Overview Of The Turkish Electricity System and Interconnections

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Outline

- Electricity Market Law & Electricity Market
- Private Sector Licenses & Investments
- Demand & Supply Projections
- Privatization
- Investment Incentives & Consumer Protection
- İnterconnections

Electricity Market Law

With the Electricity Market Law No:4628 (EML), enacted on March 3rd, 2001;

- **Removal of the monopolist structure in electricity supply,**
- **Opening the activities in the electricity market other than transmission to competition, under the regulation and supervision of EMRA,**
- **Regulation of the natural monopolies by EMRA**

are aimed.

Basic Principles 1/2

- **All legal entities to be engaged in market activities must obtain the relevant license for each activity; and for each facility if the subject market activity is to be performed in more than one facility, prior to the commencement of their market activities.**

- **Legal entities holding more than one license or legal entities performing the same activity in more than one facility must keep separate books and records of account for each licensed activity or facility.**

Basic Principles 2/2

- Licenses can not be transferred to another entity.
- The licensees except generation and autoproducer licensees cannot engage in non-market activities.
- The direct or indirect acquisition or a transfer of shares of a licensee are subject to Board approval.

Electricity Market

- Electricity market is based on bilateral contracts between suppliers and consumers (or other suppliers).
- System balance is provided through a real time balancing market.
- Consumers whose annual electricity consumptions exceed the eligibility threshold are eligible for switching.
- Consumers below that threshold are obliged to buy electricity from the regulated tariff of the default supplier in their regions, which are the distribution companies.

Eligible Consumers

- For the year 2008, the “Eligibility Threshold” is set at 1,2 GWh by the Board.
- The consumers above this threshold correspond to 40% of the total consumption. (Market opening)
- As of February 2008, there are 231 eligible consumers registered and supplying electricity from private suppliers.
- Total monthly consumption of these consumers is around 644 GWh. (corresponds to %4,5 of the total monthly consumption)

Licenses

as of 8/4/2008

Type of License	Ownership	Issued
Generation	(Public, Private)	591
Autoproducer	(Private)	181
Autoproducer Group	(Private)	18
Transmission	(Public)	1
Distribution	(Public) (*)	20
Wholesale	(Public, Private)	24
Retail	(Public) (*)	20
Organized Industrial Zones - Generation		0
Organized Industrial Zones - Distribution		72

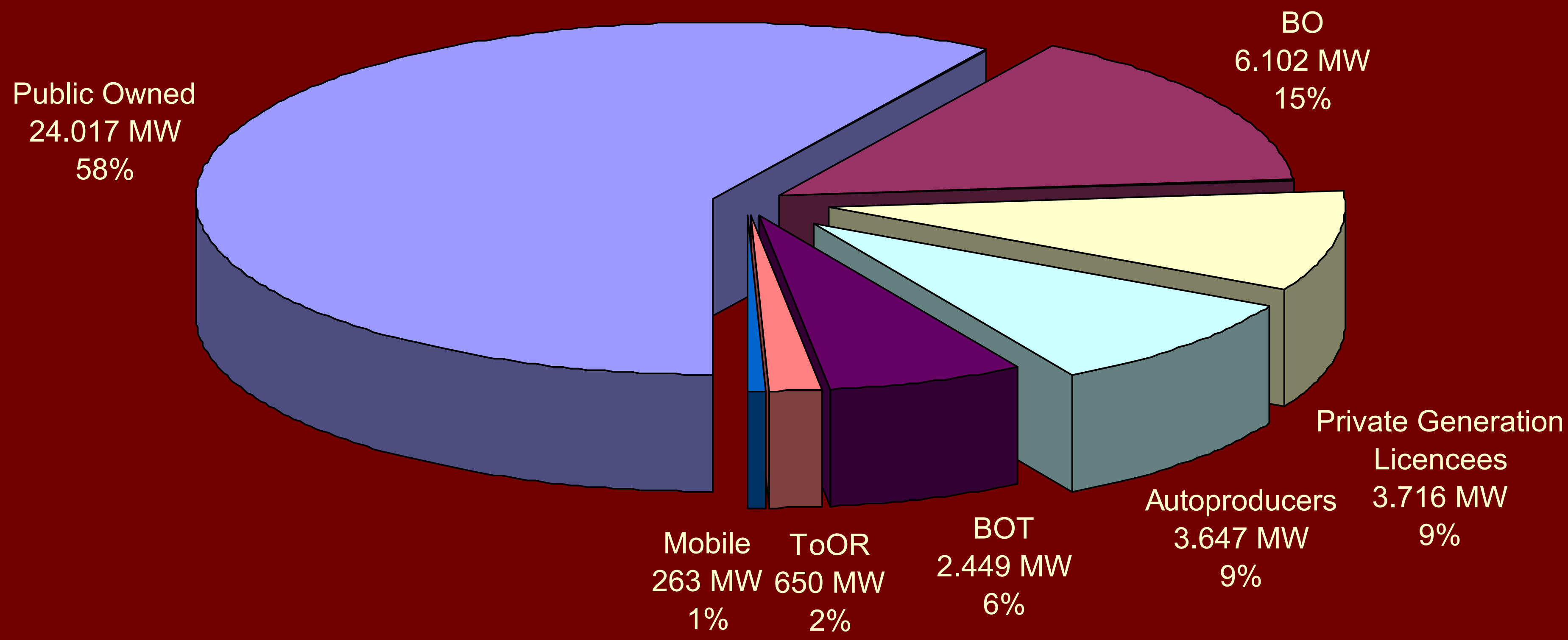
(*) The 21st and the only private distribution company KCETAŞ hasn't been licensed yet.

