



ROLE OF ENERGY REGULATORS IN MEDITERRANEAN

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INTRODUCTION

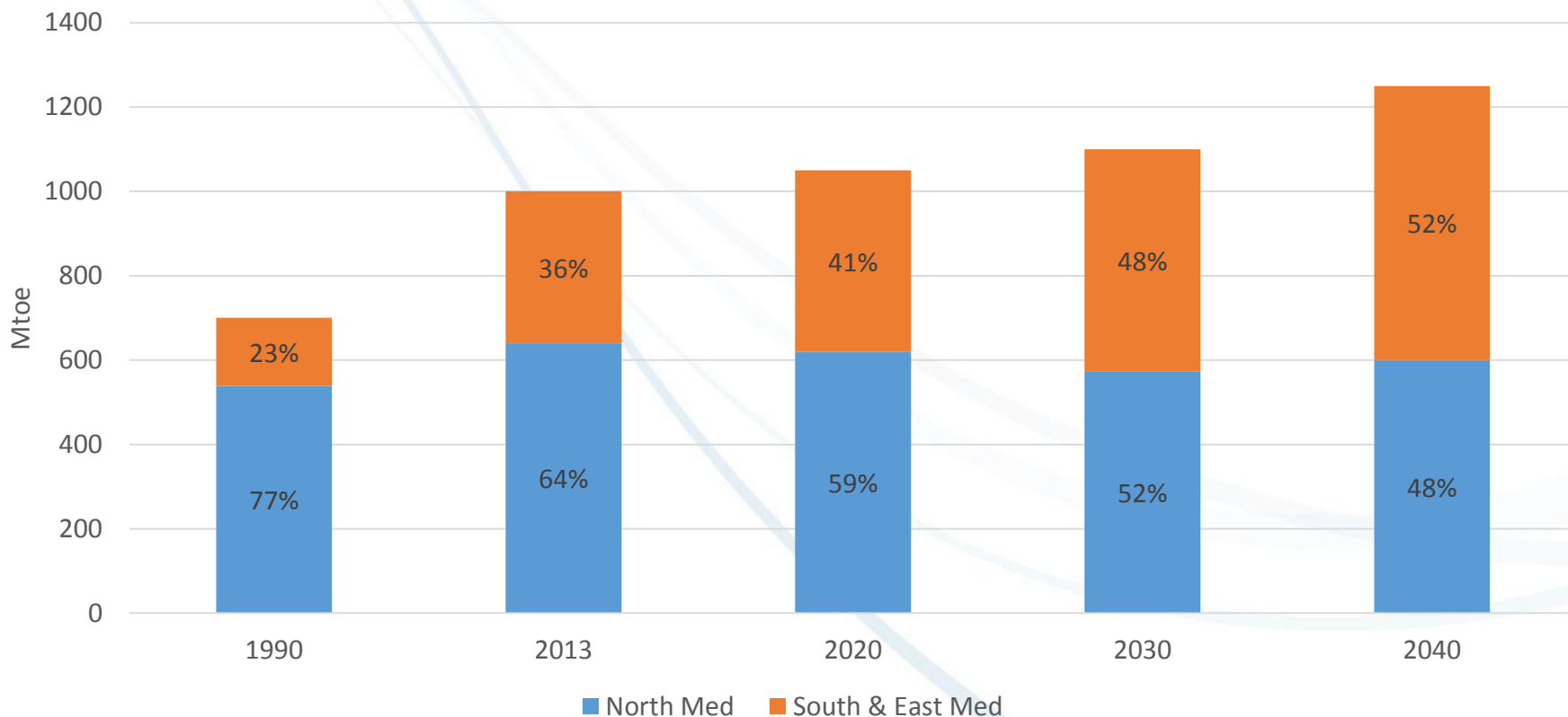
- Population in the South Mediterranean will grow **~85 Million** by 2040 (+45% in 2017).
- A **stagnating energy demand** in the North Mediterranean, an **energy-intensive development** in the South & East Mediterranean.
- South & East Mediterranean electricity demand to **double** in **2013-2040**; an extra-capacity of **185 GW** needed, most of which from **RES**.
- Need for more than **\$400 Billion** investments.

