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**FORUM 2013**

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November 20 - 21 November  
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# Turkish Electricity Market Reform

Necessity for opening the national markets:  
Lessons and challenges

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## Outline

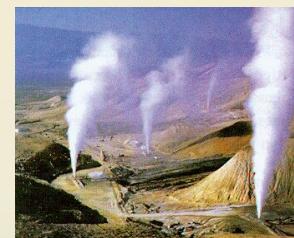
- EMRA
- Liberalization & Competition
- History of Electricity Market Reform
- Analysis of Electricity Market Structure
- Challenges in Market Reform
- Privatization
- Reform Highlights
- Wrap - Up

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## Energy Market Regulatory Authority (EMRA)



- Sole regulator of Electricity, Gas, Petroleum and LPG markets,
- Autonomous authority
- Monitors, supervises and audits markets & market players
- Approves tariffs
- Main objectives are to provide;
  - Financially viable, stable and competitive energy market
  - Sustainable energy at good quality and low cost, in a reliable and environment friendly manner



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## Why Market Liberalization?

**All in one ...**

- **Security of supply**
- **Competition**
- **Consumer choice**
- **Affordable prices**
- **More efficiency**
- **Better service quality**
- **FDI, etc.**

... because it is nice?



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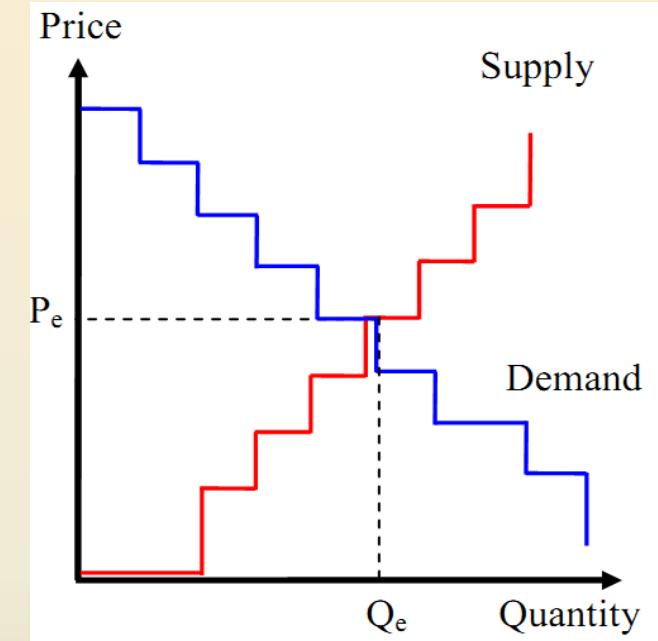
## Why Market Liberalization?

- ... because previous market structure did not work
- ... and a market operating in a competitive environment is appropriate for delivery of sufficient, good quality, low cost and environment-friendly electricity to consumers
- Additionally, it addresses many EU goals  
(internal market, competition, renewable energy, consumer choice, etc.)

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## Regulations for Liberalization

- Investment perspective
  - Economic and political stability
  - Long-term view on policy priority
  - Predictability and investment comfort
- Regulatory perspective
  - Security of supply, social & environmental goals
  - Unbundling
  - Non-discriminatory network access
  - Consumer choice



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## Effective Liberalization: Independent and Accountable

- Transparent, consistent, predictable regulatory decisions to achieve certain regulatory objectives