Generation Market

- As of 2008, on the installed capacity basis, the generation market is still dominated by the state-owned company EÜAŞ (Electricity Generation Co.) and its affilliates with a market share of 58%.
- The BO-BOT-TOOR power plants which are selling their electricity to the state-owned TETAŞ (Electricity Wholesale Co.) via long-term purchase aggreements have a market share of 23%. These companies are not licensed.
- Private companies holding generation, autoproducer and autoproducer group licenses have a total market share of 18%.

Installed Capacity

as of 8/4/2008

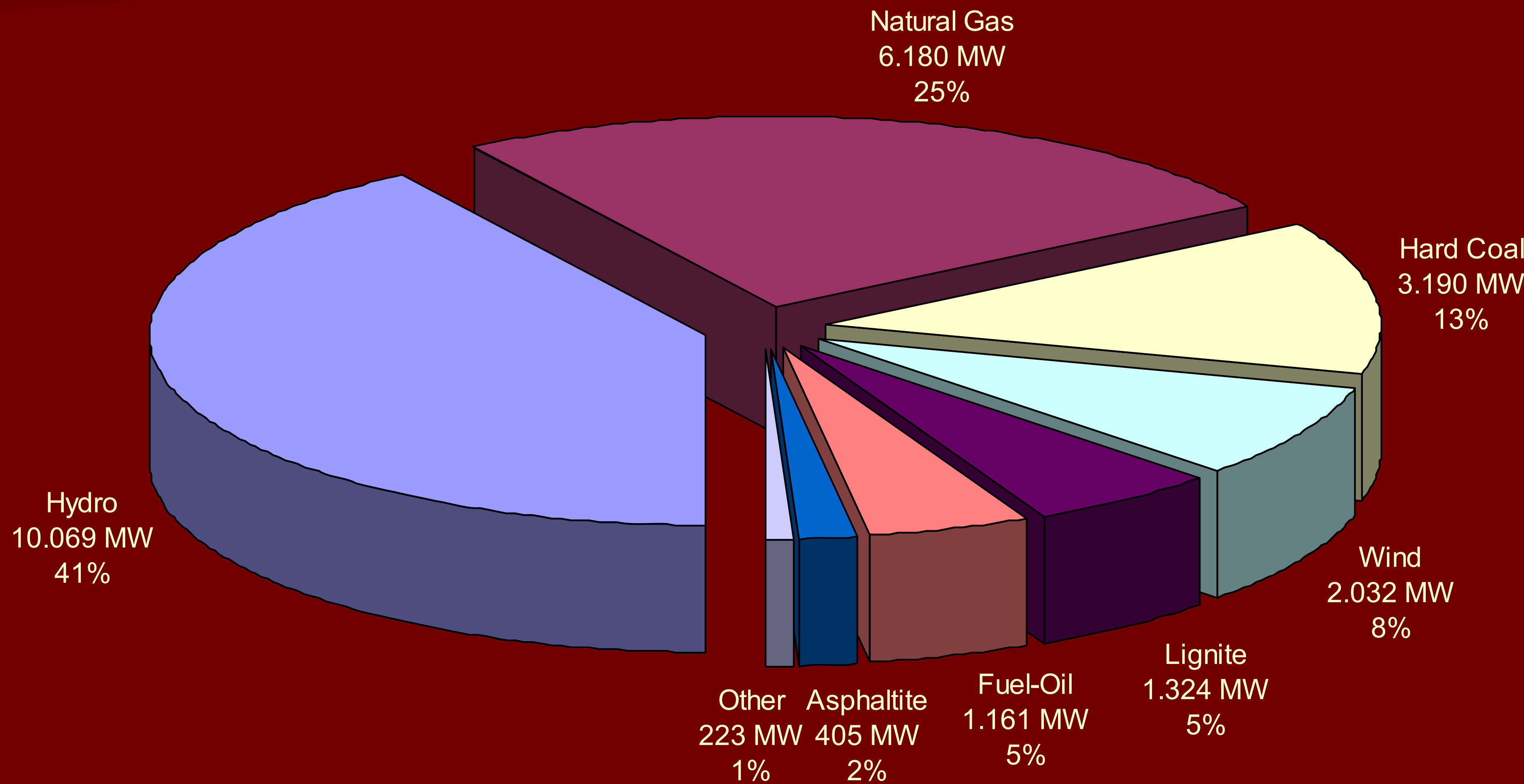


Licenses & Applications

- **669 power plant projects corresponding to a total installed capacity of 24.572 MW is licensed.**
- **Great majority of this capacity consists of hydropower plants (41%) and natural gas fired power plants (25%)**
- **7.363 MW of this capacity is in operation while the remaining 17.209 MW is still in construction.**
- **Regarding the hydropower plants within this context, 563 MW in operation, 8.625 MW in construction.**
- **116.552 MW of license applications are still in progress. 69% of this applications are based on wind power which include multiple applications to the same site.**

