



**REPUBLIC OF TÜRKİYE
MINISTRY OF ENERGY AND
NATURAL RESOURCES**

Nuclear Power Programme of Türkiye

**Sefa BEYAZTOPRAK / Expert (sefa.beyaztoprak@enerji.gov.tr)
General Directorate of Nuclear Energy and International Projects**

Electricity Market Outlook & Installed Capacity

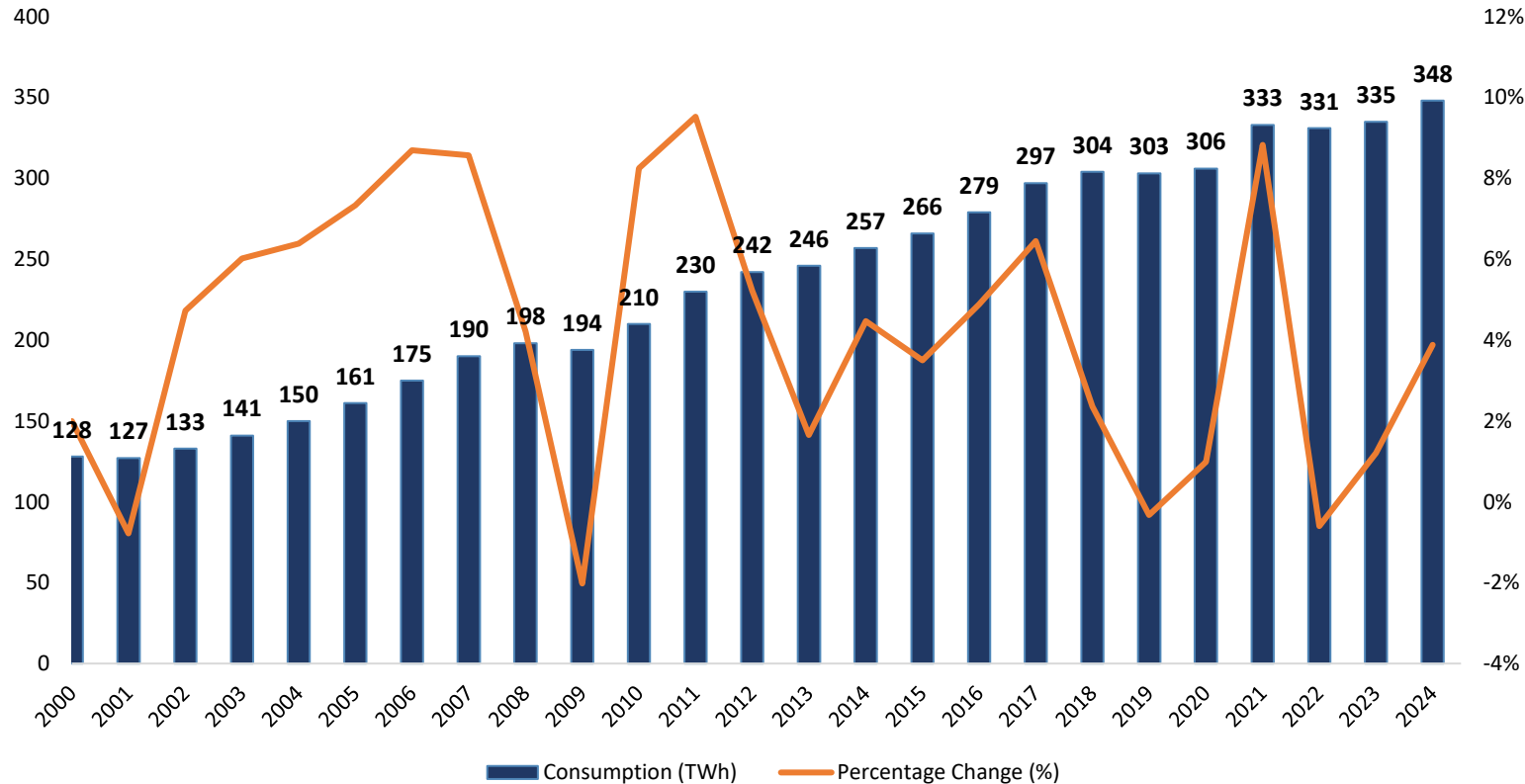
Resource Type	Total Installed Capacity (MW) (January 2025)	Share (%)	Total Generation (MWh) (As of end of 2024)	Share (%) (2024)
Hydraulic	32.289,04	26,87	59.681.637	17,15%
Solar	23.422,66	19,49	40.319.440	11,59%
Wind	13.694,80	11,40	32.443.481	9,32%
Biomass	2.116,35	1,76	8.864.533	2,55%
Geothermal	1.733,51	1,44	11.135.879	3,20%
RENEWABLE	73.256,35	60,96	152.444.969	43,82%
Natural Gas	24.733,44	20,58	75.081.470	21,58%
Import Coal	10.455,80	8,70	75.786.521	21,78%
Lignite	10.235,92	8,52	38.298.346	11,01%
Hard Coal	840,77	0,70	4.050.146	1,16%
Asphaltite	405,00	0,34	1.185.157	0,34%
Fuel-oil, Diesel, LNG, Naphtha	226,61	0,19	1.073.501	0,31%
THERMAL	46.905,26	39,04	195.475.141	56,18
TOTAL	120.161,61	100,00	348.776.892	100,00

