

EPPAM NEWSLETTER

Istanbul Aydin University

EPPAM

Year 2, Issue 8, August 2017

CONSULTATION MEETING ABOUT NATIONAL ENERGY AND MINING POLICY TURKISH MINISTRY OF ENERGY AND NATURAL RESOURCES

Turkish Ministry of Energy and Natural Resources held the Consultation Meeting on "National Energy and Mining Policy" on 28 July 2017 in Istanbul. Assist. Prof. Dr. Filiz Katman attended the meeting

with the invitation by Energy and Natural Resources Minister Berat Albayrak. She gave some information about the policies and the events that are evaluated by EPPAM.

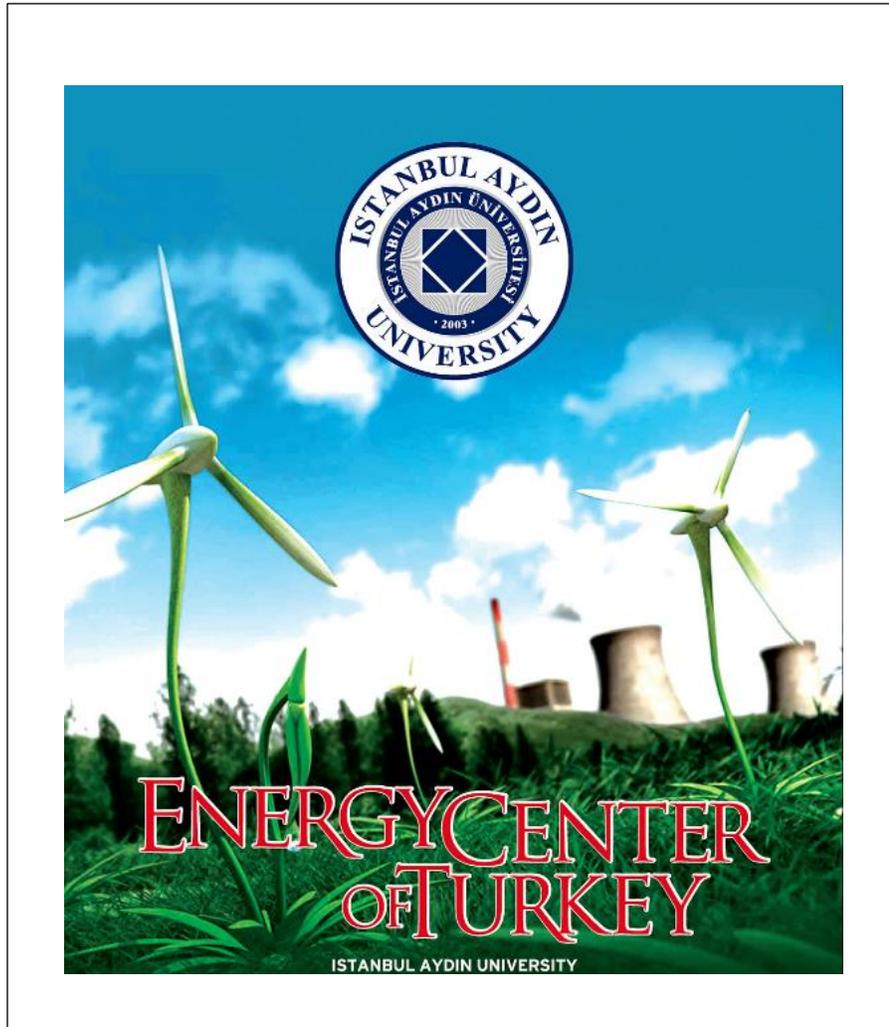
Contents

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Consultation Meeting	1
Foreign Energy Investments Workshop	2
Meeting with Advisory Board Members	3
<i>Op-Ed: Renewable Energy</i>	4

FOREIGN ENERGY INVESTMENTS WORKSHOP

Foreign Economic Relations Board (DEİK) plans a meeting on energy investments abroad and the proposals, problems and solutions of the Energy Business Council with the Ministry of Energy and Natural Resources, the Ministry of Foreign Affairs, the Ministry of Economy and the related institutions in partnership with EPPAM contributions. It aims to contribute to the process of negotiation with foreign relations and European Union's contributions with the Ministry of Energy and Natural Resources, General Directorate of Environment and Water Affairs at the Ministry of Foreign Affairs.



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PANEL



7 Nisan 2010

TÜRKİYE PETROL PİYASALARI: 'Dünü, Bugünü'



Moderatör:
 Prof. Dr. Hasan SAYGIN / İstanbul Aydın Üniversitesi Rektör Yardımcısı
Paneller:
 Mehmet İMİŞ / Enerji Piyasası Düzenleme Kurumu - EPDK Denetim Dairesi Başkanı
 Dr. Erol METİN / Petrol Sanayi Derneği - PETDER Genel Sekreteri
 Prof. Dr. Yılmaz I. ASLAN / İstanbul Aydın Üniversitesi Hukuk Fakültesi Öğretim Üyesi
 Serhakan PIYADE / ODTÜ Mecuslar Derneği Enerji Komisyonu Üyesi, Hukukçu

İSTANBUL AYDIN ÜNİVERSİTESİ
 HUKUK FAKÜLTESİ



7 Nisan 2010, Perşembe 14.00 İstanbul Aydın Üniversitesi Florya Yerleşkesi A Blok Konferans Salonu



İSTANBUL AYDIN ÜNİVERSİTESİ

KÜRESEL İKLİM DEĞİŞİKLİĞİ, ÇEVRE VE ENERJİ I. ULUSLARARASI SEMPOZYUMU

KÜRESEL İSTİKRARA YÖNELİK KÜRESEL TEHDİTLER VE FIRSATLAR
GLOBAL CLIMATE CHANGE, ENVIRONMENT AND ENERGY I. INTERNATIONAL SYMPOSIUM
GLOBAL CHALLENGES & OPPORTUNITIES TO GLOBAL STABILITY

İklim Değişiyor Yerküre akıp gidiyor...

