New Market for small wind in Turkey after the Law on unlicensed 500 kW wind Projects is in Force

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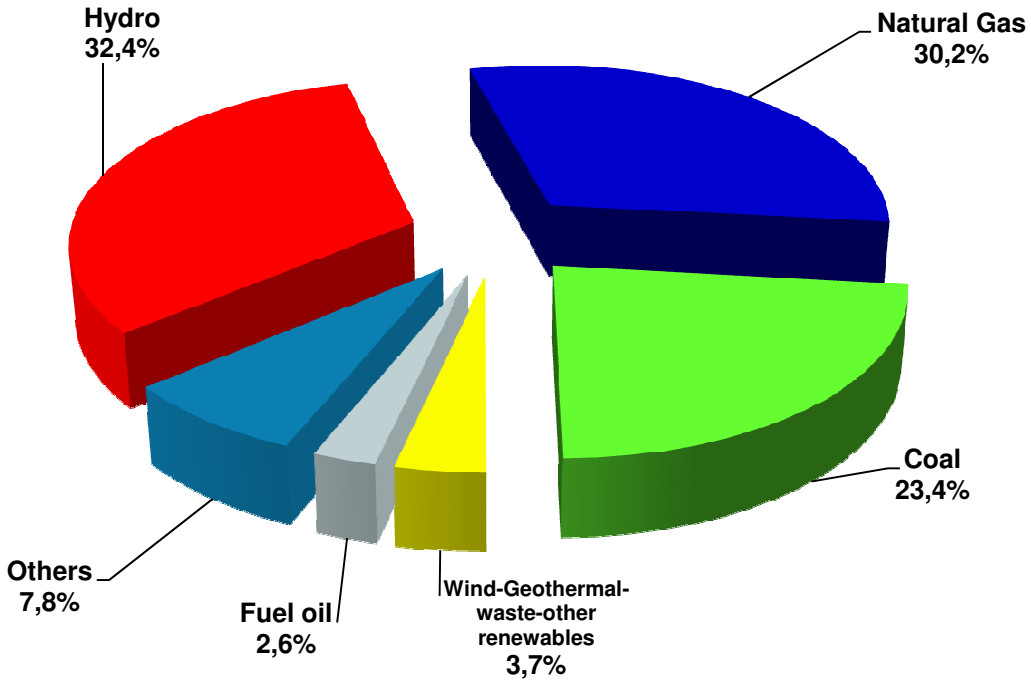
Electricity Market in Turkey by numbers

- ***Installed Power*** ***: 56,1 GW***
- ***Consumption*** ***: 228 TWh (2011)***
- ***Demand Increase*** ***: 7 - 8 %***
- ***Monetary value of the consumption: 30 billion USD***

Installed power for 2011 resource base

(MW)

Hydro	17.137
Natural gas	16.005
Fuel oil	1.362
Coal	12.356
Wind-Geothermal-waste-other renewables	1.958
Others	4.093
Total	52.911

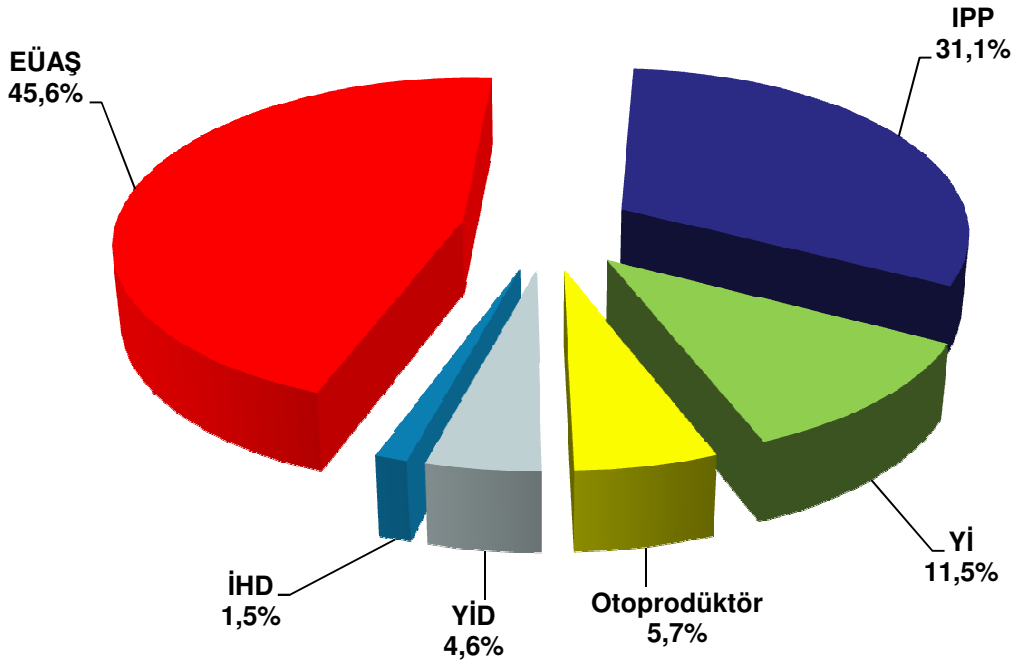


Installed Power 56,1 GW (15 November 2012)

Installed Power for 2011 Institution based

(MW)