Main Observations

- ❑ **Total Installed Capacity:** 120.161 MW (at the end of the as of July 2025)
- ❑ **Peak Demand in 2025:** 60.414 MW (increased by 2.9% compared to 2024)
- ❑ Türkiye is able to meet its electricity demand from existing power plants.
- ❑ High dependency on imported primary energy sources

Electricity Demand Trend (2000 – 2024)

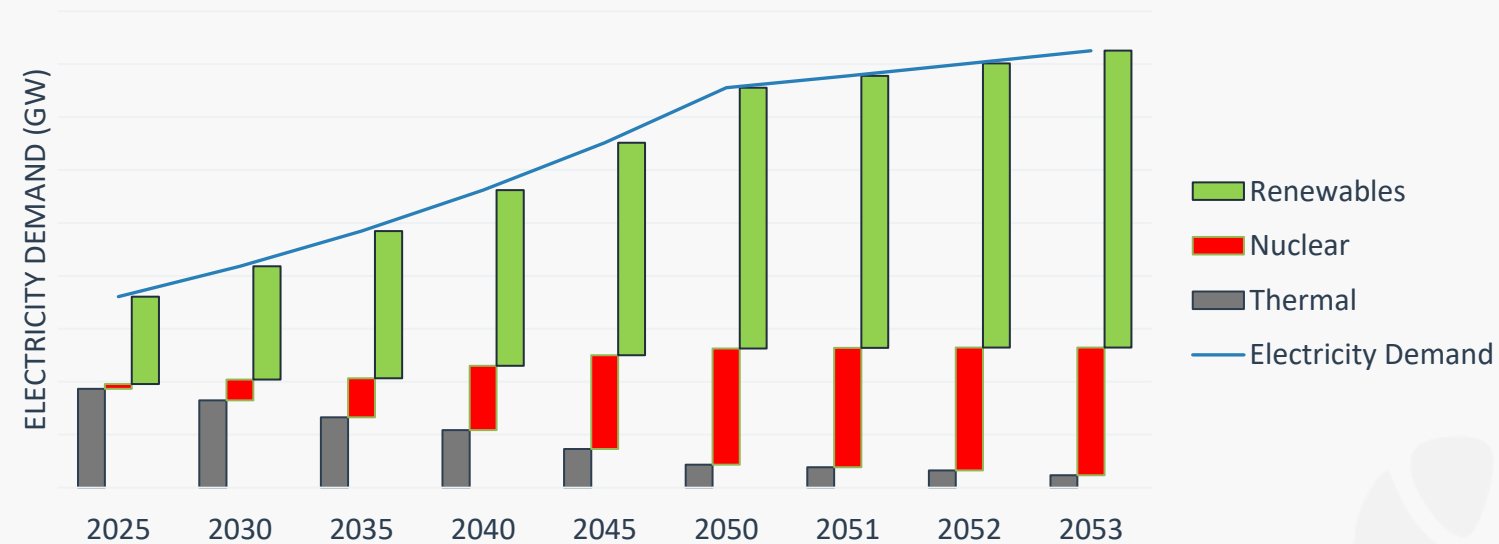
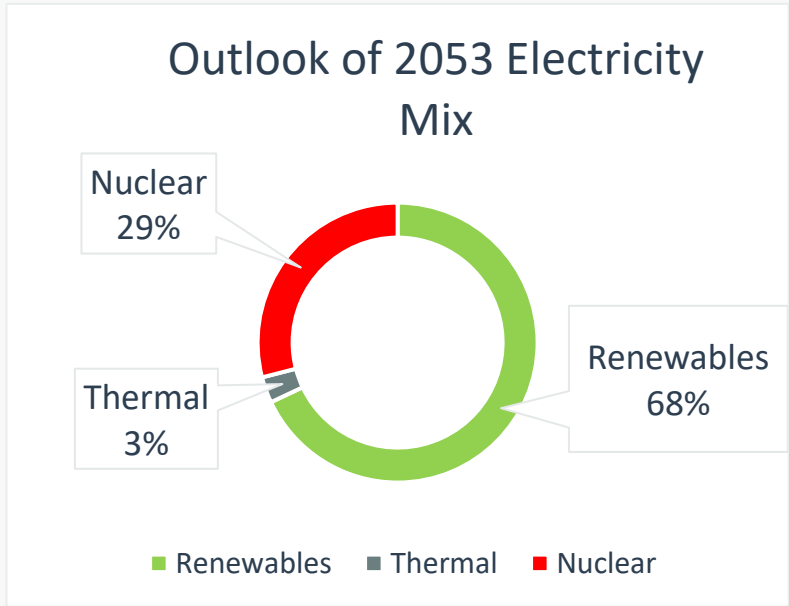
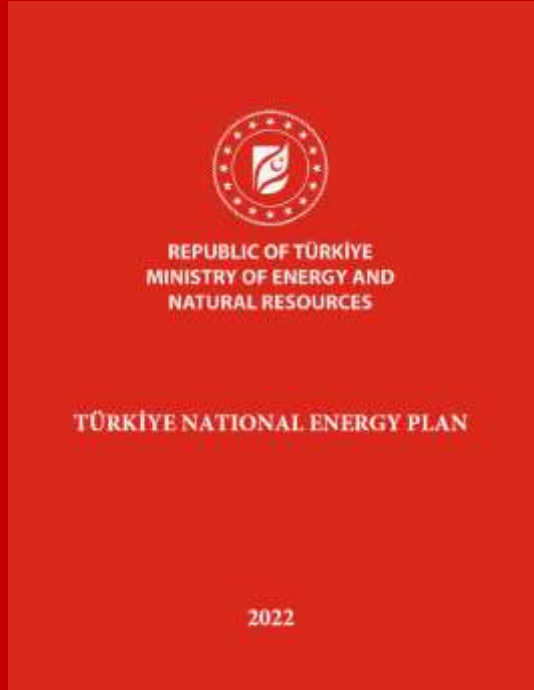
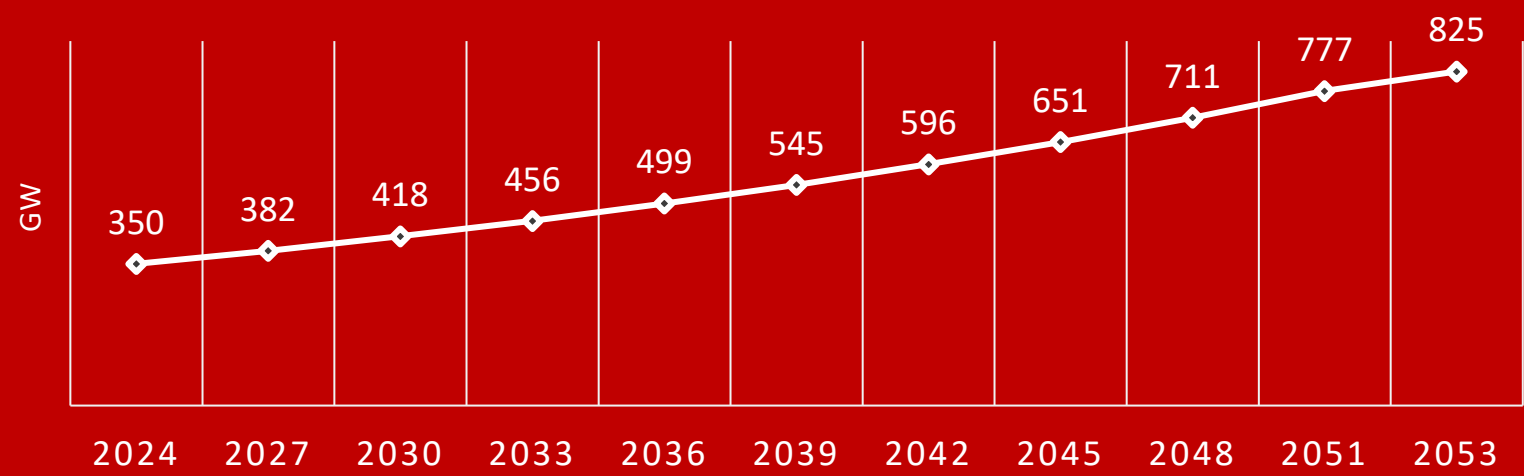
Electric Energy Demand and Rate of Increase by Years (GWh-%)