25 Nisan 2011
25 April 2011

Florya Yerleşkesi,
A Blok Konferans Salonu







İSTANBUL AYDIN ÜNİVERSİTESİ



İklim Değişiyor yerküre akıp gidiyor...
"aydınlık bir yarın için bugün harekete geçiyoruz"

KÜRESEL İKLİM DEĞİŞİKLİĞİ, ÇEVRE ve ENERJİ I. ULUSLARARASI SEMPOZYUMU

KÜRESEL İSTİKRARA YÖNELİK KÜRESEL TEHDİTLER & FIRSATLAR
GLOBAL CLIMATE CHANGE, ENVIRONMENT AND ENERGY
I. INTERNATIONAL SYMPOSIUM
GLOBAL CHALLENGES & OPPORTUNITIES TO GLOBAL STABILITY

25 Nisan 2011

İSTANBUL AYDIN ÜNİVERSİTESİ 09.00-18.00
 Florya Yerleşkesi A Blok Konferans Salonu
 Organize Edilen: Hasan Çelik Akçıl
 Kurul Başkanı: Mustafa İNANIR
 0212 488 41 41 - 1978



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MEETING WITH ADVISORY BOARD MEMBERS

EPPAM gathered with the members of the Advisory Board for the evaluation of the year 2016-2017 and the discussion of the activities for the period 2017-2018.



OP-ED: TURKEY CAN RENEW THE ENERGY WITH RENEWABLE ENERGY

*Assist. Prof. Dr. Filiz Katman,
Manager, EPPAM*

Renewable energy sources can mean non-fossil energy sources (wind, solar, geothermal, wave, tidal basin, hydropower, biomass, biogas, sewage treatment plants, gas and biogas) according to Article 2 of EU-Directive 2001. The different renewable energy sectors are photovoltaic, bioenergy, biogas, biofuels, solar thermal power, small hydro, wind energy, geothermal energy, solar heating, and ocean energy.

*IMPORTANCE OF
RENEWABLE ENERGY
RESOURCES*

Because of;

- ⊙ The protection of limited fossil fuel reserves,
- ⊙ Reduction of fossil fuel supply disruption and associated price instability risks,
- ⊙ Contributing to energy supply security and national qualification,
- ⊙ Contributing to resource diversification,

- ⊙ Long-term earnings
- ⊙ Low operating and maintenance costs,
- ⊙ No generating greenhouse gas emissions,
- ⊙ Contributing to employment, social and economic development,
- ⊙ Contributing to sustainable development,
- ⊙ Reducing external dependence,
- ⊙ No fuel expense
- ⊙ Cheap energy after depreciation,
- ⊙ No environmental damage,
- ⊙ Presenting new business opportunities to agriculture and manufacturing industry,

Interest in the use of Renewable Energy Resources (RPL) is increasing day by day.

According to the International Energy Outlook 2010 Reference scenario, world energy demand will increase by 49% from 2007 to 2035. World energy usage is

estimated at 495 quadrillion BTU (British Thermal Units) in 2007, 590 quadrillion BTU in 2020 and 738 quadrillion BTU in 2035.

It is estimated that worldwide fossil fuels will continue to provide the majority of the energy used. Liquid fuels are the largest source of energy in world market energy consumption, but the ratio of 35% in 2007 decrease to 30% in 2035. World electricity production is increasing by 87%, to 18.8 trillion in 2007, 25 trillion in 2020 and 35.2 trillion kilowatt hours in 2035. It reaches 23% in 2035 from 18% in 2007, an average increase of 3% per year in production from renewable sources. Coal is second with 2.3% increase per year.

*RENEWABLE ENERGY
PRODUCTION IN THE
WORLD*

Renewable sources are expected to provide electricity from water and wind power most 2.4 trillion kilowatt hours in 4.5 trillion kilowatt hours (54%) gained by hydroelectricity, 1.2 trillion

kilowatt hours (26%) are gained by wind.

EFFECTS OF CLIMATE CHANGE

In the world, energy-related carbon dioxide emissions will reach 33.8 billion metric tons in 2020 and 42.4 billion metric tons in 2035 from 29.7 billion metric tons in 2007. Due to the strong economic growth in the non-OECD economies and the use of large amounts of fossil fuels in the current policies, it is expected that most of this increase in CO₂ will occur in these countries. In 2007, when the emissions in non-OECD countries increased by 17%, it is estimated that this ratio will reach twice the emissions in OECD countries in 2035.

SHARE OF ENERGY RESOURCES IN ELECTRICITY PRODUCTION IN TURKEY

While electricity consumption of 257.2 billion kWh will be consumed in 2014, it will increase by 2.7% in 2015 to 264.1 billion kWh; while electricity production was 252 billion kWh in 2014, while it increased by 3.1 percent in 2015 to 259.7 billion kWh.

In 2015, 37.8% of electricity production is from natural gas, 28.4% from coal, 25.8% from hydraulic, 4.4% from wind, 1.3% from geothermal and 2.2% is provided by other sources. In 2020, it is projected to reach 392 TWh with an increase of 6.9% year on year in the high scenario and 357.4 TWh with an average annual increase of 5.5% according to the baseline scenario.

Significant step was also recorded in investments in the energy sector, adding a new power plant of 4288 MW and reaching 73147 MW in 2015. Distribution of the installed power to resources consists of 35.4% hydraulic, 29% natural gas, 20.6% coal, 6.2% wind, 0.9% geothermal and 8% other sources according to the Ministry of Energy and Natural Sources

Regarding the energy market, Energy Exchange Istanbul (EXIST) was officially established on March 12, 2015 with the provisions of Electricity Market Law No. 6446 and Turkish Commercial Code No. 6102 dated 14.02.2013 and owned by the

companies in the energy sector for the transparent market.

RENEWABLE ENERGY IN TURKEY

Wind Energy Potential

It is accepted that wind farms can be installed in Turkey with a power of 5 MW per square kilometer at 50 m above ground level and at wind speeds above 7.5 m / s. accordingly, the Wind Potential Capacity is estimated at 48,000 MW. The total area corresponding to this potential corresponds to 1.30% of Turkey's face. At the end of 2015, annual wind energy production in Turkey is 11,552 GWh. The installed capacity of wind power plants operating in 2015 is 4.503 MW.