### Independence from...

- Industry
- Political control

### Independence in...

- Budget
- Appointment
- Decision making procedure

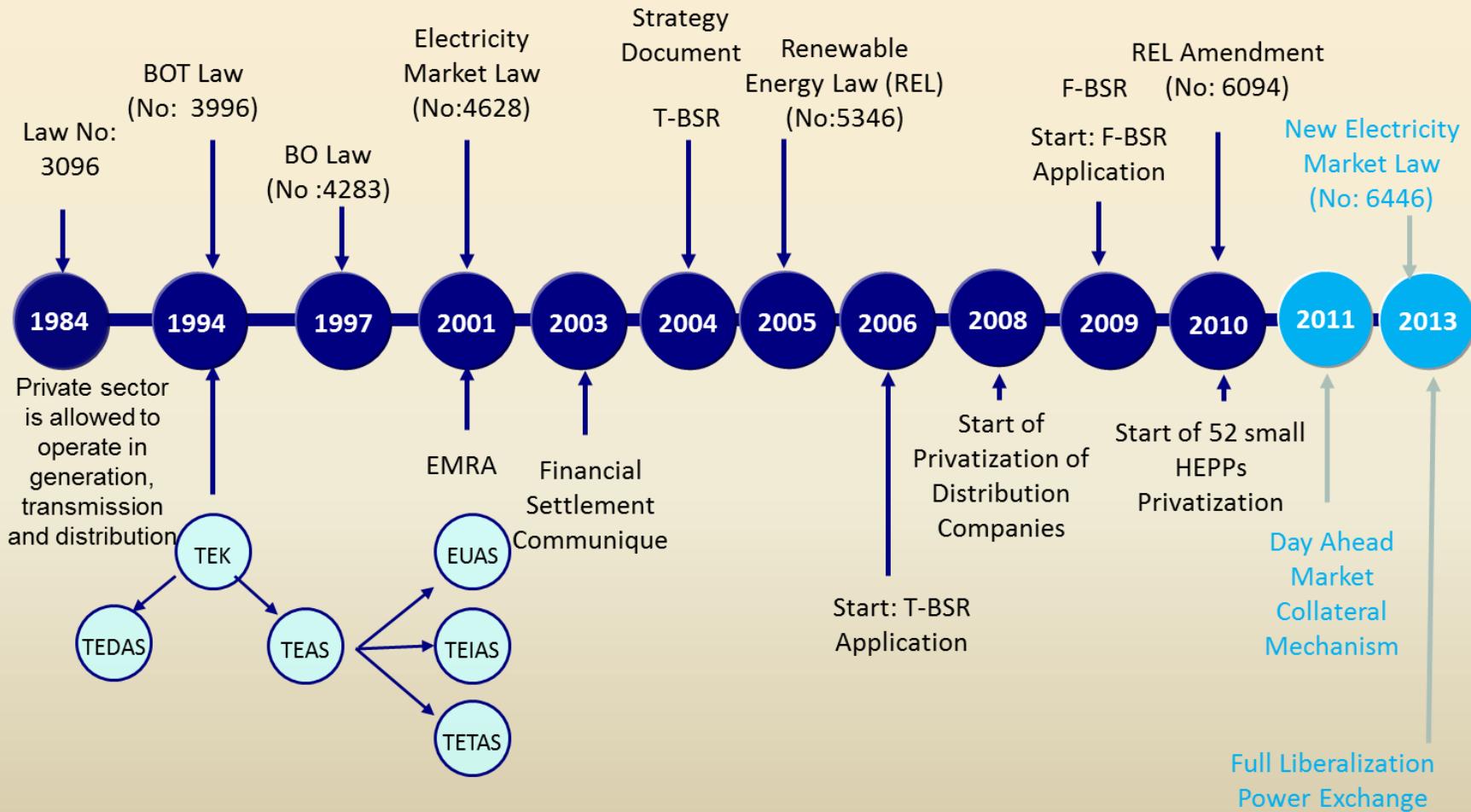
### Accountable to...