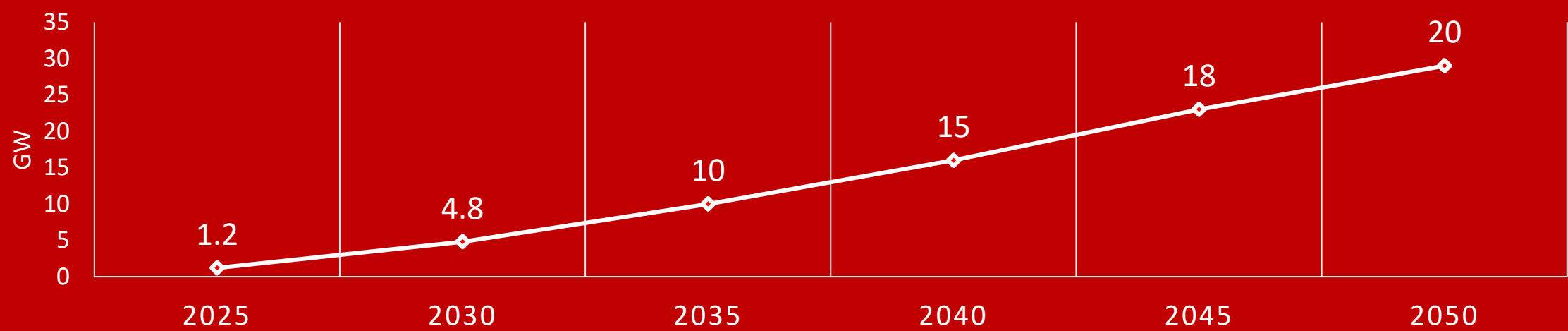
Main Observations

- ❑ The demand has increased compared to the previous year in the last 20 years, except for 2009, 2019 and 2022.
- ❑ Demand Growth: doubled in 15 years between 2004 – 2019.
- ❑ **Total Electricity Demand in 2024: 348 TWh** (3.88% increase compared to the previous year)
- ❑ Türkiye ranks **15th** in the world in terms of electricity consumption.