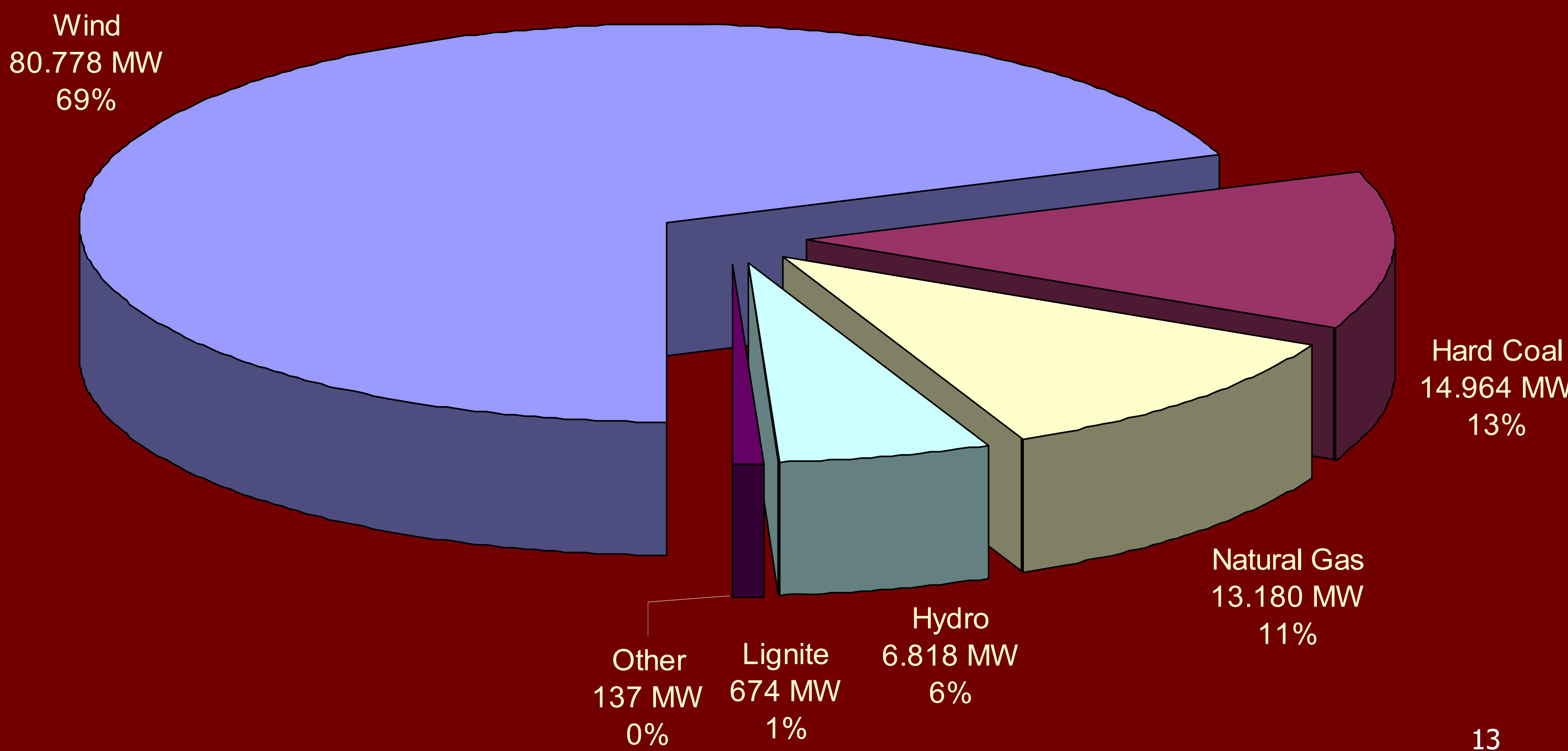
Licenses Issued

as of 8/4/2008



Applications in Progress

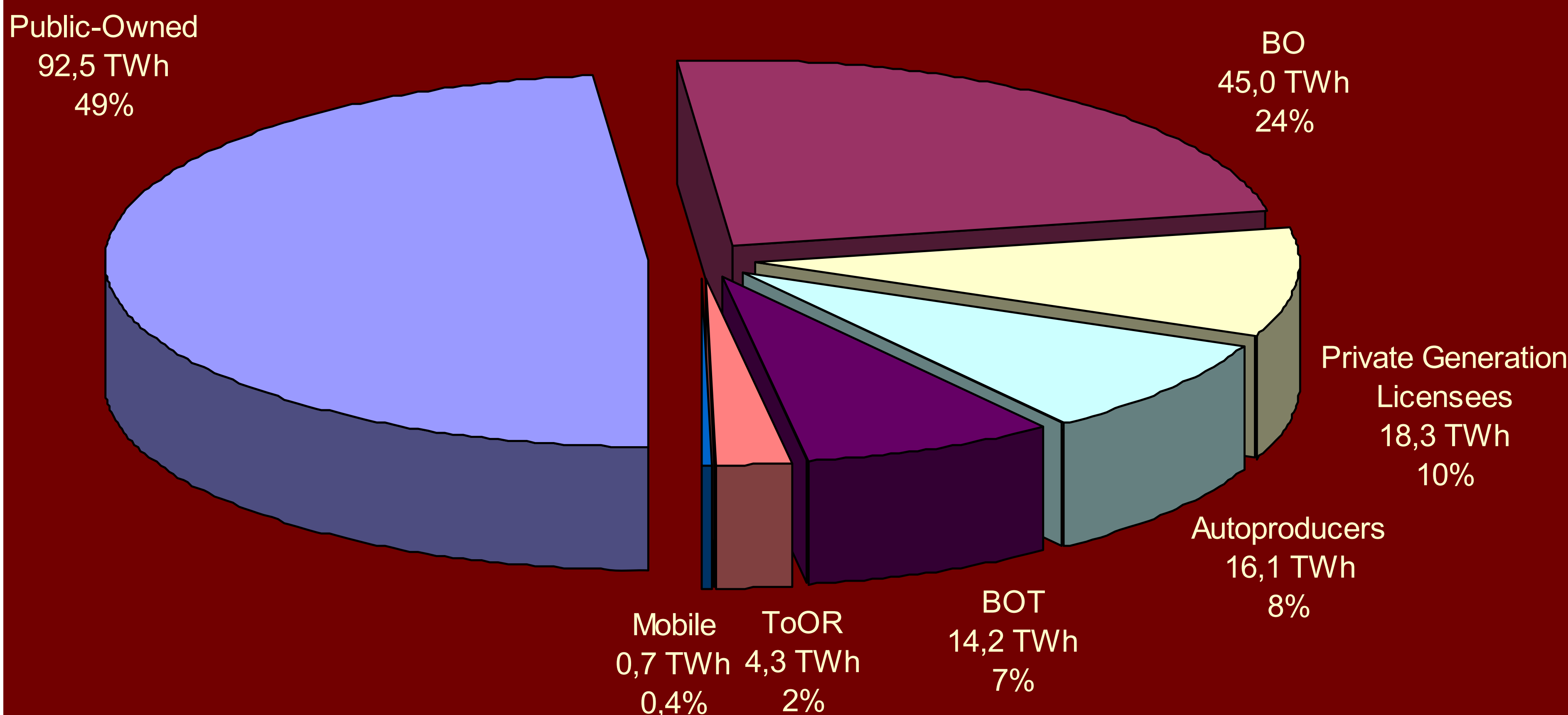
as of 8/4/2008



Generation Market

- As of 2007, on the generated energy basis, EÜAŞ (Electricity Generation Co.) and its affilliates have a market share of 49%.
- The BO-BOT-ToOR power plants have a market share of 33%.
- Private companies holding generation autoproducer and autoproducer group licenses have a total market share of 18%.

