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This project is co-funded by the European Union and the Republic of Turkey

Towards a Stronger EU-Turkey Energy Dialogue: Energy Security Perspectives and Risks

Ankara, April 26, 2017

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Contents

- Turkey and the EU Energy Union
- Turkey's Energy Security Risk Assessment
- Towards a Gas Hub
- Improving the Energy Governance Framework
- Policy Recommendations

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EU and Turkey: Common Challenges and Opportunities

- Turkey's role in the Energy Union
- Security of Supply Risks: Turkey and the EU play complimentary roles
- Regional cooperation in the framework of the Energy Union benefits all
- The EU as a powerful force for transforming the energy governance framework of Turkey
- Seeking policy convergence on renewable energy, energy efficiency and climate change

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Turkish progress towards the energy acquis implementation

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	Bulgaria	Croatia	Czech Republic	Estonia	Greece	Hungary	Latvia	Lithuania	Poland	Romania	Slovakia	Turkey
Third Energy Package	Compliance Review	Transposed	Transposed	Transposed	Transposed	Transposed	Granted derogation from the Third Energy Package	Transposed	Compliance Review	Not transposed completely	Transposed	Transposed
Organised Day-ahead Market	Further efforts required	Further efforts required	Coupling with Slovakia and Hungary	Member of the Nord Pool Exchange	Further efforts required	Coupling with the Czech and Slovak markets should be extended to other countries	Activ participation of Latvenergo to Nord Pool Spot market is necessary	Baltpool operation is based on the Nord Pool Spot model	In progress	In progress	Coupling with the Czech and Hungarian Markets	Further efforts required on coupling with Bulgaria and Greece. Most contracts are still bilateral.
National Balancing Market	Further efforts required	Further efforts required	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Price Deregulation	No	Further efforts required	Yes	Yes	Yes	Regulated prices were cut by 20% in 2013	In progress	Deregulated gas prices and regulated electricity prices	Electricity prices for non-households are deregulated	In progress. Electricity prices for non-households are deregulated	Regulated gas and electricity prices	Wholesale prices are not regulated; partial regulation of retail markets
TSO Unbundling	Legally Unbundled	In progress	Legally Unbundled	Legally Unbundled	DESFA Independence under review	Legally Unbundled	Legally Unbundled	Certification in progress	Acomplished	In progress since 2000.	Legally Unbundled	Unbundled completed in electricity but not in Gas Markets.
DSO Unbundling	Legally Unbundled	In progress	Legally Unbundled	Legally Unbundled	Legally Unbundled	Further efforts required	In progress	Legally Unbundled	In progress	In progress	Legally Unbundled	Unbundled
NRA Independence	Further efforts required	Further efforts required	Independent	Independent	Impaired by severe budget cuts	Cannot set tariffs autonomously	Independent	Independent	Further efforts required	In progress	In progress	Dependent on the Executive

Source: DG Energy – Country Reports; CSD Comparison

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Areas needing more reform

- Fully liberalize the retail power prices to induce more energy savings
- Complete the power market coupling with Bulgaria and Greece
- Restructure and demonopolize the natural gas market to improve gas market competition and security of supply
- Accelerate the implementation of the energy efficiency to reach the energy savings targets
- Improve the independence of the energy regulator

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Turkey's Energy Security Risk Assessment

- Availability of Energy Resources
- Reliability of Energy Supply
- Affordability of Energy
- Sustainability of Energy Production and Consumption

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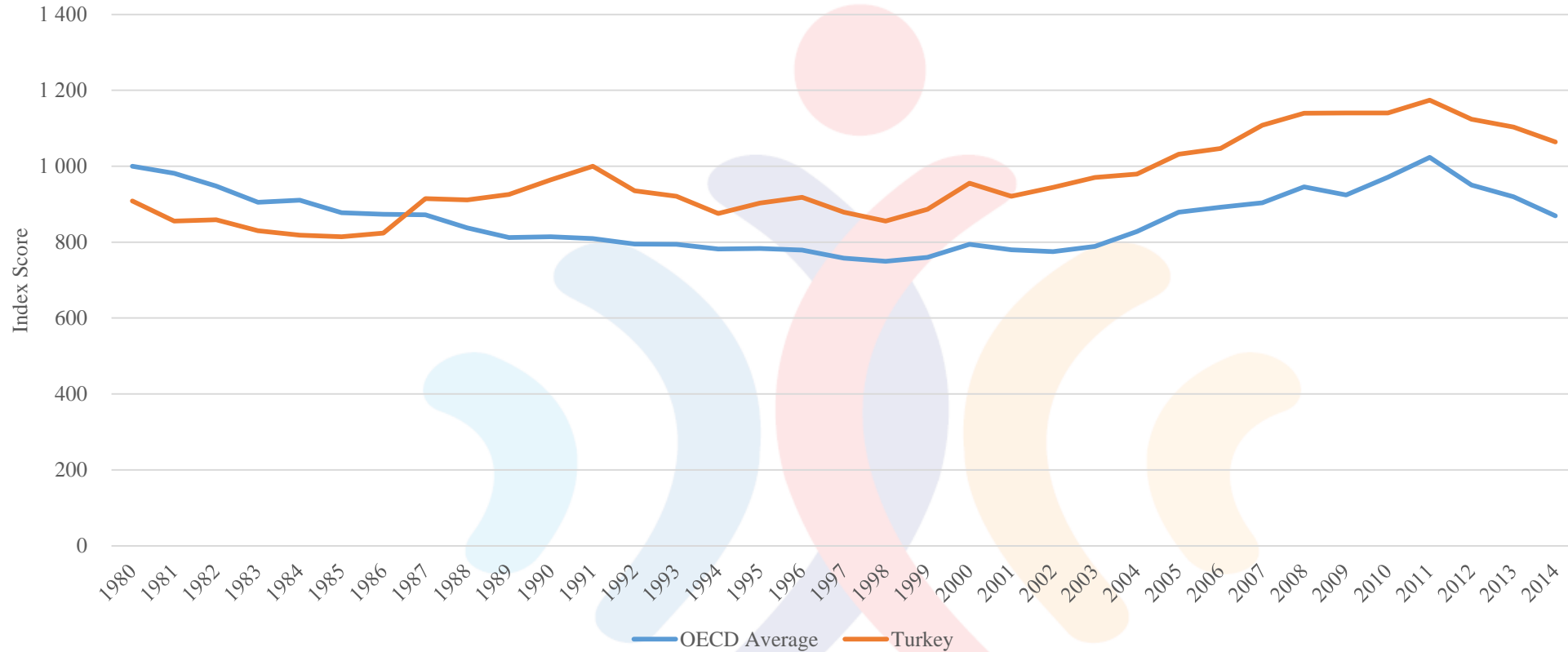
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Turkey's Energy Security Profile



