

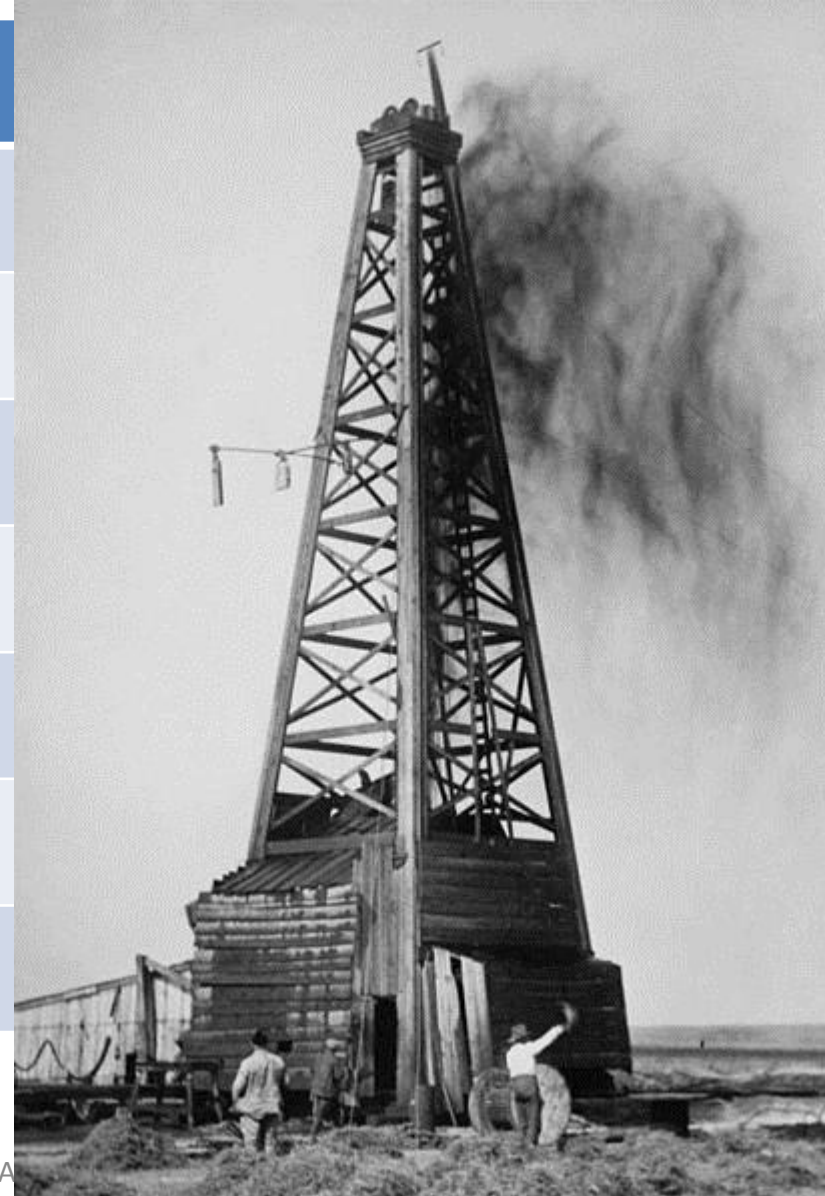
## 2. PETROL (toprak, kaya yađı)



# Petrolün bileşimi

## Composition by weight

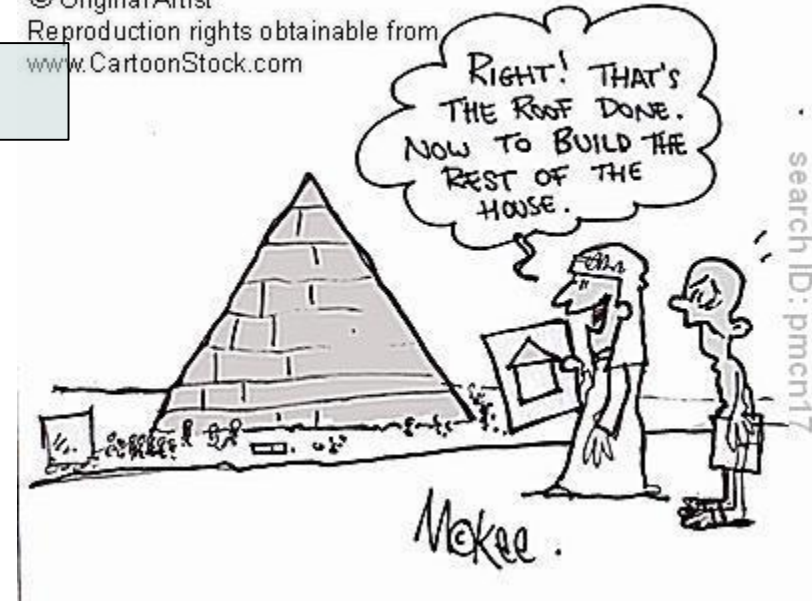
Element	Percent range
Carbon	83 to 87%
Hydrogen	10 to 14%
Nitrogen	0.1 to 2%
Oxygen	0.1 to 1.5%
Sulfur	0.5 to .6%
Metals	< 0.1%

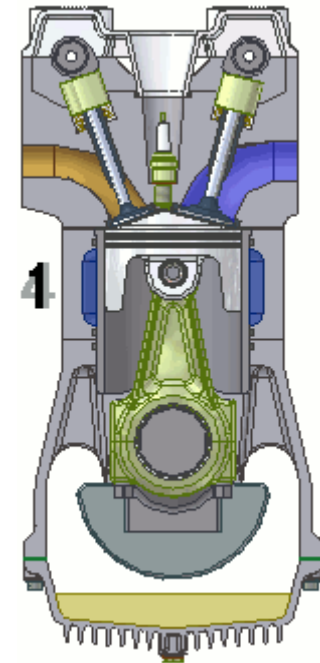


# Petrolün üretimi ve kullanılması

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www.CartoonStock.com

- İnşaat harcı
- Gemi kalafatlama
- Yağlama
- İlaç
- Ortopedik tedavi gereci
- Gaz yağı
- Petrol endüstrisinin kurulması 1856 Pennsylvania