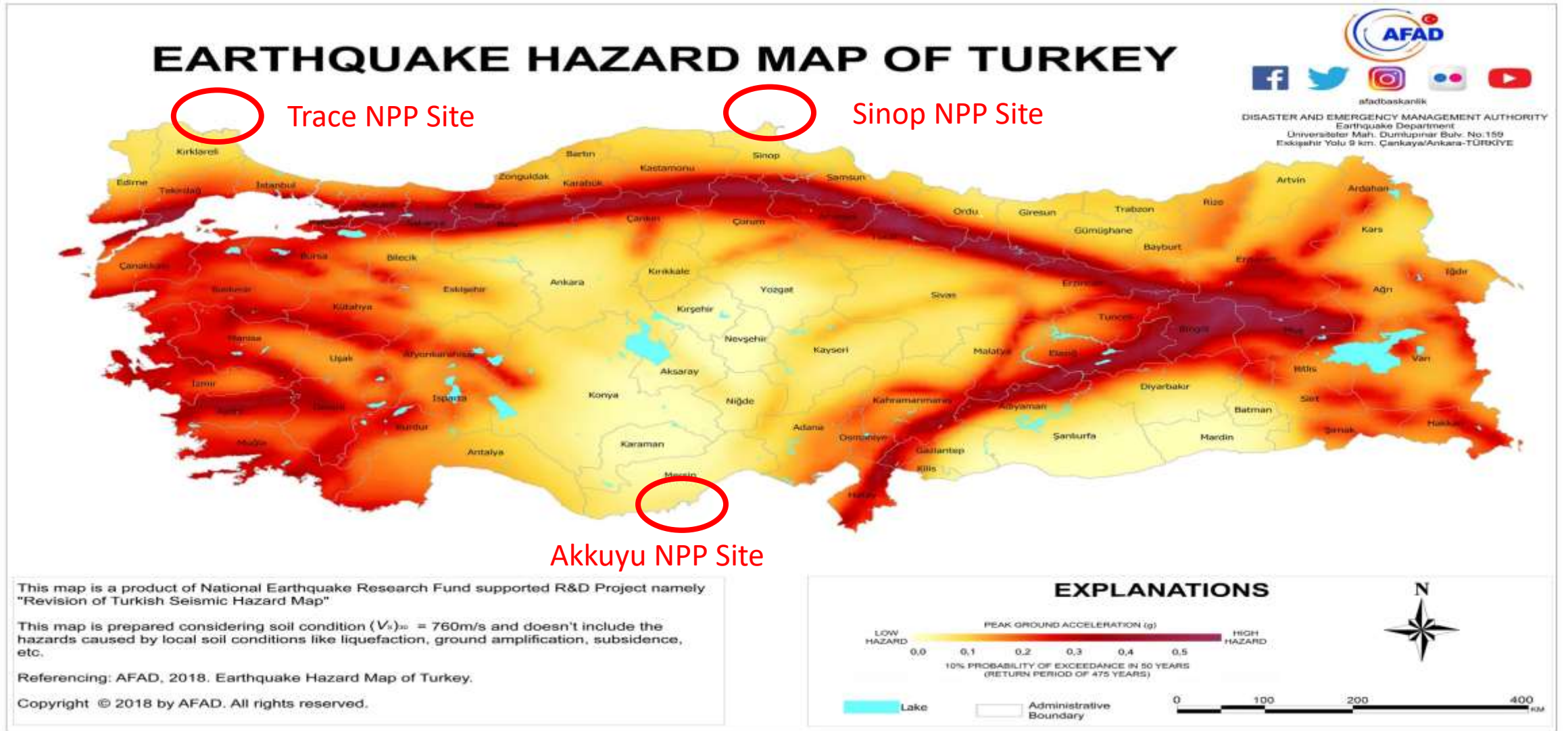
Electricity Generation Projection



Nuclear Installed Capacity Projection



Selected NPP Sites

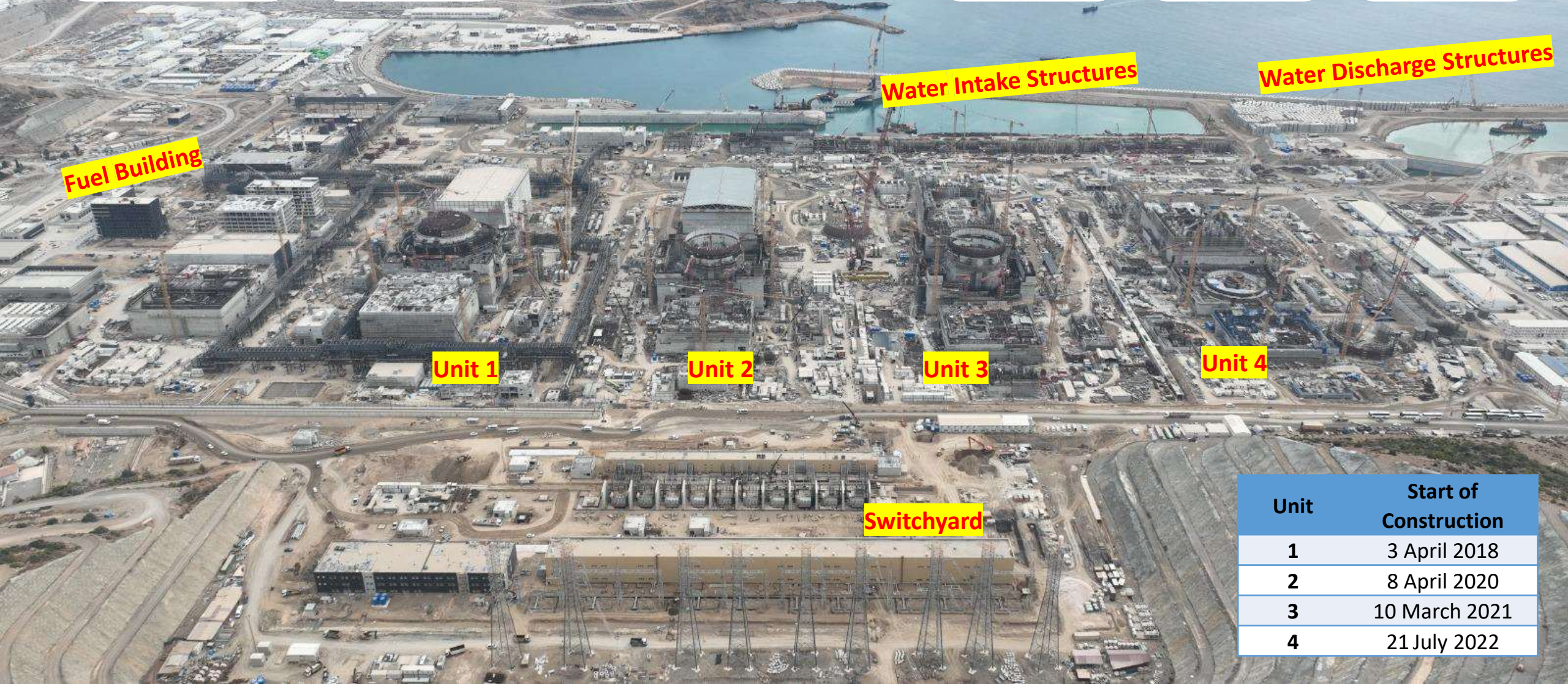


Akkuyu NPP Site



Intergovernmental Agreement (IGA) signed between governments of Russian Federation and Republic of Türkiye on the construction and operation of Akkuyu NPP on the basis of BOO model on 12 May 2010





Unit	Start of Construction
1	3 April 2018
2	8 April 2020
3	10 March 2021
4	21 July 2022

