



THORIUM RESEARCH AND DEVELOPMENT ACTIVITIES IN TURKEY

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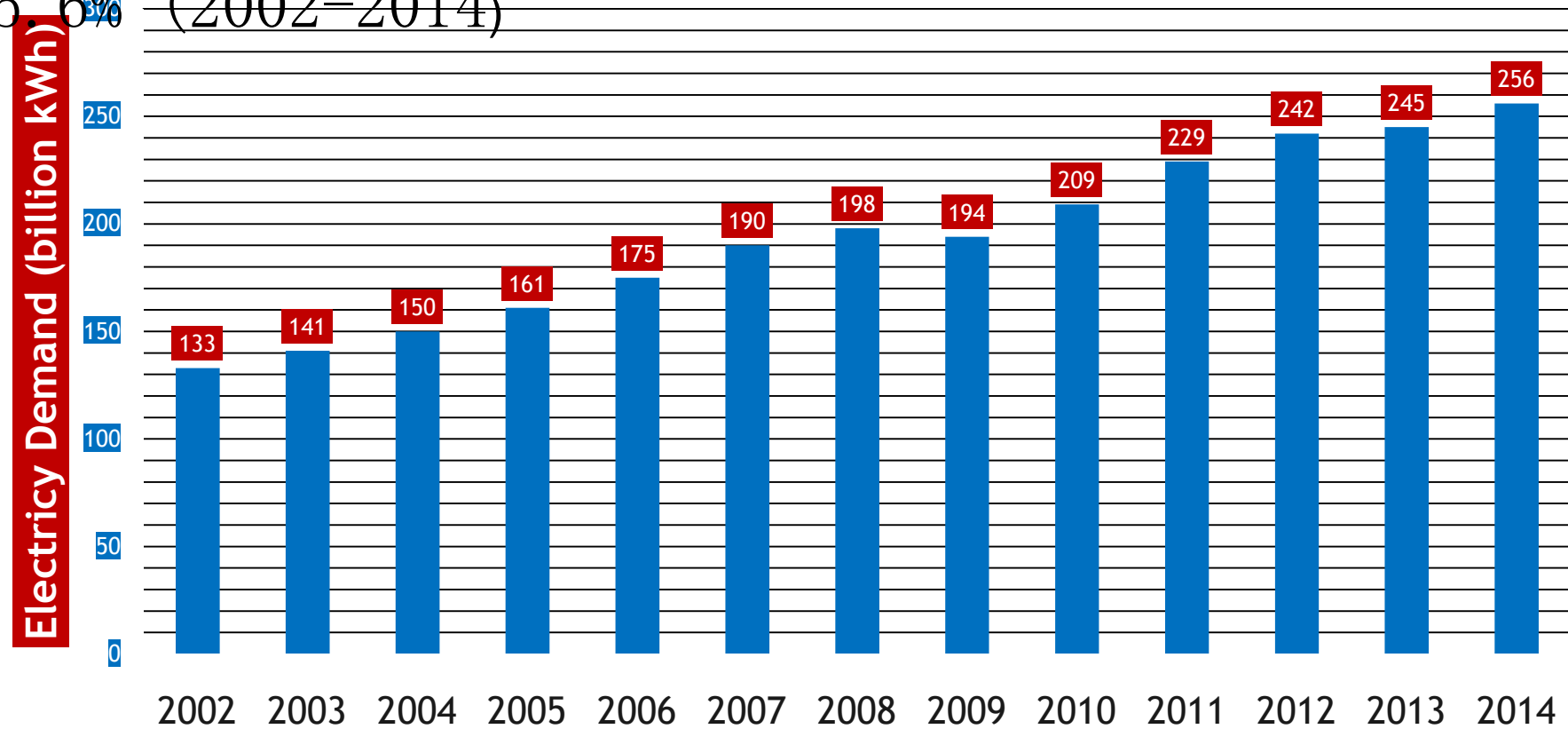
Country profile

- Area: 783,562 km² (37th)
- Population: 78 million (17th, 2014)
 - 26% of population is under 15 ages.
 - 8% of population is above 65 ages.
- GDP: 753 billion \$ (17th, 2014)
- GDP per capita: ~10.000 \$ (64th, 2014)
- Installed power: 69.5 GWe (2014)
- Electricity Consumption: 257 billion kWh (2014)