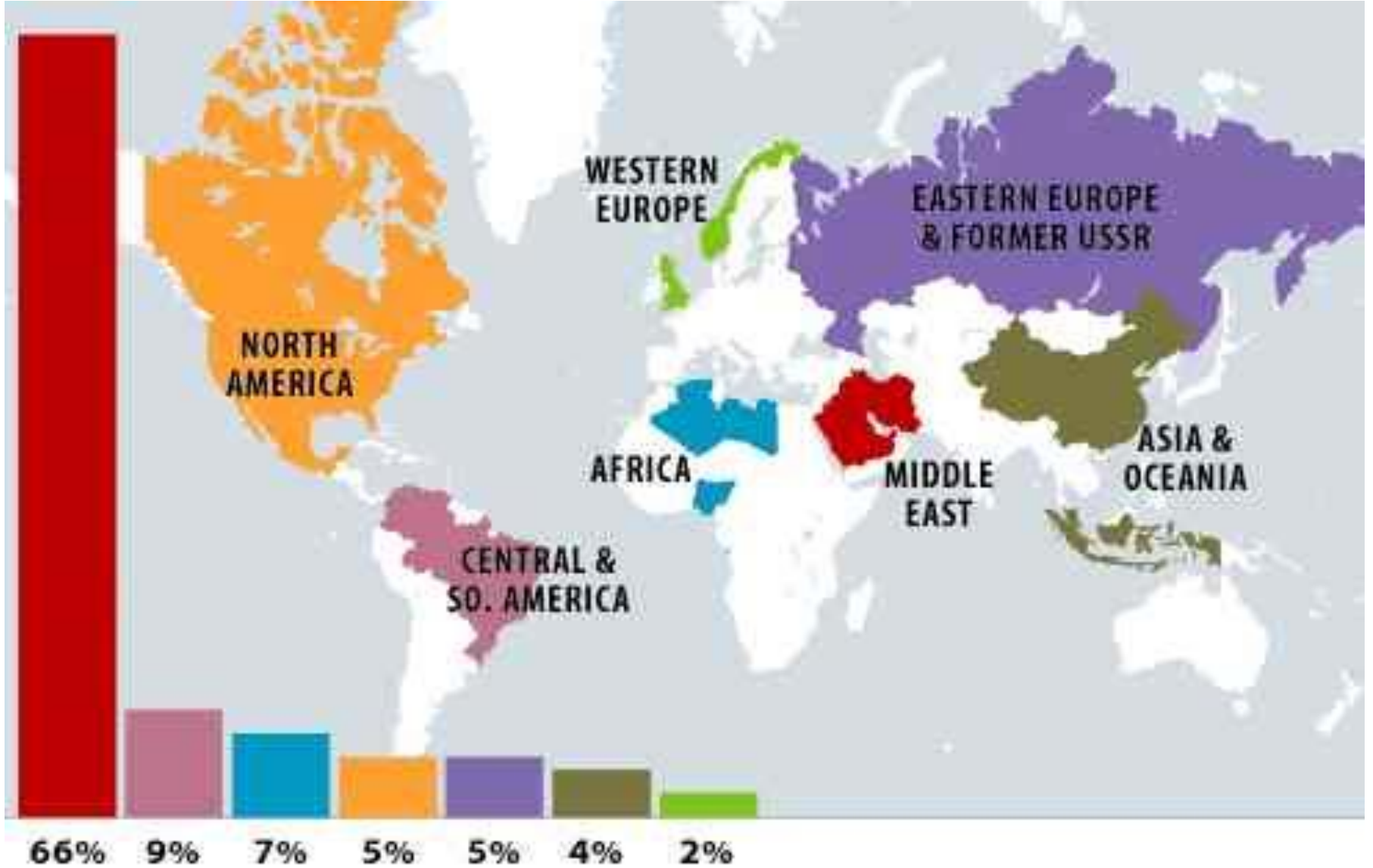




20.05.2016

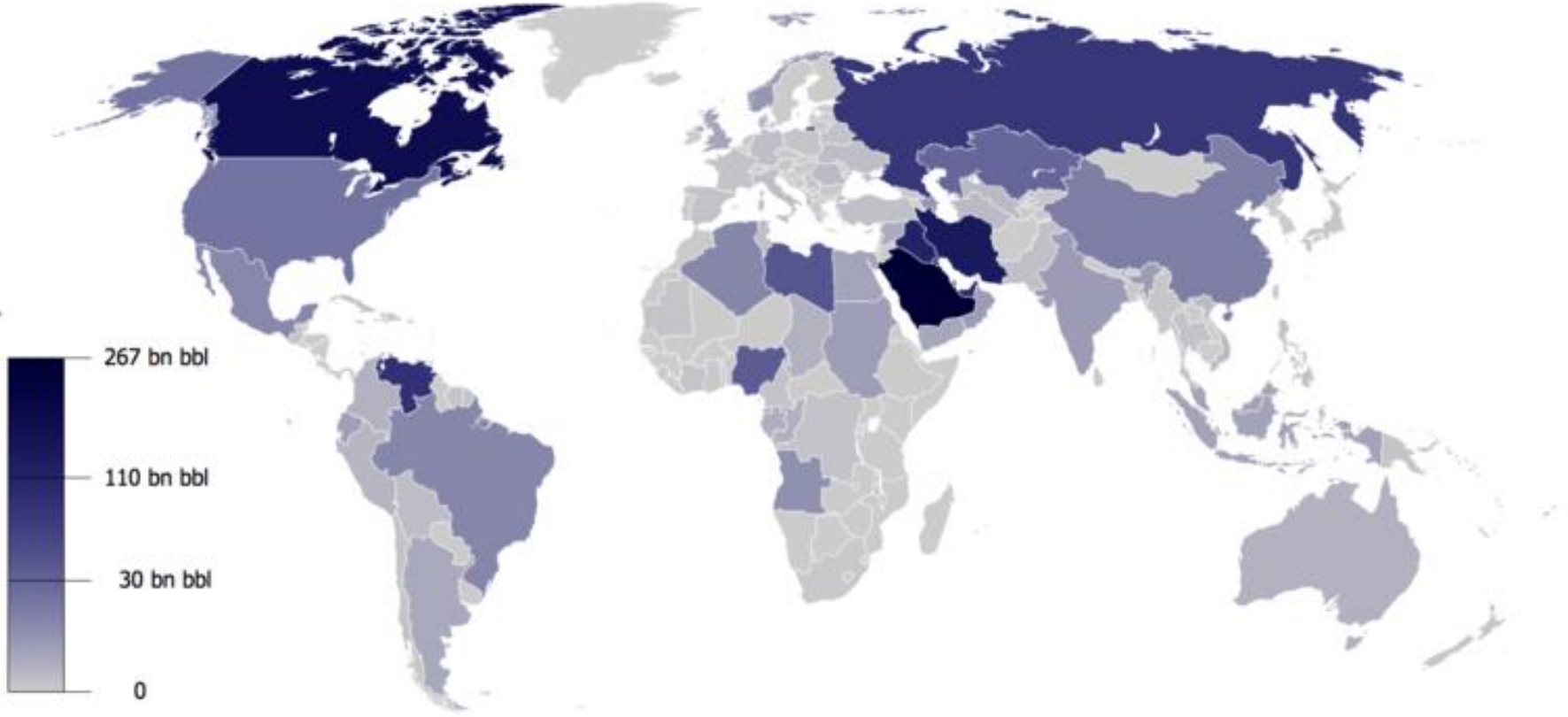
Arş. Gör. Onur ÇALIŞKAN

# Dünya Petrol Yatakları

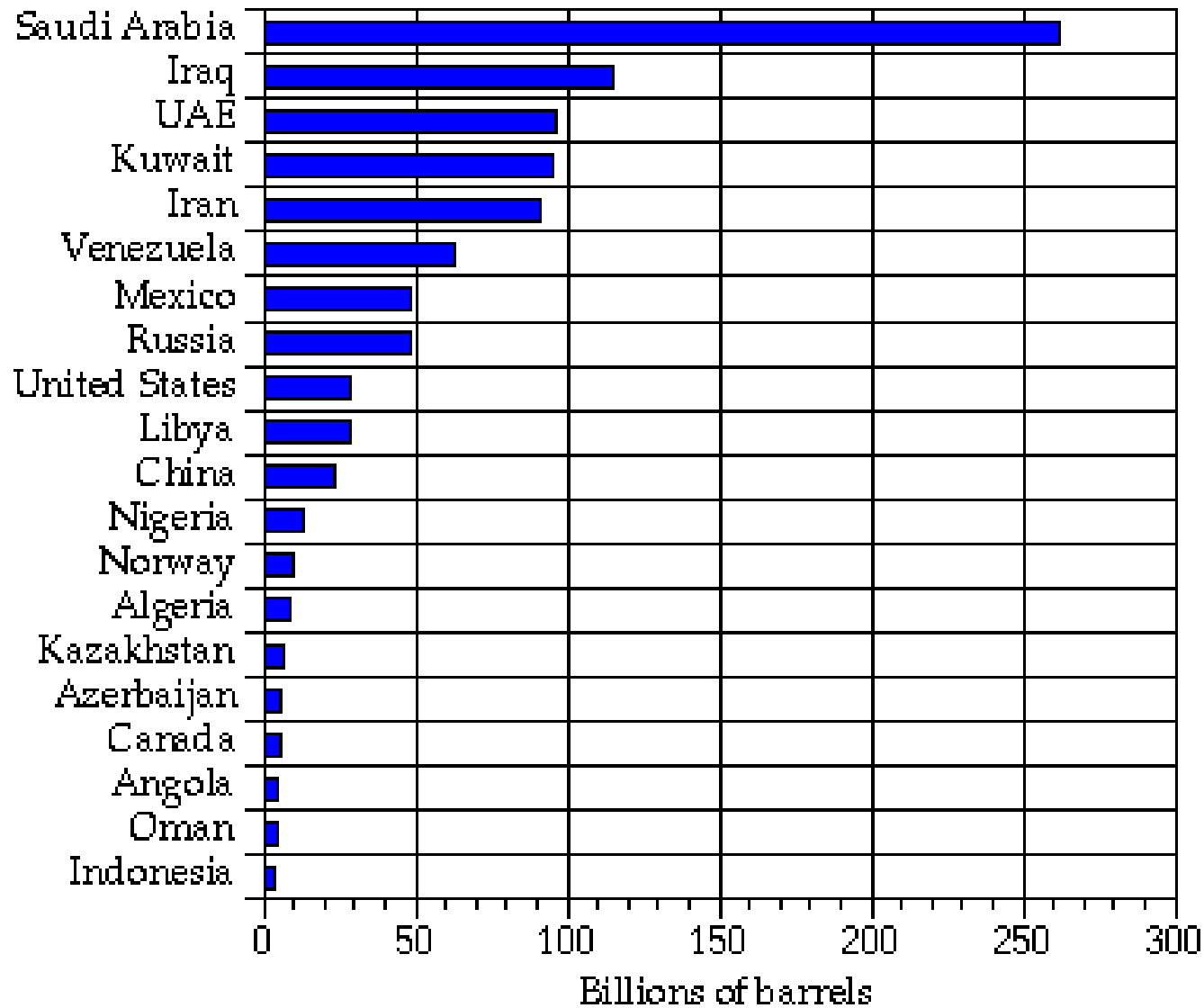




# Dünya Petrol Yatakları

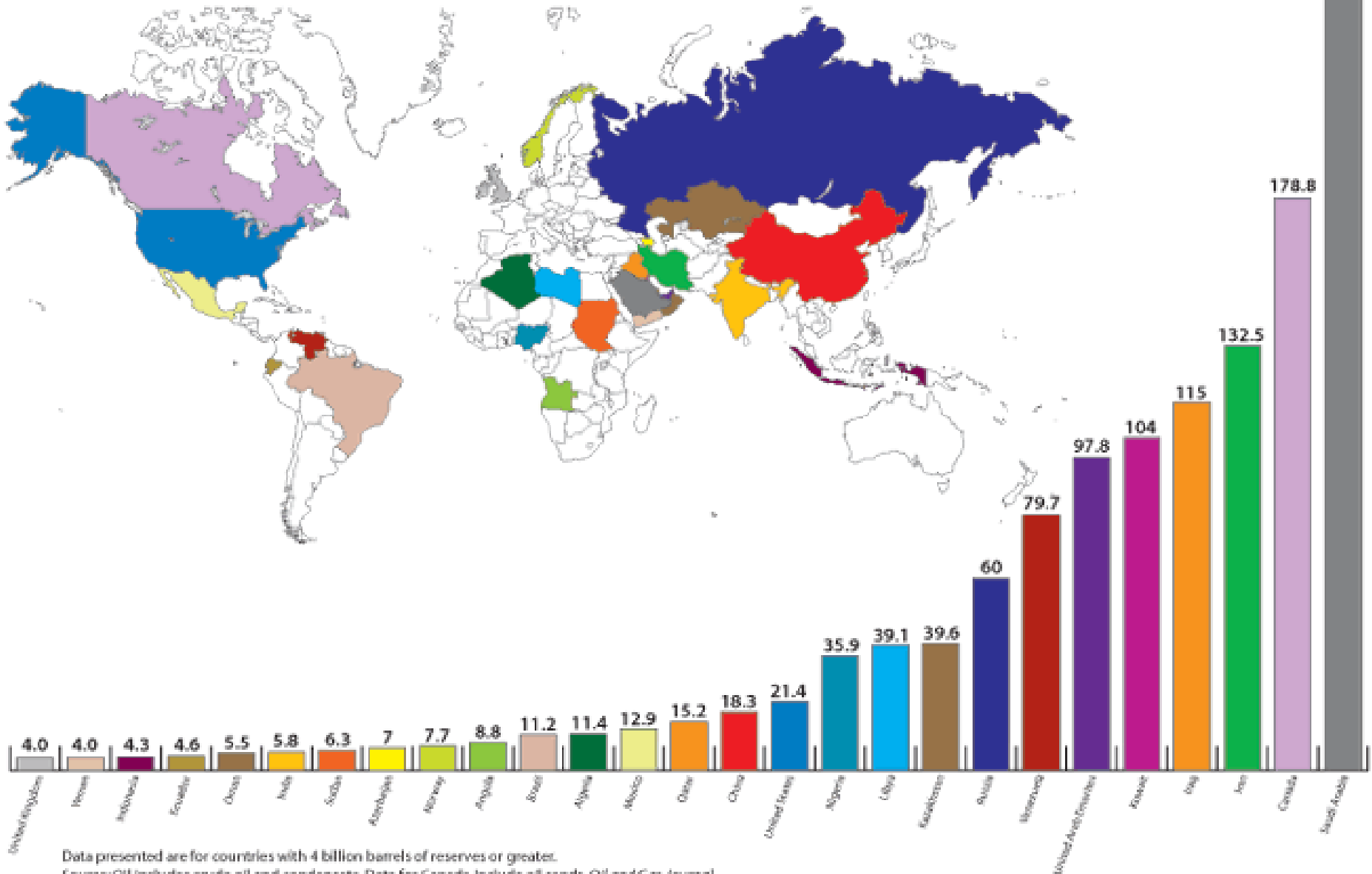


Estimated proven reserves of oil (end 1996)  
(The Economist, 8/2/97)



# Oil Reserves

(billion barrels)



Data presented are for countries with 4 billion barrels of reserves or greater.

Source: Oil includes crude oil and condensate. Data for Canada include oil sands. *Oil and Gas Journal*, December 19, 2005. Data for the United States are from the Energy Information Agency, November 2005.