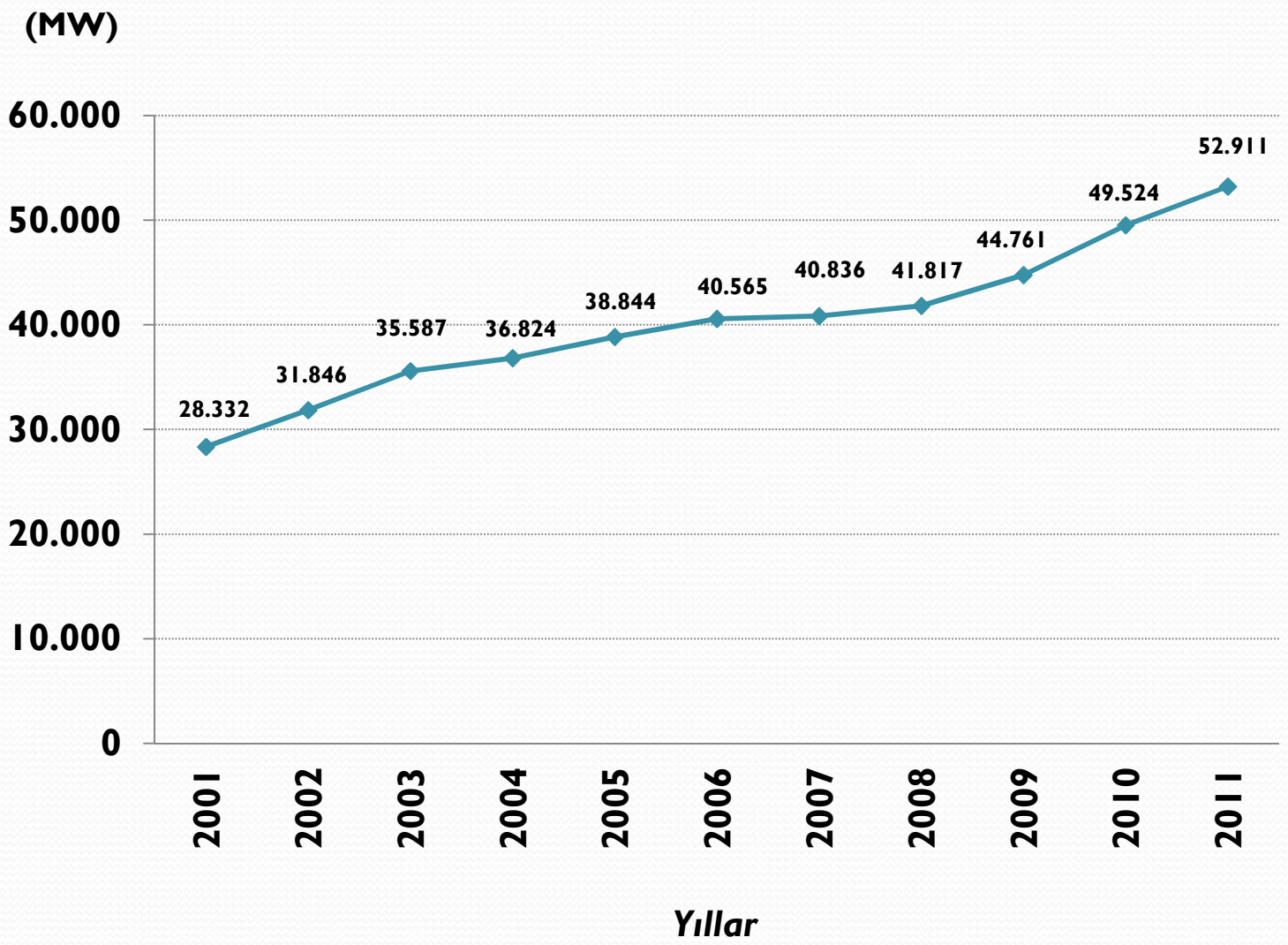
EÜAŞ	24.149
Independent Power Producers	16.473
Otoprodüktör	3.019
Yİ	6.102
YİD	2.420
İHD	748
Total	52.911



Installed Power 56,1 GW (15 November 2012)