Source: OME



CO₂ emissions are expected to increase by 400 Mtoe in the South & East (+50%) even in the Proactive Scenario

Mediterranean CO₂ emissions by year

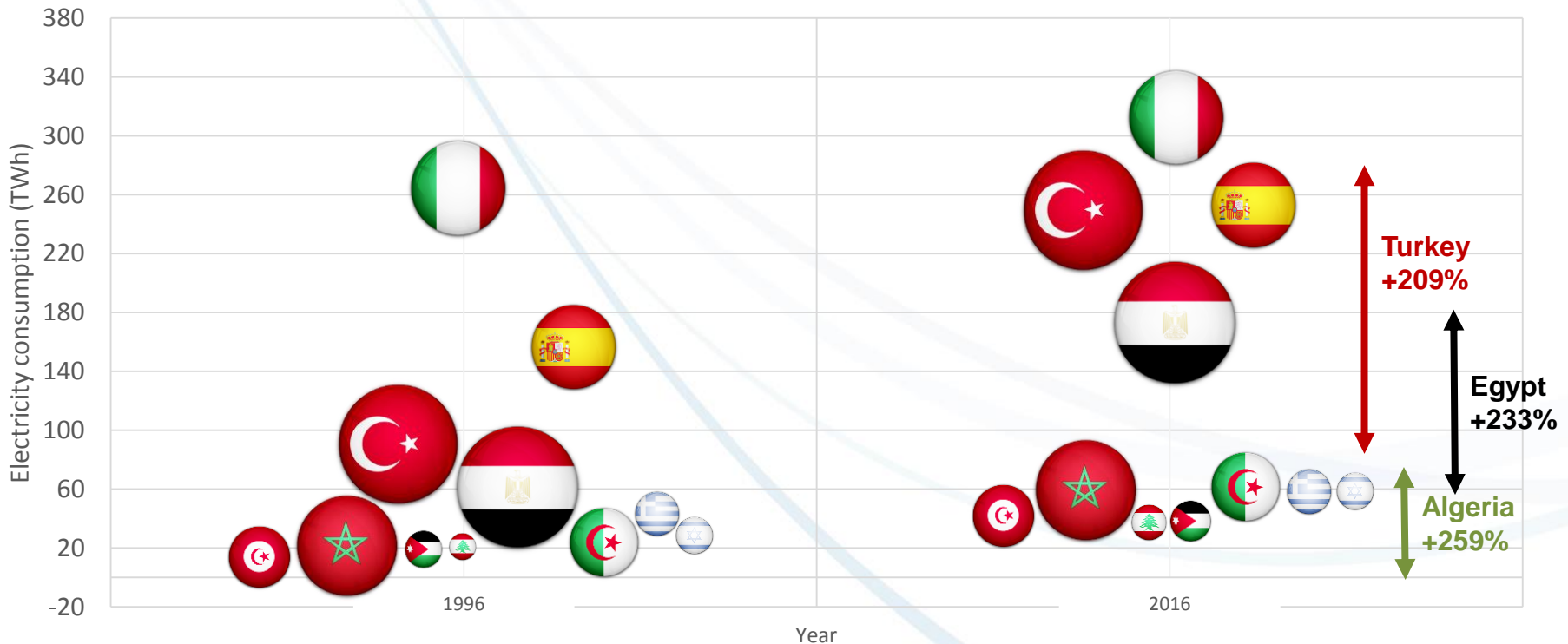


Source: OME



Booming population and electricity demand driving electricity supply security concerns