Source: International Index of Energy Security Risks (IIESR), 21st Century Energy Institute

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Availability of Energy Resources

Cons:

- Limited domestic energy resources apart from coal
- Almost full oil and gas import dependence

Pros:

- Ambitious renewable energy support program – already exceeded its own 2023 target of 30%
- Nuclear ambitions to replace gas-fired base load capacity
- Reinvigoration of the country's coal potential

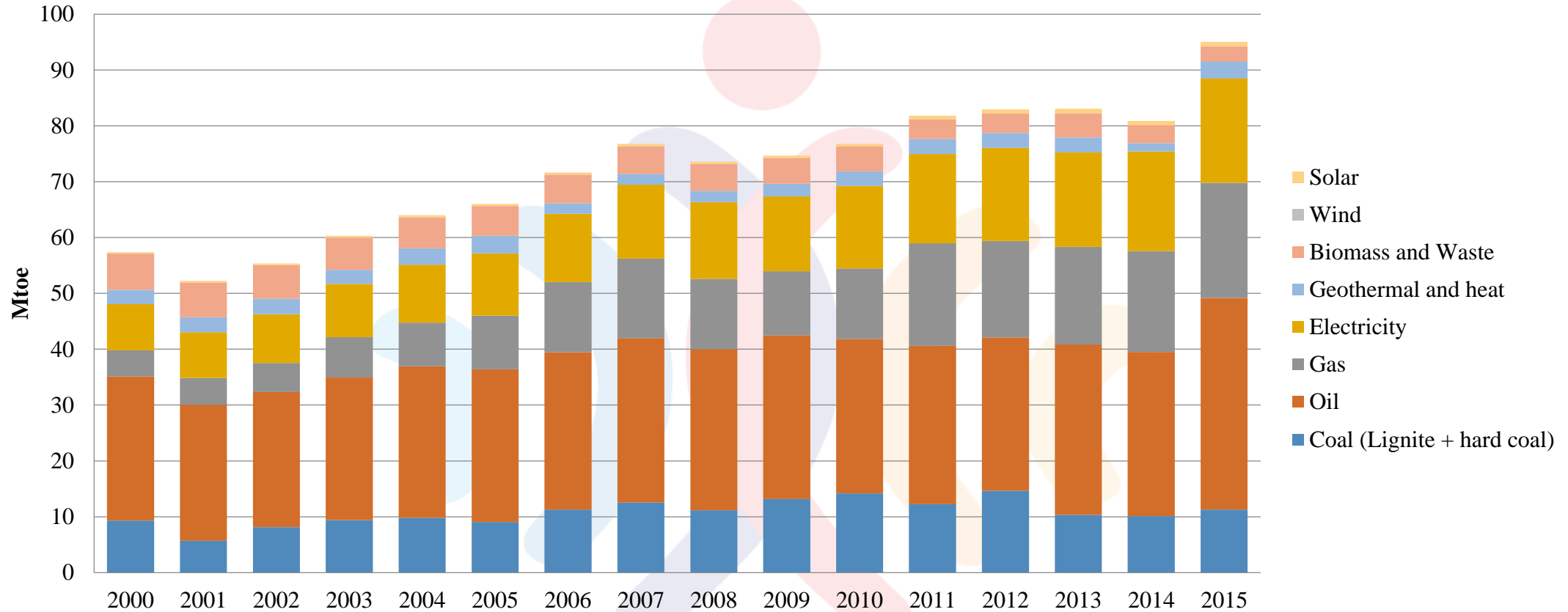
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Total Final Energy Consumption By Source



Source: Ministry of Energy and Natural Resources

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Reliability of Energy Supply Risks

- The Gas and Power Reliability Nexus
- Inadequate gas pipeline and storage capacity
- Potential natural gas supply deficits in the future due to skyrocketing demand
- Rapidly rising electricity demand outstripping new generation and infrastructure upgrades
- Oil supply security threatened by geopolitical conflicts in the neighborhood