ENERJİ PİYASASI DÜZENLEME KURUMU

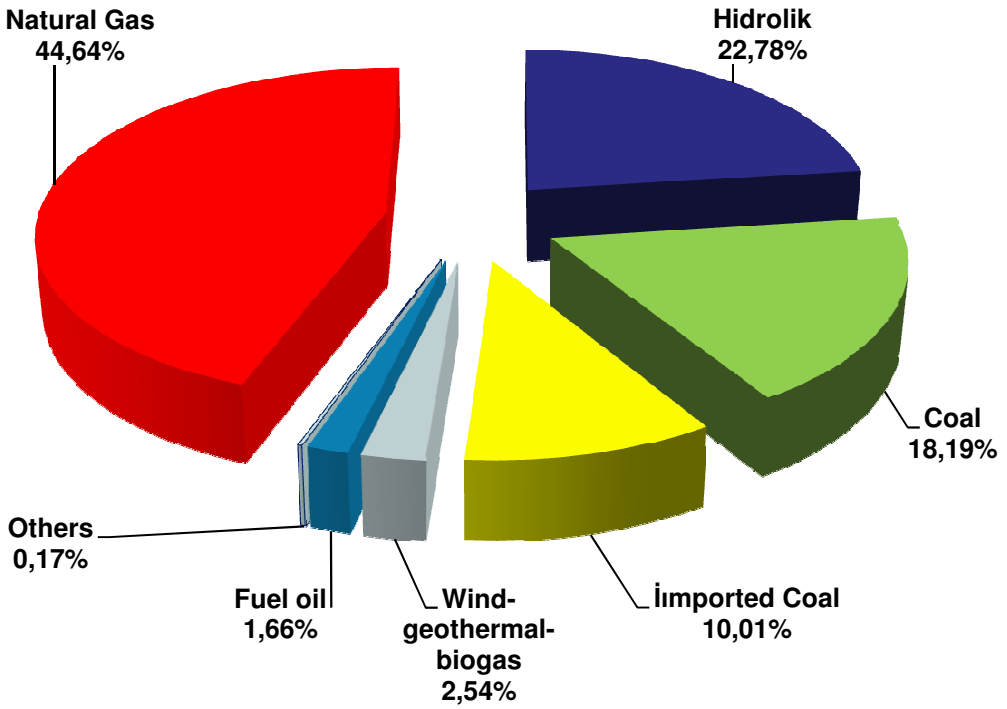
Installed Power by Years



Electricity Production Resource Base 2011

(TWh)

Natural Gas	102,1
Coal	41,6
Hidrolik	52,1
Imported Coal	22,9
Fuel oil	3,8
Wind-Geothermal-Biogas	5,8
Others	0,4
Total	228,4

