Energy Infrastructure Investment
Keynote Address

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Turkey’s Energy Policy Pillars

1. Energy supply security

2. Localization
   1. Energy resources
   2. Energy technologies

3. Predictability (of energy markets)
Turkey’s Key Strategies for the Development of its Energy Sector

1. Diversify primary & electricity generation mix
   a. Increase reliance on domestic renewables, domestic coal & nuclear power.
   b. Diversify sources of natural gas imports.

2. Enhance key infrastructure including
   a. LNG terminals including FSRUs,
   b. gas storage,
   c. power transmission and distribution

3. Increase competition & the role of the private sector.

Each Strategy Requires Infrastructure Investment

- Diversify sources of natural gas imports.
  - New pipelines, new LNG terminals, FSRUs,
- Increase reliance on domestic renewables, domestic coal & nuclear power.
  - New power plant investments and grid investments
- Increase competition & the role of the private sector.
  - Shifts role of raising capital from the government to the private sector.
- Become a natural gas trading center.
  - Investments needed in natural gas storage and a stronger role for the private sector to achieve a competitive market.
Goal 1: New Pipelines Provide Turkish Energy Security and Foreign Investment

• TurkStream provides a direct supply to Turkey from Gazprom and provides new export opportunities from Westline.

• TANAP provides a major diversification of Turkish energy supplies from growing Caspian natural gas production.

• TAP provides the backbone of the Southern Corridor making Turkey a key country for European natural gas security.

• SOCAR, the majority investor in TANAP and TAP is the largest foreign investor in Turkey.
Goal 1: IICEC Analysis Predicts that Turkey’s Gas Suppliers Will Become More Diversified

% Shares of Turkey's Natural Gas Imports
Goal 2: Investments in the Power Sector Needed for Energy Security and Clean Energy

- 4-5% annual growth in power demand
- 2.6 GW of net capacity additions in 2018 YTD
- One-half of total capacity is now renewable energy
- Solar PV is almost 5 GW
- Strong potential remains in renewable energy
- Grid investments are also needed to serve generators and customers
- There are large energy efficiency savings to be had in Turkey to reduce electricity demand and save money
- Financial sustainability is essential for investment
Goal 2: Current Turkish Electricity Generating Capacity: Renewables = 50% of Capacity

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- Hydro: 32%
- Natural Gas: 22%
- Coal: 5%
- Wind: 5%
- Solar: 8%
- Geothermal: 2%
- Other: 5%
Goal 2: Clean Energy Investment

• Having met the previous clean energy goal of 31% renewable energy generation 5 years ahead of schedule, the new goal is 50% generation by 2023.

• To do this the Energy Ministry has established a:
  – GW scale solar tender with battery storage
  – GW scale wind tender
  – $1.2 billion off-shore wind project that must include 60% Turkish value added and 80% Turkish engineers
  – Ministry projects are not just about Turkish power but the Turkish energy industry and workforce
Goal 3: Increase Competition

• As the Turkish energy economy becomes more competitive, market forces become more dominant in the allocation of resources and the determinates of investments.

• This helps achieve an improved economic efficiency, and greater value for shareholders, the economy and the society.

• At the same time, in the energy sector, the path from state control to private markets takes time and must be implemented carefully.
Goal 3: Government Role Still Important

• A government role is required during the transition period to ensure enough energy investment to meet growing Turkish energy demand and to meet the twin goals of more clean energy and increased energy security.

• Power:
  – Energy supply tenders cause the government to be the supplier of large volumes of electric power even though the power is produced by private industry through feed-in tariffs

• Gas:
  – In addition, pipeline investments would not be possible unless the government executes the take-or-pay agreements with gas suppliers.
  – Eventually a market could evolve where private parties secure gas imports but this cannot happen overnight.
Goal 4: Becoming a Natural Gas Trading Center

• Several factors are moving in the right direction, including diversification of gas supplies & alternative sources of energy.

• Nonetheless, a gas hub & exchange will need:
  – more tradable supplies (i.e., w/o destination clauses);
  – more storage,
  – more LNG regasification capacity to accommodate variable demand and to add spot supplies.
  – a Turkish gas hub and trading center will require that no single party is able to affect prices.
Goal 4: Becoming a Natural Gas Trading Center: Need for Competition & Transparency but Transition is Required

• Otherwise, non-commercial traders cannot evaluate future prices based on market fundamentals and would not participate.

• The divestiture of Botaş Contracts to the private sector has begun - but will take time before Botaş would not control natural gas prices.

• Consider also, Botaş is the only entity that can ensure that the necessary natural gas storage investments are made for a hub to function.
Final Comments: Energy Investments

• Turkish power tenders provide the most attractive investment opportunities for a number of reasons:
  – Sales prices are guaranteed over the investment payback horizon.
  – Turkish power tenders are typically renewable power contracts with no fuel cost risk.
  – Thermal power plant investments risk being squeezed between low electricity prices and high fuel costs, especially for fuel that is imported (natural gas and hard coal).
Final Comments: Moving Towards Turkish Energy Goals

• A carefully calibrated role for the public & private sectors can achieve Turkish energy policy goals.

• This involves government support to ensure needed energy-sector investments, improved predictability and better risk management in the private sector.

• At the same time, the role of market forces in allocating investments can grow and lead to a more efficient and sustainable Turkish energy economy.
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