- Downwards → consumers
- Upwards → government

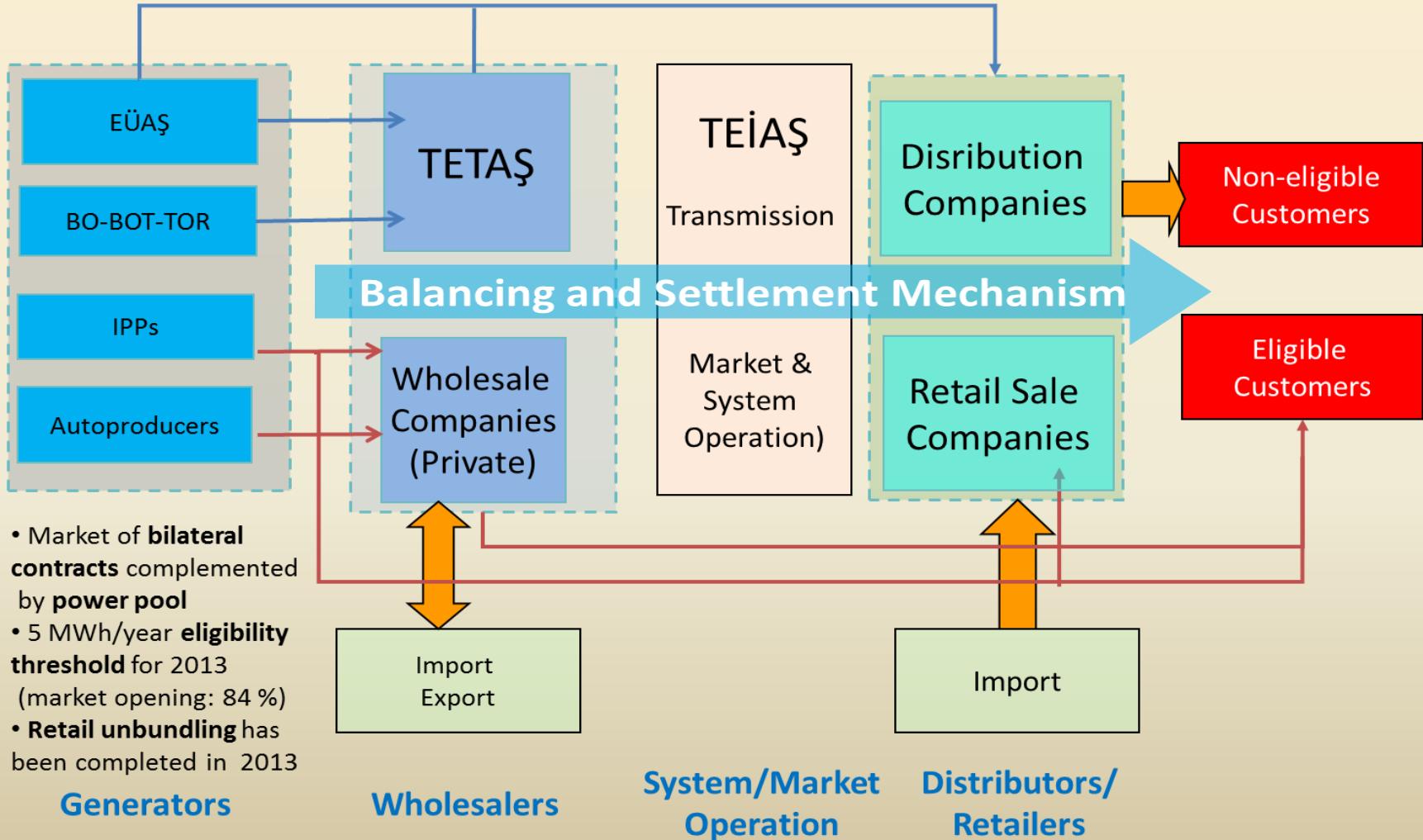
### ...leading to...

- Increased legitimacy
- Avoiding implementation problems
- Increased public trust

## History of Electricity Market Reform



## Electricity Market Structure



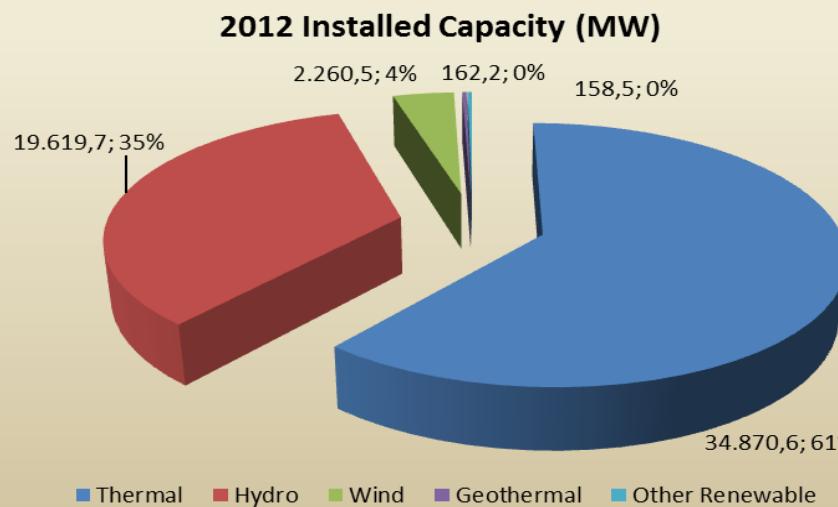
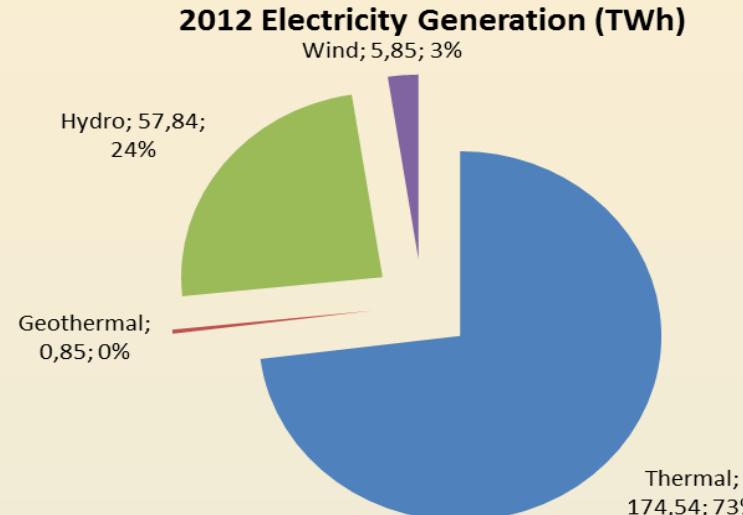
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## Continuing Reform: New EML (6446) ratified in Mar'13