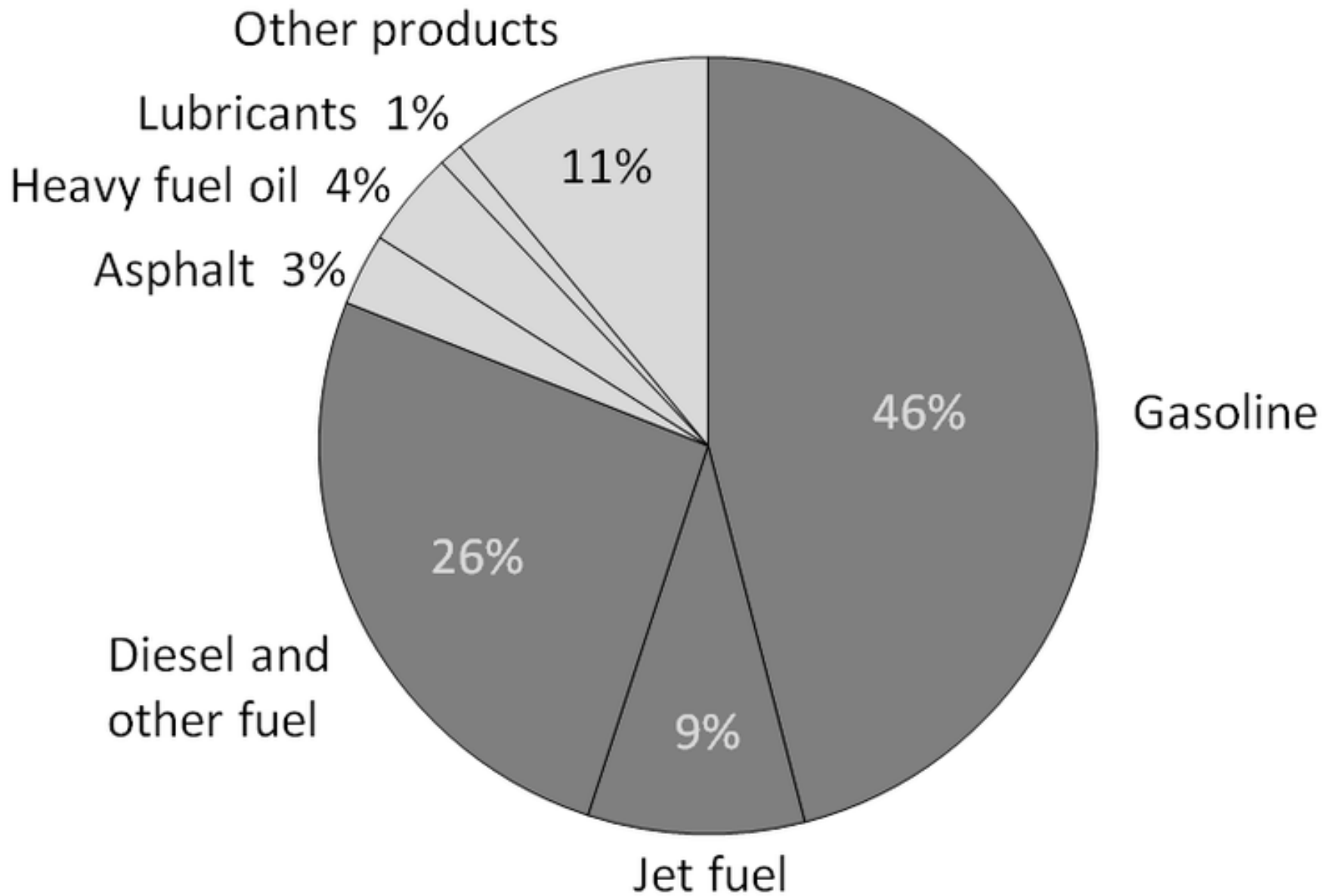
20.05.2016

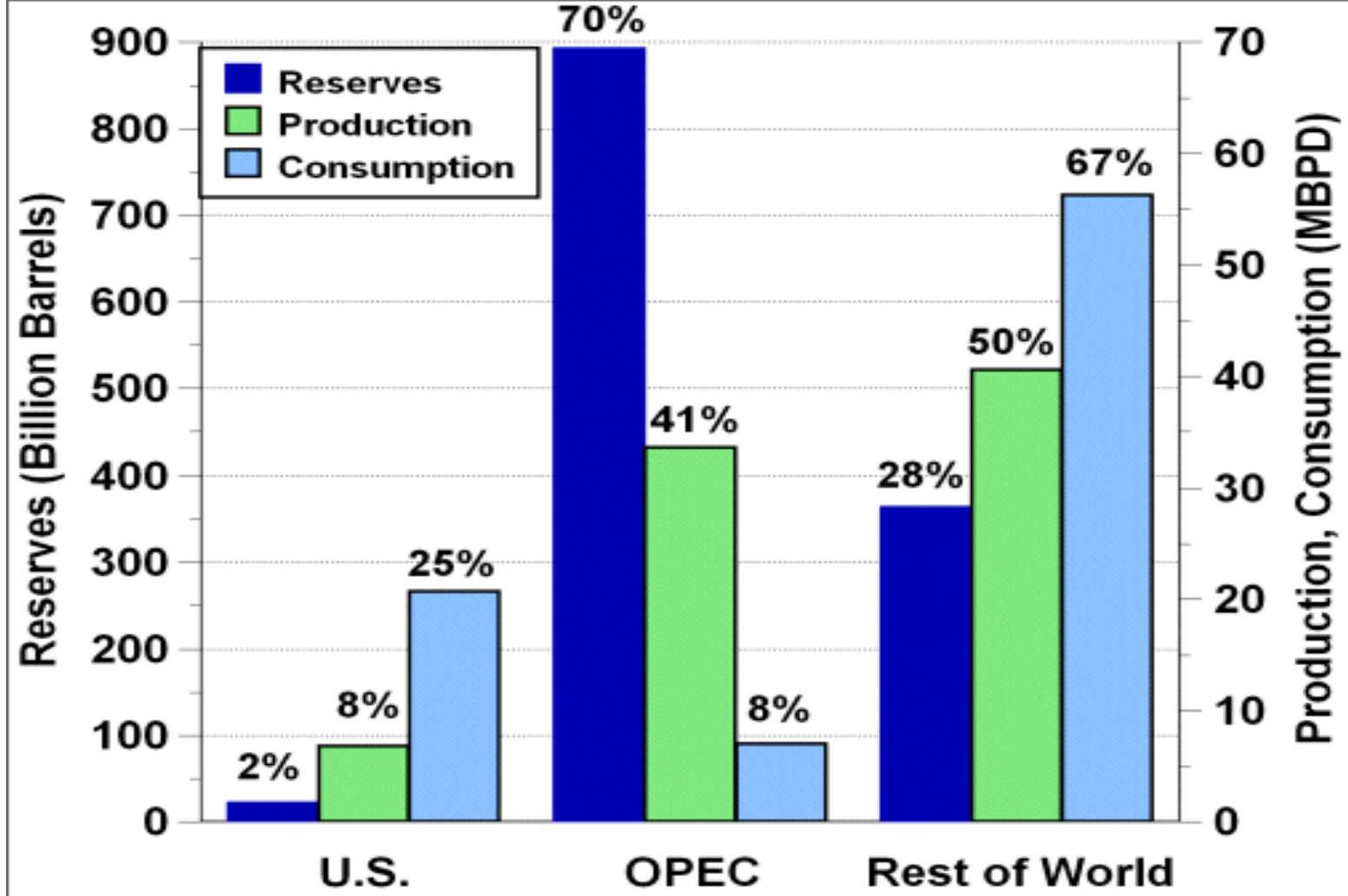
Arş. Gör. Unur ÇALIŞKAN



# Petrol üretim ve Tüketimi





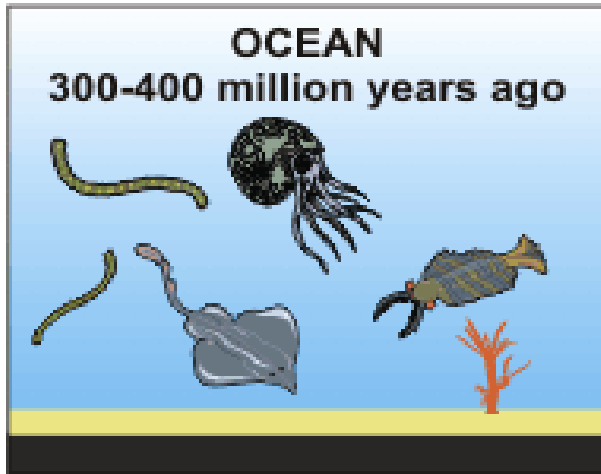


Republic of Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. They were to become the Founder Members of the Organization.

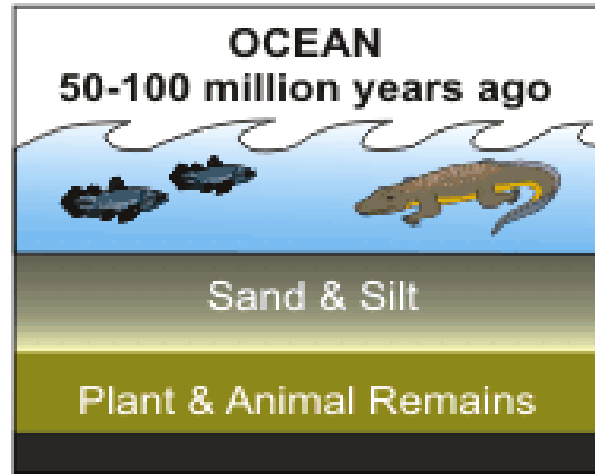
These countries were later joined by Qatar (1961), Indonesia (1962), Socialist People's Libyan Arab Jamahiriya (1962), the United Arab Emirates (1967), Algeria (1969), Nigeria (1971), Ecuador (1973), Gabon (1975) and Angola (2007).

# Petrolün Oluşumu ve Jeolojik Yayılışı

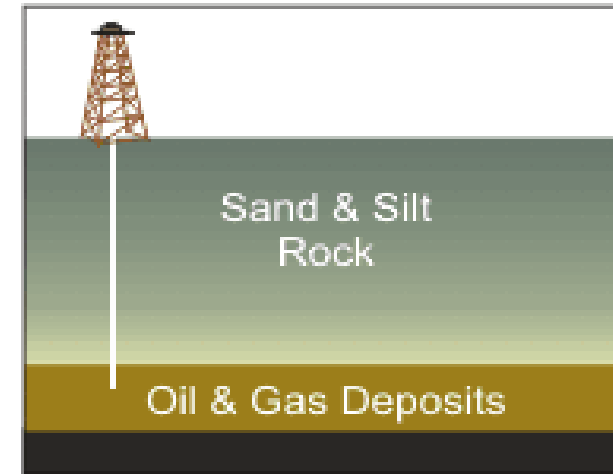
## PETROLEUM & NATURAL GAS FORMATION



Tiny sea plants and animals died and were buried on the ocean floor. Over time, they were covered by layers of silt and sand.

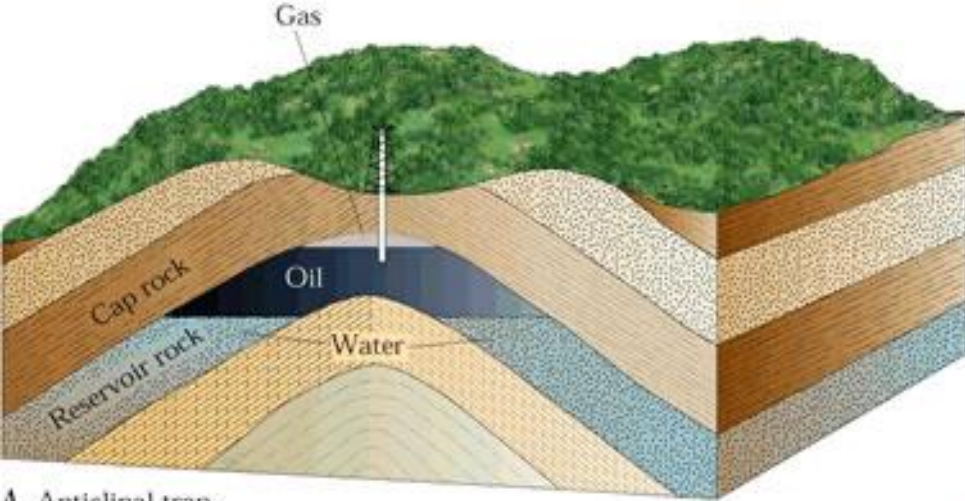


Over millions of years, the remains were buried deeper and deeper. The enormous heat and pressure turned them into oil and gas.

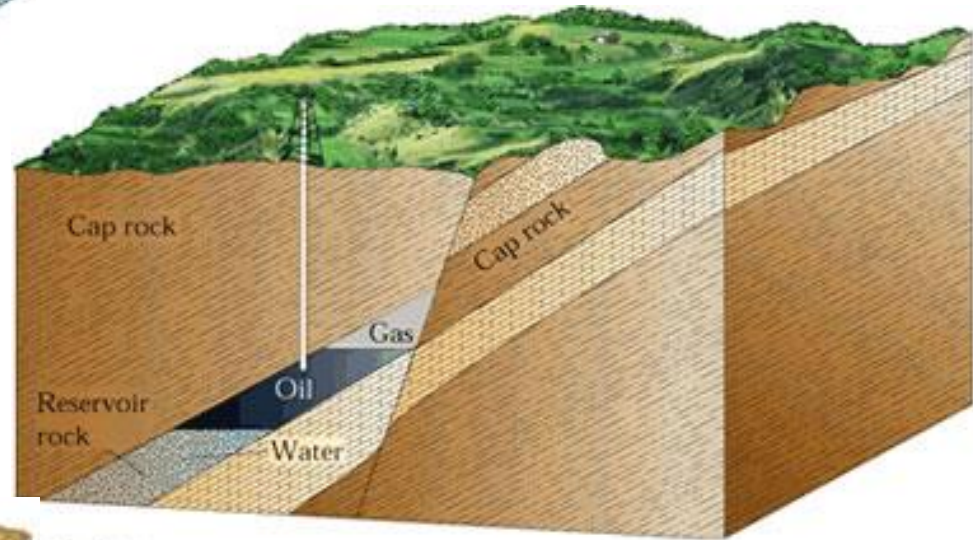


Today, we drill down through layers of sand, silt, and rock to reach the rock formations that contain oil and gas deposits.