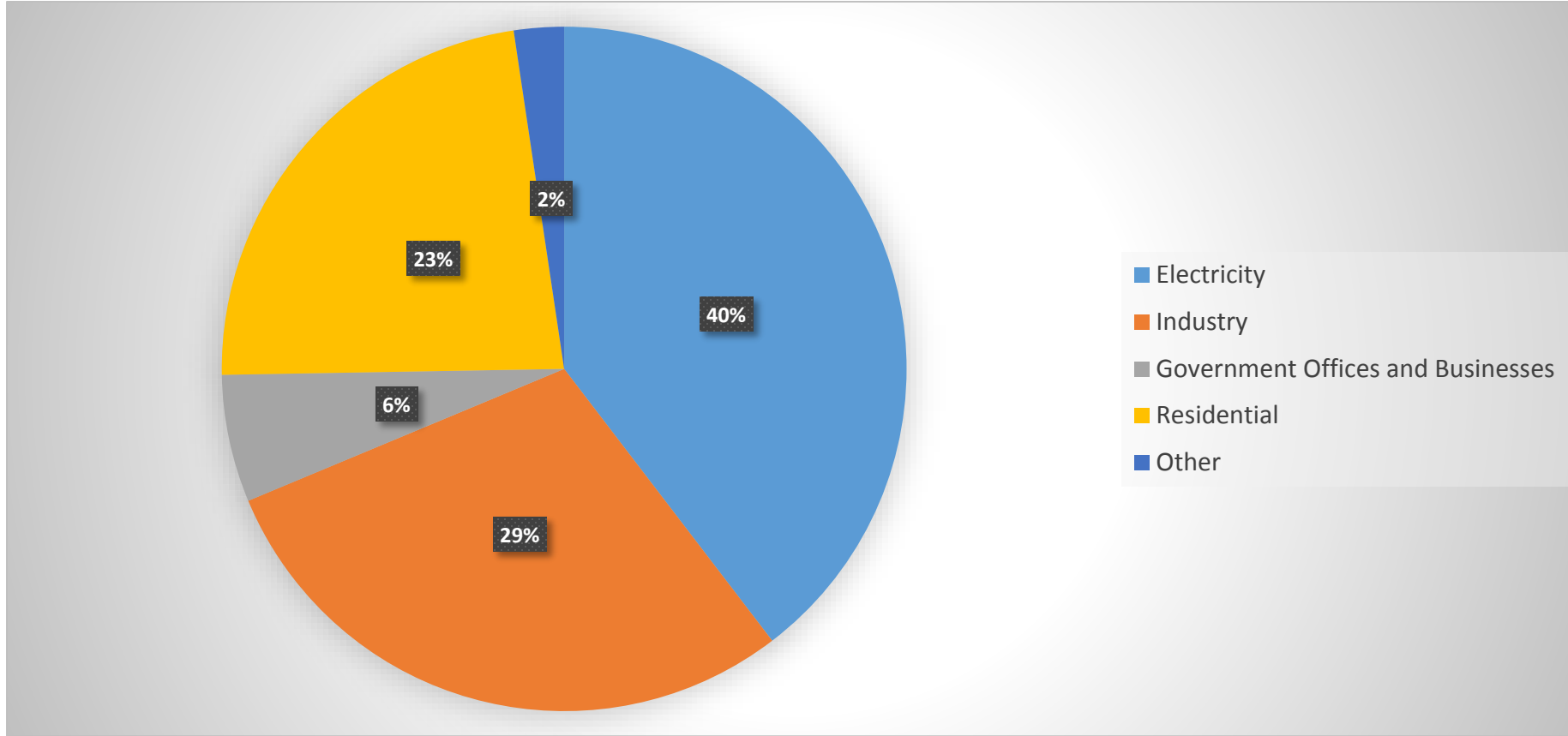
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Natural Gas Consumption by Sector in 2015 (%)



Source: EMRA 2015 Natural Gas Market Report

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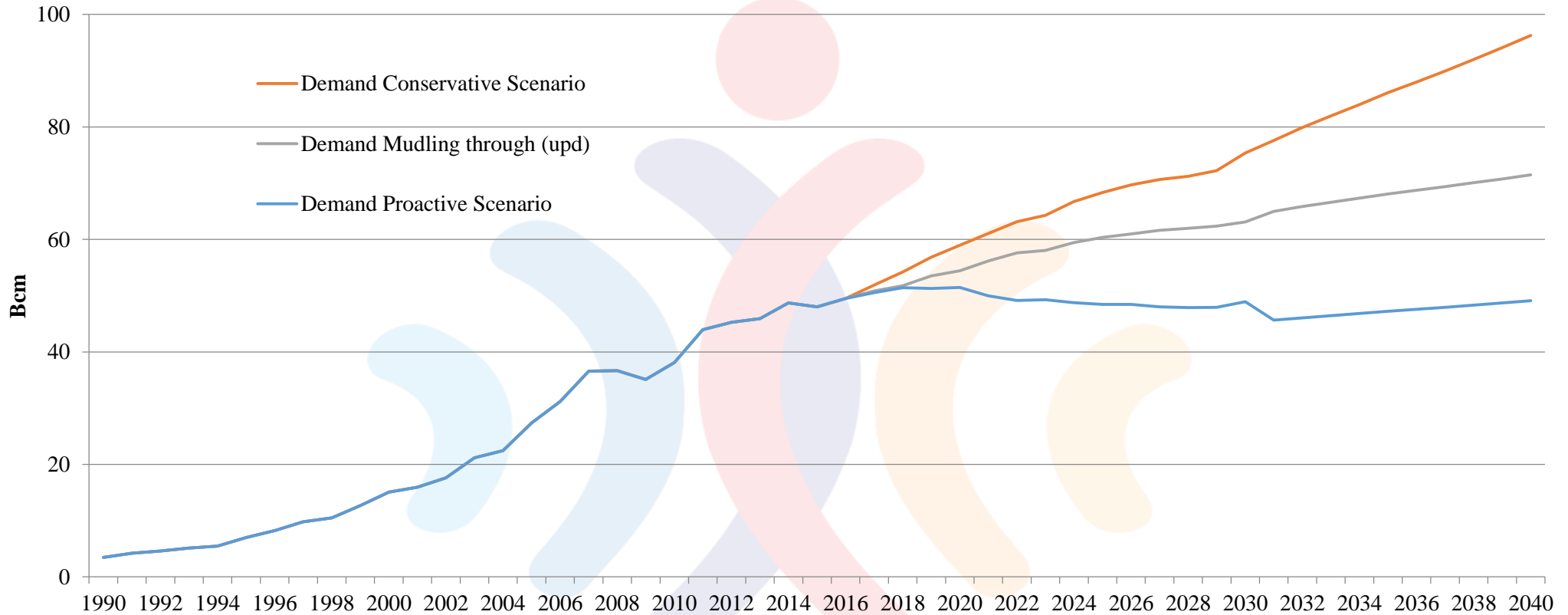
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Natural Gas Demand Forecast Scenarios (Baseline year is 2013)



