TURKEY ENERGY OUTLOOK | 2020
Turkey Energy Outlook (TEO) supports a stronger energy future for Turkey with solid recommendations.

**WHY THE TEO?**

- A long-term perspective in a dynamic energy landscape with uncertainties
- Policy and technology pathways for a stronger energy future
- An independent, participative and exemplary study

**10 TEO RECOMMENDATIONS**
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**HOW THE TEO WAS DEVELOPED?**

- Building upon energy policy objectives
- A holistic energy model developed by IICEC
- Scenario-based approach out to 2040 with a detailed bottom-up accounting of the Turkish energy sector
- Reflecting different implications of energy policy choices, market progress and technological developments
- Supported by independent research, quantitative analyses and insights
- Stakeholder engagement built upon the Government-Industry-Academia success triangle
Two TEO Scenarios demonstrate energy policy and technology pathways out to 2040.

1. Reference Scenario
   - Outlines the continuation of current policies but not necessarily achieving the most ambitious and challenging long-term targets.

2. Alternative Scenario
   - Assumes additional policy initiatives that, while cost-effective, require more challenging policy obstacles to be overcome.

The TEO Scenarios provide an up-to-date holistic approach reflecting the impact of the recent gas discovery on energy balances and also taking into account the current and possible future impacts of the Covid-19.
Turkey’s power system moves towards a more localized structure with investment allocation shifting more to the grids.

Sustained investments are needed for a more localized and sustainable power mix backed by increasingly robust power grids to accommodate more variable supply and demand features with enhanced flexibility.
Transport is yet an oil story but Turkey has opportunities to lower oil demand growth and imports with policy and technology choices.

Modal shifts from road to rail and marine, fleet renewal policies, electricity and natural gas vehicles, fuel taxation and urban transport planning can help achieve a better matching of refinery and import slates.
Gasification continues in all non-power sectors backed by increasing domestic gas production with multiple benefits.

Global and regional gas market dynamics, Turkey’s enhancing infrastructure, expiry calendar of existing import contracts and the recent gas discovery will all be supportive for a more competitive gas market.
Energy efficiency and fuel shifts drive a more sustainable and technology-driven growth of energy demand services.

Energy efficiency measures and fuel shifts supported by technology and digitalization can further be leveraged by innovative business and financing models in all end-user sectors.
The energy supply mix transforms into a more diversified and sustainable structure limiting energy imports and carbon footprint.

Energy supply shifts to a less carbon intensive and import dependent pattern as a result of increasing nuclear, renewables and energy efficiency, sustained E&P, and wider localization.
The TEO Alternative Scenario presents wider benefits for supporting efficient growth of developing Turkish energy economy.
R&D and innovation progress can enable energy technology localization and prospects for domestic manufacturing.

The TEO discusses promising energy technology choices for Turkey to develop a domestic manufacturing industry while advancing through energy transition.

- Renewables and energy storage
- Nuclear power including the SMRs
- Electric vehicles
- Carbon capture from air
- Hydrogen production from local coal via CCUS
- Hydrogen in transportation and industrial sectors
- Advanced data analytics and digitalization

Turkey can become a clean energy technology developer and exporter rather than importing these technologies while, at the same time, advancing towards near-zero emissions pathway post 2040.
Many uncertainties remain for Covid-19 implications; we may see permanent impacts on travel activity and choices.

**Modal Shares in Intercity Passenger Travel by Scenario (%)**

- **2018**
- **2040 Reference Scenario**
- **2040 Alternative Scenario**
- **2040 Covid-19 Long-Term Impact Scenario**

**Transport Oil Demand Change in the Long-Term Covid-19 Scenario over the Alternative Scenario (2040, mtoe)**

- Jet Fuel
- Diesel
- Gasoline
- LPG

Behavior changes could affect high occupancy modes of passenger travel; however, total oil products demand by 2040 is not anticipated to be greatly affected.
## 10 TEO Recommendations for a more secure, efficient, competitive, technology-oriented and sustainable energy future

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