- Announcing available grid connection capacity more than 1 year in advance for solar & wind projects
  - TEİAŞ (TSO) informs EMRA about available capacity for the next 5 & 10 years
- Licensing exemption increased to 1 MW
- An independent market operator (EPİAŞ) to be established
- Increasing import-export and trade opportunities
- Market deepening towards a regional energy hub

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## Electricity Market Figures



- Installed Capacity  
Renewable 39 %  
Thermal 61 %  
(by Dec '12)

- Consumption (2012) 242 TWh
- Generation (2012)  
Renewable 27 %  
Thermal 73 %
- Peak Load (2012) 39.045 MW

**Aggregate Figures:**

- Consumption (2012) 242 TWh
- Generation (2012) 239.1 TWh
- Import (2012) 4.363 TWh
- Export (2012) 1.489 TWh

**As of Nov'13;**

- Total installed capacity : 61.984 MW
- Installed **RES-E capacity** : 24.947 MW
- Share of **RES-E** in capacity : 40,2 %
- Installed Wind Capacity : 2.689 MW
- Installed Hydro Capacity : 21.724 MW

## Major Challenges in Reform

### Problem

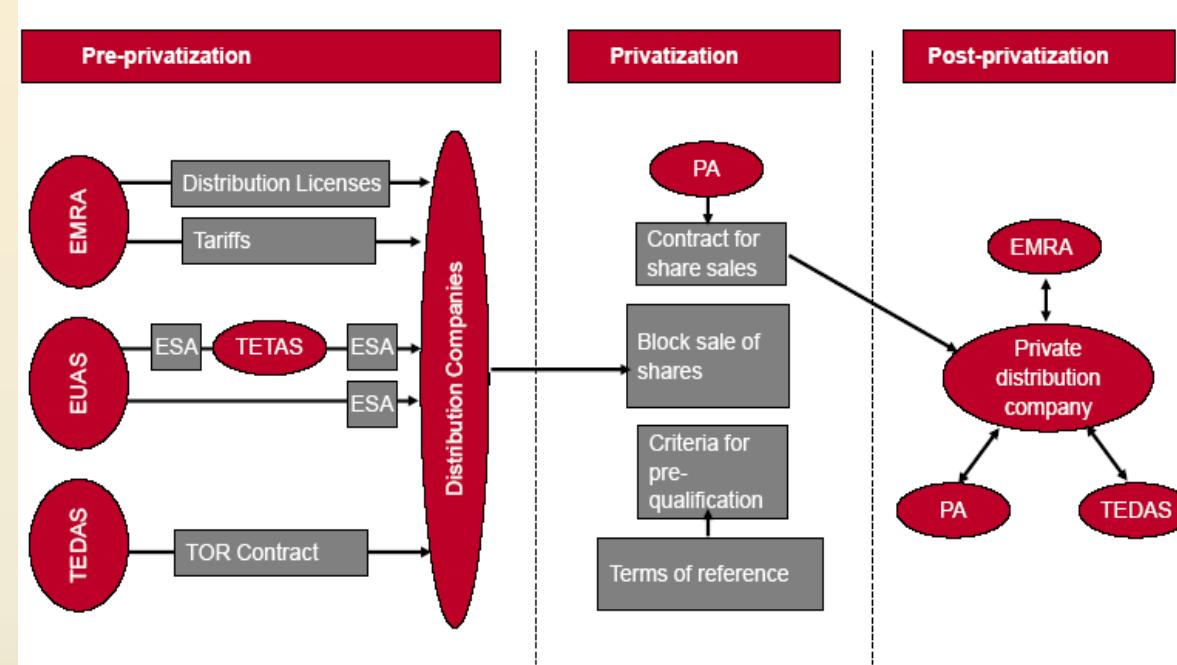
- Differences between regions and consumer groups
- High technical and non-technical losses
- Fast increasing demand & high investment requirement
- Lack of competition in market activities
- Reliance on imported fuels in the fuel-mix