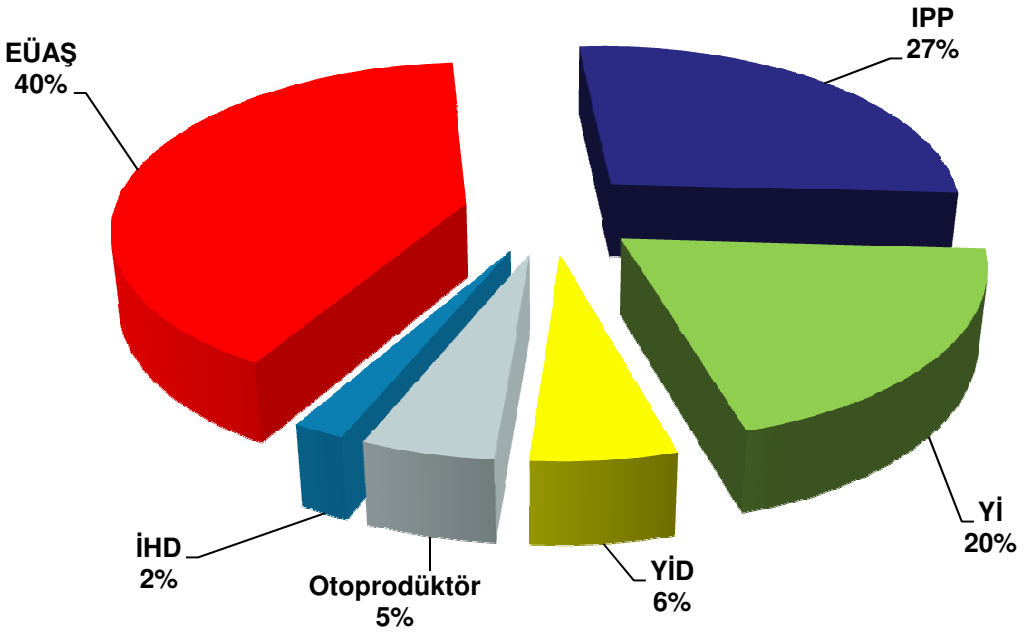


255 TWh (First 8 months of 2012)

Electricity Production, Institutional Base 2011

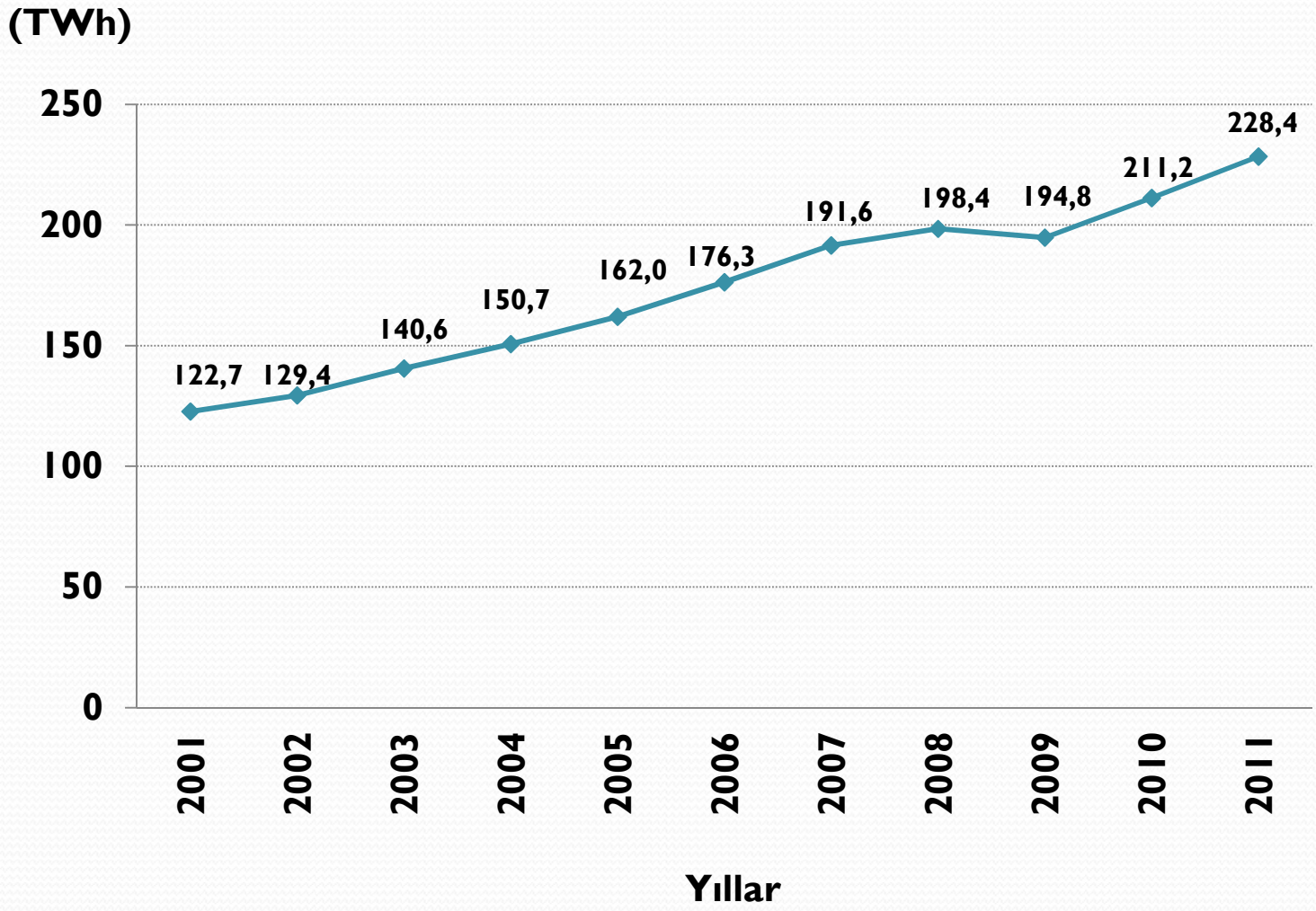
(TWh)

EÜAŞ	92,3
Independent Power Producer(IPP)	62
Otoprodüktör	11,7
Yİ	45
YİD	12,8
İHD	4,6
Toplam	228,4