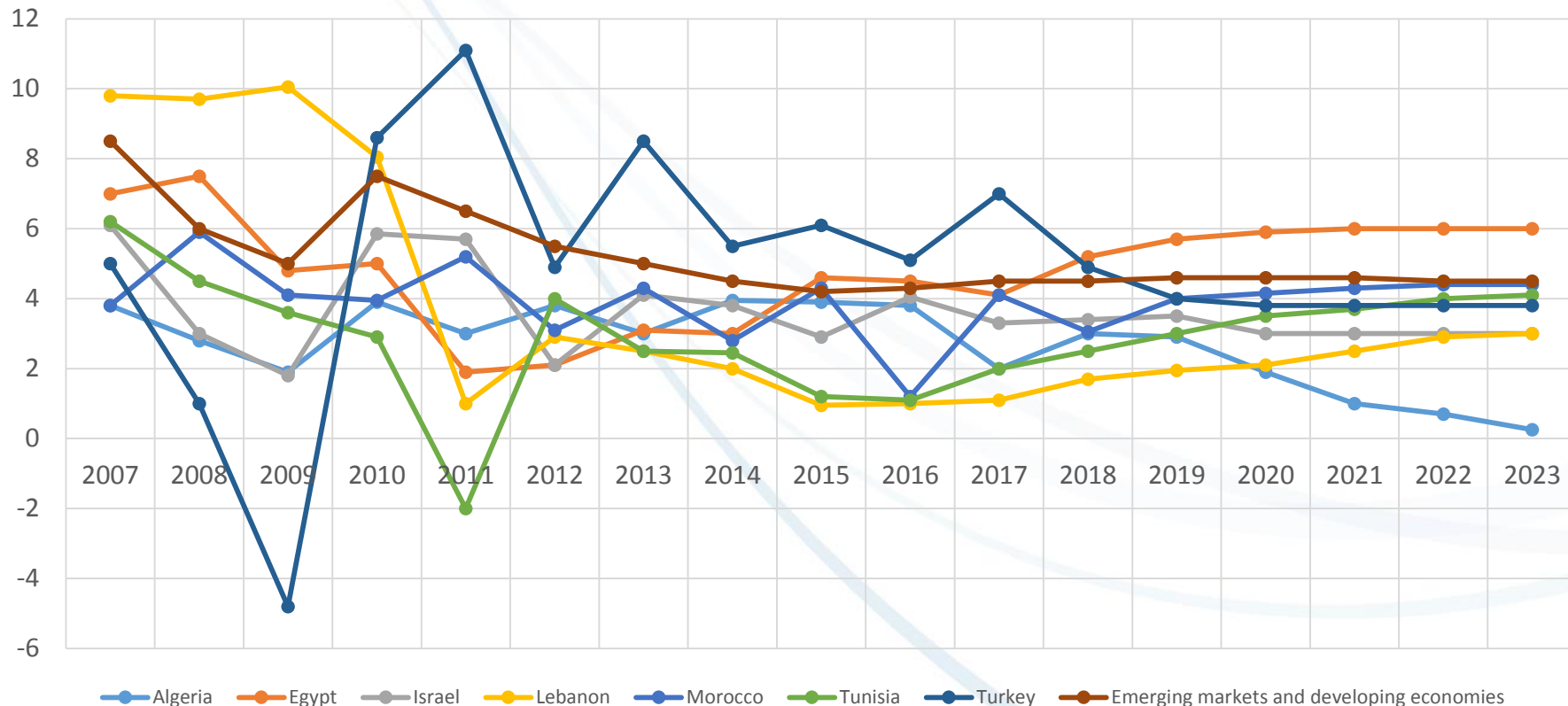
Evolution of electricity demand and population in selection of Mediterranean countries, 1996/2016



Source: IEA Database; UN World Population Prospects 2017

Economic growth also fueling energy demand, further upward potential in the region