2007 Generation



Investments & Demand 1/2

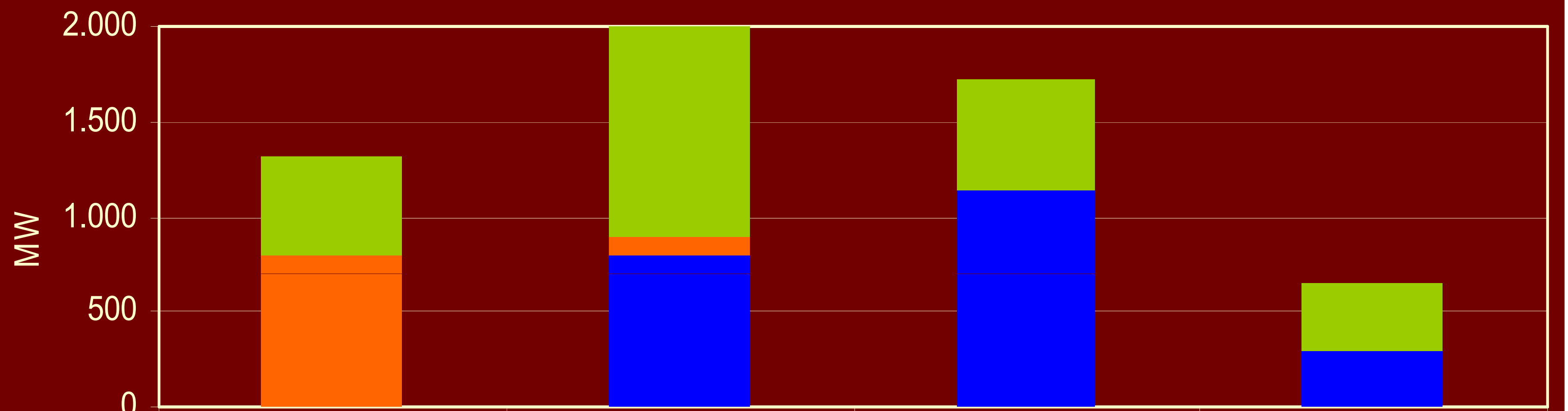
- In the period 2004-2007, 5.692 MW of new capacity was commisioned.
- 2.566 MW (45%) of this capacity was built by private companies holding licenses.
- In the following 6 years (2008-2013), regarding two marginal scenarios, a total new capacity in the range of 8.500-13.000 MW is expected to be commissioned.