Solar Energy Potential

Average of Global Solar Radiation:

1.500 kWh/m²-year,

Total Installed Power: 300 MW (March 2016)

Estimated Installed Capacity: 1.000 MW (End of 2016),
Estimated Installed Capacity: 2,000 MW (End of 2017)

Total installed solar collector area is calculated as approximately 18.640.000 m² in 2012. Approximately 768,000 TEP (Ton Equivalent Petroleum) heat energy was produced by solar collectors in 2012. By the end of 2015, when the number of solar power plants reach 362, while the total installed power of these plants are 248,8 MW with the establishment of unlicensed power generation plants.

TURKEY ENERGY STRATEGIC ACTION PLAN

- The target is to meet 30% of your electricity needs from renewable sources until 2030.
- According to Turkey's strategic energy plan, it is hoped that the remaining 60% of the energy needs of hydro-carbon sources will be met through diversification of existing transit routes and resource countries.

LEGISLATION IN TURKEY

The following information on the transition process to the renewable resources in the Turkish National Action Plan: As regards the reduction of the negative environmental effects

of industrial activities, Turkey became a party to the United Nations Framework Convention on Climate Change and signed the Kyoto Protocol on 28 May 2009. In addition, since 2010, Turkey has implemented a series of measures against adverse environmental impacts. Among these are the following: The usage of renewable energy sources, the efficient use of energy and the promotion of clean coal technologies, reduction of greenhouse gas emissions, utilization of biomass / biogas potential (especially in water, wastewater and solid waste infrastructure), increasing the effectiveness of controls and inspections to comply with sustainable mining and sustainable environmental principles in mining activities, and training and awareness-raising activities on climate change and environmentally friendly energy technologies.

The government issued important documents on the energy strategy:

- The first, entitled "Electricity Market and Supply Security Strategy", updates the 2004 strategy.

- The Strategy Document states that by 2023 Turkey will have a 30% share of renewable resources in electricity generation.

- "Strategic Plan of the Ministry of Energy and Natural Resources" covers the period 2015-2019 and explains the objectives of the Strategy Paper.

- Turkey enacted the first renewable energy law in 2005 under the heading "Use of Renewable Energy Resources with the Purpose of Electricity Generation" (Law No. 5346 of 18 May 2005).

- There are also provisions relating to the renewable energy in the Electricity Market Act.

- If there is no change in the design of the law, the Ministry of Energy will charge 6,5 Euro / cents for 1 kilowatt of wind energy (KWh), 13 Euro / cents for 1 kWh of solar energy, 8 Euro / cents for geothermal energy, cents, and biomass (including garbage gas) will yield 14 Euro / cents.

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PROF. DR. KURT DEKETE LAERE, AB YENİLENEBİLİR ENERJİ POLİTİKASI VE HUKUKUNA BAKIŞ, Çevre

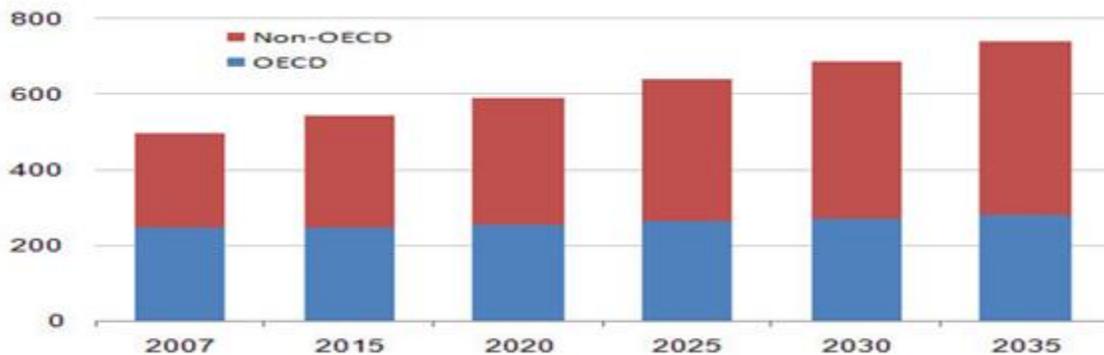
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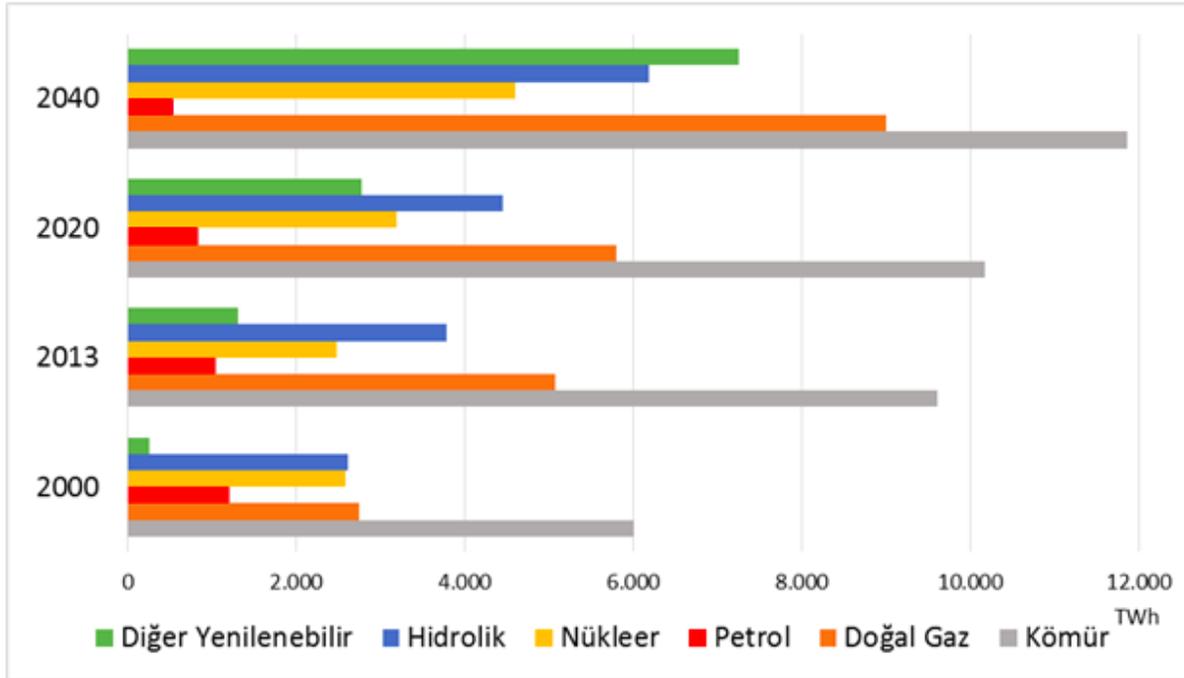
T.C. Enerji ve Tabii Kaynaklar Bakanlığı, <http://www.enerji.gov.tr/tr-TR/Sayfalar/Elektrik>