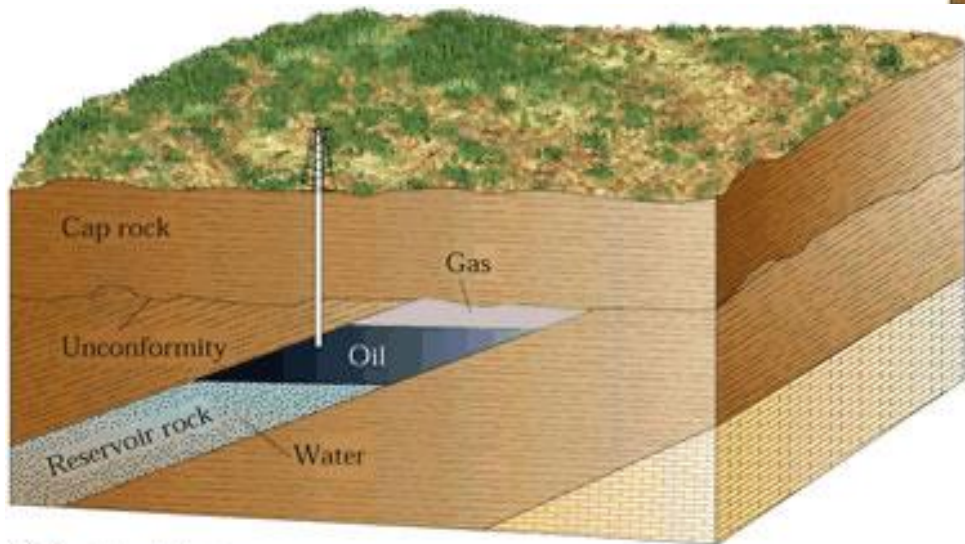




A. Anticlinal trap

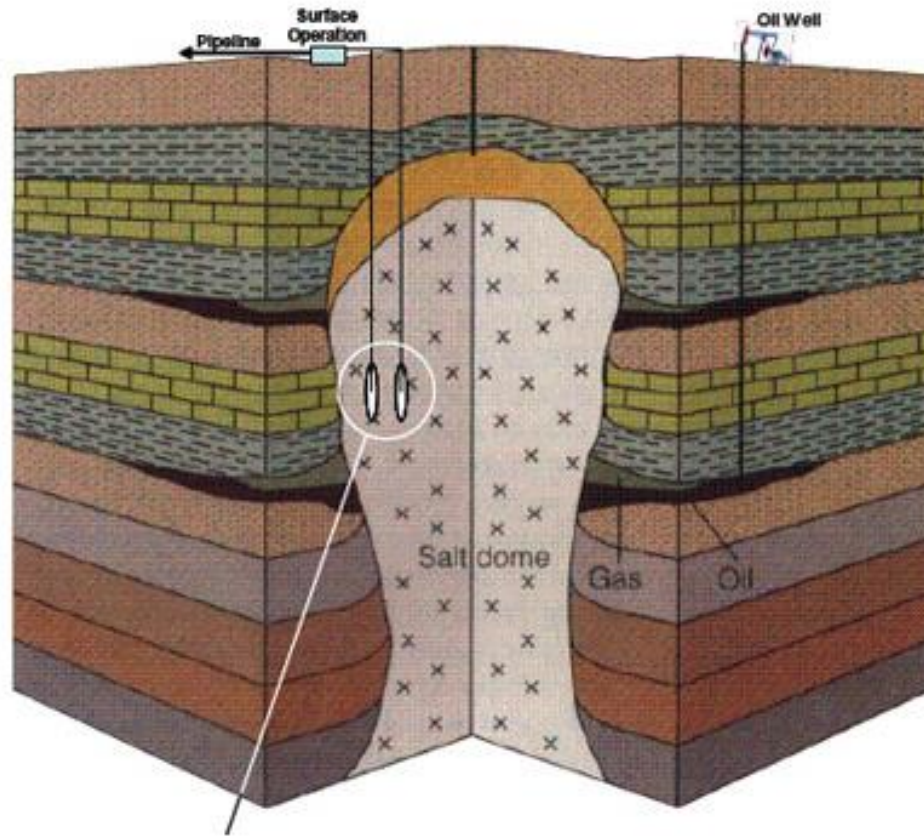


Fault trap



C. Stratigraphic trap

Not to Scale



Salt Dome Caverns

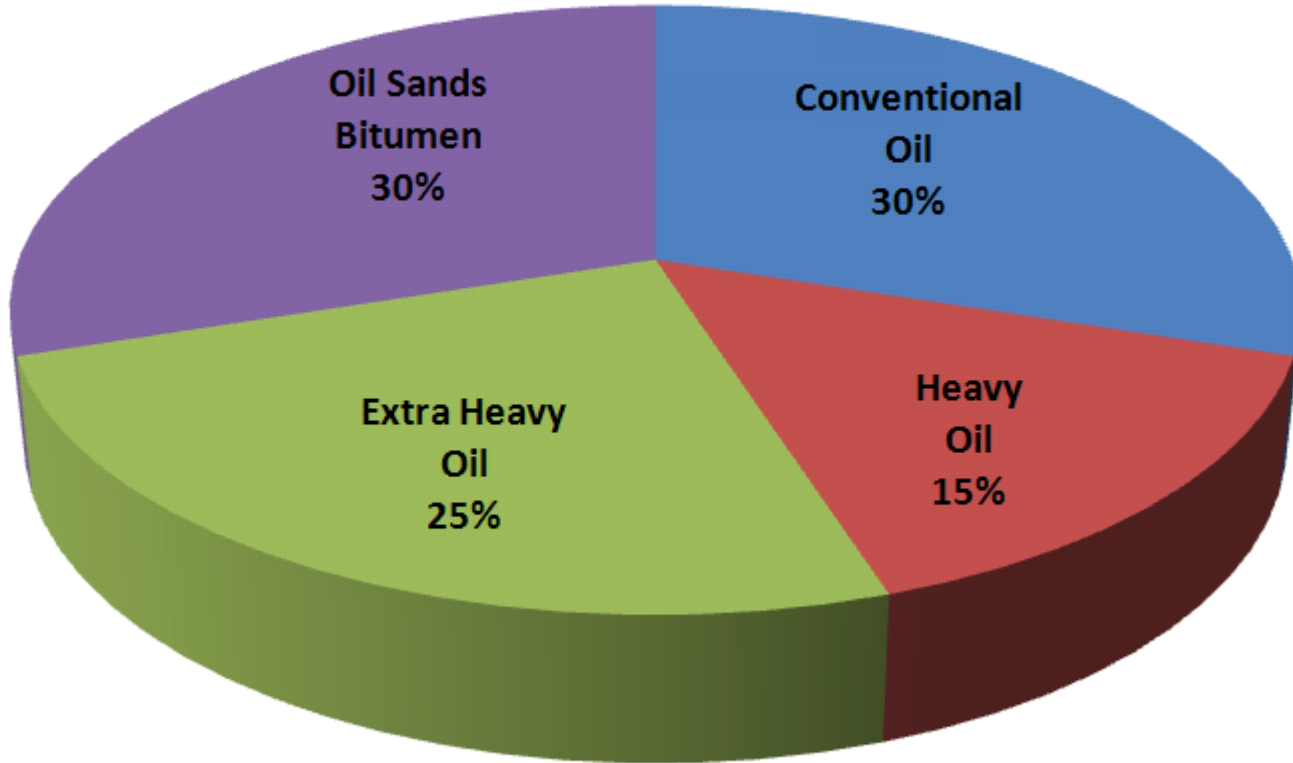




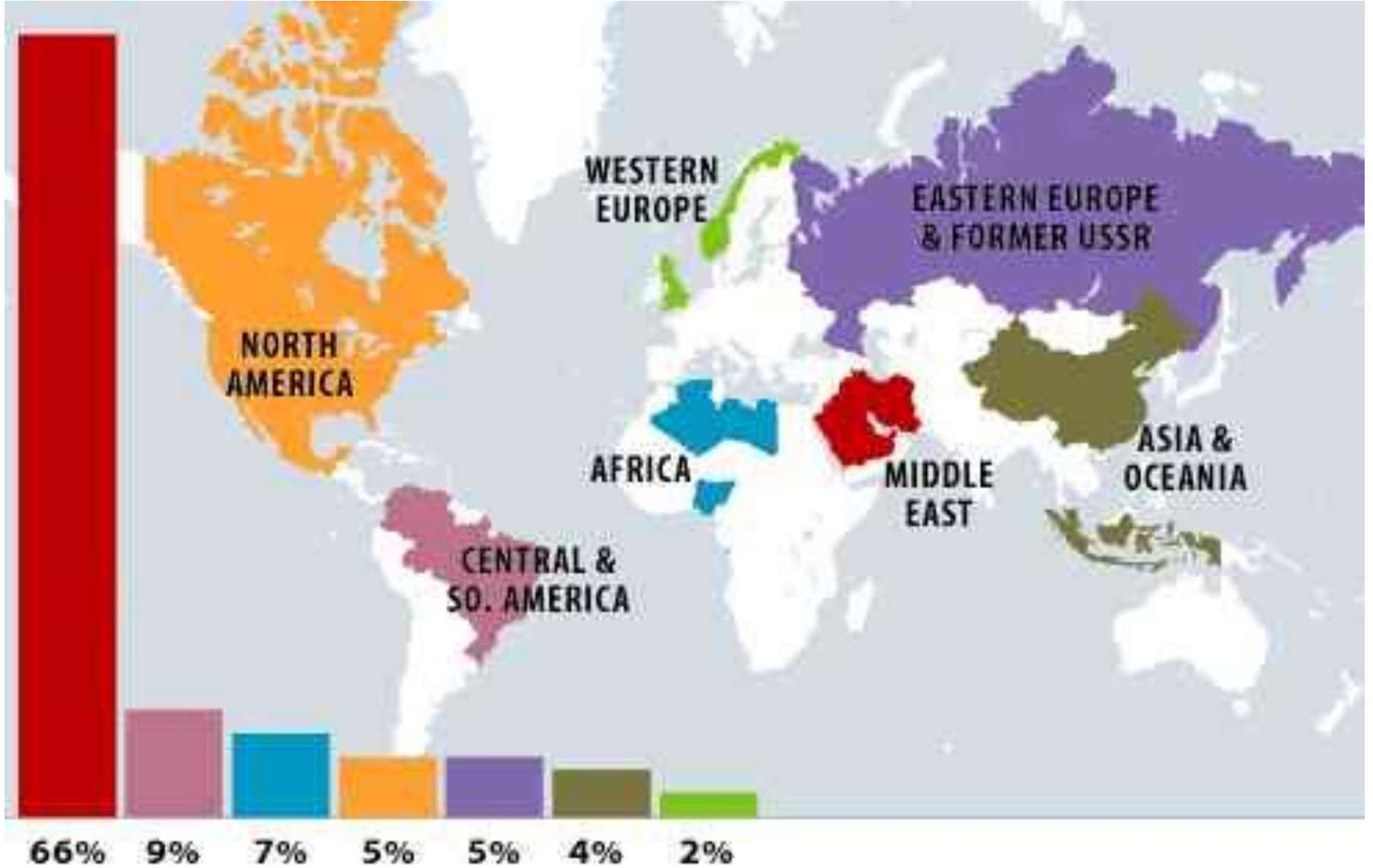
20.05.2016

Arş. Gör. Onur ÇAL

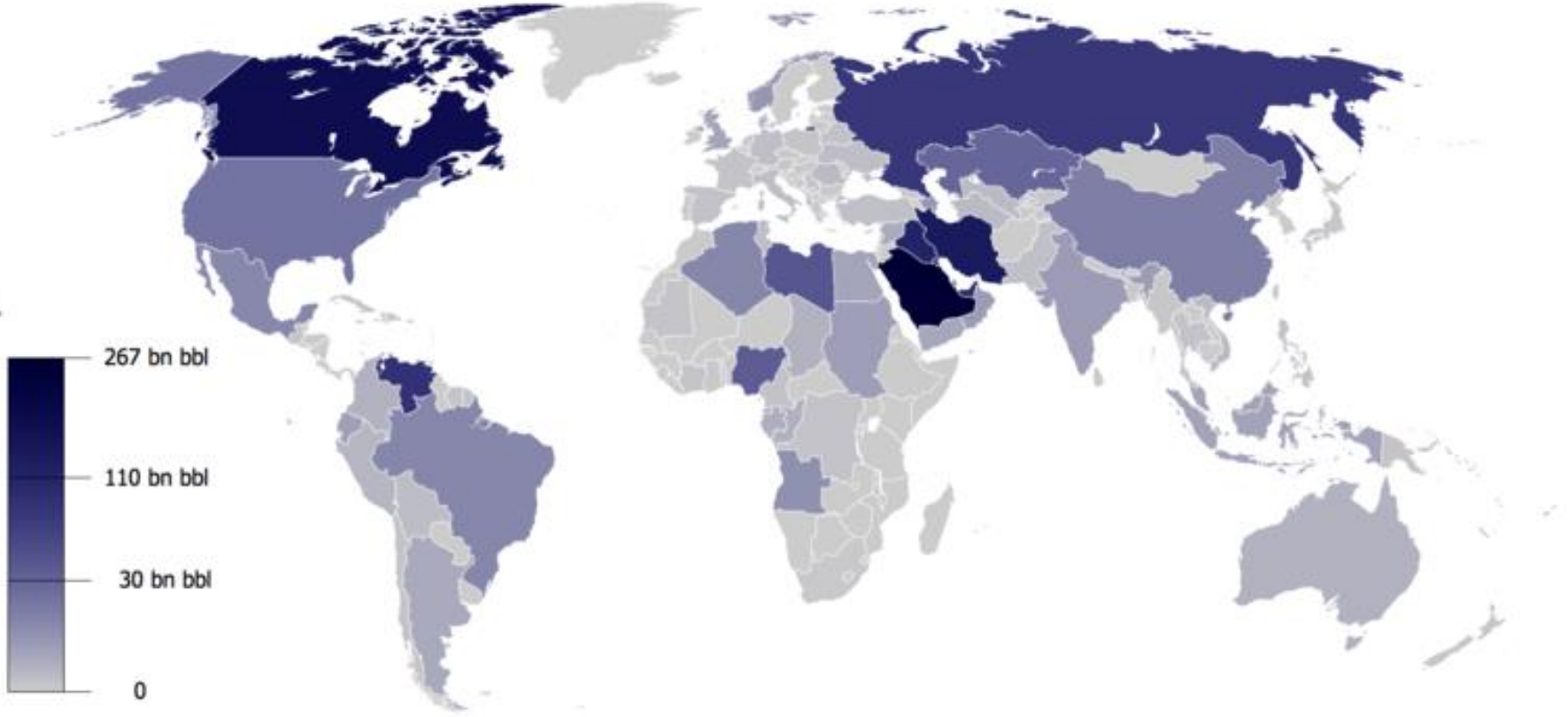
## Total World Oil Reserves



# Dünya Petrol Yatakları

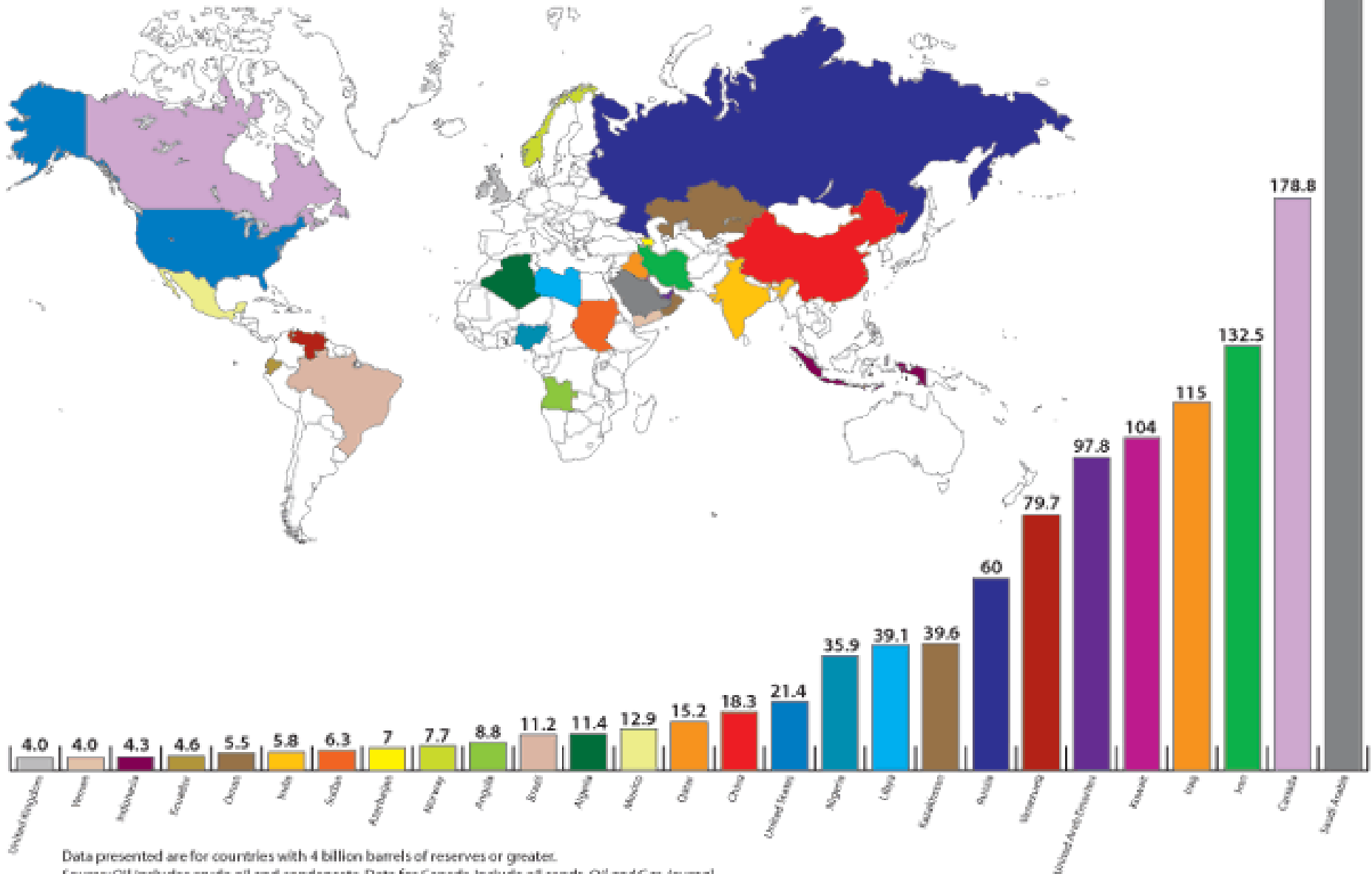


