



Key Data of Iran in 2017

- ☐ Area: 1,648,195 km²
- ☐ Population: 81,000,000 (Based on 2017 Census)
- ☐ Number of electricity consumers: 33.8 (Million)
- ☐ Number of Regional Electricity Companies: 16
- ☐ Number of DSOs: 42
- ☐ Peak load: 55,443 (MW), in 2017



Power Balance in 2017

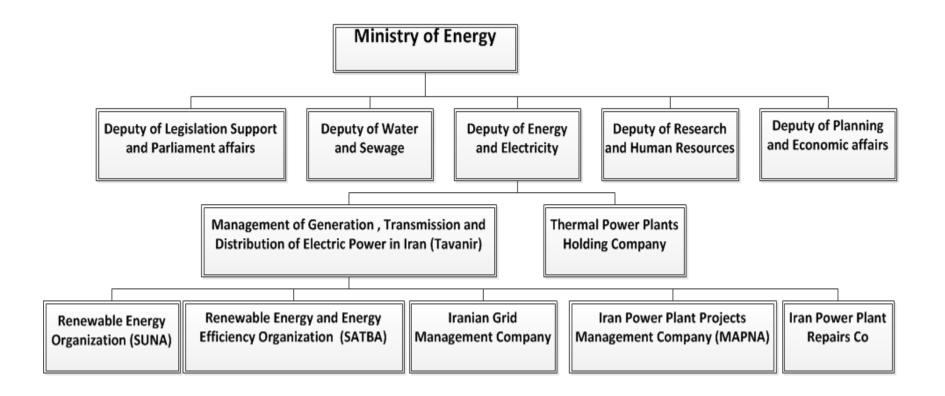
- ☐ Generation (TWh): 289
- ☐ Consumption (TWh): 237
- ☐ Imports (TWh): 4.2
- ☐ Exports (TWh): 6.7
- ☐ Losses (TWh): 52

Grid Facts and Characteristics

5 <	Private Sector Ac	Created Institutions	
	Type of Generations Diesel Installed Capacity(MW): 3.36 Transmission Lines Length(km): NA Village Electrification (Num): NA Annual Energy Consumption(GWh): 5.2		Office of Lighting (1906)
<	Parallel Activities of Public		
	Type of Generations Diesel, Thermal, Hydro, Installed Capacity (MW): 712 Transmission Lines Length(km): 809 Village Electrification(Num): 120 Annual Energy Consumption(GWh): 1210		Electric Organization of Tehran (1936)
⁵² <	Centralization and Public Sec		
	Type of Generations Diesel, Thermal, Hydro, G Installed Capacity (MW): 13011 Transmission Lines Length(km): 27368 Village Electrification(Num): 22541 Annual Energy Consumption(GWh): 32619	Gas	IOEP (1963) RECs (1965) TAVANIR (1969) MOE (1974)
<	Decentralization, Structure Renovation		
12	Type of Generations Diesel, Thermal, Hydro, On Installed Capacity (MW): 31518 Transmission Lines Length (km): 73912 Village Electrification (Num): 46235 Annual Energy Consumption (GWh): 105076	Gas, Combined-cycle, Renewable	PGMCs (1997) DISCOs (1997)
<	Electricity Market D		
	Type of Generations Diesel, Thermal, Hydro, C Installed Capacity (MW): 73758	Gas, Combined-cycle, Renewable, Nuclear	IEMRB (2003) IGMC (2004)
	Transmission Lines Length(km): 121507 Village Electrification(Num): 55664		PCMEI (2005)