Status of Akkuyu NPP

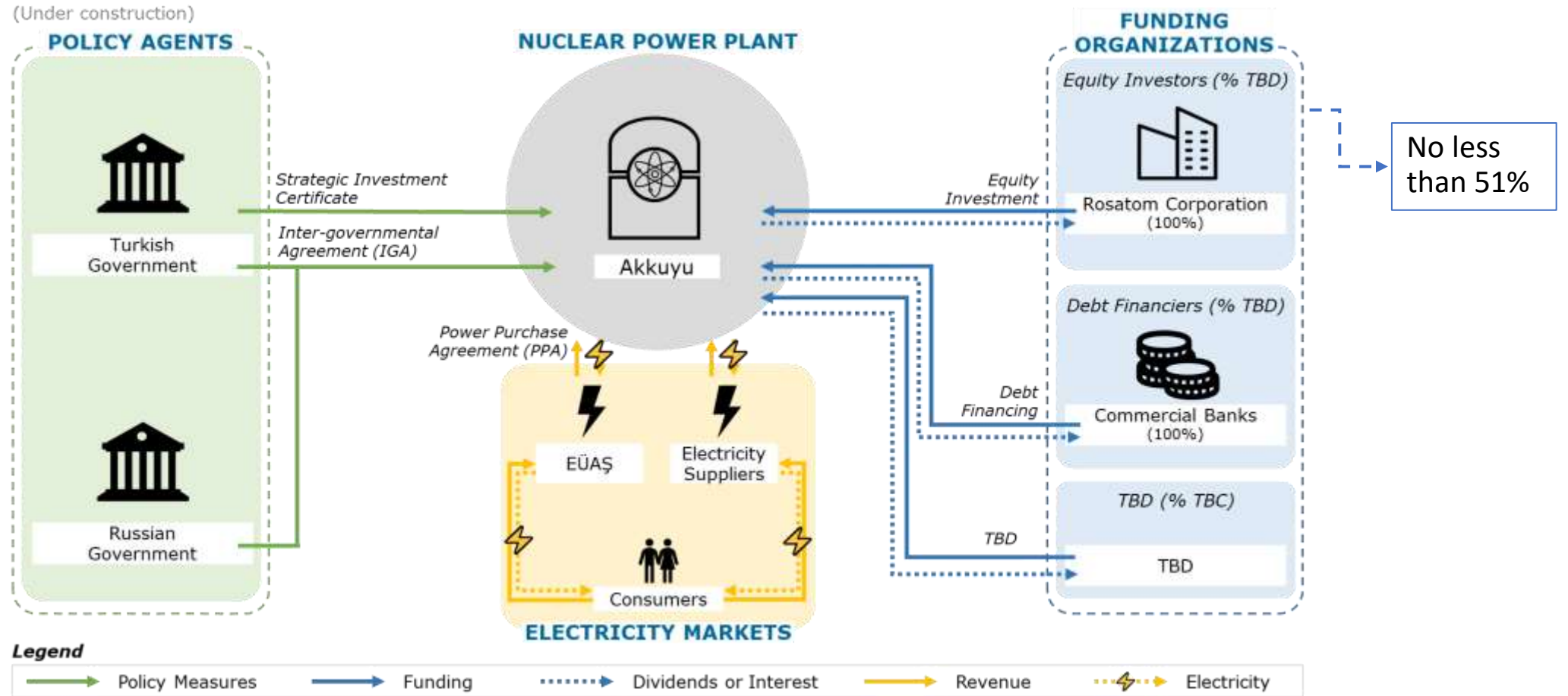


Akkuyu NPP – Main Parameters

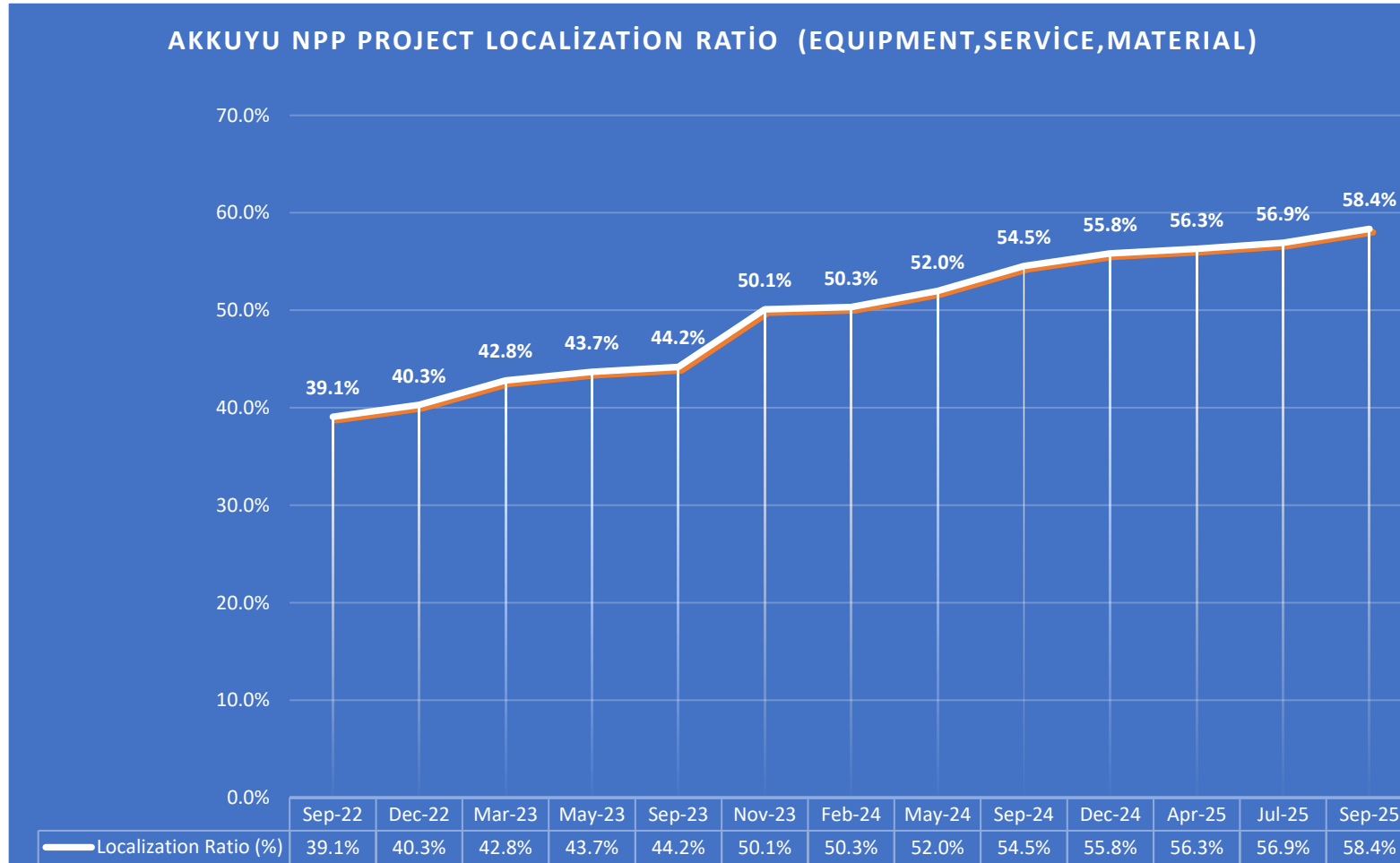
Parameters	
Estimated CAPEX	20 billion USD
Reactor type	VVER-1200 (AES-2006)
Number of units	4
Installed capacity	4800 MWe
Operating life-time	60+20 years / 3+Gen
Reactor vendor	Atomenergomash (AEM)
EPC contractor	Titan 2 – IC Ictas Construction JSC
Owner/Operator	Akkuyu Nuclear JSC (100% of stake is belong to Rosatom)
Financial sources	Fully funding by ROSATOM
Operation Company	Rusatom Service
Fuel Supply Company	TVEL

Akkuyu Business Model

Source:NEA



Akkuyu Localization Ratio



- ❖ The total localization potential for the Akkuyu NPP project is estimated to be equal up to minimum **10 billion USD** according to the **“Localization Plan and Roadmap”**



Main Areas of Localization



Safety class 4 equipment and non safety grade equipment

- Pumping equipment
- Plate heat exchangers
- Load lifting mechanisms
- Ventilation plants
- Split-systems
- Water treatment facilities
- Pipe fittings, valves, gates



Basic construction materials

- Concretes, mortars, crushed stone, gravel, sand
- Construction metal structures, rebars, rolled metal
- Materials and products of wood, plastic, roofing materials



Electrical equipment and materials

- 1.Cable products of safety classes 2–4
- 2.Cabling metal structures
- 3.Transformers
- 4.Packaged switchgears 10 kV, 0.4 kV



Pipelines

- 1.Pipelines of on-site networks
- 2.Pipelines of nuclear and turbine islands



Temporary buildings and structures

- 1.Temporary buildings and structures
- 2.Temporary on-shore hydraulic engineering structures

Sinop and Thrace Nuclear Power Plant (NPP) Projects

Sinop NPP Project

2012	Recognition of the owner EÜAŞ
2013	Signature of IGA with Japanese Government
2019	Sinop NPP Project with Japanese Gov. was cancelled
2020	EIA report approval
2023	Recognition of the owner status of TÜNAŞ
2023	Application for site approval
2024	Site Approval has been obtained from NDK

Thrace NPP Project

Ongoing	Site Characterization Activities
	Vendor and Apr. Business Model Selection
	Intergovernmental negotiations

Thank You



Expert, Sefa BEYAZTOPRAK

General Directorate of Nuclear Energy and International Projects

17-21 November 2025, Nairobi-Kenya