# Dünya Petrol Yatakları



# Oil Reserves

(billion barrels)



Data presented are for countries with 4 billion barrels of reserves or greater.

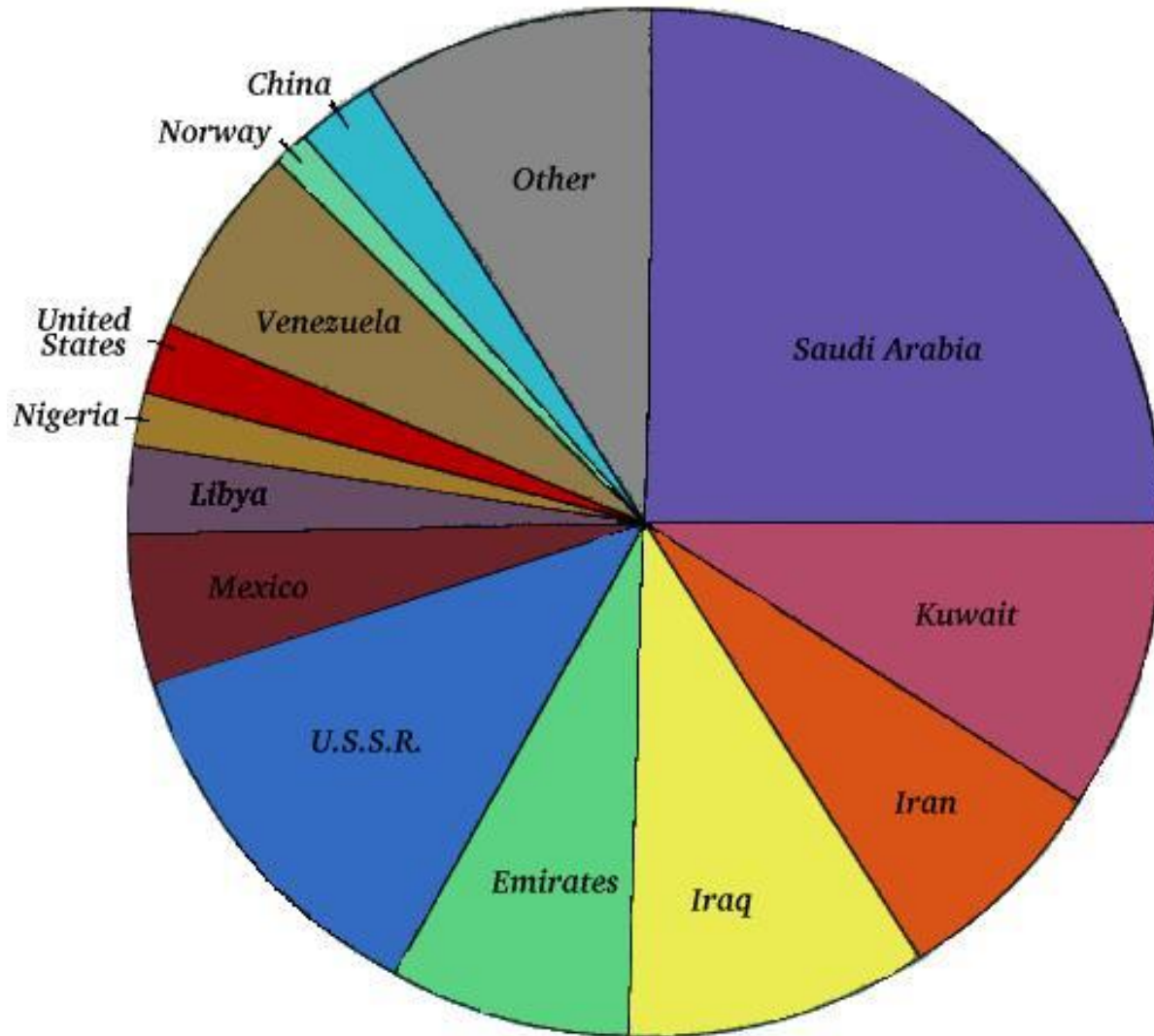
Source: Oil includes crude oil and condensate. Data for Canada include oil sands. *Oil and Gas Journal*, December 19, 2005. Data for the United States are from the Energy Information Agency, November 2005.