GDP growth of selection of Mediterranean countries (%), 2007-2023e



Source: IMF World Economic Outlook April 2018

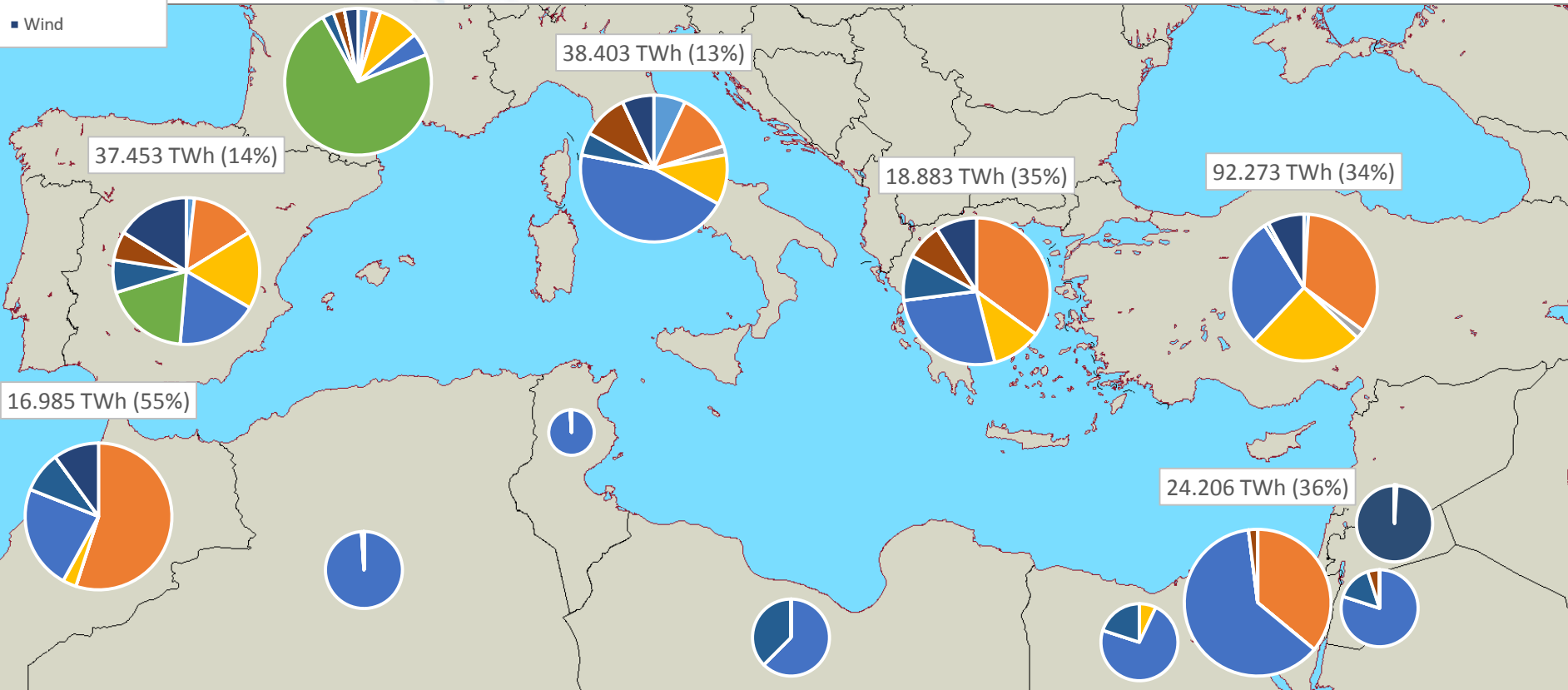


With the climate change threat, phasing out oil-fired power generation and avoiding more coal

- Biofuels & waste
- Coal
- Geothermal
- Hydro
- Natural gas
- Nuclear
- Oil
- Solar PV
- Solar thermal
- Tide
- Wind

