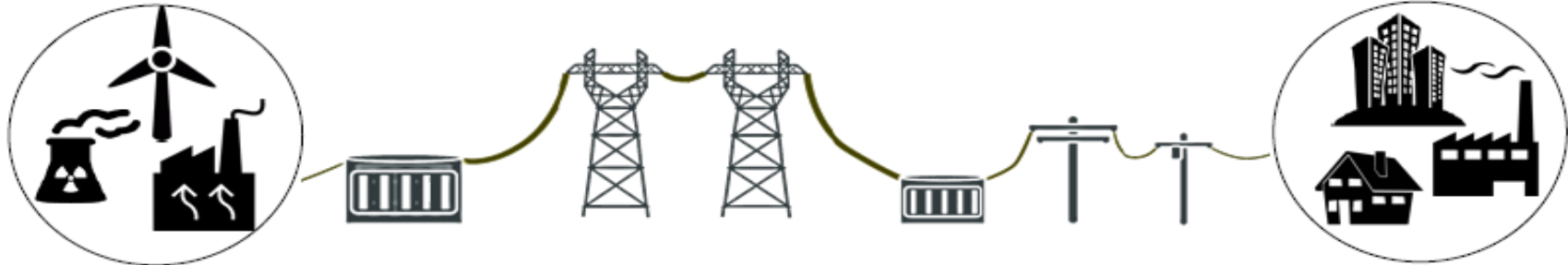
50% of the Electricity from RE in 2040

Global power capacity by source in the Stated Policies Scenario



- ESS can work as a flexible power electronic device that supports the grid in providing a constant supply whilst satisfying power quality and reliability
- ESS can contribute to improving system reliability and optimally maintaining sensible operational costs.
- ESSs can mitigate power variations and functions as storage for flexible dispatch of RE
- ESS will dispatch its stored energy during low energy production of RE, and will help store excess energy when power production is high.
- ESSs can also mitigate peak shaving and energy arbitrage

Benefits of Energy Storage Solutions



Generation



- Renewable Smoothing, Time Shifting, Backup
- Replace Gas Peaker Plants
- Energy Market Arbitrage
- Frequency Regulation
- Spinning/Non-spinning Reserves
- Voltage Support
- Black Start
- Dispatching Nuclear Baseload

Transmission



- Peak Efficiency Operation
- Congestion Relief
- Infrastructure Deferral and Avoidance

Distribution



- Utility*
- Infrastructure Deferral and Avoidance
- Demand Management
- Managing Two-Way Current Flow



- Customer "behind the meter"*
- Time of Use
- Demand Charge
- Demand Response
- PV Management
- Virtual Power Plants
- Back-up Power
- Customized Micro-grid Services

Energy Storage Legislations in Turkey



1. 09 May 2021 the legislation,
2. 21 September 2021 the grid connection rules has been announced.
3. 21 October 2021 license application for ESS will be start.
4. 15 November 2021 the test procedure for ESS will be announced.

Content of the Legislation on ESS

1. ESS integrated to production
2. ESS integrated to consumption.
3. Stand alone ESS for arbitrage and Primary Frequency Control, Secondary Frequency Control, black start etc.
4. ESS to manage the grid and deferral new investment on the grid for distribution companies .



THANK YOU