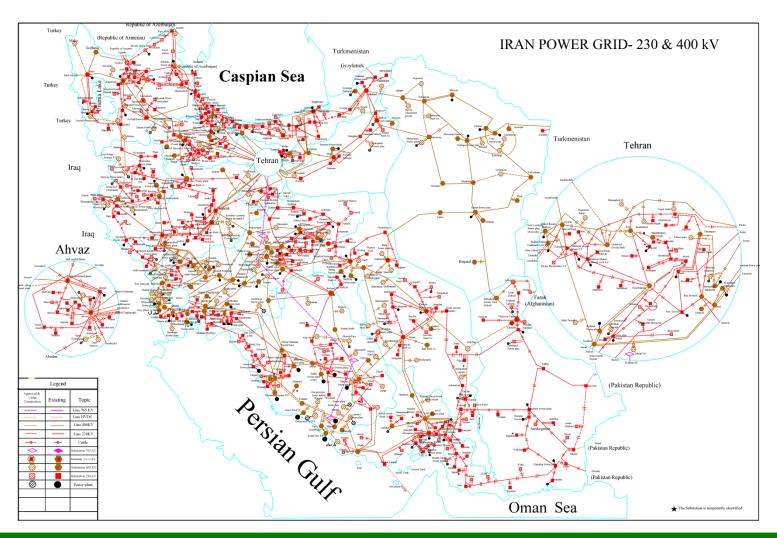
Power structure of the country



Structure of Electrical Power System

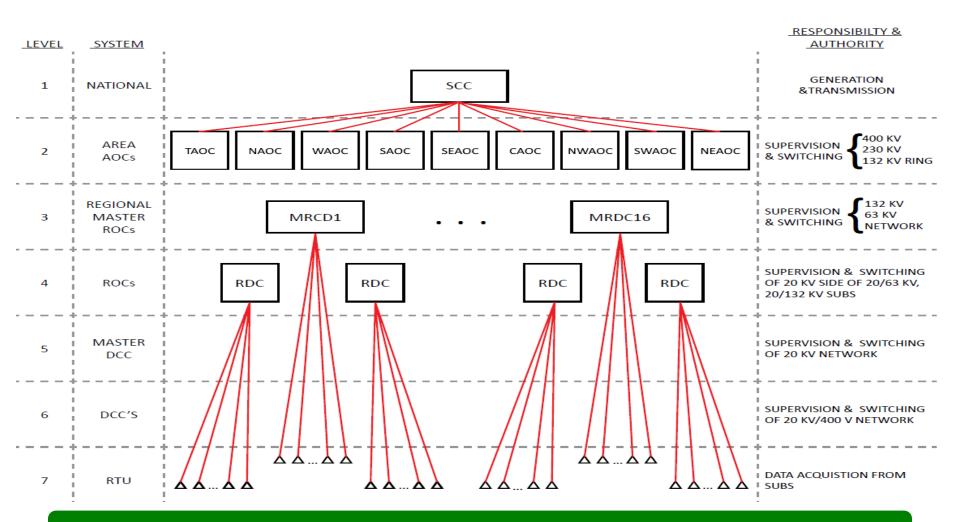
- ☐ The Transmission Sector is responsible for maintenance, operation and development of 400 kV & 230 kV transmission lines and substations as well as 132 kV, 66 kV and 63 kV subtransmission lines
- ☐ 42 Distribution Companies are working as non-governmental Companies in the county.
- ☐ The Distribution voltage level are 33 kV, 20 kV, 11 kV
- ☐ The voltage level of three phase consumer is 380 V.

Map of the High Voltage Grid (400 kV & 230 kV)



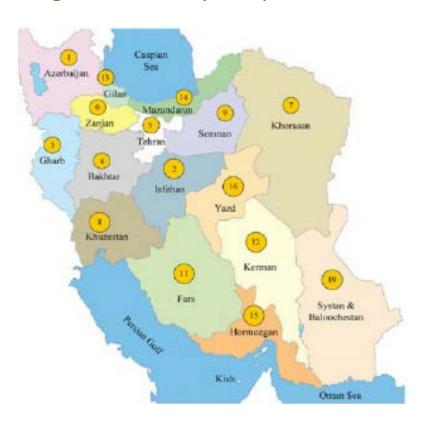


Hierarchy of Dispatching Centers in Iran





Regional Electricity Companies



Dispatching Centers





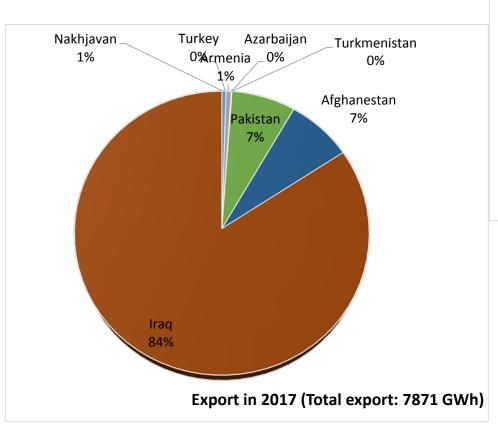
Global Map of the Grid and of Its Interconnections