Figure 1. 2010 Reference Scenario, World Energy Demand



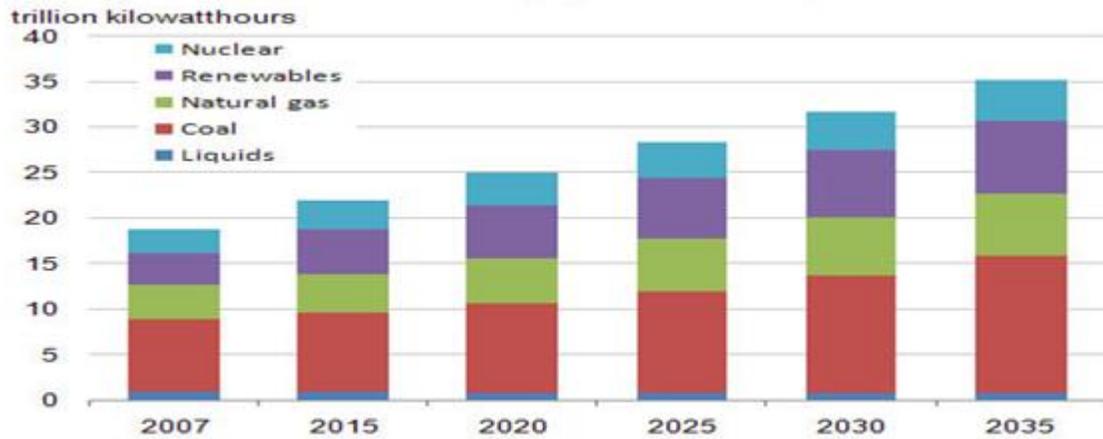
Source: www.eia.doe.gov/oiaf/ieo/highlights.html

Figure 2. Shares of Energy Sources in the World Electricity Production (2000-2040)



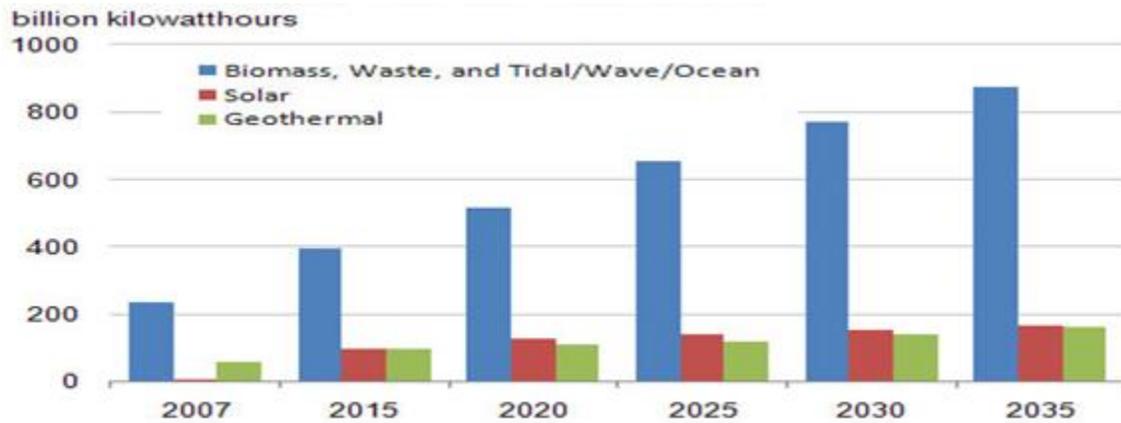
Source: IEA, Dünya Enerji Görünümü 2015

Şekil 3. Shares of Energy Sources in the World Electricity Production (2000-2040)



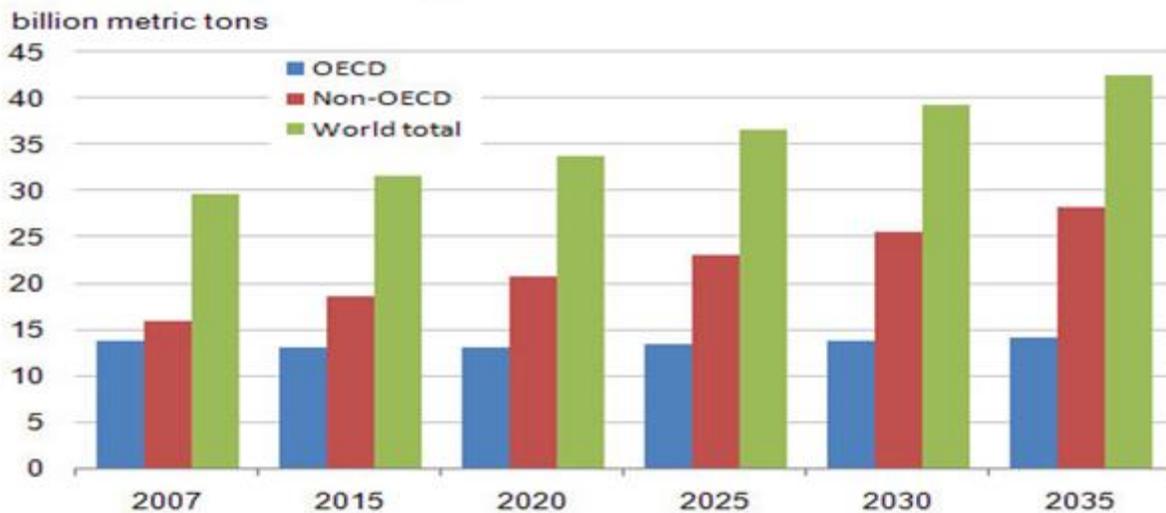
Source: www.eia.doe.gov/oiaf/ieo/highlights.html