### Remedy

- Price equalization mechanism for a smooth transition
- Loss targets and incentive-based regulation
- Enhanced trade opportunities for generators, long-term tariff setting with satisfactory returns for network operators
- Unbundled market activities, privatization & enabling supplier switching
- Encouraging diversity via incentives, increasing utilization of renewables and distributed generation

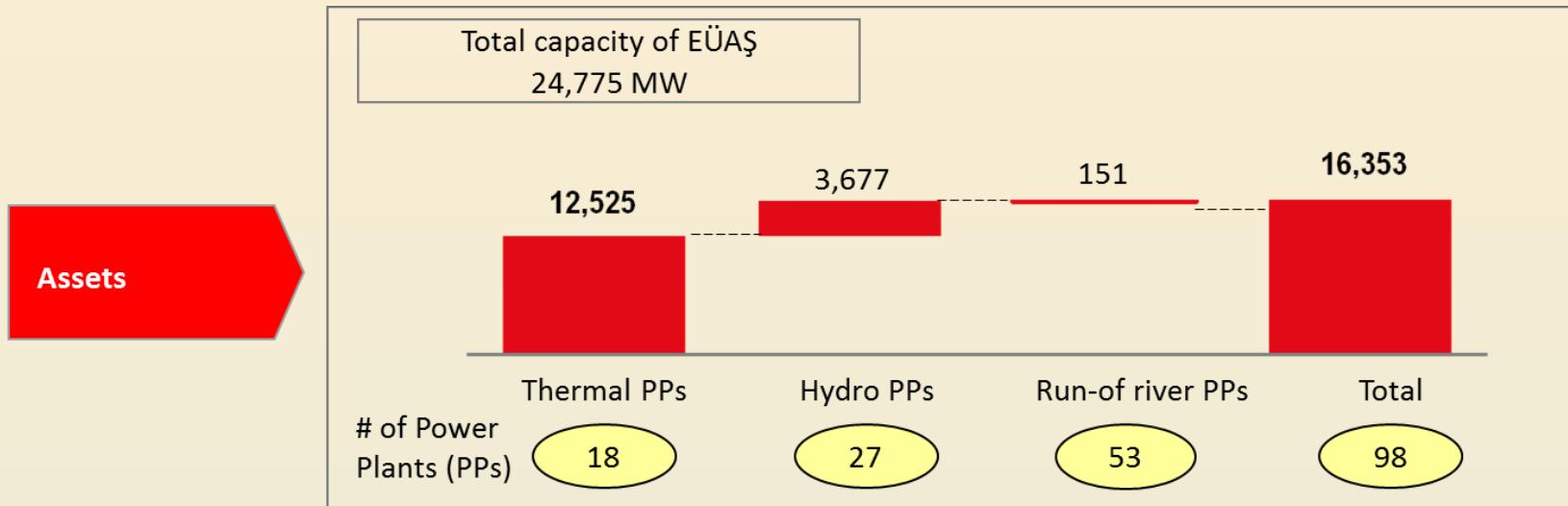
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## Distribution Privatizations



- Distribution assets are owned by state (TEDAS) and operated by private companies for 30 years
- 21 distribution regions are served by private companies. Retail competition enabled.
- Total revenue from privatization reached 13 billion USD
- Private companies obtain satisfactory returns from network investments