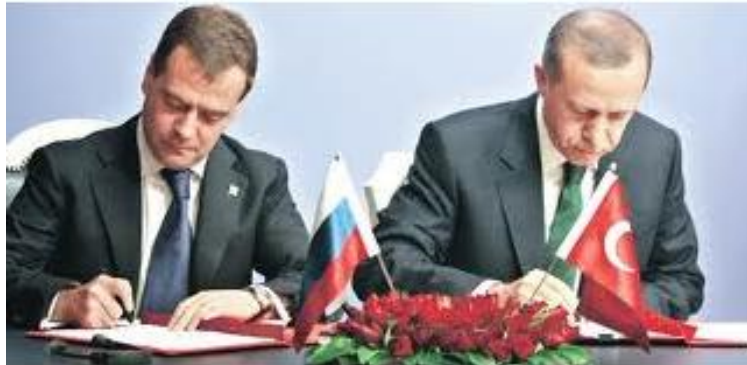


Country profile

Average annual electricity demand growth rate:
5.6% (2002-2014)



Akkuyu NPP project



IGA with Russian Federation on May
12, 2010.

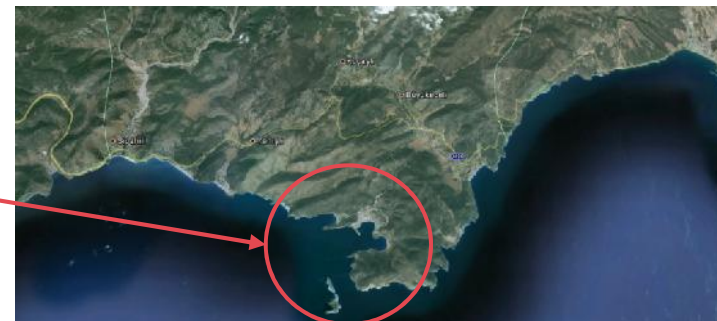
4 units of VVER 1200

60 years

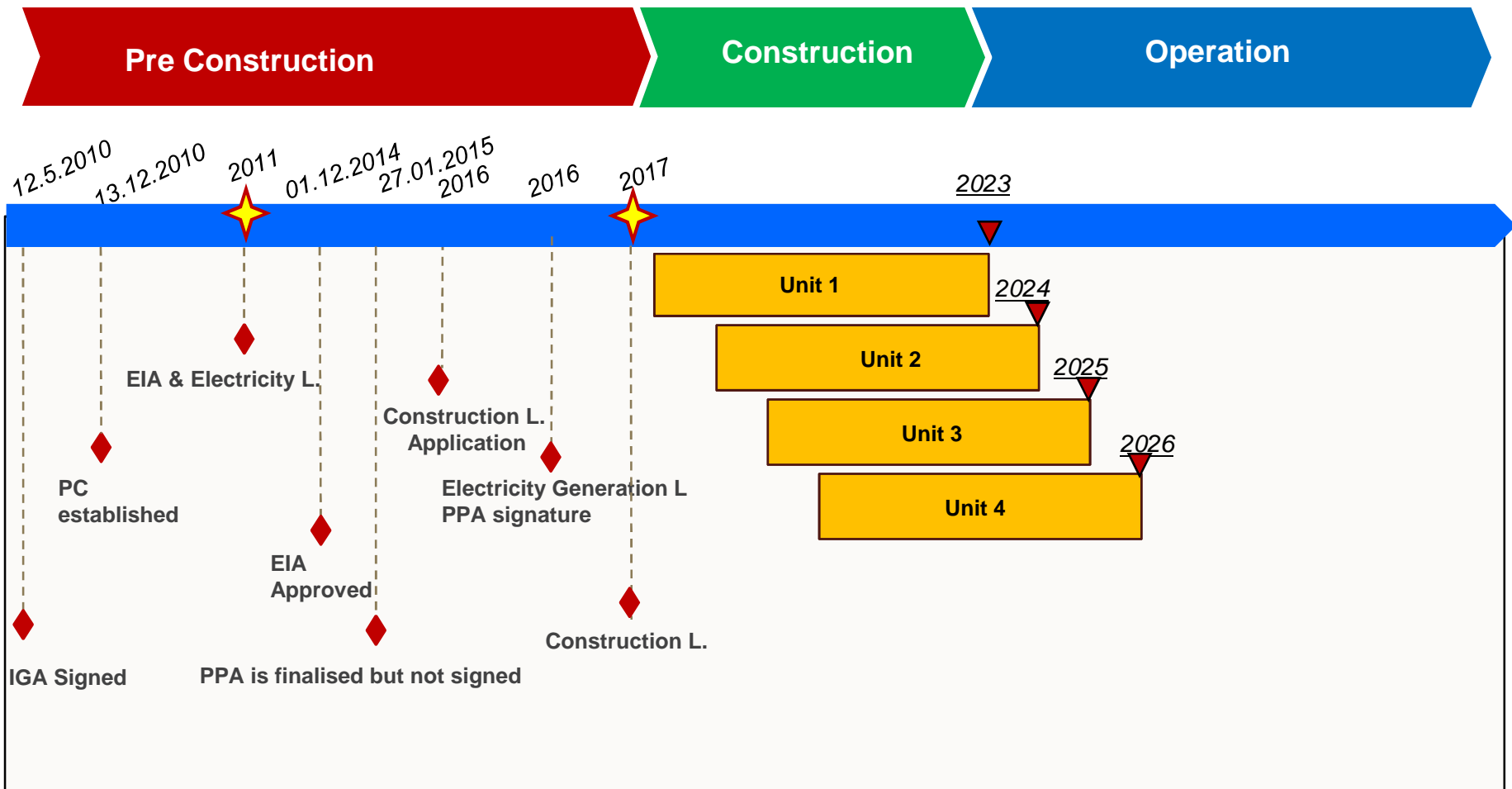
4800 MW
(Total
Capacity)