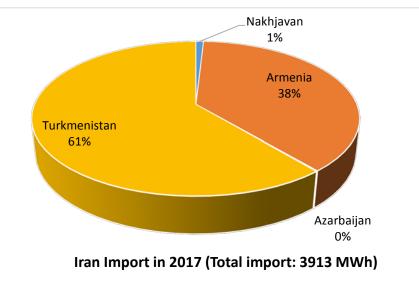
- Interconnection with:
 - **≻**Turkey
 - ➤ Azarbaijan
 - > Turkmenistan
 - **≻**Armenia
 - > Iraq
 - ➤ Afghanestan
 - **>** Pakistan
 - **≻** Nakhjavan





Cross-Border Energy Exchanges in 2017







Installed Capacity with Reference to Primary Resources

☐ Installed operational capacities (MW), in 2017:

➤ Gas: 26,200

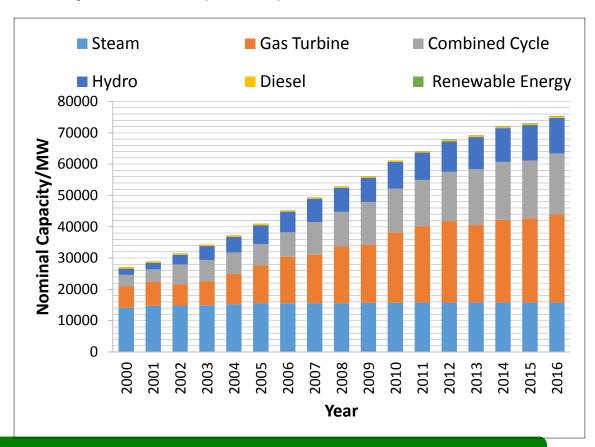
> Steam: 15,829

Combined Cycle: 23,166

Nuclear: 1,020

➤ Hydro power: 11,943

Other Renewables: 333





Energy Production with Reference to Primary Resources

☐ Electricity generated (GWh), in 2017

> Steam: 85,092

> Gas: 76,053

> Hydro Power: 16,417

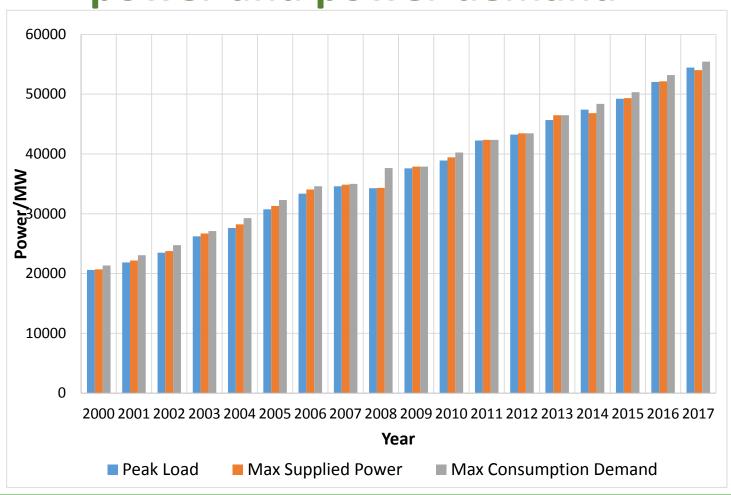
Nuclear and Renewables: 7,001

Diesel: 24

Combined Cycle: 103,859

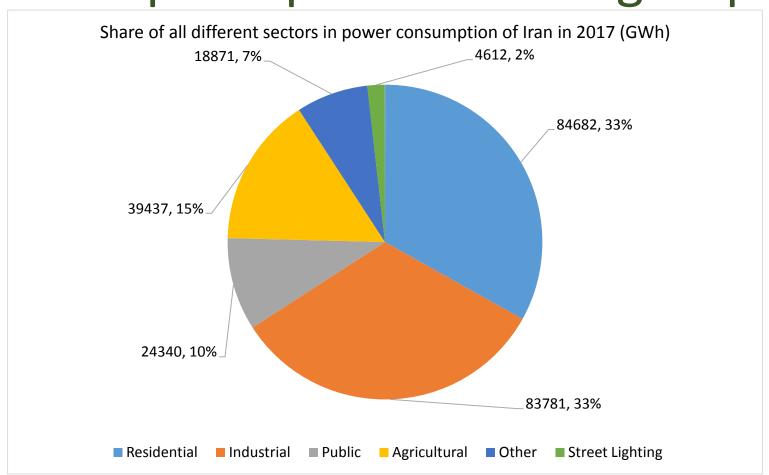


Peak load, maximum supplied power and power demand



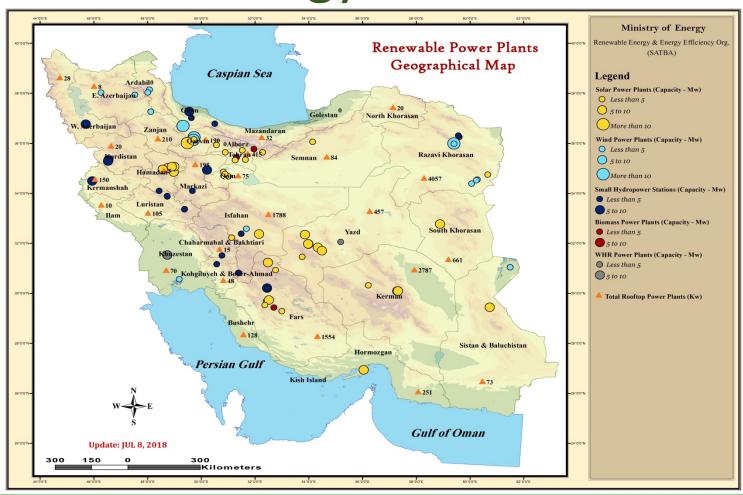
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Comsuption per customer groups