Electricity mix of Mediterranean countries

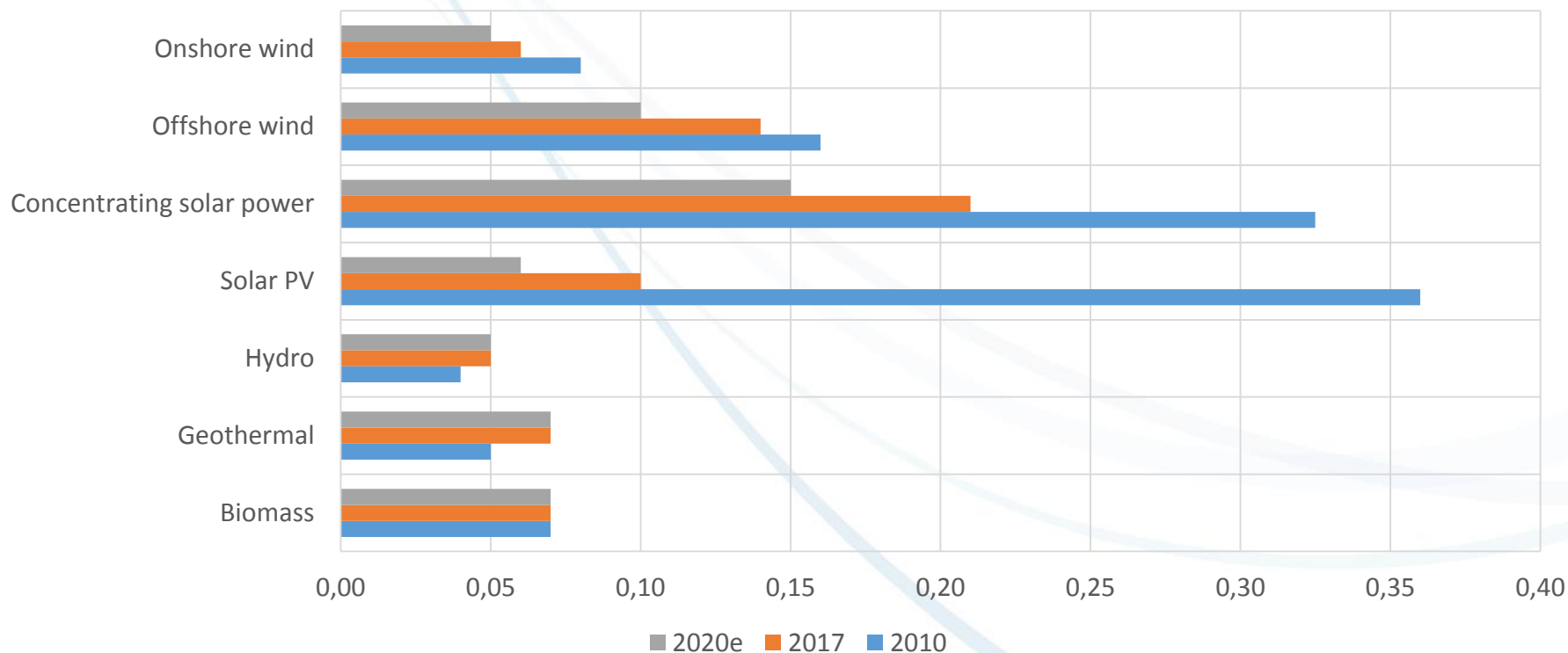
10.520 TWh (2%)



Source: IEA Database

Renewable energy technologies increasingly competitive, gas can become key back-up

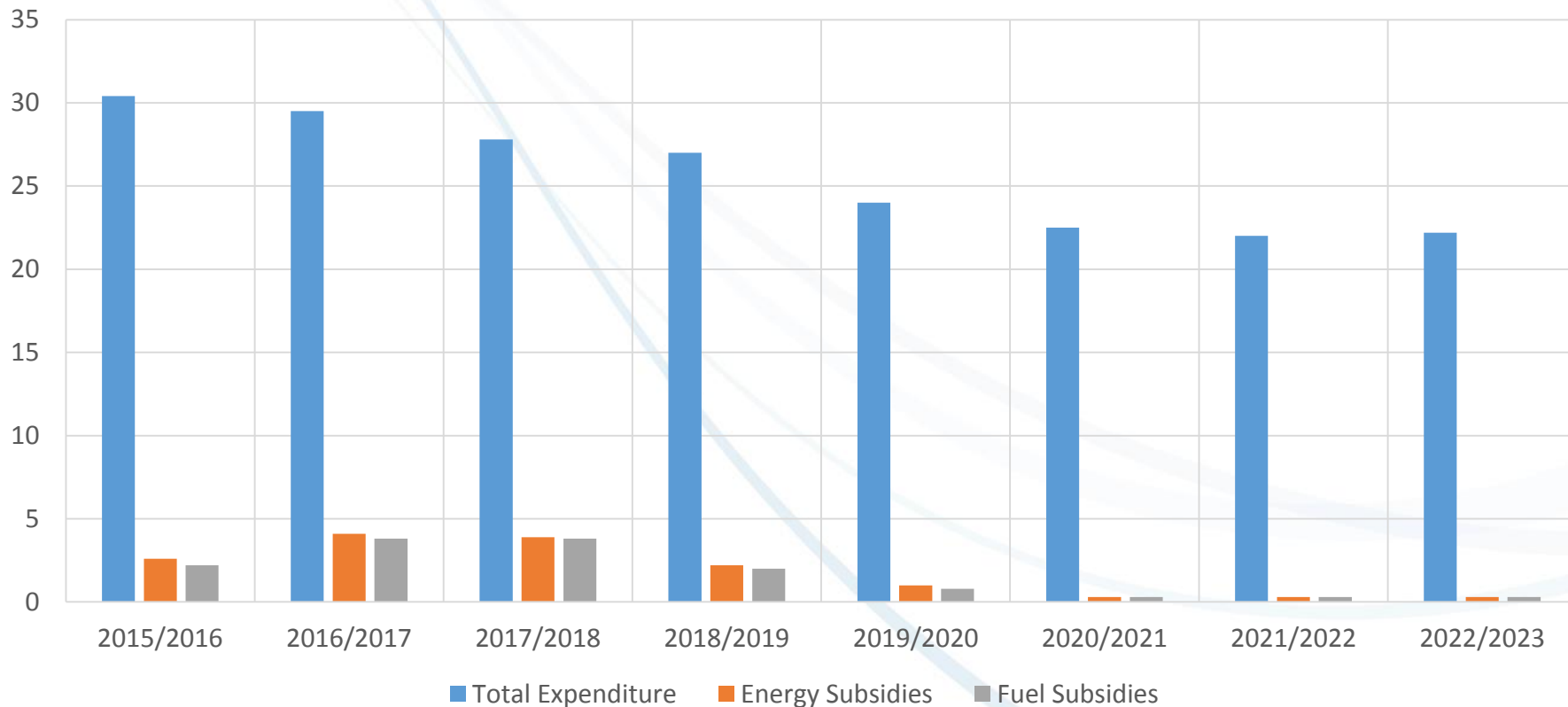
Global levelized costs of electricity from utility-scale renewable power generation technologies, 2010-2020e (\$/kWh)