Source: Mediterranean Energy Observatory (OME)

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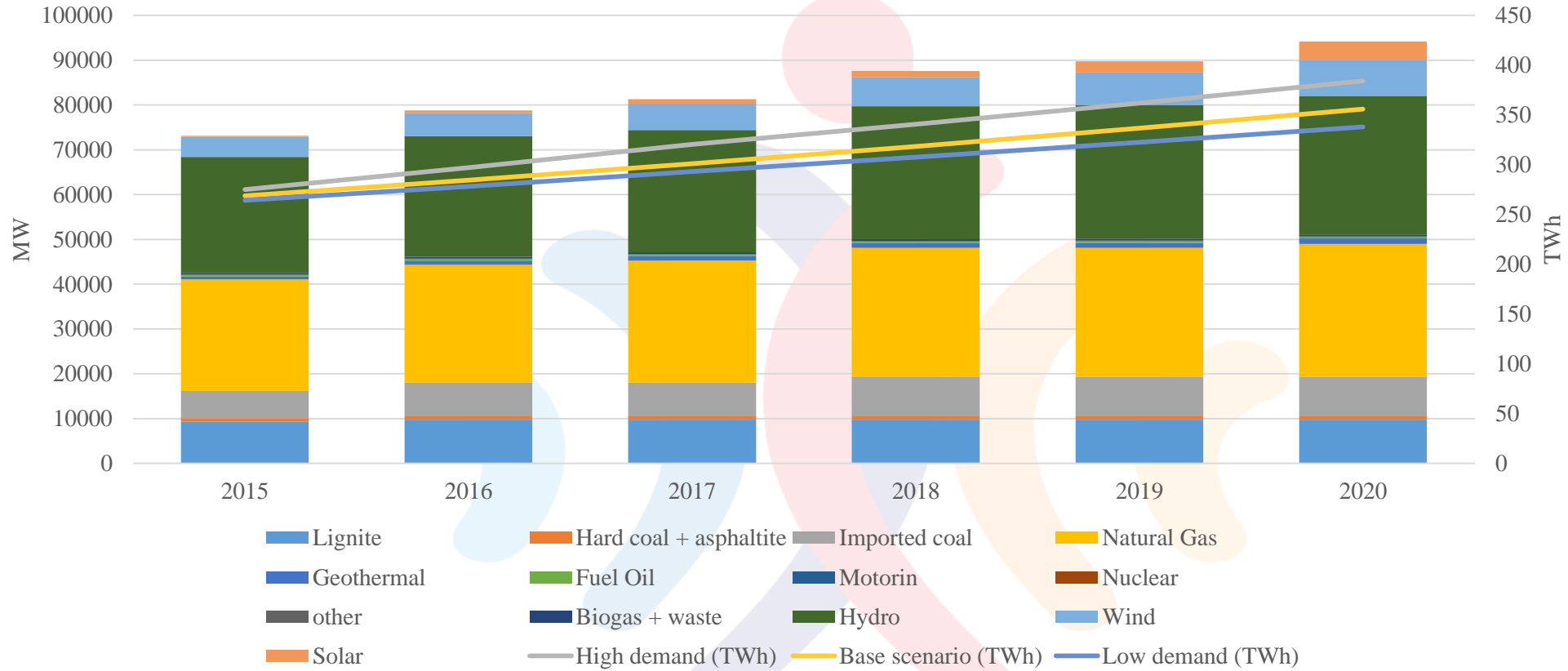
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Installed Capacity and Demand Forecasts until 2020



Source: TEIAS

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Key Objectives for Improving the Security of Supply

- Invest in a reliable gas and power infrastructure that would manage demand peaks including by expanding gas storages, build up transmission and distribution grids.
- Diversify the fuel mix in the domestic energy supply and the energy imports including by limiting the role of gas in the power sector, boosting the renewable energy share, investing in new coal-fired power generation capacity and build nuclear power plants
- Improve demand peak management through energy efficiency and demand-side incentives for reducing consumption