Figure 4. Shares of Renewable Sources in the World Electricity Production (except wind and hydro) (2000-2040)



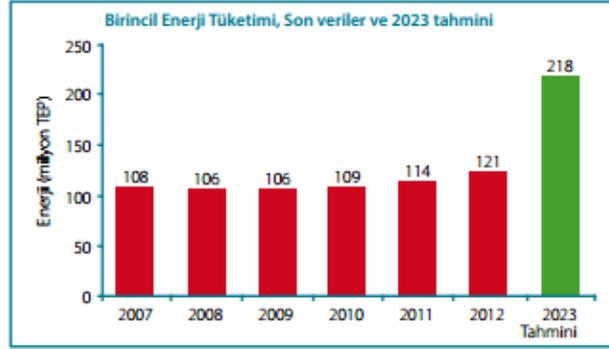
Source: www.eia.doe.gov/oiaf/ieo/highlights.html

Figure 5. Shares of Renewable Sources in the World Electricity Production (except wind and hydro) (2000-2040)

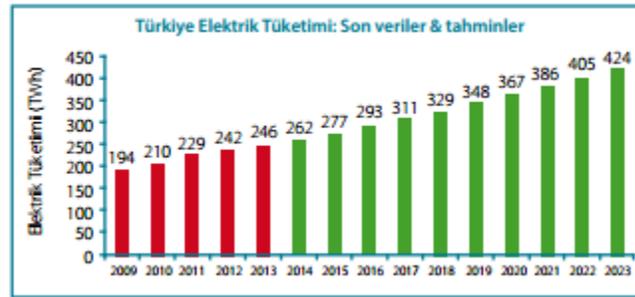


Source: www.eia.doe.gov/oiaf/ieo/highlights.html

Şekil 1: Türkiye'de Birincil Enerji Tüketimi, son veriler ve 2023 tahmini
Kaynak: Enerji ve Tabii Kaynaklar Bakanlığı



Şekil 2: Türkiye'de elektrik tüketimi: son veriler ve tahminler
Kaynak: TEİAŞ

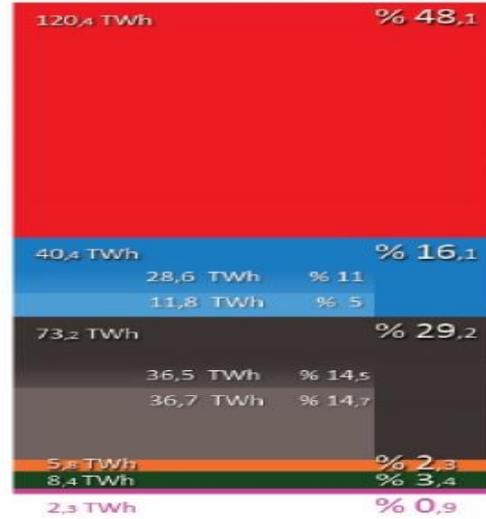


Elektrik Kurulu Güç ve Üretimlerinin Kaynaklara Göre Dağılımı 2014

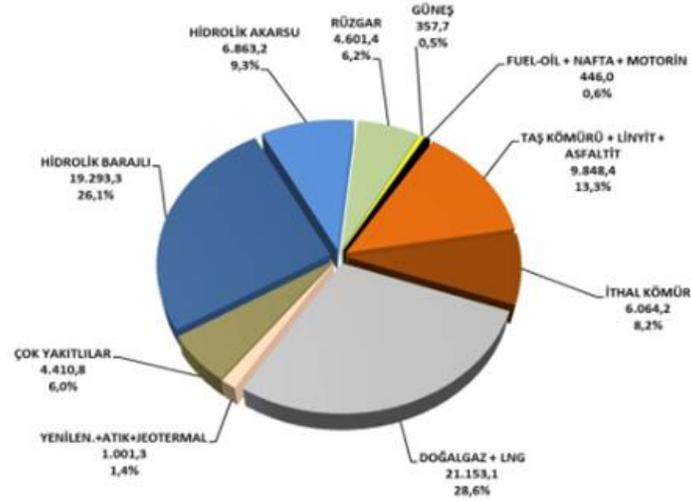
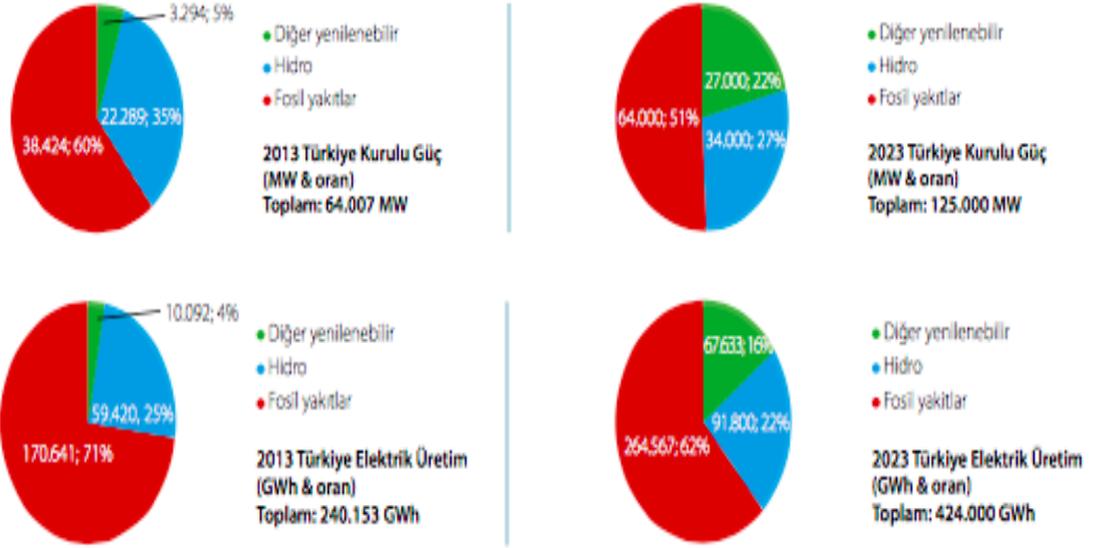
Kurulu Güç Dağılımı