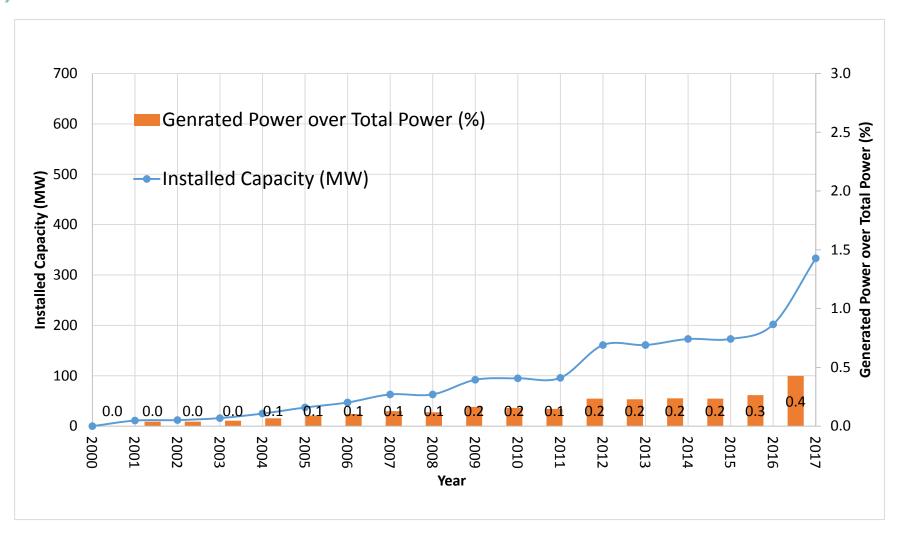


Location of Renewable Energy Sources





Development of Renewable Energy

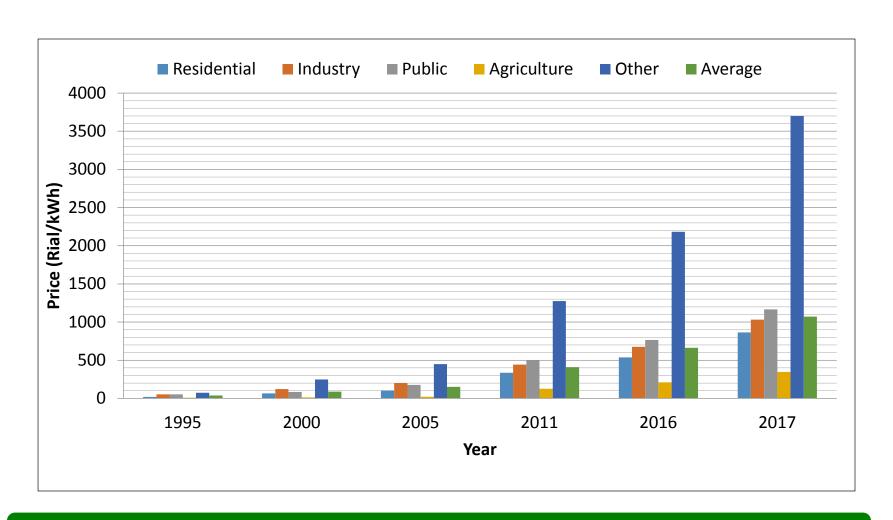


RES installed capacity and production since 2016 to 2017

	Wind	Solar	Small Hydro (<10 MW)	Other (biomass, landfill,)	Total
Installed Capacity- MW(until 2017)	150.7	148.5	13.6	20.2	333
Generated Energy in 2017 (kWh)	180,413,491	110,059,118	67,277,474	68,373,596	426,123,679
Generated Energy in 2016 (kWh)	126,452,005	4,046,684	64,459,538	23,522,105	218,480,332