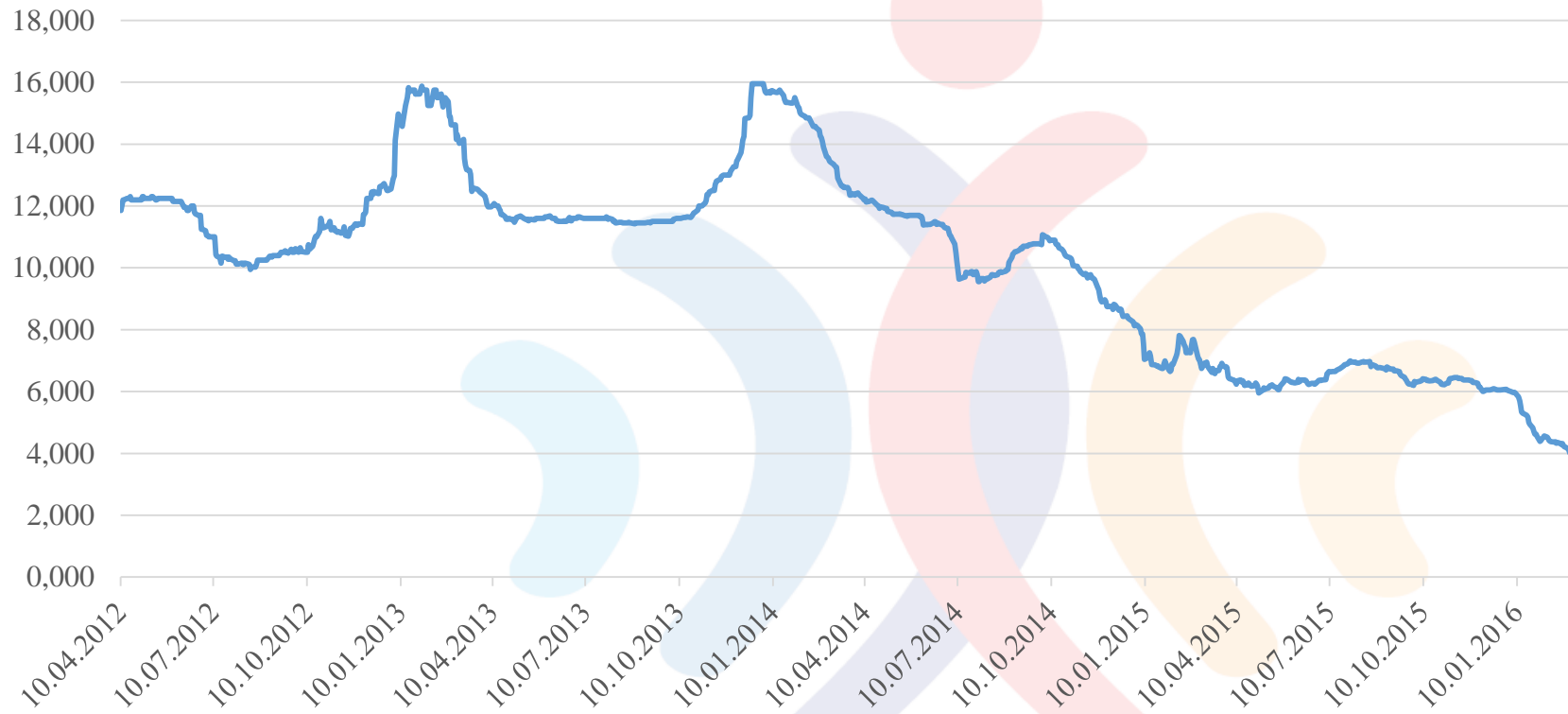
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Turkey's Spot LNG Prices (USD/MMBtu)



Source: Argus

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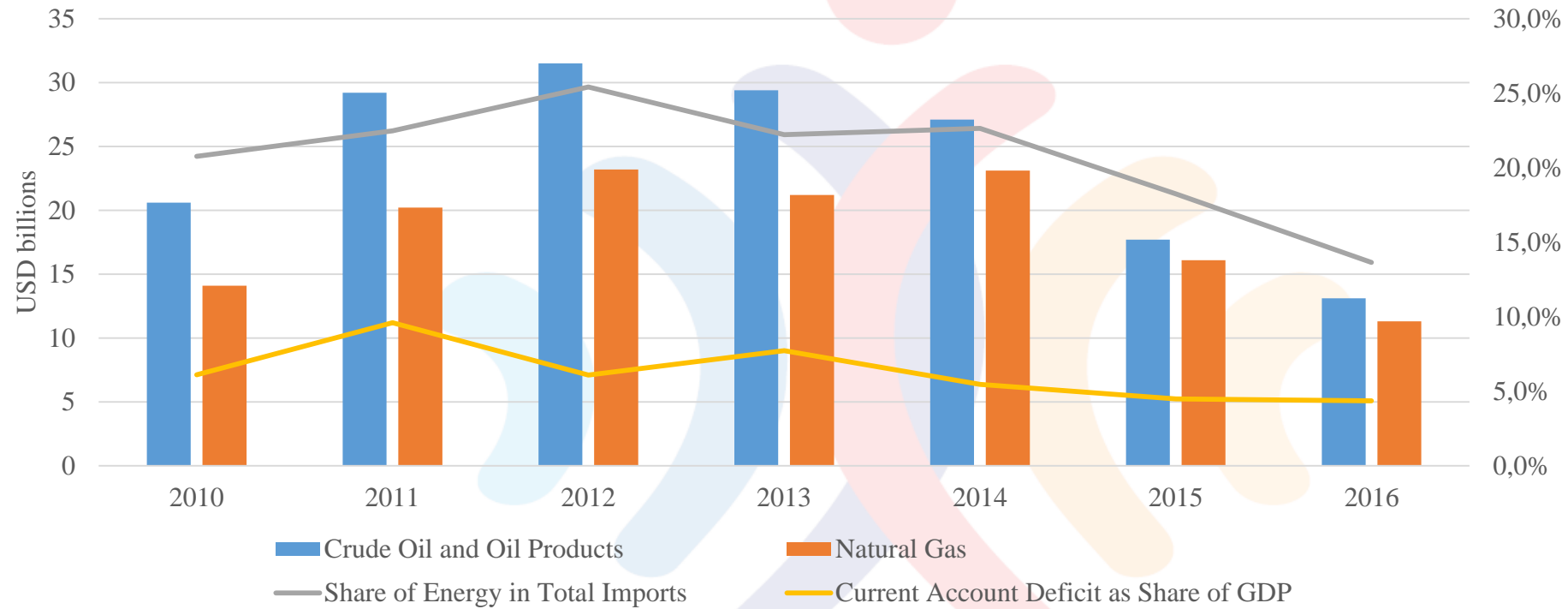