Elektrik Üretimi Dağılımı

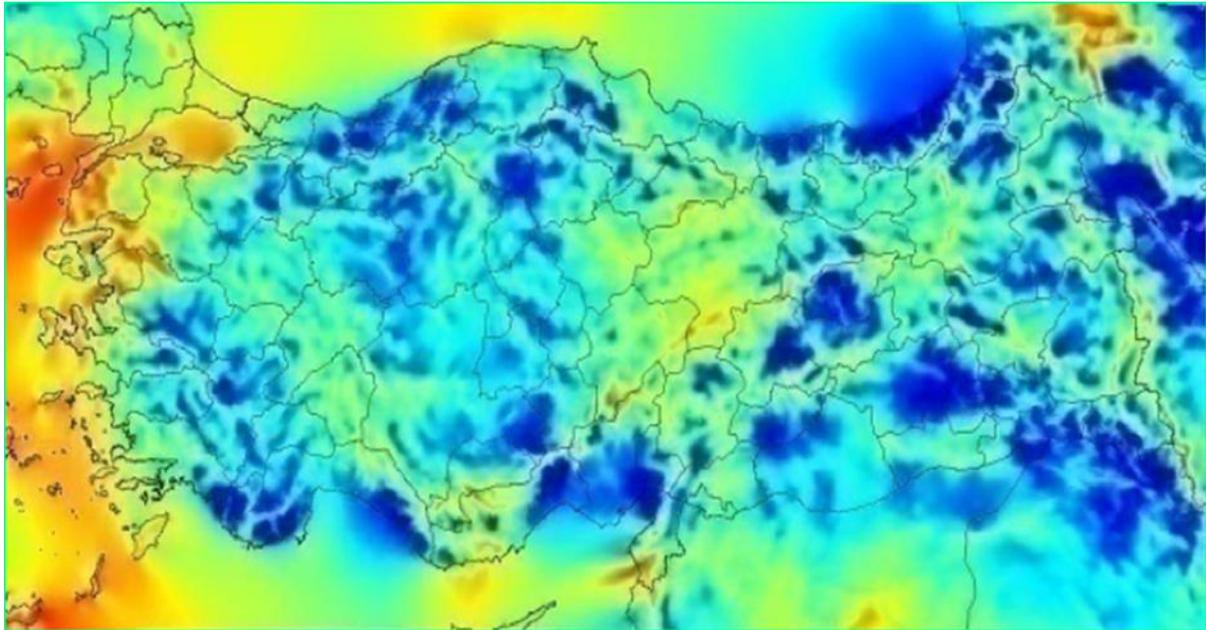


Kaynak: ETKİB, TEİAŞ, Bakanlar Yayımları

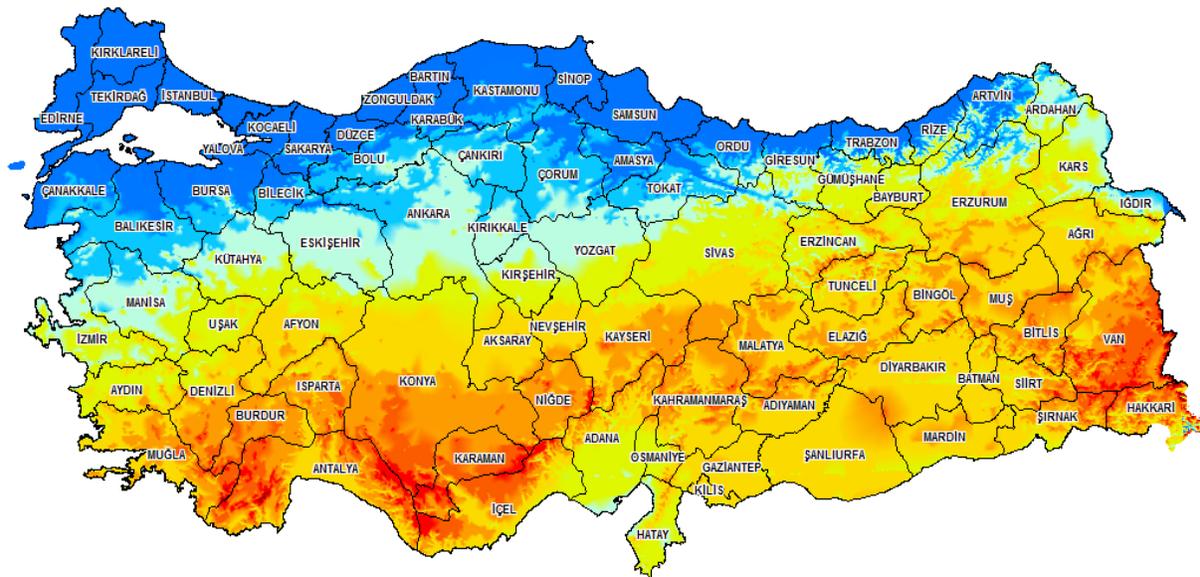


Source: Ministry of Energy and Natural Resources

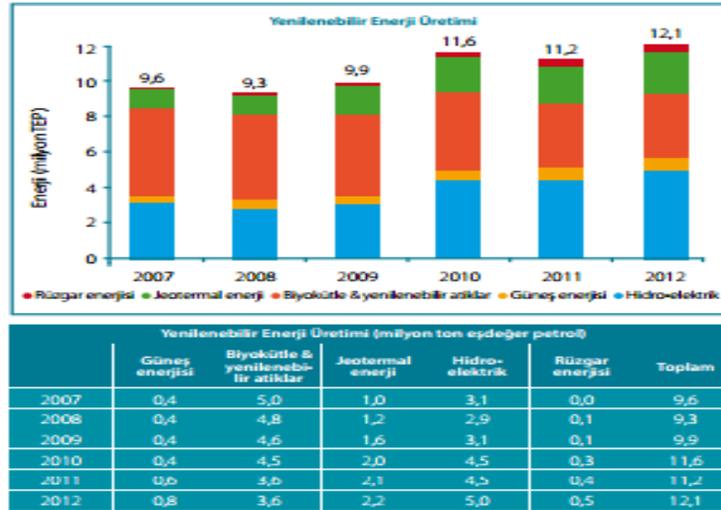
Wind Energy Potential



