



# ENERGY OUTLOOK OF TURKEY

## INTRODUCTION OF NUCLEAR POWER

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## RAPID DEMAND GROWTH IN ALL ENERGY SECTORS

- Domestic Demand for Electricity:

Around 7% each year

→ Making Turkey the Second Country after China in proportional increase in energy demand.

For instance, in 2011 and 2012, the demand for Natural Gas increased by 25%.

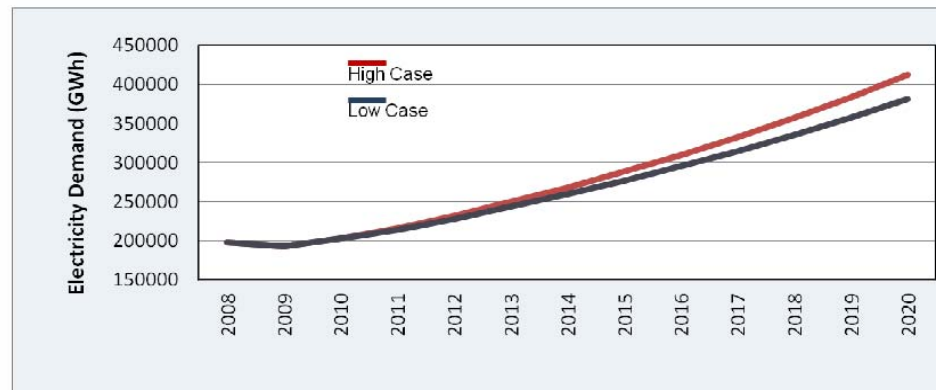
## 2023 VISION OF TURKEY

- 2023 is the 100<sup>th</sup> anniversary of the Republic of Turkey.
- Main Goal :  
Making Turkey one of the top ten economies of the world.  
→ Per Capita Income = 25,000 US Dollars  
Total Exports = Exceed 500 billion US Dollars

# ELECTRICITY DEMAND WILL FURTHER INCREASE

- Current Demand in 2012 :240 billion kWh
- Demand in 2023: 500 billion kWh

- Electricity demand increase annually 6.7% (low case scenario) or 7.5% (high case scenario) until 2020.



# HIGH DEPENDENCY ON ENERGY IMPORTS

- Turkey imports :
  - 98 % of its Natural Gas
  - 92% of its Oil
  - 30% of its Coal

Total Import Dependency in Energy Sources  
= 74%.

# TURKEY'S BASIC ENERGY STRATEGY

- a) Diversifying Turkey's energy supply routes and source countries in order to ensure safe, secure, uninterrupted and affordable energy
- b) Introducing the nuclear in its energy mix and increasing the share of renewables
- c) Uplifting energy efficiency

# CURRENT ENERGY CAPACITY

- Domestic Resources :  
Only around 26% of the total energy demand
- Total installed capacity in Turkey :  
Around 56,000 MW **in 2012**
  - 46% : natural gas
  - 25% : coal
  - 24% : hydro
  - 3% : renewables other than hydro

# TURKEY'S ENERGY CAPACITY WILL EXCEED 100,000 MW IN 2023

## THIS WILL REQUIRE 120 BILLION DOLLARS OF EXTRA INVESTMENT

- Renewables in 2023 : 30%
  - Hydro : 36,000 MW ( 58.4% in Renewables)
  - Wind : 20,000 MW ( 32.4% )
  - Solar : 3,000 MW ( 4.9% )
  - Biomass : 2,000 MW ( 3.2% )
  - Geothermal: 600 MW ( 1.0% )
- Natural gas is to diminish to 30%, while the aggregate share of coal and oil is around 30%.
- **Nuclear : 10%**
- Renewables are complementary resources rather than competitors to nuclear energy.