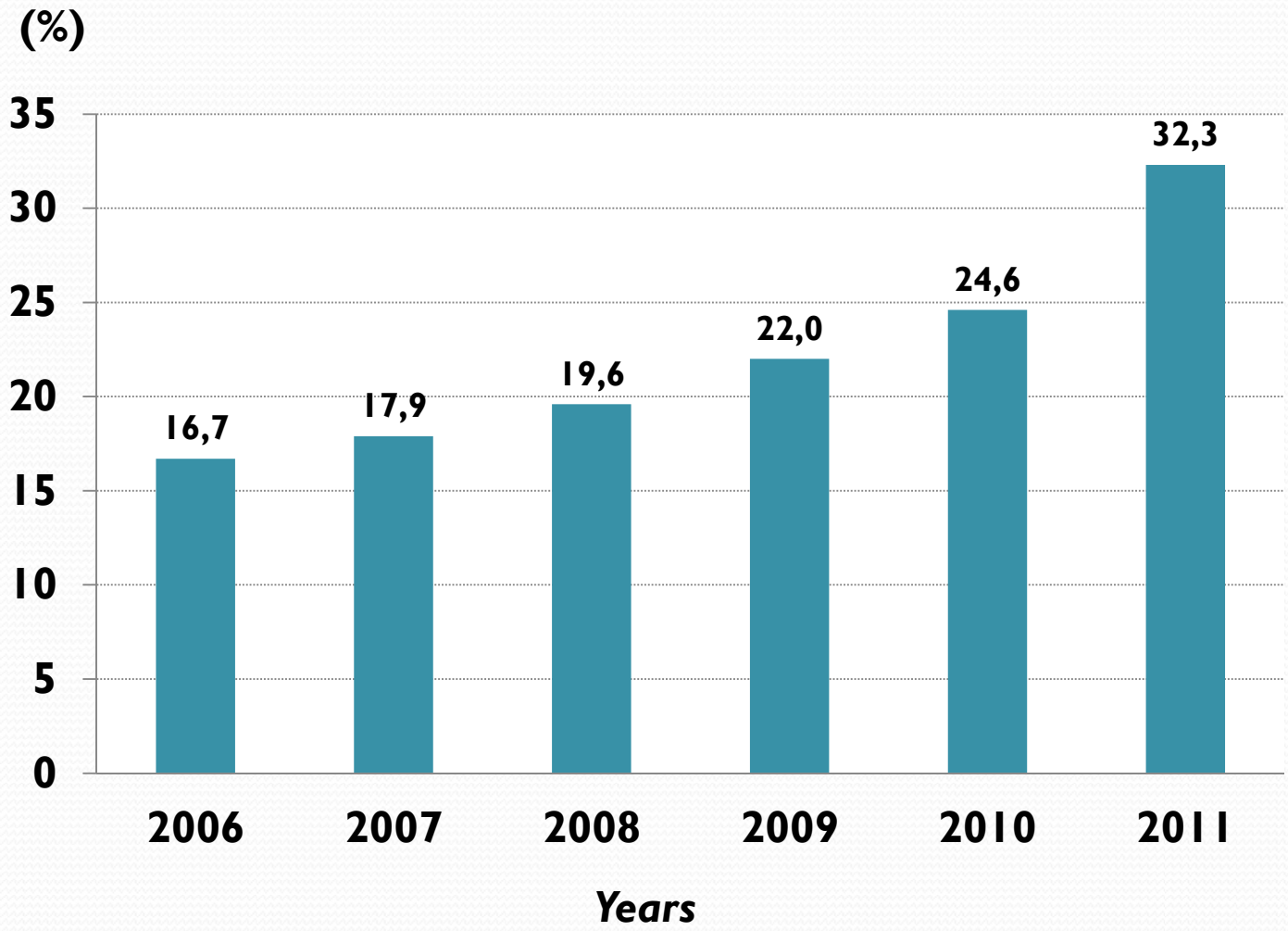


255 TWh (2012 yılı ilk 8 ay)

Electricity Production by years



Share of the Private Sector in Electricity production



LICENSE OPERATIONS OF RENEWABLE ENERGY

	Başvuru		İnceleme & Değerlendirme		Uygun Bulma		Lisans Verilen		İptal Edilen Lisanslar		Sonlandırılan Lisanslar	
	Adet	MW	Adet	MW	Adet	MW	Adet	MW	Adet	MW	Adet	MW
Rüzgar	3	39,60	619	28.530,42	46	1.654,50	101	3.910,20	13	537,81	9	378,90
Jeotermal			3	69,90			12	281,70			1	15,00
Biyogaz							18	103,33	1	15,00		
Biyokütle							2	17,12	1	10,00		
TOPLAM	3	39,60	622	28.600,32	46	1.654,50	133	4.312,35	15	562,81	10	393,90

Targets for Renewable Energies

According to Electrical Energy Market and Supply Security Strategy Document;

The rate of the energy generation from renewable resources will be at least 30% until 2023, for that purpose:

- **Wind** energy installed capacity will be increased to 20.000 MW by 2023,
- Technically and economically evaluated entire **hydroelectric** potential will be used in electricity generation by 2023,
- 600 MW **geothermal** potential which is determined to be suitable for the production of electricity generation will be commisioned by 2023,
- Increase the use of **solar** energy in electricity generation.

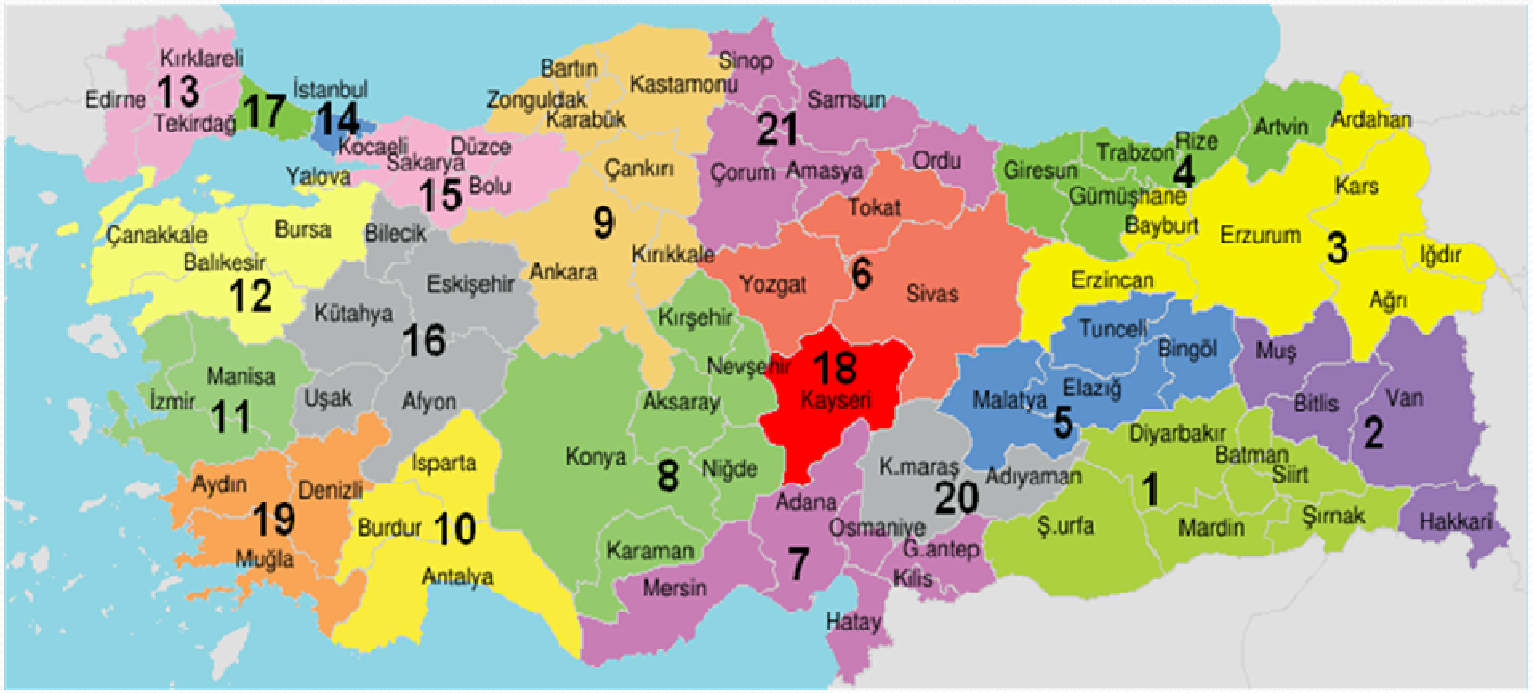
Fixed Price Support for Electricity on US$ / kWh