Investments & Demand 2/2

- **However, these numbers are still below the necessary new capacity to meet the demand increasing in the range of 8-9% per year. (About 3.000 MW a year)**

- **Regarding the worst case demand & supply scenarios (high demand scenario, low new capacity, dry season) in the year 2009, there will be a short of generation capacity.**

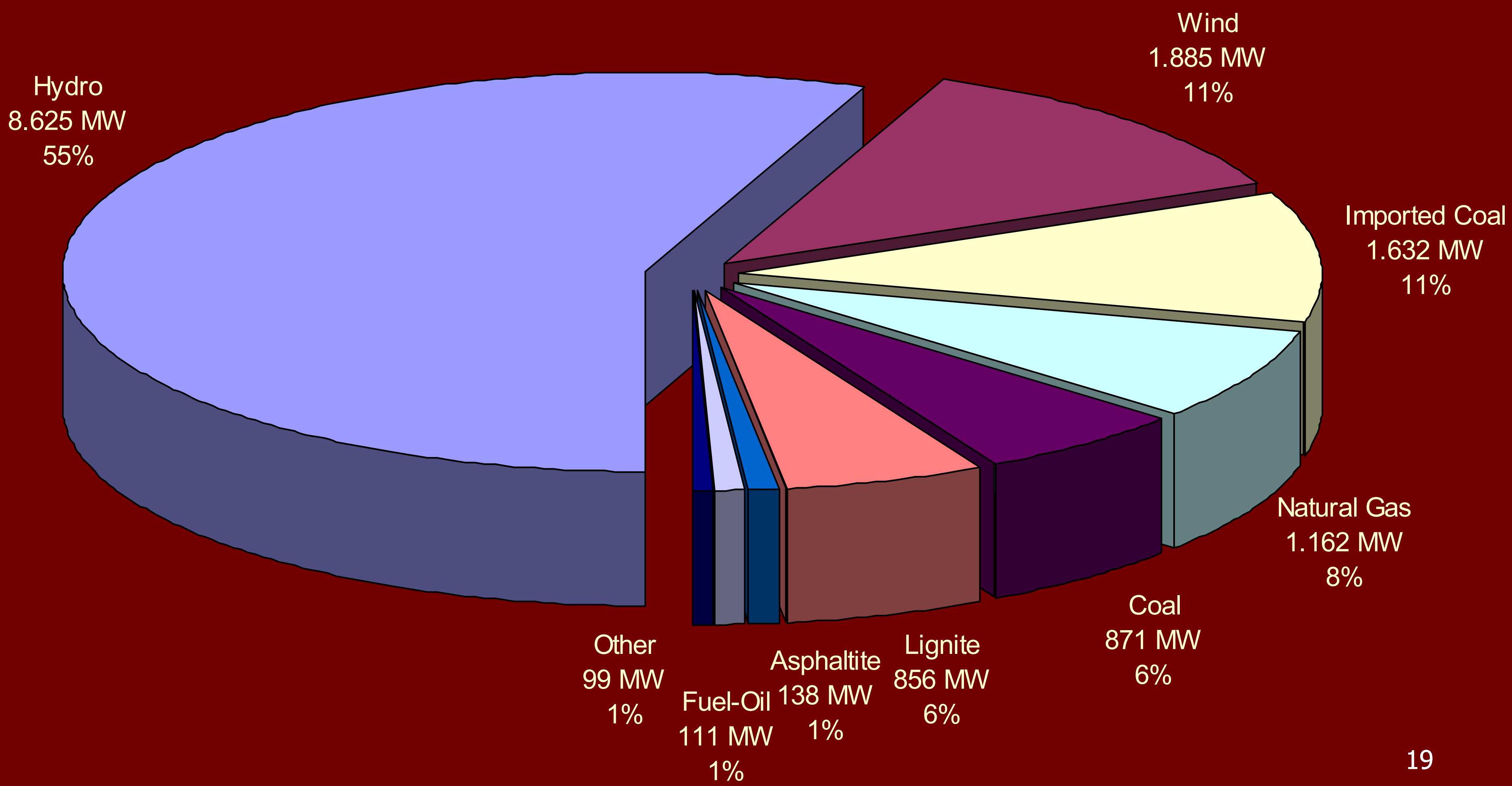
New Capacity (2004-2007)



	2004	2005	2006	2007
Private	523,9	1.101,0	587,7	354,1
BO-BOT-ToOR	798,0	100,0		
Public		795,0	1.132,1	300,6