# PROSPECTIVE NUCLEAR POWER PLANTS IN TURKEY



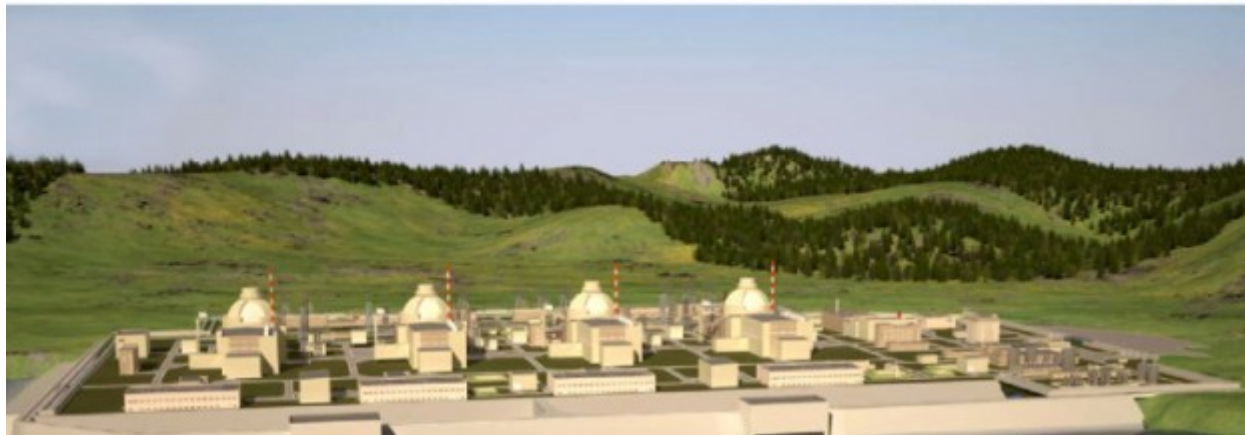
# AKKUYU NPP CANDIDATE SITE



**Akkuyu Site**

# SINOP NUCLEAR POWER PROJECT

Source: <http://www.aa.com.tr/en/tag/172208--nuclear-plants-to-help-turkey-shave-7-2-bn-off-energy-imports>



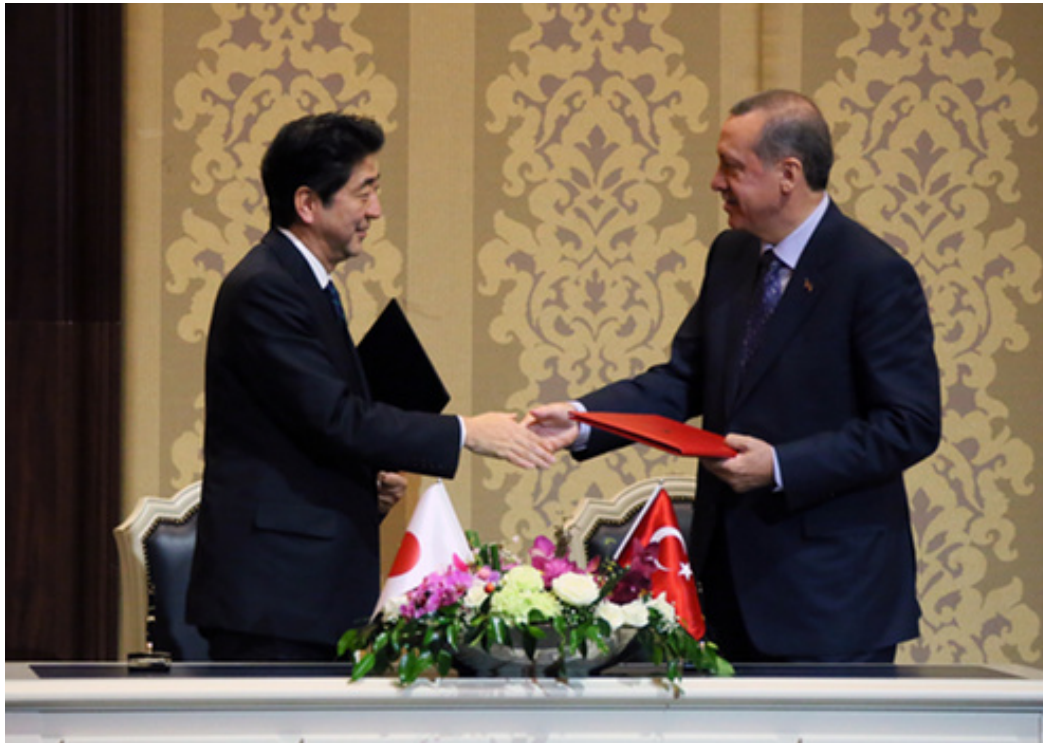
## COST OF ENERGY IMPORTS vs. NUCLEAR POWER INTRODUCTION

- Energy import cost exceeds 20% of Turkey's total import expenditure.

This means a cost of over 50 billion US Dollars every year. The high cost of imported energy negatively contributes to the current account deficit of Turkey.

- The total electricity generation at Akkuyu and Sinop NPPs is around 80 billion kWh annually. This output corresponds to 16 billion cubic meters of natural gas used for electricity generation, with an annual import cost of around **7 billion US Dollars** for Turkey.

# STRATEGIC PARTNERSHIP



Prime Minister Abe and Prime Minister Erdoğan at Signing Ceremony of the “Joint Declaration on the Establishment of Strategic Partnership between Turkey and Japan” on May 3, 2013 in Turkey



Second Visit of Prime Minister Abe to Turkey in October 2013

# PRIME MINISTER ERDOGAN'S VISIT TO JAPAN

January 2014



# IMPORTANT FIELDS OF COOPERATION IN SINOP NPP PROJECT

- Human Resources Development
- Local Industrial Involvement (Localization)
- Transfer of Know-how and Technology
  
- Construction and operation licensing as well as other related legislative and regulatory frameworks can also become important aspects of cooperation.
  
- Sinop NPP project will have a multiplier effect on Turkey-Japan economic, commercial, scientific and technological relations

ありがとうございました