20.05.2016

Arş. Gör. Unur ÇALIŞKAN

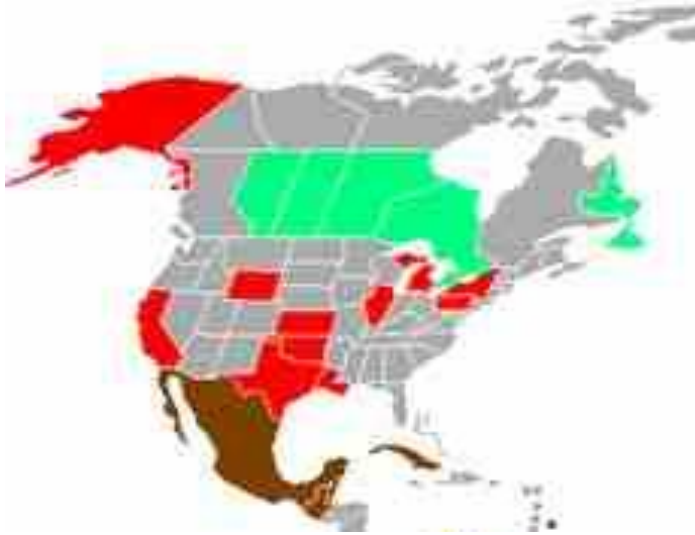


**Crude Oil**  
**World Total: 1,055.3**  
**(Billion Barrels)**

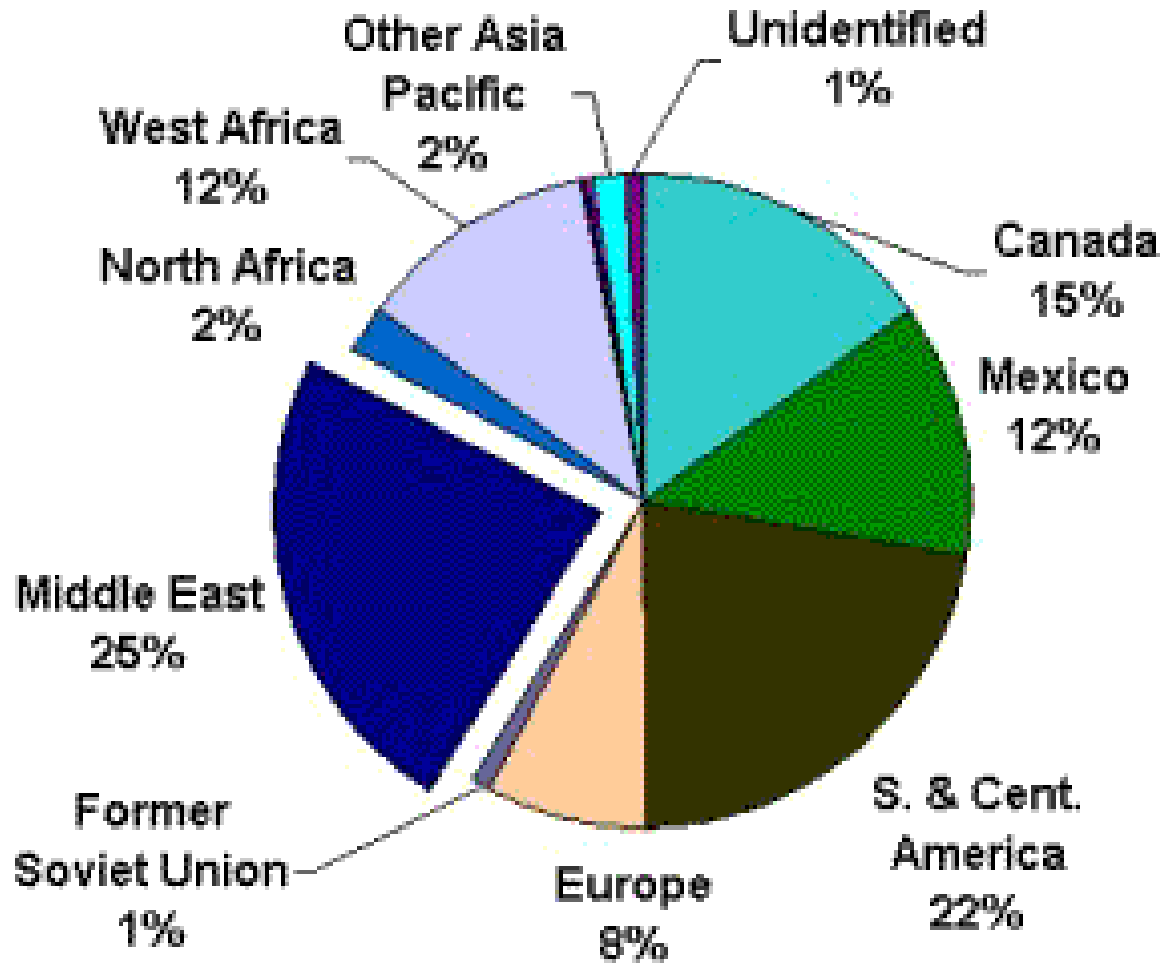


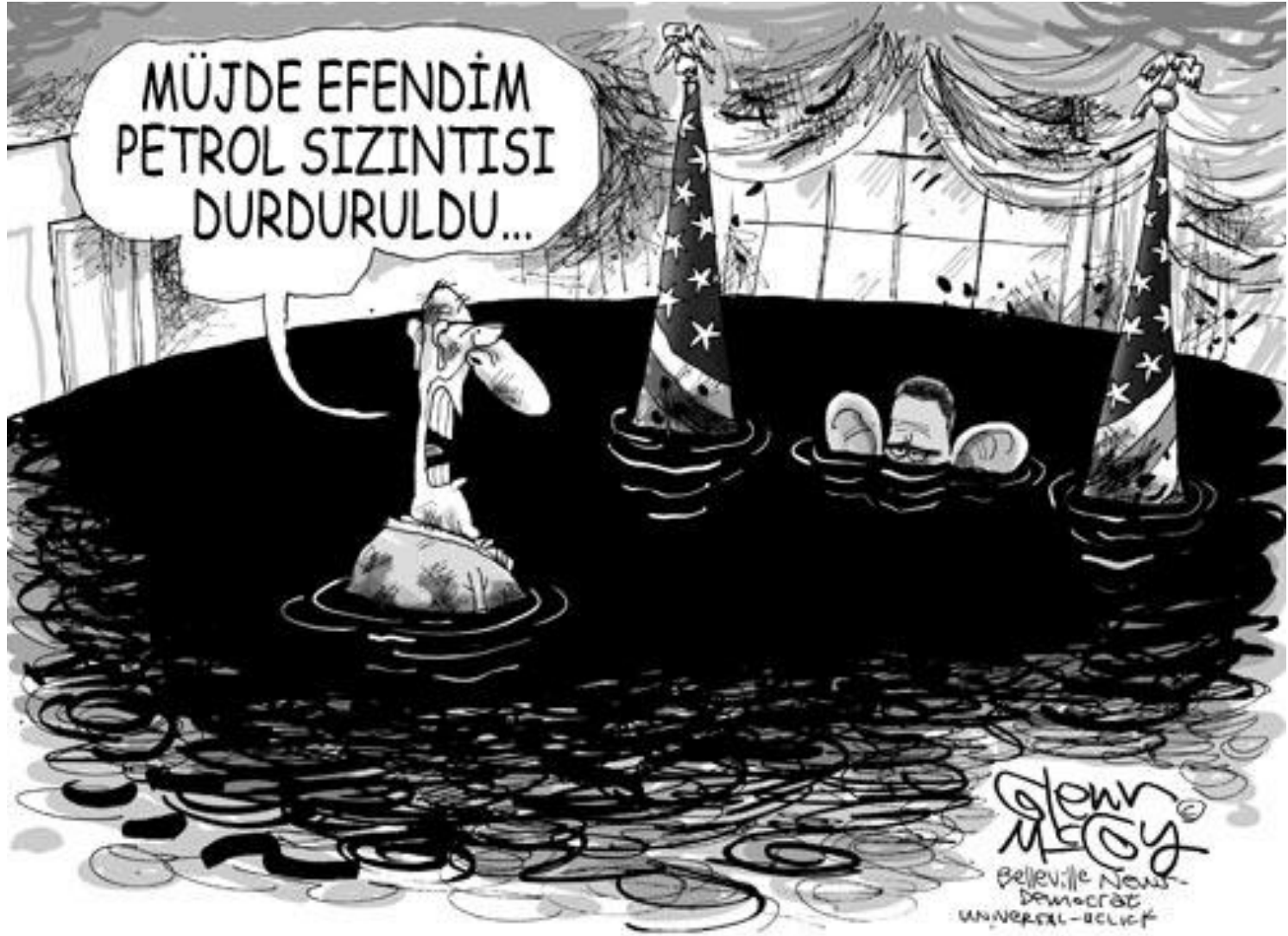


# ABD



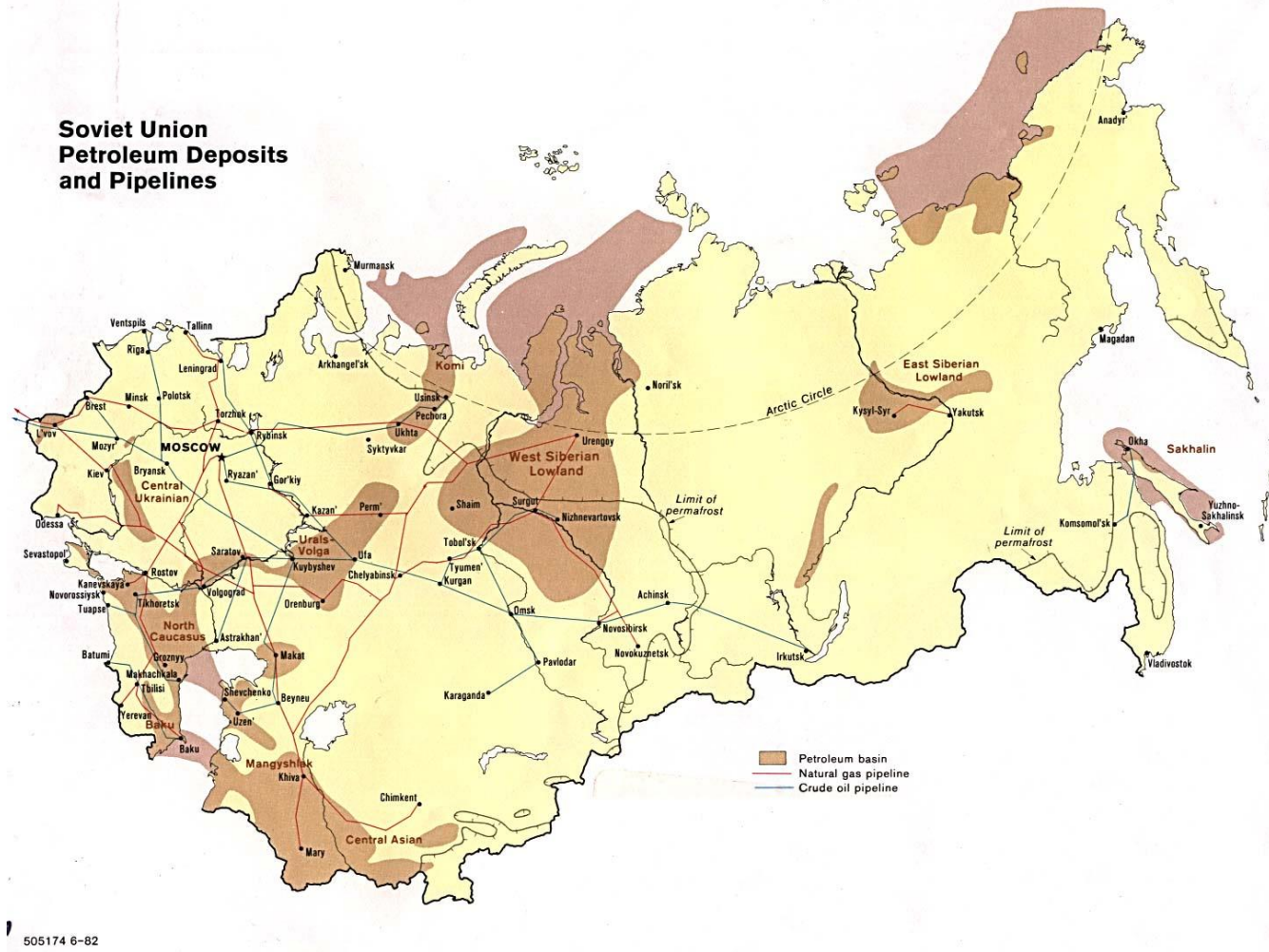
**Figure 1. Percentage Distribution of Source of Oil Imports by USA in 2001**