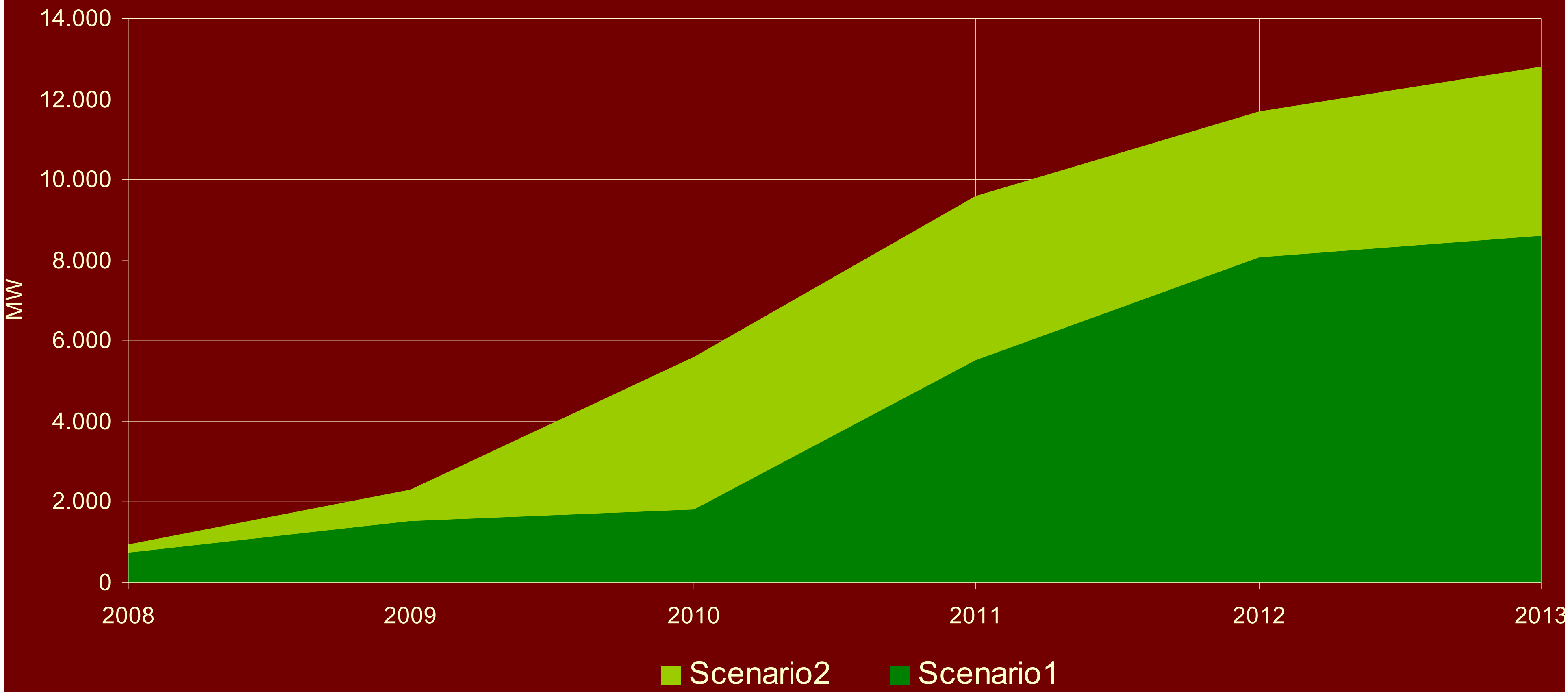
Plants in Construction

as of 31/12/2007



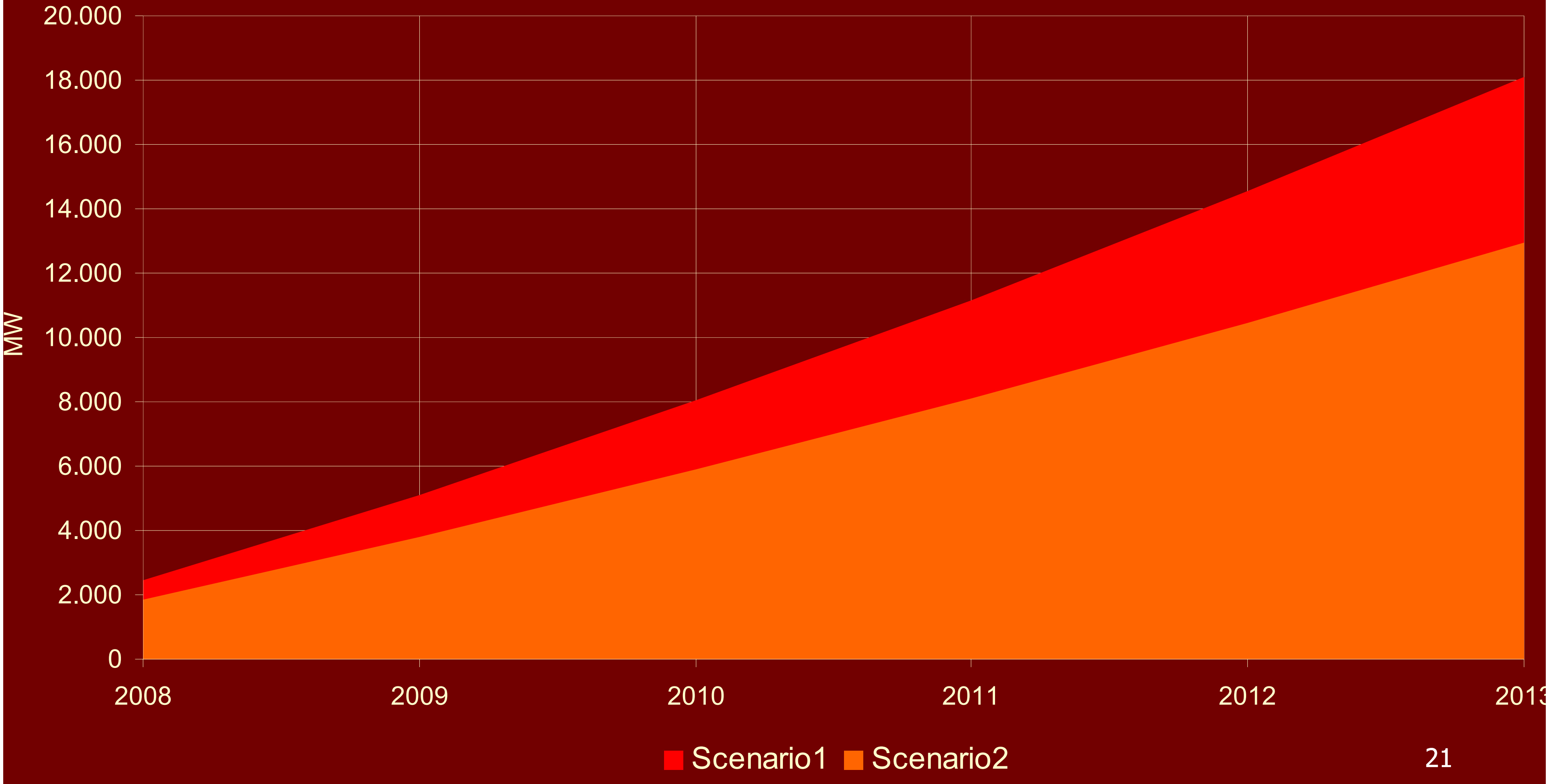
Expected New Capacity

as of 31/12/2007, Private Sector, Cumulative



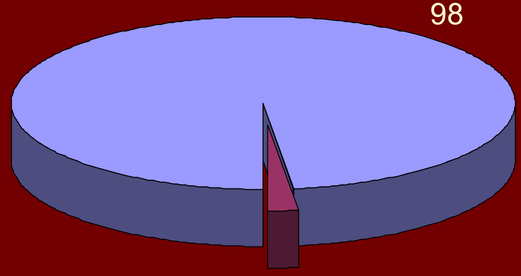
Increasing Peak Demand

Difference with respect to 2007



Marginal Scenarios

Electricity Distribution



Regarding the Electricity Sector Reform And Prıvatization Strategy Paper (2004) of the Higher Planning Council, TEDAŞ, the state-owned distribution company was restructured as 20 regional distribution companies and the privatization of these companies was scheduled to be completed by the end of 2006.

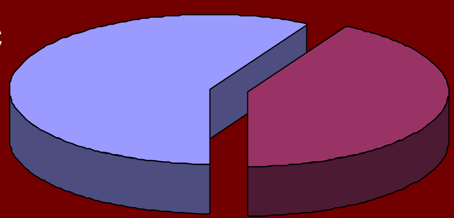
This date being postponed, privatization of the distribution companies is still one of the prior issues in the electricity market.

Only private distribution company KCETAŞ (Kayseri ve Civarı Elektrik TAŞ) having a market share of appr. 2% hasn't been licensed yet.