## Generation Privatizations



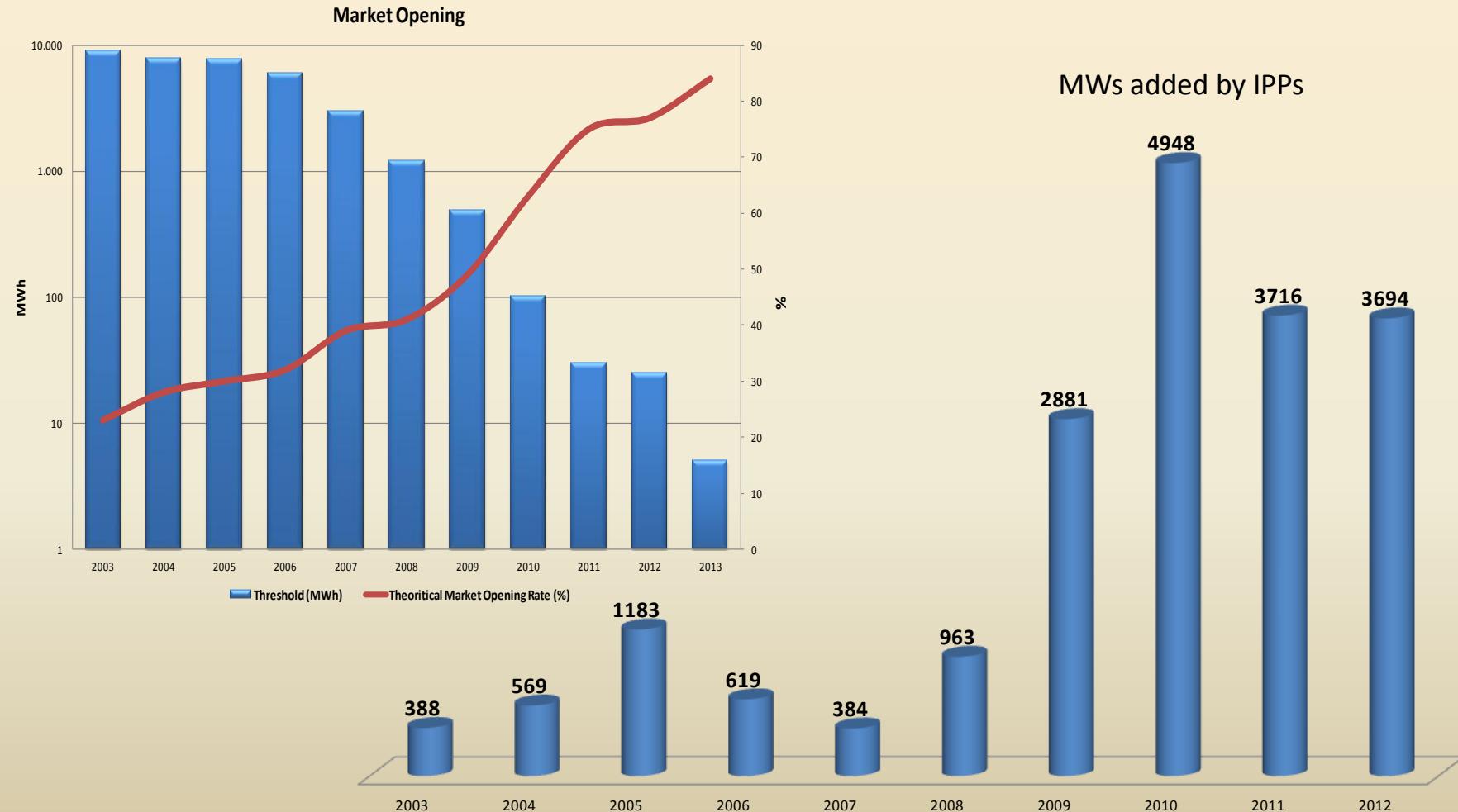
Privatization  
method

- 9 PP portfolios were formed ranging from 356 MW to 2,795 MW in size
- Separate privatization of 4 thermal PPs: Hamitabat, Seyitömer, Soma and Kangal
- As a pilot project, ADUAS (9 small PPs) with a total capacity of 140 MW were privatized for 510 million USD in 2008
- 52 run-of river PPs were tendered in 19 groups for 440 million USD
- Remaining assets to be privatized as **priority assets** (4 thermal above – total 3,247 MW) and **portfolios**
- 3 priority assets privatized in 2013 ( 2.213 MW - 3,35 billion USD)