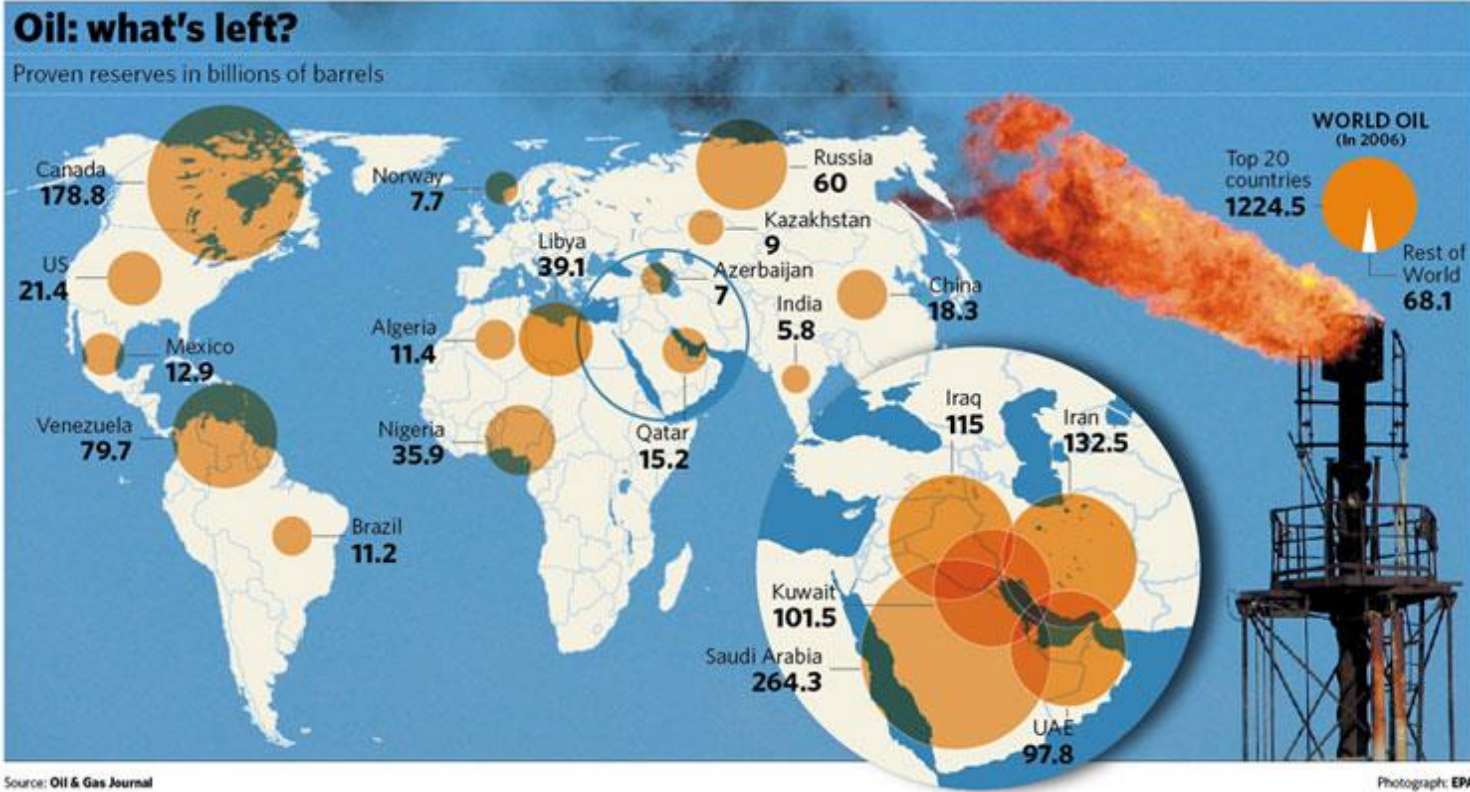


7/20

# Rusya Federasyonu



# Venezuela

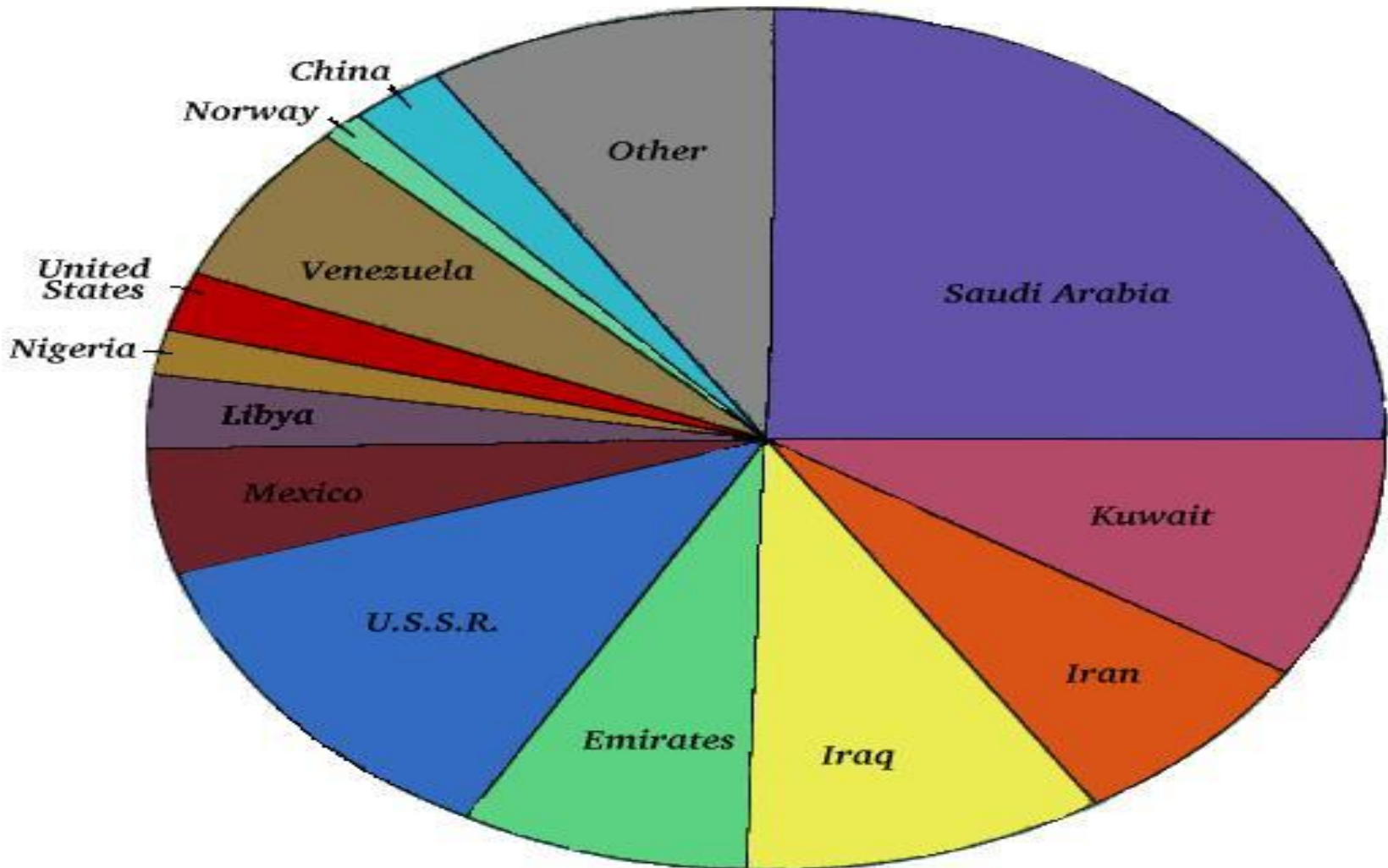


Maracaibo en önemli petrol yatağıdır.



# Güneybatı Asya (Orta Doğu)

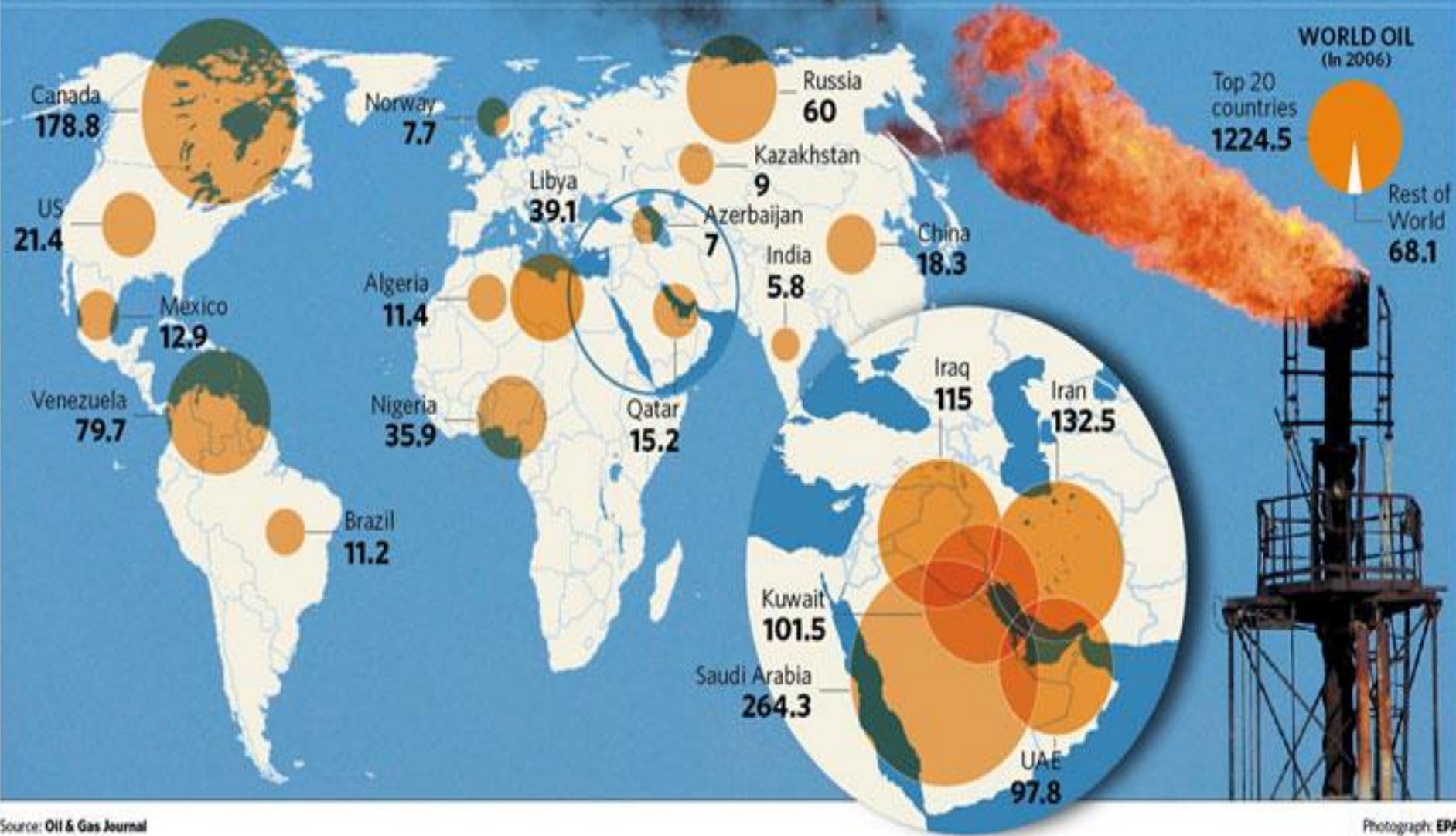
*Crude Oil  
World Total: 1,055.3  
(Billion Barrels)*





# Oil: what's left?

Proven reserves in billions of barrels

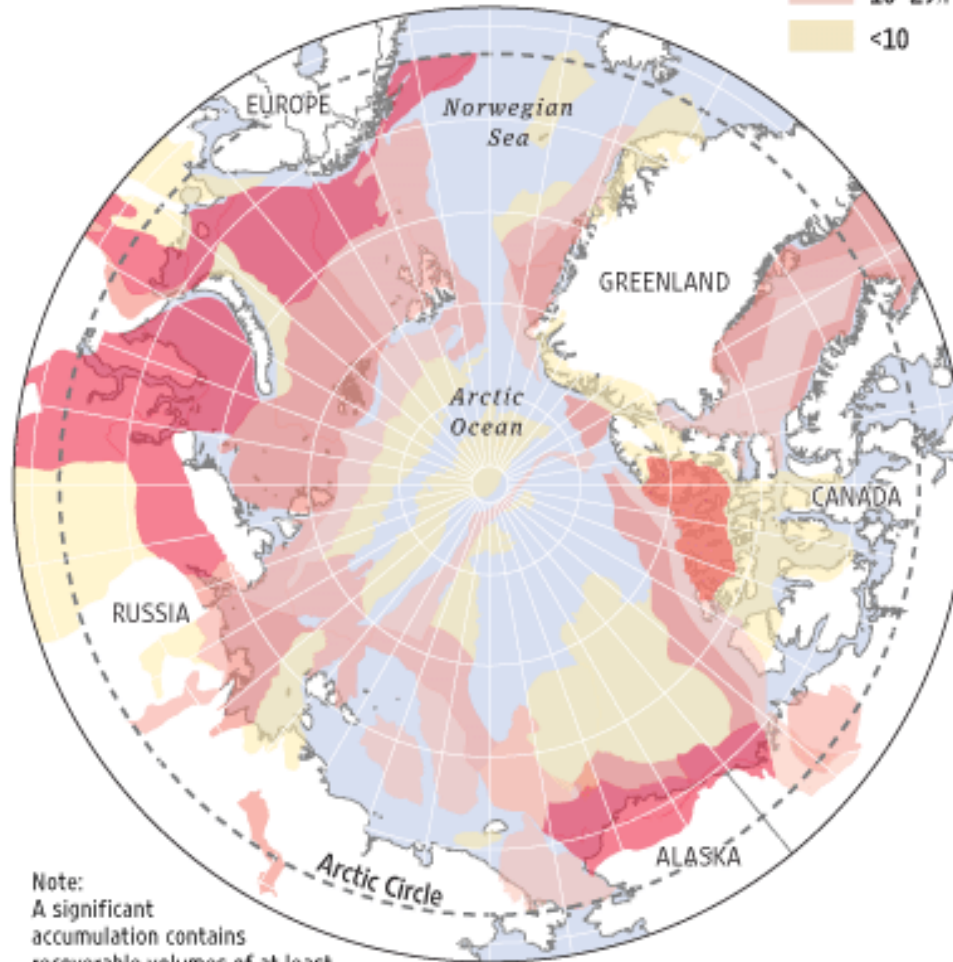
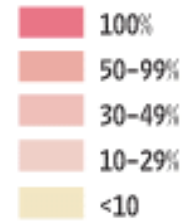