Electricity Generation

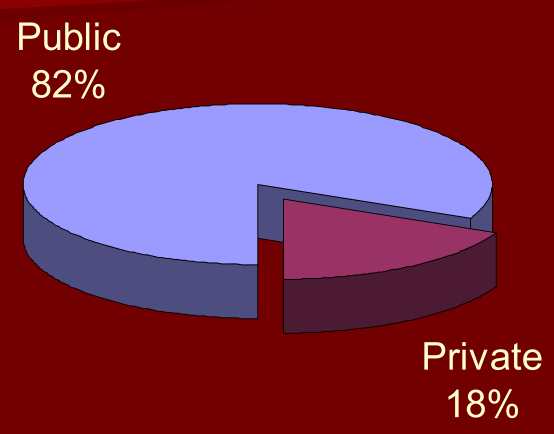
On the generation market, 58% of the total capacity is owned by the state owned EÜAŞ and its affiliates.

EÜAŞ is planned to be privatized as 6 portfolio companies.



As a first step, while bidding is completed, the privatization of the Ankara Natural Electricity Generation & Trading Co. is about to be completed. This company has 9 power plants with a total capacity of 140 MW.

Trade & Transmission



TETAŞ is holding a market share of 82% in the wholesale market.

Privatization of TETAŞ via a partial public offering may be achievable in the following years.

Also, restructuring of TEİAŞ (Turkish Electricity Transmission Co.) by separating transmission and electricity market operating activies and privatizing these newly formed companies via partial public offerings is also another option being considered.