Resource	*Fixed price*
	(US cent / kWh)
Hydro	*7,3*
Wind	*7,3*
Geothermal	*10,5*
Biogas (Deponie gas included.)	*13,3*
Solar	*13,3*

Rüzgar ve güneş için lisans başvuruları

- ***Başvurular EPDK Kurul Kararı ile belirlenen bir tarihte yapılabilir.***
- ***1 yıllık veri - ölçüm zorunluluğu***
- ***Rüzgar için asgari 1 yıllık yerinde ölçüm zorunluluğu***
- ***Güneş için asgari 6 ay süreli yerinde ölçüm zorunluluğu***

21 Distribution Regions in Turkey.



Kaynak: Elektrik Piyasası Raporu 2011 - EPDK

www.epdk.org.tr

Güneşe dayalı lisans başvuruları

- ***EPDK 10-14 Haziran 2013 tarihlerinde mesai saatlerinde güneşe dayalı lisans başvurularının alınmasına karar vermiştir.***
  - *Tarım arazilerine başvuru kabul edilmeyecektir.*
  - *Tesis yüzey alanı MW başına 2 ha (20.000 m²) ile sınırlanmıştır.*
  - *Yıllık toplam güneş radyasyonu minimum 1620 kWh/m² olmalıdır.*

Regulation on the Unlicensed Electricity Generation

Regulation on the Unlicensed Electricity Generation on the Electricity Market ("Regulation") has entered into force through publication in the Official Gazette dated July 21, 2011 and numbered 28001. The Regulation provides that real and legal persons fulfilling certain minimum legal requirements are exempt from the requirement of obtaining a license and establishing a company in order to generate electricity. With the Regulation, it is possible to establish a generating station or power plant, the installed power capacity of which is limited to a maximum of five hundred kilowatts based on renewable energy[i] sources, and/or cogeneration facilities[ii].

Exemption concerning the license and establishment of a company

Exemption concerning the license and establishment of a company is laid down under Article 4 of the Regulation. Pursuant to the relevant article, persons who can benefit from the exemption concerning the license and establishment of a company are as follows:

- Real and legal persons who will generate electricity in micro cogeneration[iii] facilities, or generation stations with a maximum installed power of five hundred kilowatts based on renewable energy sources,
- Real and legal persons who will establish a cogeneration facility that exceeds the limit laid down under the Regulation on Increase of Productivity on the Utilization of Energy Sources and Energy, in order to meet their own needs.

The limitation on the number of power consumption station for each energy generation stations that can be established within the scope of the Regulation is important. Principally, only one cogeneration facility, micro cogeneration facility or generation facility based on renewable energy sources can be established for each power consumption station. However, in the case the distribution system has sufficient capacity to cope with the uptake, more than one cogeneration or generation facility based on renewable energy sources can be established for each consumption facility. On the other hand, the total installed capacity power of these stations may not exceed 500 kilowatts

The rule that allows the opportunity to establish more than one facility shall not be applicable on micro cogeneration facilities. Only one micro cogeneration station can be established for each power consumption station.

Another paramount issue that should be taken into consideration about the Regulation is that the power generation and consumption stations are required to be located within the same distribution zone. Stations, located outside distribution zones shall not be evaluated within the Regulation.

The Connection principles and connection application

The power generation stations that fall under the scope of the Regulation are connected to the distribution system. The connection application can be made by real or legal persons willing to generate electricity in generation facilities under the Regulation, by filling out the Unlicensed Generation Connection Application Form. The application shall be made directly to the relevant distribution company, or to the legal entity holding Organized Industrial Zone distribution license. The document confirming the grant of utilization right of renewable energy sources must be accompanied with the other application documents.

Assessment of the application

The applications are assessed against the set criteria such as the use of renewable energy sources in the generation stations, the eligibility of the station as a cogeneration station and whether the power station is located within same location with the power consumption station.

Surplus energy

The basic principle required by the Regulation for the real and legal persons who opt to generate unlicensed energy is to generate energy to meet only their own needs. However, if surplus energy is generated, this amount of energy may be consumed in the consumption station located at the same location with the generation station, or in another consumption station belongs to the producer even if it is located outside of the power generating station's zone.

The unconsumed energy in the abovementioned stations is qualified as surplus energy. In the event that the surplus energy is generated from renewable energy sources, it can be purchased by a distribution company holding a retail sale license, on the price determined by the Code on the Utilization of Renewable Energy Sources for the Generation of Electric Energy dated 10/5/2005 and numbered 5346. In the event that the source of the surplus energy is micro cogeneration, it shall be purchased on the average wholesale electricity price applied in Turkey.

Another important issue concerning the surplus energy is that the unlicensed generators are not permitted to sell or supply the electricity generated within the scope of the Regulation by concluding bilateral agreements. Unlicensed generators may only sell the surplus energy to licensed distribution companies. Therefore, discretionary practices of unlicensed generators concerning the sale of energy are prevented.