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Energy Affordability Risks

- Energy poverty as a macroeconomic vulnerability



Source: Ministry of the Economy; PETFORM calculations

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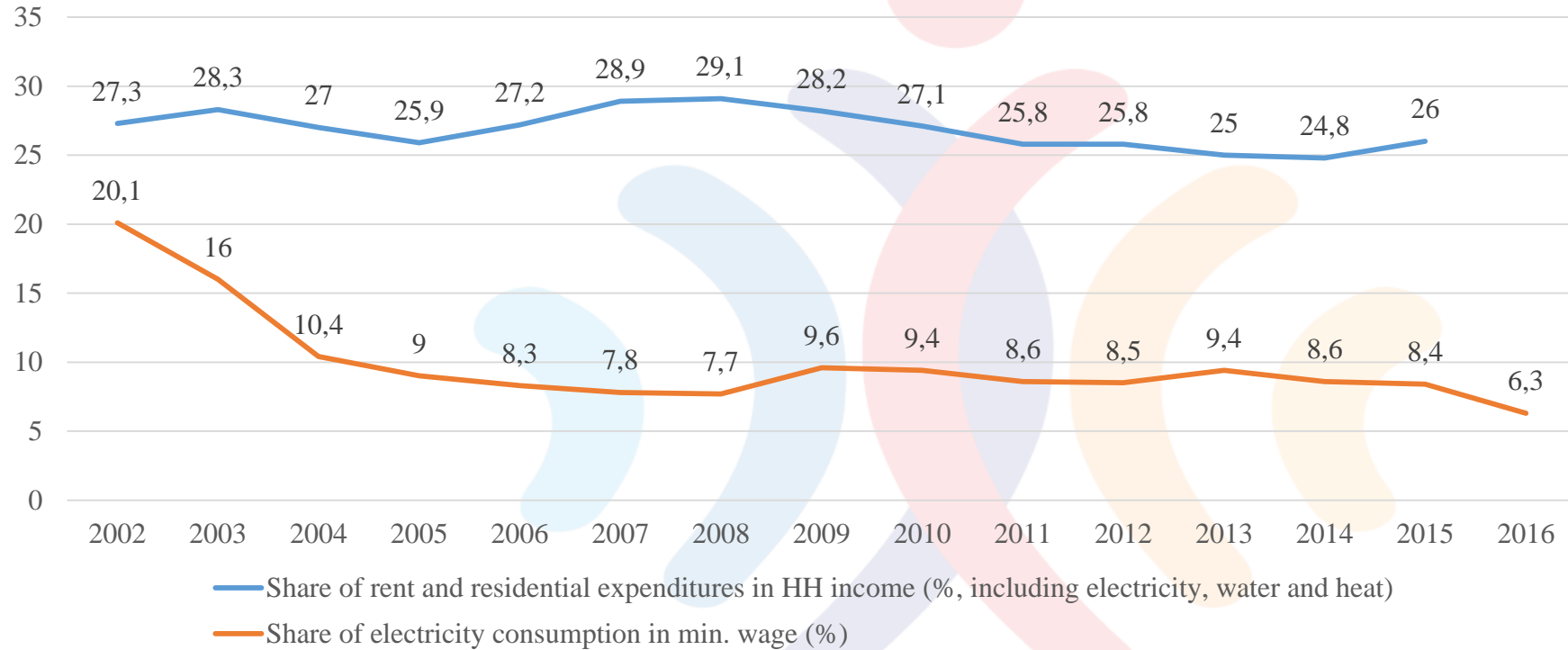




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Energy Affordability Risks

• Energy Poverty as a Socio-Economic Vulnerability



Source: TurkSTAT, Household Expenditure Survey; Ministry of Energy

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Energy Affordability Risks

- Inefficient regulated natural gas pricing

Consumption ranges (1000 m ³)		Euro/1 000m ³		TL/1 000m ³	
		2015/1	2015/2	2015/1	2015/2
T < 522	EU	1000	1150	3010	3670
	Turkey	410	370	1220	1190
522 ≤ T < 5219	EU	710	750	2120	2400
	Turkey	400	370	1210	1180
T ≥ 5219	EU	650	650	1970	2080
	Turkey	400	370	1210	1170

Source: EMRA 2015 Report on the Natural Gas Market

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Sustainability of Energy Production and Consumption

- High energy and carbon intensity
- Ambitious but still limited development of the country's renewable and nuclear energy potential – too much focus on coal and gas.
- Contradictory coal and climate change policy
- Implementation gap of energy efficiency and demand-side policies