Incentives

- Incentives to new investors;
  - Renewables and domestic energy sources
    - License application fee: only 1%
    - Annual license fee, 0 for 8 years
    - Purchase guarantee for renewables by retail sale licensees, average wholesale price (limited within the range 5 & 5,5 €cent/kWh)
    - Purchase guarantee for domestic coal fired plants by TETAŞ, 15 years, tender bid price
    - Connection priority

Consumer Protection

- Tariffs
  - **Regulated tariffs for networks**
  - **Regulated retail sale tariffs**
- Regulations
  - **Tecnnical and service quality regulation**
  - **Supplier of Last Resort**
  - **Other regulations**

İnterconnections

- **The Turkish power system is currently not prepared for synchronous operations with other countries, but there are many interconnections such as those to Azerbaijan, Armenia, Bulgaria, Greece (not completed),Georgia, Iran, Iraq and Syria.**

- **The Turkish power system is connected to the UCTE grid via three single-circuit 400kV lines (two 400kV lines between Turkey and Bulgaria and one 400kV line between Turkey and Greece).**

İnterconnections

- **Maritsa East Power Plant - Babaeski substation is energized AC 400kV, line's thermal capacity is 1000 MW and line's length is one hundred and thirty six kilometres.**

- **The other line which is Maritsa East Power Plant - Babaeski substation is energized AC 400kV, line's thermal capacity is 2000 MW and line's length is one hundred and fifty kilometres**

İnterconnections

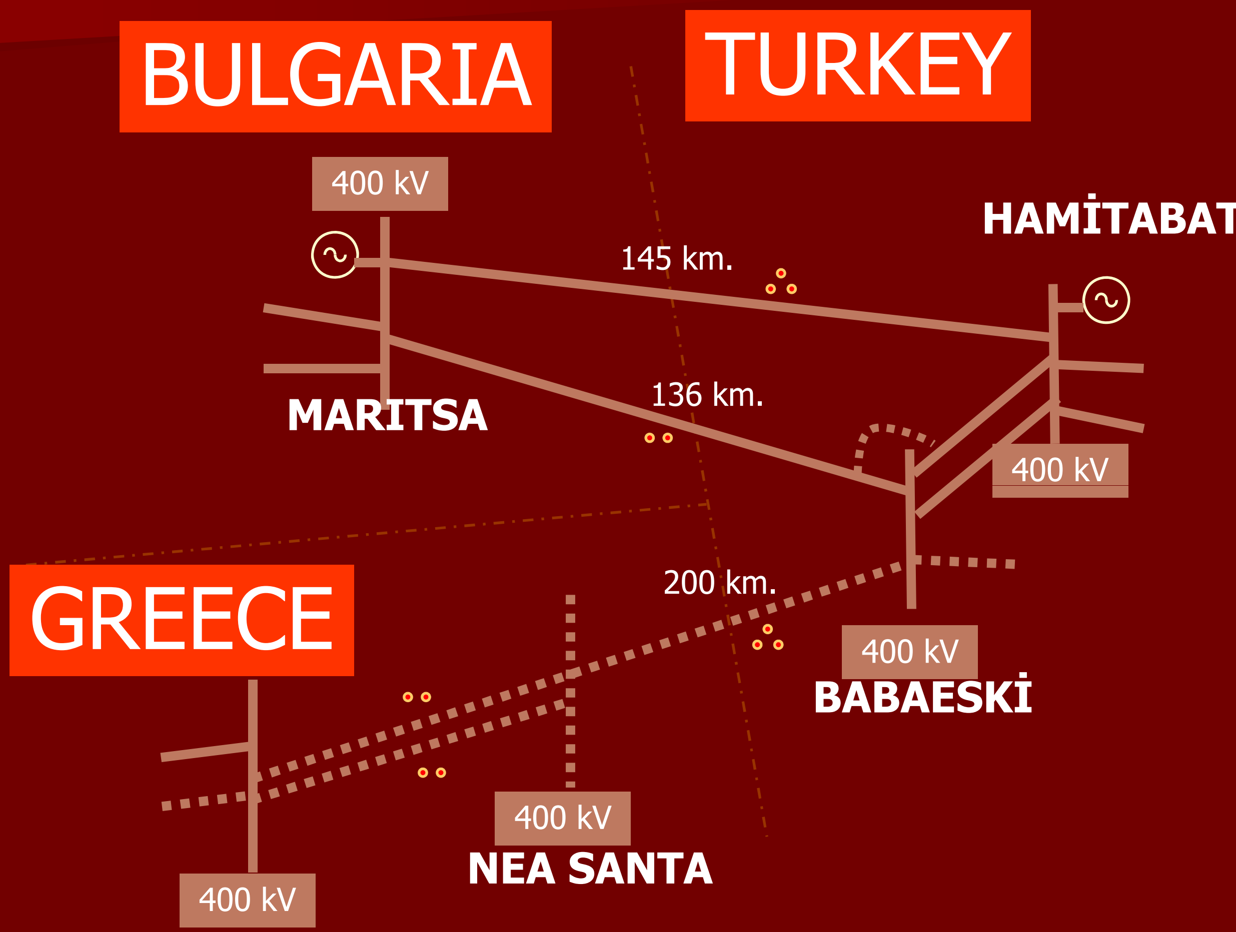
- **In March 2002, Turkey and Greece signed a Memorandum of Understanding for the construction of a 400 kV line between Babaeski in Turkey and Nea Santa in Greece.**

- **The line is under construction to be commissioned in 2008, and the capacity of the line is 2000 MW.**

İnterconnections

- The possible synchronisation of Turkish and Syrian Power Systems has been investigated in the framework of the Mediterranean Ring study.
- Turkey regulated Electricity Market Import and Export Regulation according to Regulation 1228/2003/EC.
- After connecting to UCTE, Turkey intends to apply ITC (inter-TSO compensation mechanism) .

Interconnections



- THANK YOU FOR YOUR ATTENTION !!!

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