Source: IRENA, Renewable Power Generation Costs in 2017, January 2018

Necessary economic reforms, including progressive removal of energy subsidies

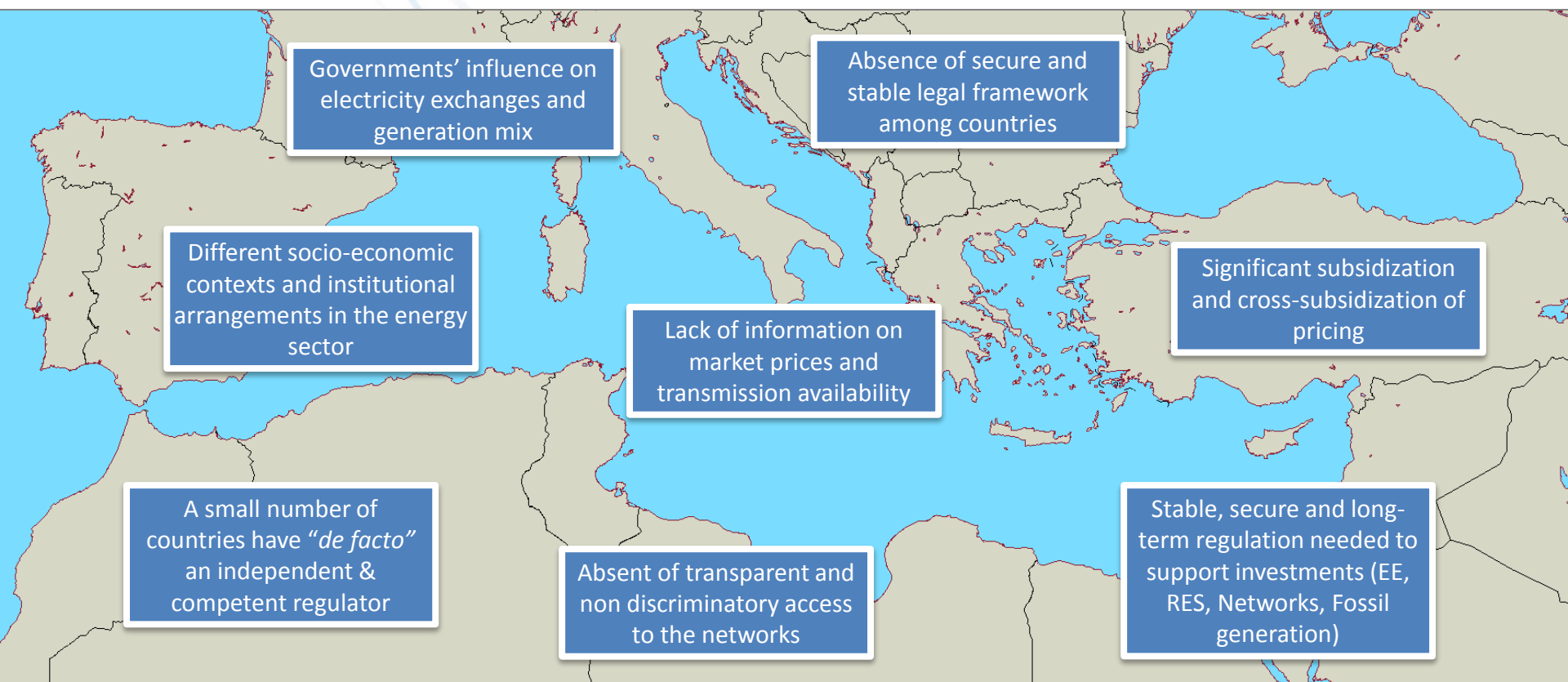
Egypt's budget sector* expenditure (in % of GDP)