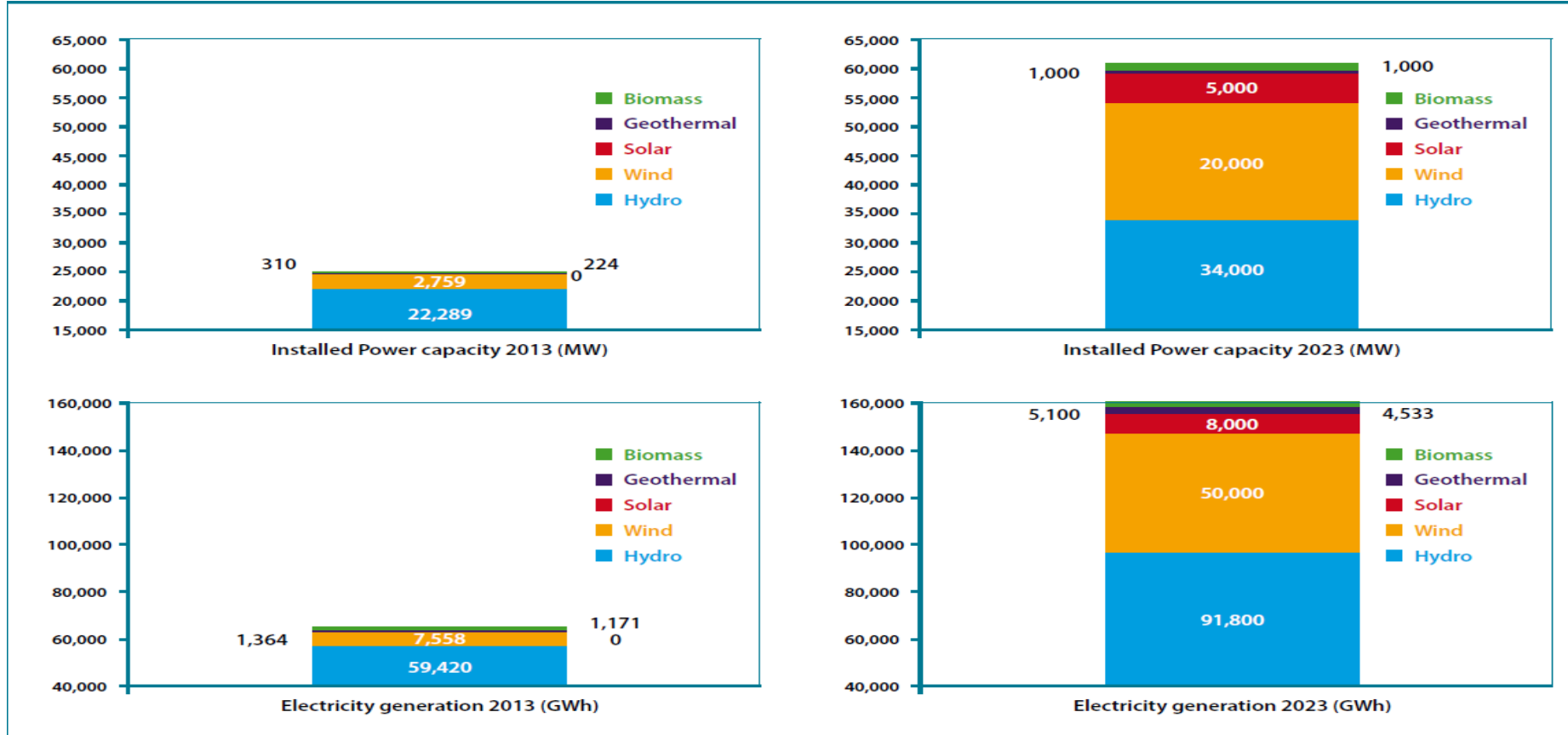
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Renewable Energy Ambitions – 2013 versus 2023



Source: National Renewable Energy Action Plan for Turkey

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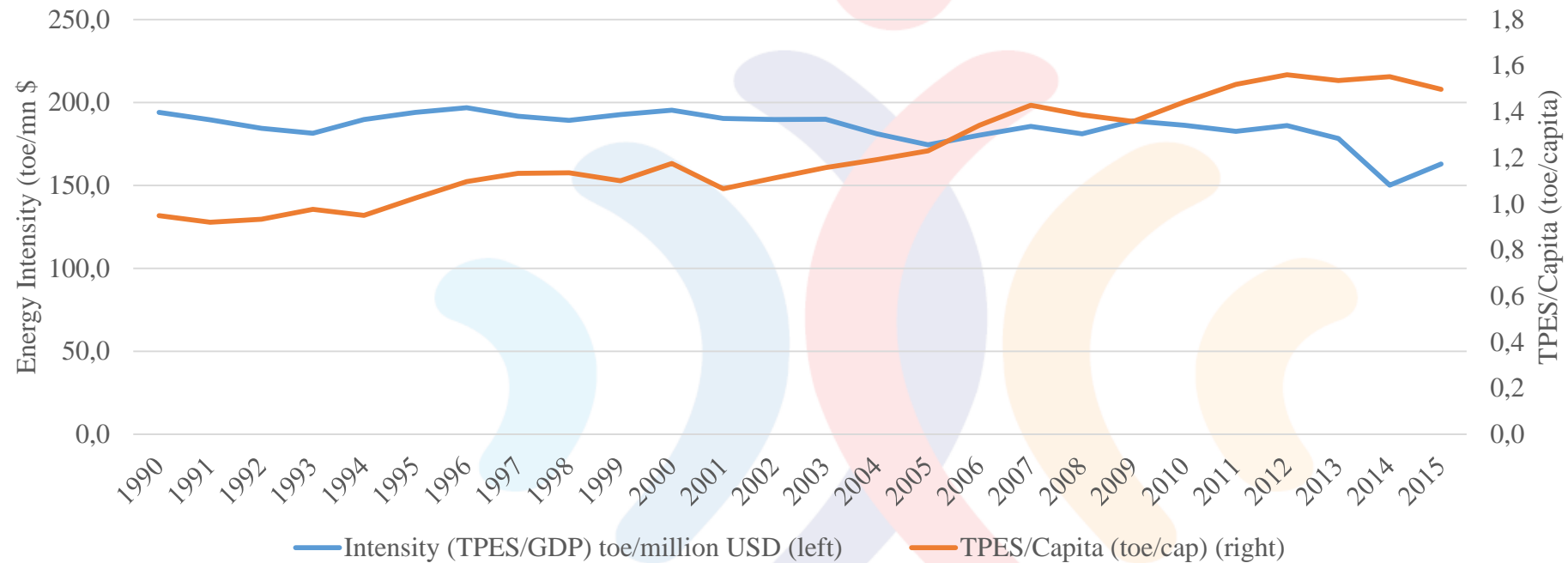