Timing

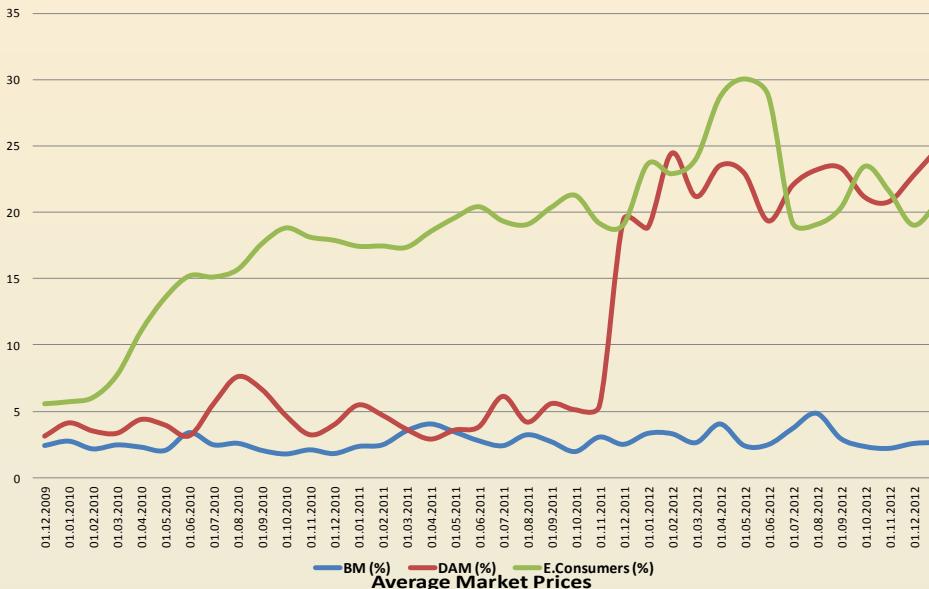
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## Increasing Suppliers & Eligible Consumers



## Spot Market Developments

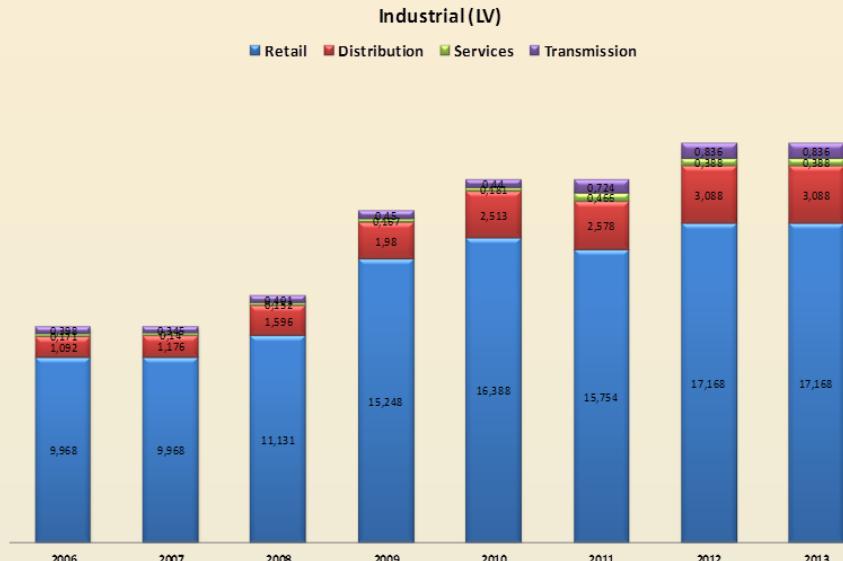
Development of Market Shares



- High day-ahead market share
- Residual imbalances settled in Balancing Market
- Increasing customer switching
- Converging day-ahead and real time prices
- Cost reflective prices in the spot market

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## Increasing Cost Reflectivity : Tariffs ↑



### Industrial (LV)

Increase in rates btw 2006-13

Retail	: 72.2 %
Distribution	: 182.8 %
Services	: 126.9 %
Transmission	: 110.1 %
Overall	: 84,71 %