*Budget sector comprises central government, local governments, and public corporations. Fuel subsidies are gasoline, diesel, kerosene, LPG and fuel oil.

Source: IMF Country Report No. 18/213

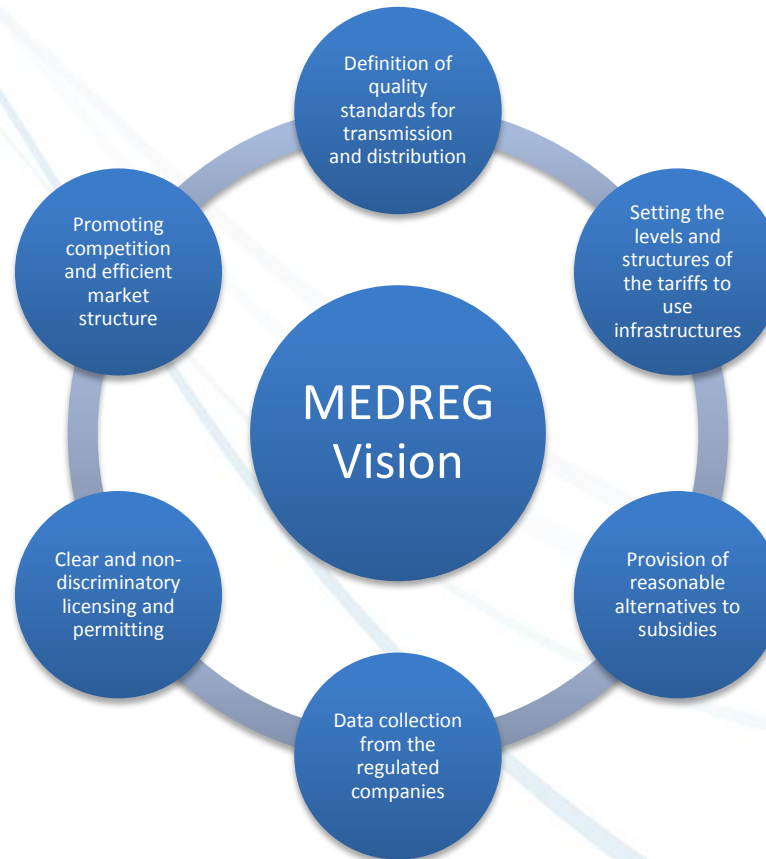
Barriers and challenges for investments



Source: MEDREG



How regulation can incentivize investments?



Source: MEDREG



How GOOD regulators can incentivize investments?



Source: MEDREG



MEDREG has been elaborating a roadmap to pave the way to create a regional energy market

- **harmonizing** legislative and regulatory frameworks
- considering **social\political\economical peculiarities** and diversities
- promoting gradual and flexible processes for **reforming national energy sectors** (electrical integration vs market integration)
- strengthening **regulatory** institutional arrangements
- approaching on **local basis** (regional/sub-regional/bilateral) with **pilot projects** (i.e. Integrated Electricity Zones)

Empowering Mediterranean regulators for a common energy future

Source: MEDREG

12





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