The system that permits the sale of surplus energy is an advantageous and prosperous system not only for medium and small sized industries, but also for the State. Industries can raise additional income by the sale of the surplus energy they generate, and the State can make saving by purchasing the energy generated from renewable energy sources rather than importing high cost natural gas. As a result of consuming domestic surplus energy the cost-effective reductions may be obtained and contributions may be made to the austerity of the State while utilization of renewable energy sources will be encouraged and promoted.

Conclusion

The Regulation of the Unlicensed Electricity Generation in the Electricity Market was prepared by the Energy Market Regulatory Board in the light of sector consultation. With the Regulation, the possibility of unlicensed electricity generation has been based on a legal framework. As a result, unlicensed electricity generation has been permitted in Turkey, a country that is convenient for electricity generation from the sources such as wind turbines in terms of engineering, machinery, infrastructure and background. In addition, the possibility of sale of the surplus electricity will be certainly beneficial for both the generators and the State.

27-29 June 2013
T.C. Maltepe Municipality
Türkan Saylan Cultural Center
Istanbul- Turkey

100% Renewable Energy is POSSIBLE

EUROSOLAR Turkey, the Turkish Section of European Association for Renewable Energies, in line with the vision of the Association, is organizing every year **IRENEC, International 100% Renewable Energy Conferences**, to set up an international platform to discuss the technical, economic, political aspects of transition to 100% Renewable Energy and build the courses to realize this vision in industry, architecture, transportation, local communities and training.

Following the paths set out in the conclusions of **IRENEC2012**, the global challenge to transform totally the existing energy network for a 100% renewable energy future shall be the main theme of the topics of **IRENEC2013**.

We are looking forward to the pleasure of meeting you at **IRENEC 2013**

Conference Chairman
Prof. Dr. Tanay Sıdkı UYAR
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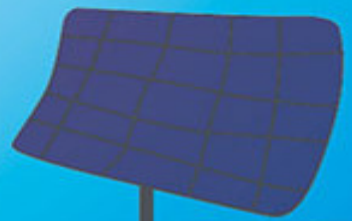
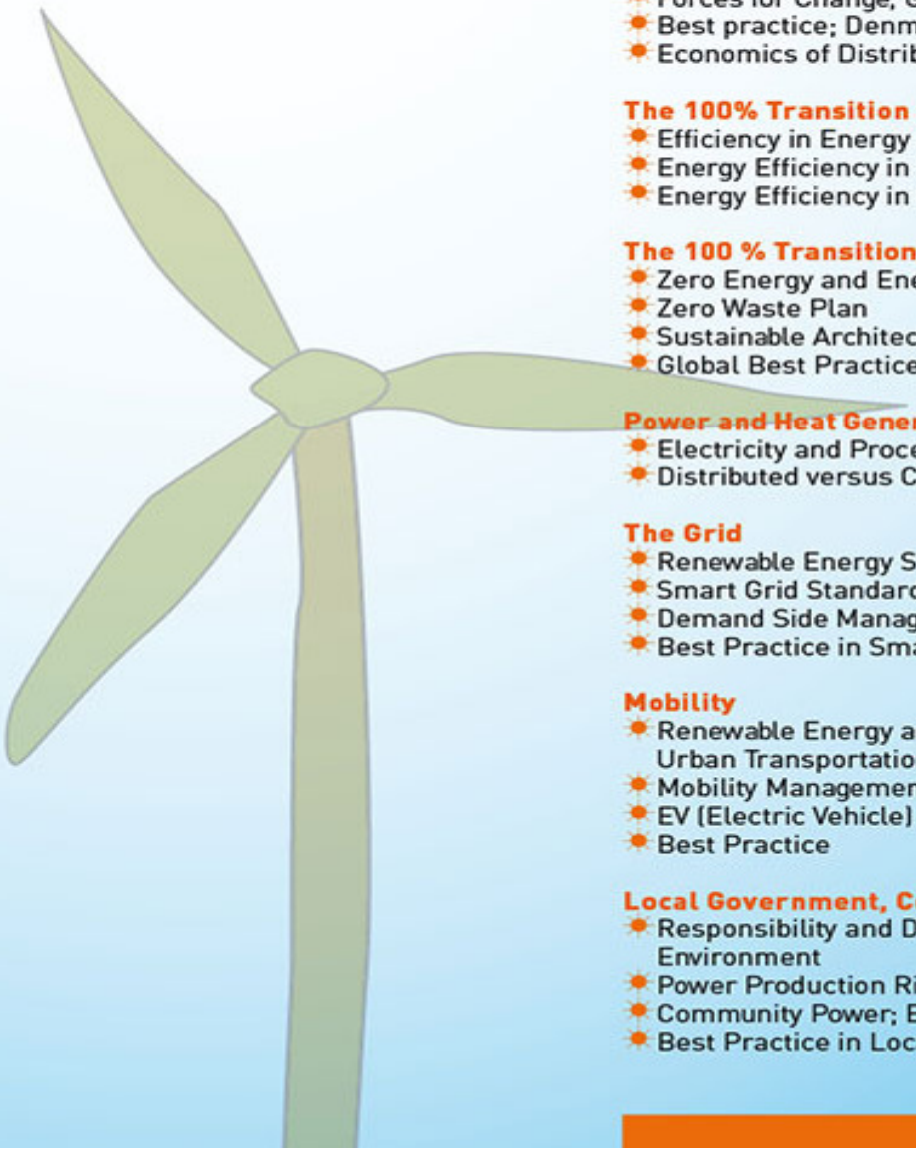