20 billion
USD

35 billion
kWh



Akkuyu NPP project



Sinop NPP project



IGA with Japan on May 3, 2013.

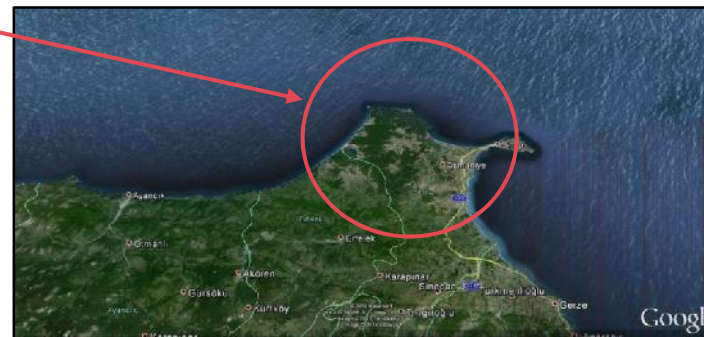
4 units of ATMEA 1

60 years

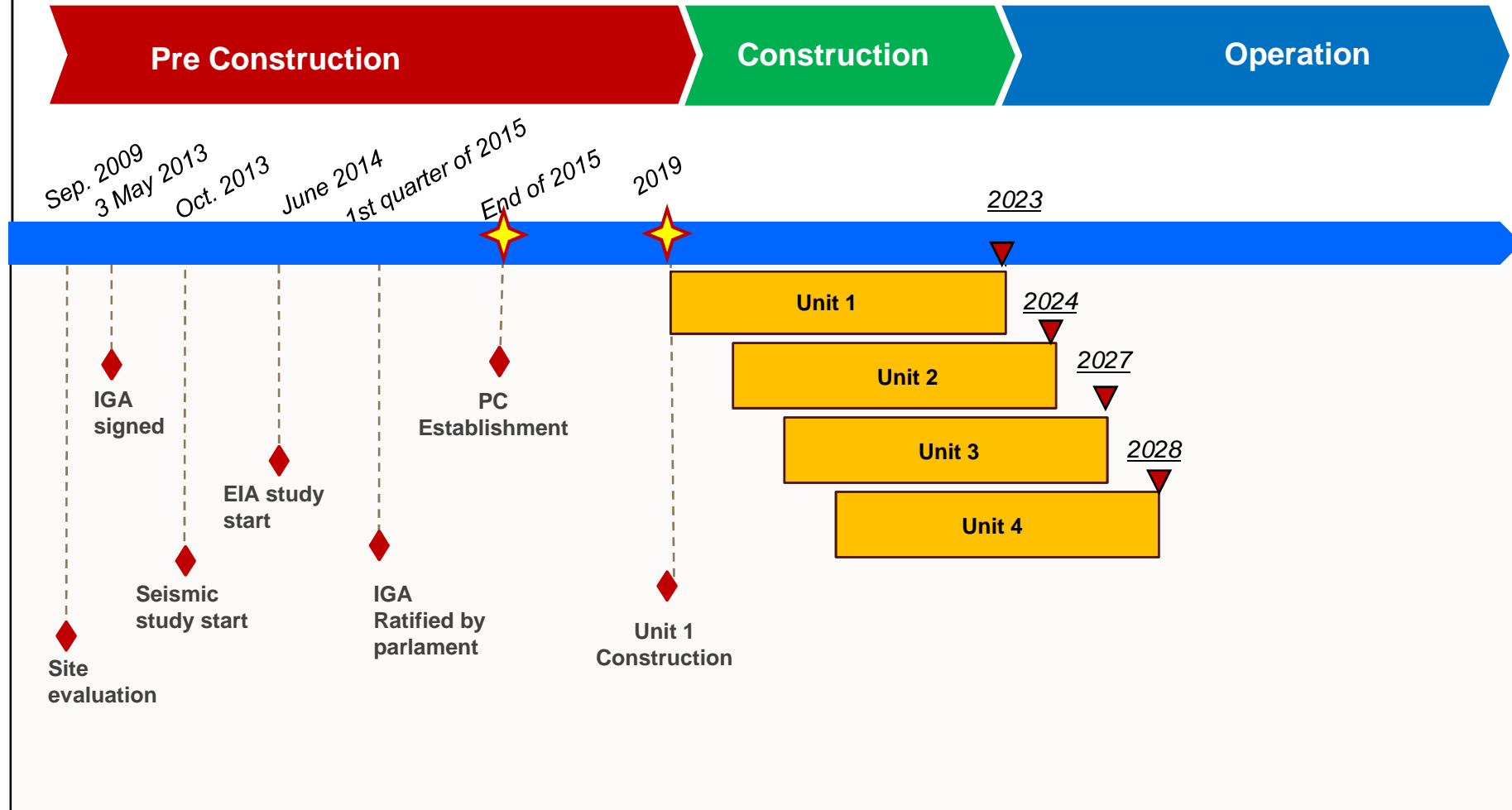
4480 MW
(Total Capacity)

22 billion
USD

33 billion
kWh



Sinop NPP project



Th exploration and development activities

- Turkey has 380 ktons of reasonably assured Th resources whereas the feasibility of their extraction should be studied.

- Research and development activities should be promoted to determine the feasibility of Th mining and fuel cycle.

Technologies should be developed for

Research on Th fuel cycle

- There are advanced academic research on Th fuel cycle in Turkey which should be supported by the industry.
- Reactor types studied include CANDU-6, MSBR, HTGR where Th utilization had been demonstrated and also prototype reactors AHWR, GT-MHR, HTMR-100, RM-BWR, ACR-700, HNR, VVER-1000 (with core and blanket)

Research on ADS

- Turkey should be integrated to international R&D activities on ADS which is expected to be commercialized in the middle of this century.
- There are theoretical academic research studies on ADS in Turkey which should be verified by industrial demonstrations.

Infrastructure development

- Industrial baseline for nuclear technologies should be separated from nuclear regulatory activities.
- Legislative framework for R&D should be improved to promote the flexibility of organizations and researchers on their activities.

Conclusion

- Th is considered as a potential resource to decrease the energy import dependency of Turkey.
- The strategic plan of MENR until 2019 includes research and development activities of U and Th reserves to determine the feasibility of their extraction.



THANK YOU!