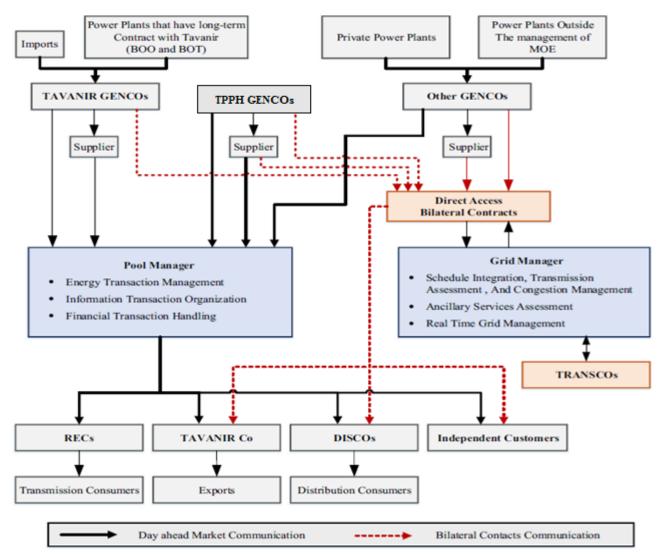


Price Development for All Consumers



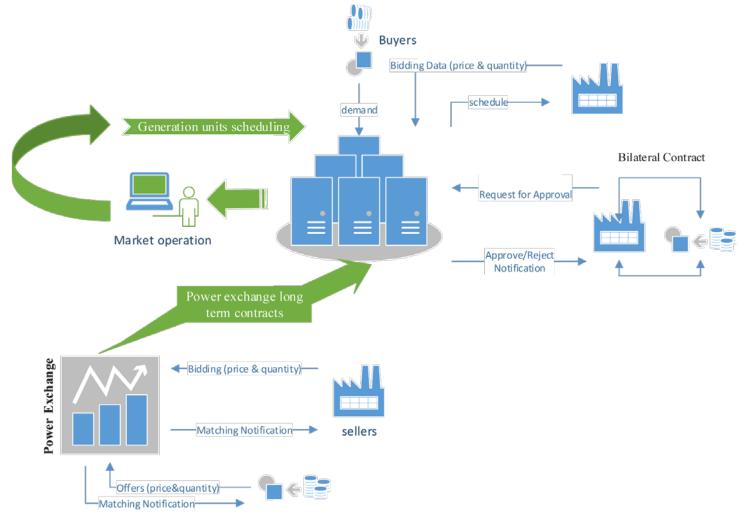


Electricity Market Organisation





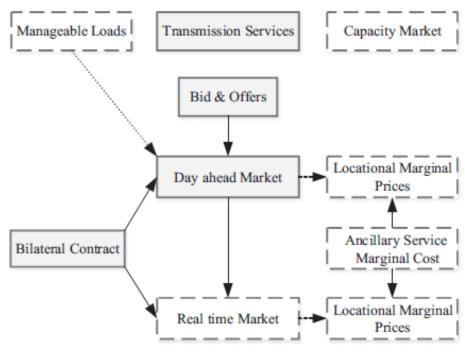
Electricity Trade Structure





Specific aspects of the electricity market

Iranian Electricity market model in comparison with standard market from the viewpoint of FERC (the dotted connections Manageable Loads have not been established yet).







Thanks for Your Attention