IRENEC

- Privatization of Energy Production and the Role of State on Energy Production Planning
- Energy Policy Acts
- Energy Policies, Decision Support Models
- Internalization of External Costs and Harmful Subsidies
- Renewable Energy Supply and Energy Security
- Climate Change Effects, Carbon Management and Finance
- Global Environmental Change and Ecosystems Management
- Capacity Building and Training for 100% Renewable Energy
- Role of Utilities in the Transition
- Forces for Change, Global Energy Politics
- Best practice; Denmark, Germany, others
- Economics of Distributed Generation



The 100% Transition to Renewable Energy, Energy End Use Efficiency

- Efficiency in Energy Related Processes
- Energy Efficiency in Industry
- Energy Efficiency in the Built Environment

The 100 % Transition, Built Environment

- Zero Energy and Energy Efficient Buildings, Zero Carbon Cities
- Zero Waste Plan
- Sustainable Architecture and Design
- Global Best Practice

Power and Heat Generation from Renewables (Wind, Solar, Geothermal, Biomass)

- Electricity and Process Heat Production from Renewable Resources
- Distributed versus Centralized Generation

The Grid

- Renewable Energy Storage, Grid Connections, Smart Grids and Power Management
- Smart Grid Standardization, Government Policy and Landscape
- Demand Side Management
- Best Practice in Smart Grids

Mobility

- Renewable Energy and Energy End-use Efficiency Approaches in Sustainable Urban Transportation Planning
- Mobility Management, Intelligent Transportation Systems
- EV (Electric Vehicle) or NoV (No Vehicle) ?
- Best Practice

Local Government, Community Power

- Responsibility and Delegated Power of Local Authorities in Protecting the Environment
- Power Production Right of Local Authorities and Private Enterprises
- Community Power; Energy Sector Game Changer?
- Best Practice in Local Ownership of Renewable Generation

Paper Submission

Keynote Addresses

Dr. Bülent Başol; *Encore, USA*
"Past Present and Future of Thin Film PV Technologies"

Prof. Dr. Peter Droege; *Program Director, Inst. Architecture and Planning, University Liechtenstein, EUROSOLAR President, Liechtenstein*
"RED Alert! 100% Renewable is Long Overdue"

Colin Harvey; *Vice President, IGA International Geothermal Association, New Zeland*
"Update of World Geothermal Development"

Prof. Dr. Friedrich Klinger; *Saarland University of Applied Sciences, Saarbrucken, Germany*
"Wind Energy Technology in Europe - onshore & offshore"

Dr. Heinz Kopetz; *President, WBA World Bioenergy Energy Association, Austria*
"Towards 100% RE, the Role of Biomass Energy"

Dr. Harry Lehmann; *General Director, Federal Environmental Agency, Germany.*
"Archetypes of 100% Renewable Energies Scenarios by 2050"

Preben Maegard; *Vice President of EUROSOLAR European Association for Renewable Energy, Denmark*
"The Challenge of 100% Supply with Renewable Energy: Case Stories from Denmark"

IRENEC

Public policy for energy efficiency and renewables development in Turkey

Chair: **Yusuf Yazar**
REDM General Manager

- Renewable energy; present situation and targets
- Renewable energy legislation
- The activities of Renewable Energy Directorate of the Ministry
- Energy Efficiency Legislation
- EE Strategy White paper

Status of and prospects for PV research, development and manufacturing in Turkey.

Chair: **Bülent Başol**
Encore Solar, USA

- Present R&D and manufacturing activities in the field of PV in Turkey
- R&D, manufacturing, supply chain and local added value potentials for c-Si technologies in Turkey
- R&D, manufacturing, supply chain and local added value potentials for thin film technologies in Turkey
- Potential activities on 3 rd generation PV technologies

Wind Energy in Turkey: Investors' Perspective

Chair: **Erol Demirer**
Demirer Holding

- Factors influencing the investment process.
- Development of the market.
- Tasks to achieve 2023 targets.

Renewable Energy Potential in Turkey and the Barriers Preventing this Potential to be transferred to Investments.

Chair: **Yetik Kadri Mert**
Enerjisa Enerji A.Ş.

Economic values of ecosystem services and energy investments

Chair: **Ece Özdemiroğlu**
EFTEC, UK

RES cooperation between countries, and in particular related to the EU and Turkey.

Chair: **Dr. Gustav Resch**
Vienna University of Technology, Austria

Non-Licensed Electricity Production; Problems and Solutions

Chair: **Ceyhan Saldanlı**
Bereket Enerji

- Problems and Solutions in the Installation of Generation Systems
- The influence of non-licensed electricity production on the distribution grid
- Support mechanisms and finance in non-licensed electricity production

Alternative Ownership in Energy Production and The Energy Cooperatives Movement

Co-Chairs: **Dr. Baha Kuban**
Mümtaz Derya Tarhan

- Energy Cooperatives From Across the World
- Collective Ownership of the Means of Power Production
- Local government as a provider of local renewable energy

Solar Energy ; The Infinite Source

Chair: **Mehmet Ali Neyzi**
S.T.F.A

- Solar Potential in Turkey
- The European Solar Experience; best-practice and mid-term perspectives
- Asia and the mid-term prospects for solar energy
- Solar power from the investor point-of-view