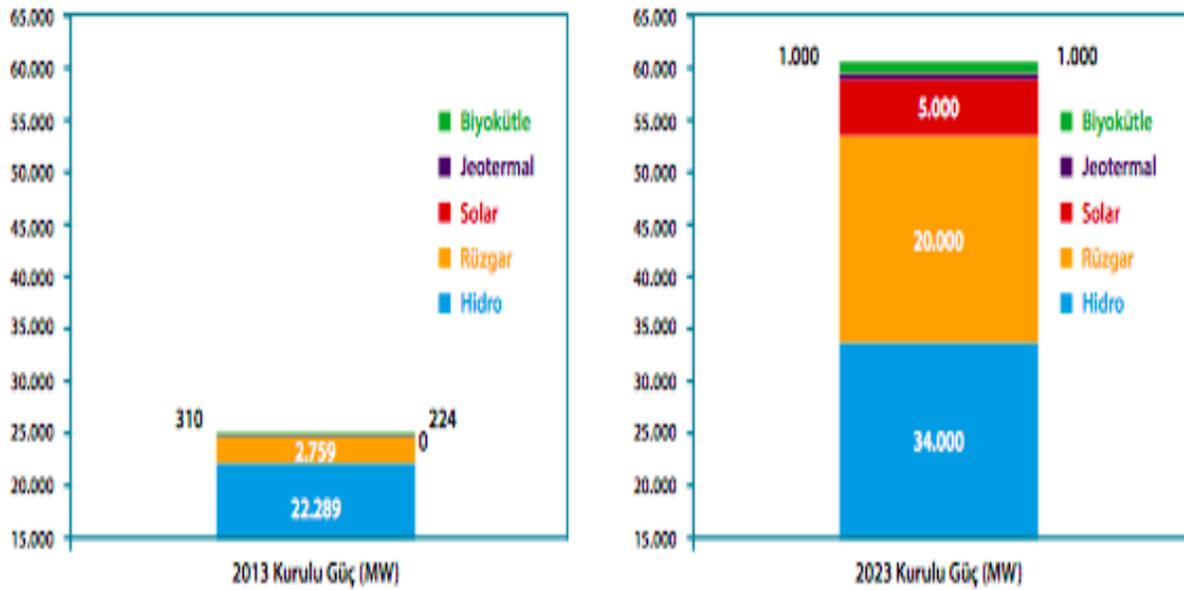
Solar Energy Potential



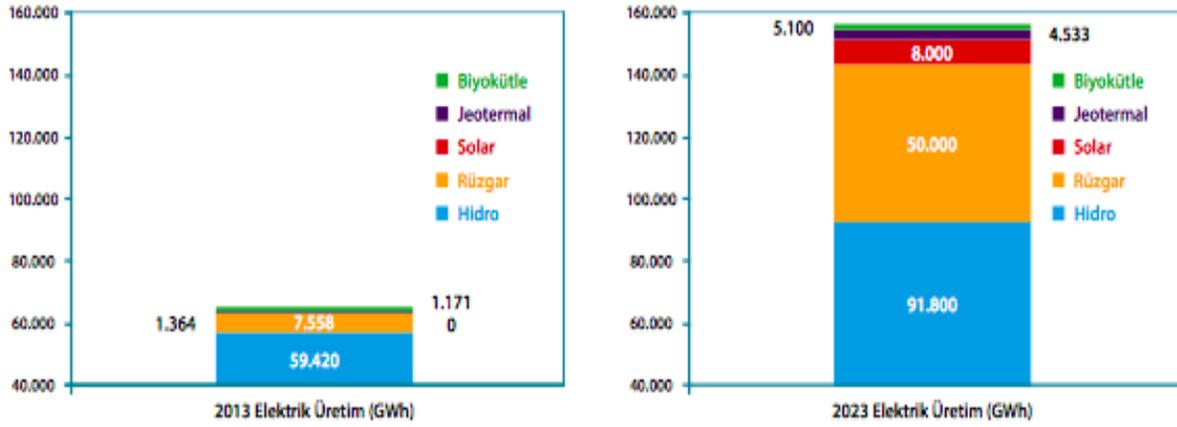
Şekil 4: Yenilenebilir enerji üretimi
Kaynak: Eurostat



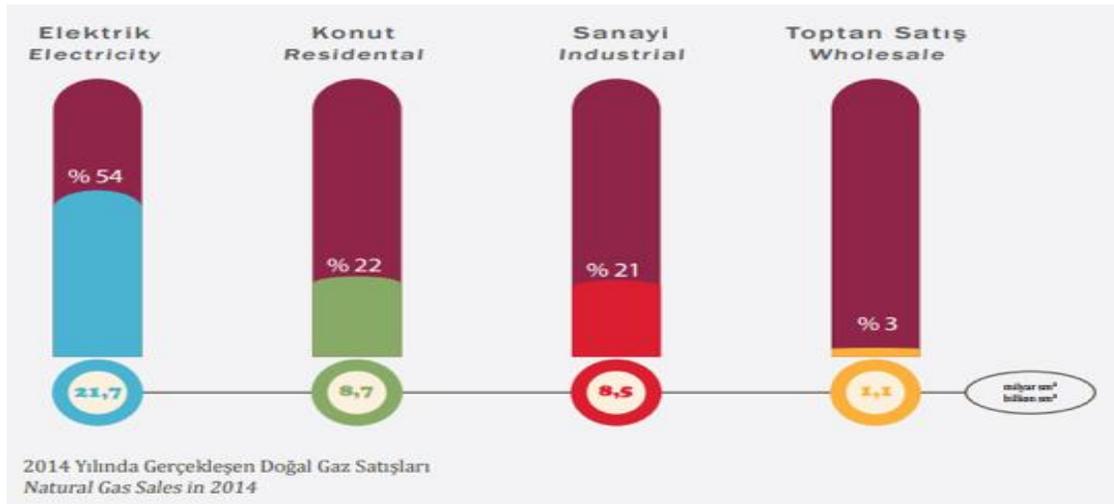
Established power capacity from renewable sources and 2023 targets