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Excessive energy intensity

• Total Primary Energy Supply per Capita Versus Energy Intensity



Source: Ministry of Energy and Natural Resources

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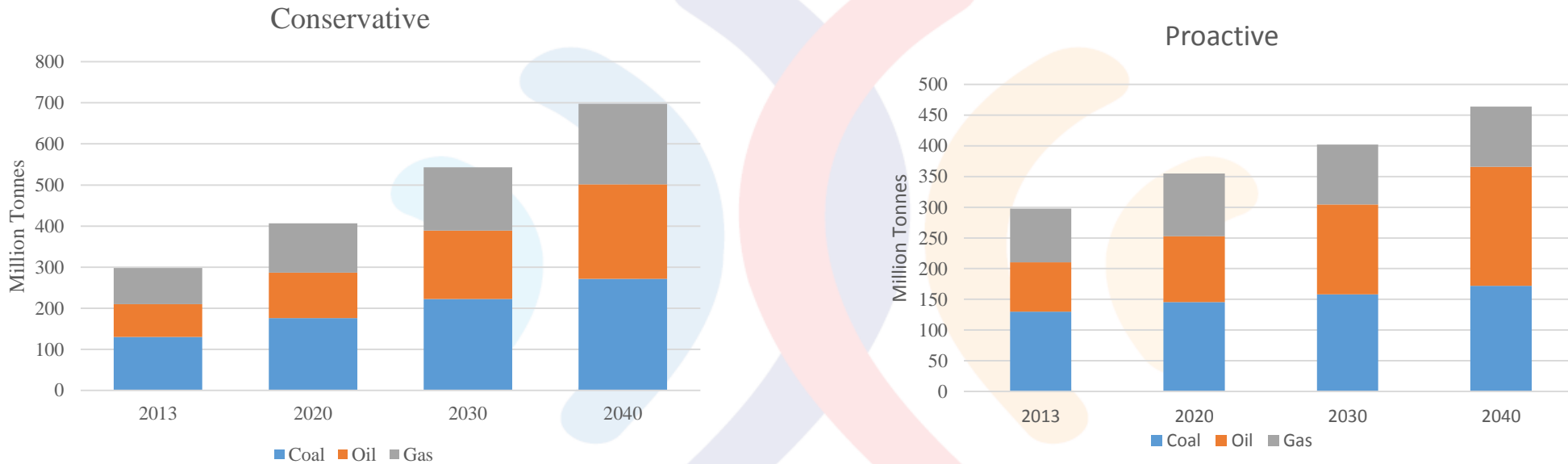




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Controversial Climate Change Policy

• Carbon Emissions in the Conservative/Proactive Scenarios



Source: Mediterranean Energy Perspectives, 2015

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The Prerequisites for a Gas Hub in Turkey

- Natural gas market liberalization
- Limited transaction costs in terms of administrative and contractual terms
- Enabling the access to a diverse set of regional natural gas sources
- Ensuring enough physical capacity for delivery and storage of natural gas that goes beyond domestic demand satisfaction
- Development of a virtual gas trading platform that supports a physical distribution point
- Having gas supply contract terms with no oil linkage and destination clauses

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Benefits of a Natural Gas Trading Hub

- Increased economic activity, through both investment and job creation by the expansion of the national transmission grid and/or the construction of transit pipelines.
- Turkish consumers would likely see lower transmission costs as the average rate of capacity utilization is achieved.
- Enhancement of market liquidity in the natural gas sector through the creation of a natural gas trading market.
- The creation of a gas market hub would have notable spillover effects into the wider economy, particularly, through the development of secondary and tertiary markets in the service industries.
- A gas trading hub would meet Turkey's strategic energy supply needs by moving large amounts of natural gas through the network.
- Make Turkey more attractive for the EU energy security needs, and therefore enhance Turkey's political clout within the EU, while also making its eventual membership more pivotal.

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Improving the Energy Governance Framework

- Regulatory (In)Dependence
- Corporate Governance of State Owned Enterprises (SOEs)
- Financial Management of SOEs

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Policy Recommendations

- Enhancement of EU efforts to form a common energy security policy based on close cooperation with its extra-EU key energy partners.
- Expansion of the regional natural gas and power interconnectors to facilitate the physical integration of Turkey in the European internal energy market leading to an increase in liquidity and competitiveness.
- Natural gas diversification away from pipeline trade, and development of LNG capacity on the Mediterranean coast to tap world markets and assist the development of a virtual natural gas hub.
- Improving the governance of the Turkish energy sector through the introduction of transparent regulation and management of the state-owned companies, as well as a consistent regulatory framework.
- Introduce prioritization and selection of large investments projects in the Turkish decision-making process, based on clear and transparent procedures and fact-based analyses, synchronized with EU priorities.
- The private sector must understand that there are no risk-free energy investments. A guaranteed profit mentality should be buried in the pages of history.
- Turkey should pursue a more balanced and diverse energy mix and electricity generation mix. In this sense, the diversity of its supply sources and routes need to be improved as well.
- Turkey needs a strong push for renewable energy sources and aggressive implementation of energy efficiency and energy conservation policies. The effect of energy efficiency improvements would help the Turkish government achieve three energy policy objectives at the same time, namely to reduce the macroeconomic effect of energy imports on the current account balance, improve the security of supply and raise the competitiveness of Turkish businesses.
- Turkey must pay more attention to R&D and innovation in the energy sector, especially when it comes to making use of its domestic lignite reserves.
- The EU needs to pay particular attention to strengthening its engagement with Turkey on other Southern Gas Corridor and on other issues of common energy security concern.
- Member-states and Energy Community members from SEE should intensify their dialogue with Turkey and seek to leverage EU funding for improving energy integration and liberalisation in the region.

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