### Household

Year	Retail	Distribution	Services	Transmission	Total
2006	10,244	0,195	0,581	0,154	10,244
2007	10,244	0,154	1,636	0,154	10,244
2008	12,105	2,145	0,159	0,159	12,105
2009	16,582	2,591	0,149	0,149	16,582
2010	17,82	3,218	0,161	0,161	17,82
2011	17,167	3,302	0,724	0,466	17,167
2012	18,555	3,955	0,836	0,388	18,555
2013	18,555	3,955	0,836	0,388	18,555

GDP/capita increase: 48,12 %

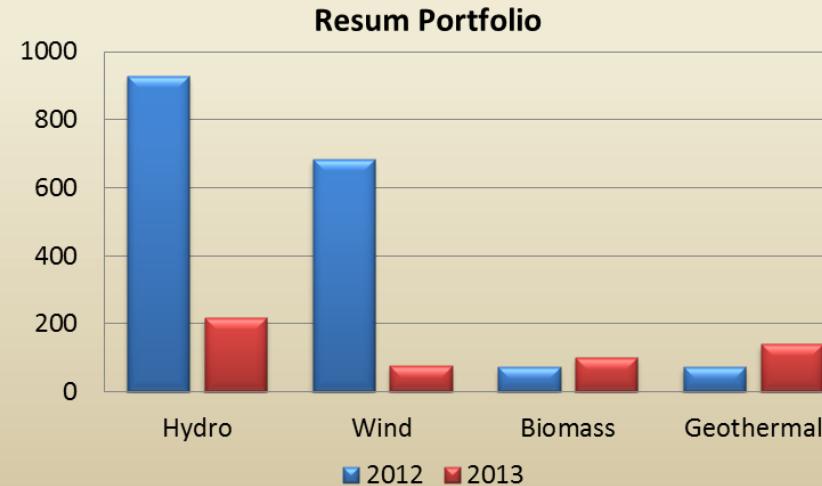
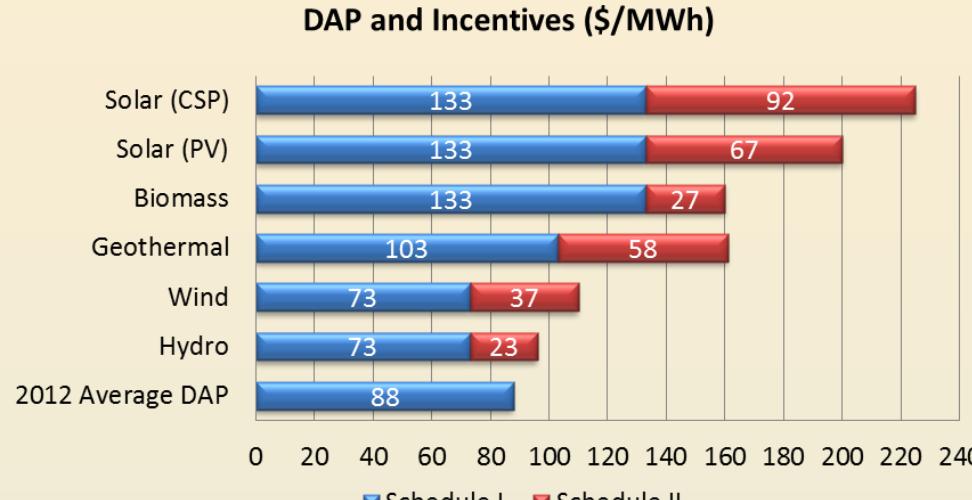
### Household

Increase in rates btw 2006-13

Retail	: 81.1%
Distribution	: 150.2 %
Services	: 123.0 %
Transmission	: 105.9 %,
Overall	: 91,33 %



## Renewable Energy Support Mechanism (RESUM)



- Resum portfolio size and guaranteed FITs are quite moderate
- Investors are comfortable with the market structure
- FITs provide a moderate yet reliable secure cash flow for financing
- Market price (DAP) is preferable for wind and hydro (excl. local content support)
- For geothermal, biomass and solar FIT is higher making these sources reliant on Resum

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## Final Remarks

- Sustainable economic growth requires attracting energy investments
- Investors are sensitive to signals
  - Predictability (i.e. reliable market rules)
  - Investment comfort (i.e. returns)
- Changes never happen overnight. There is no magic wand!
  - Appropriate legal framework
  - Credible regulator
  - Promising market conditions
- **Major challenge:** Balancing Interests (politicians, investors, consumers)



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## Thank you for your attention!

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