Established electricity capacity from renewable sources and 2023 targets



Electricity Energy Production in Turkey, Capacity Factors, External Dependency and Energy Security

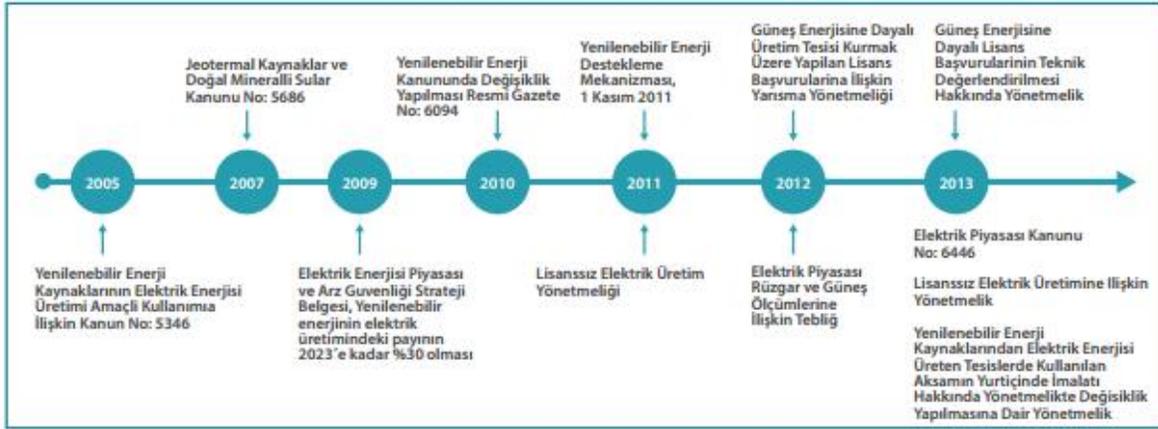


ANLAŞMALARLA GAZ NEREDEN GELİYOR? (milyar m³)

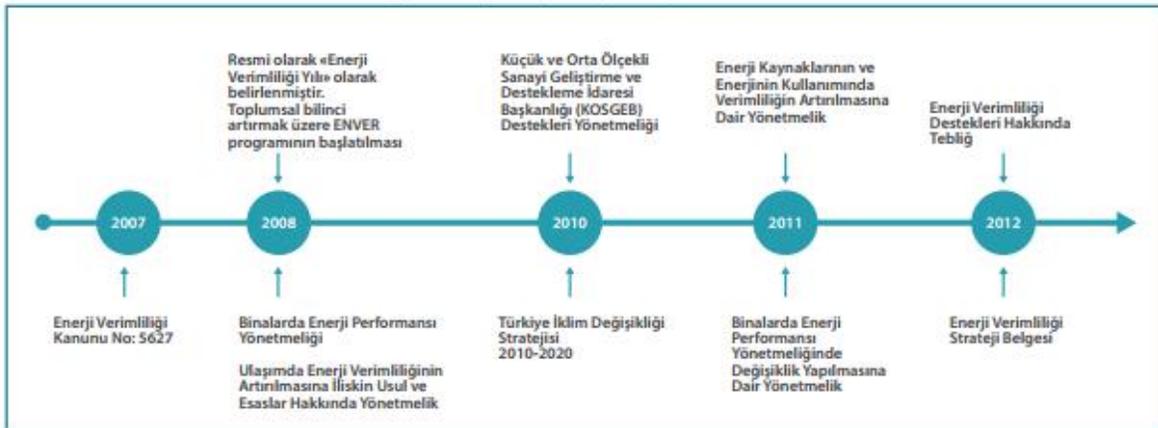
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- Karadeniz (1997)	16.0	
- Batı-Edirne (1998)	4.0	
AZERBAYCAN	6.7	6.0
- I. faz (2001)	6.6	
- II. faz (2011)	0.1	
İRAN (1996)	9.6	8.9
TOPLAM	36.3	41.9

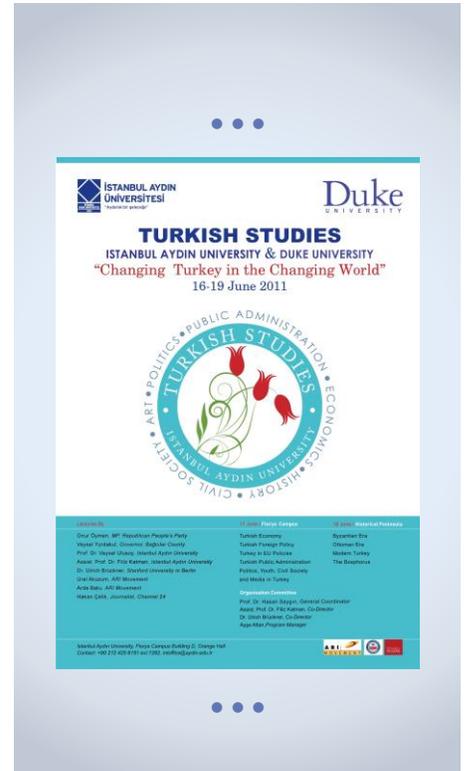
Kaynak: Botaş, EPDK

Şekil 5a: Türkiye'de yenilenebilir enerji düzenlemelerinin ve politikalarının gelişimi



Şekil 5b: Türkiye'de başlıca enerji verimliliği düzenlemeleri





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