Source: Oil & Gas Journal

Photograph: EPA

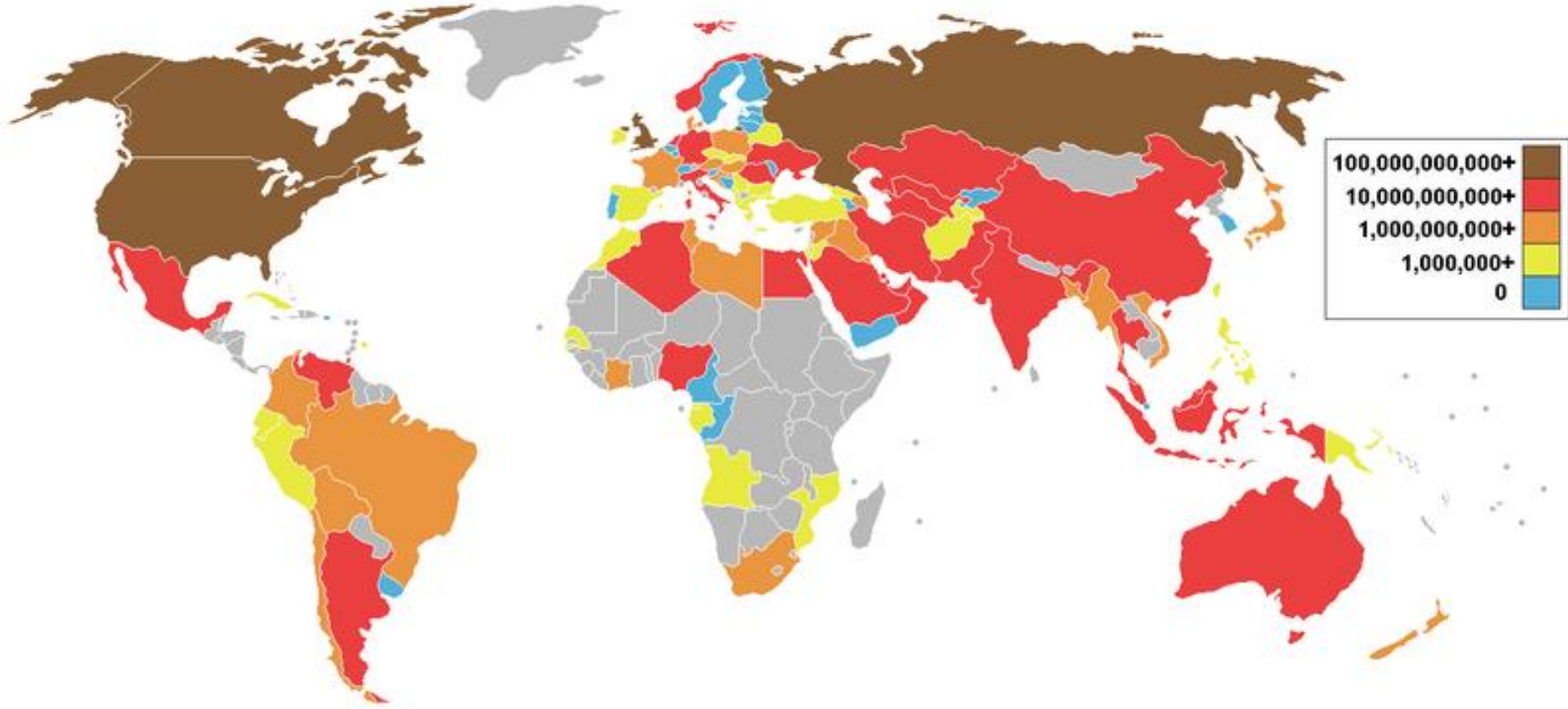
## Arctic Reserves

The probability that at least one significant accumulation of oil or gas exists, according to the U.S. Geological Survey.

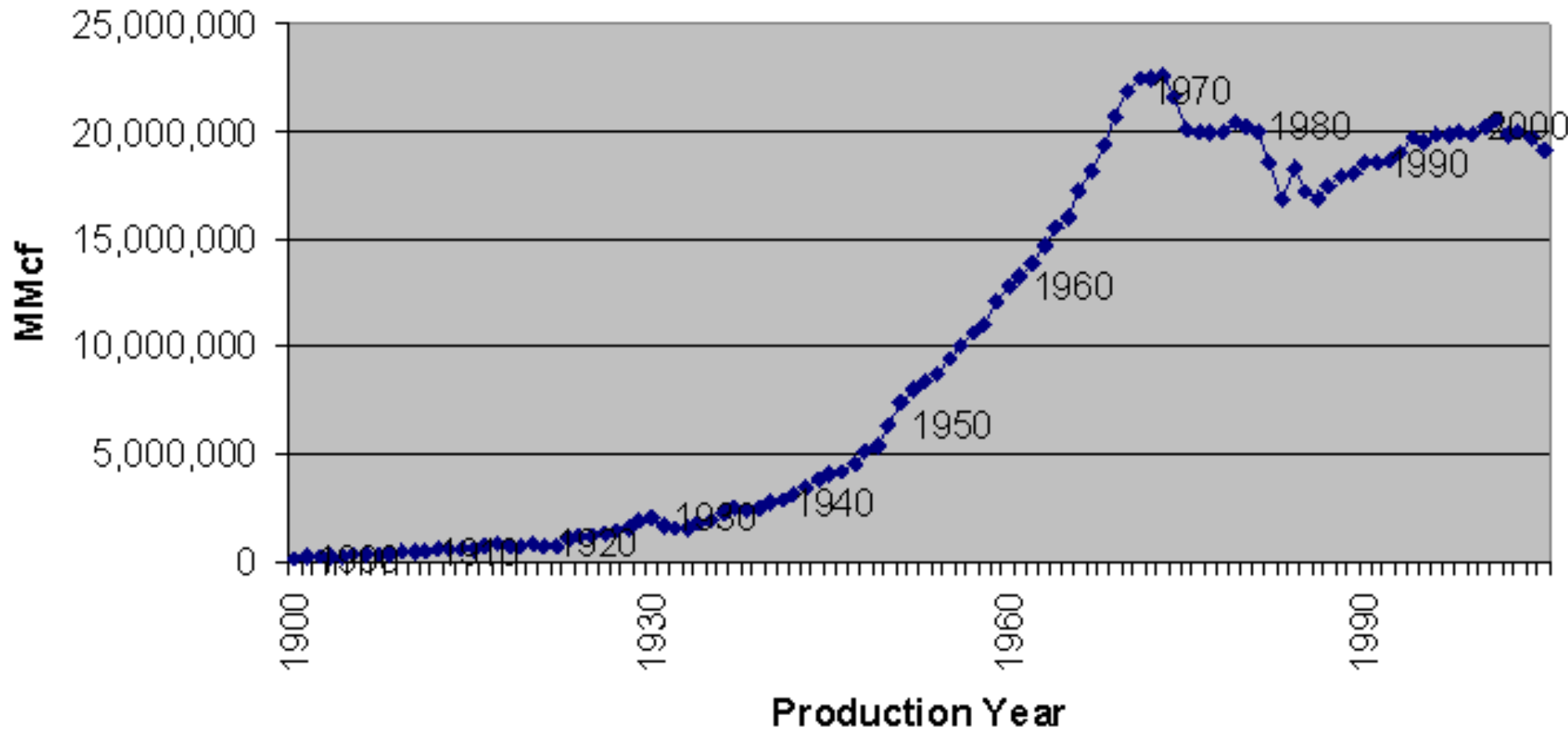


Note:  
A significant accumulation contains recoverable volumes of at least 50 million barrels of oil or oil-equivalent natural gas.

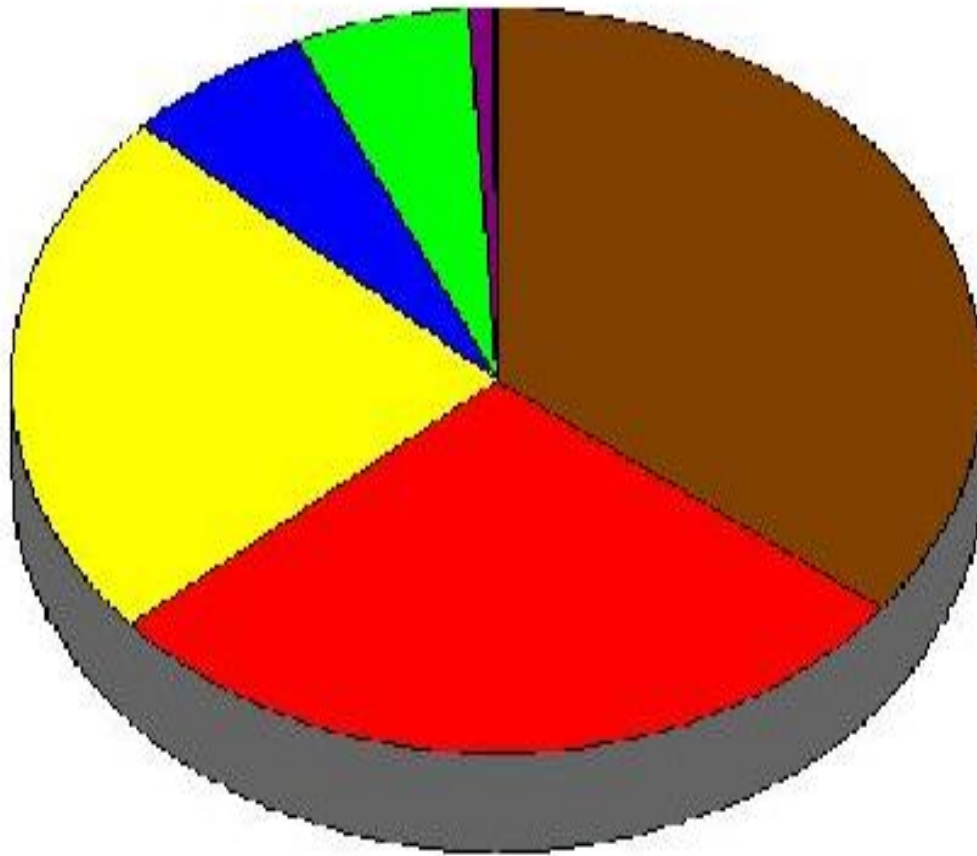
### 3. DOĞAL GAZ



# U.S. Natural Gas Production

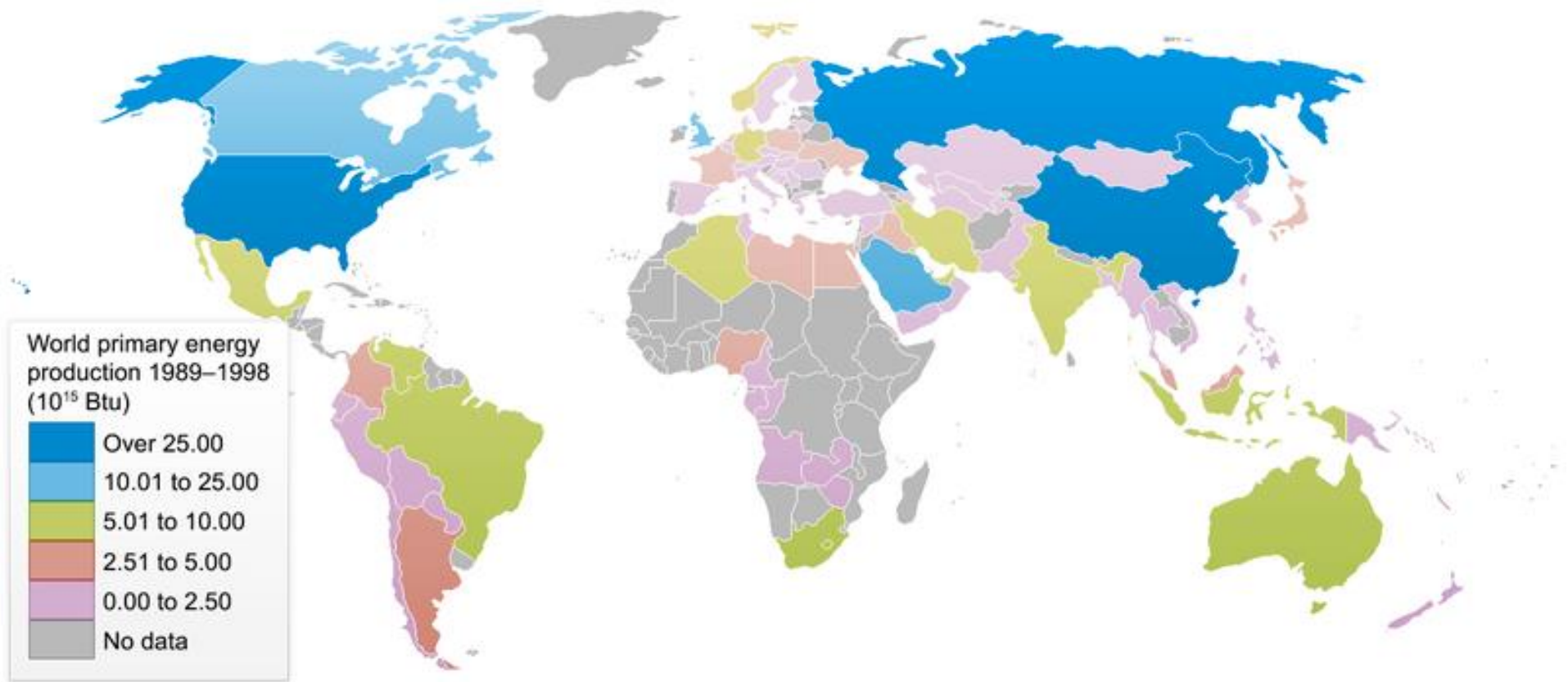






■	Petroleum:	3527 ~ 35.43%
■	Coal:	2802 ~ 28.15%
■	Dry natural gas:	2335 ~ 23.46%
■	Hydro-electricity:	624 ~ 6.27%
■	Nuclear electricity:	576 ~ 5.79%
■	Geothermal, wind, solar, biomass :	86 ~ 0.86%
■	Geothermal, biomass, solar not used for electricity:	5 ~ 0.05%

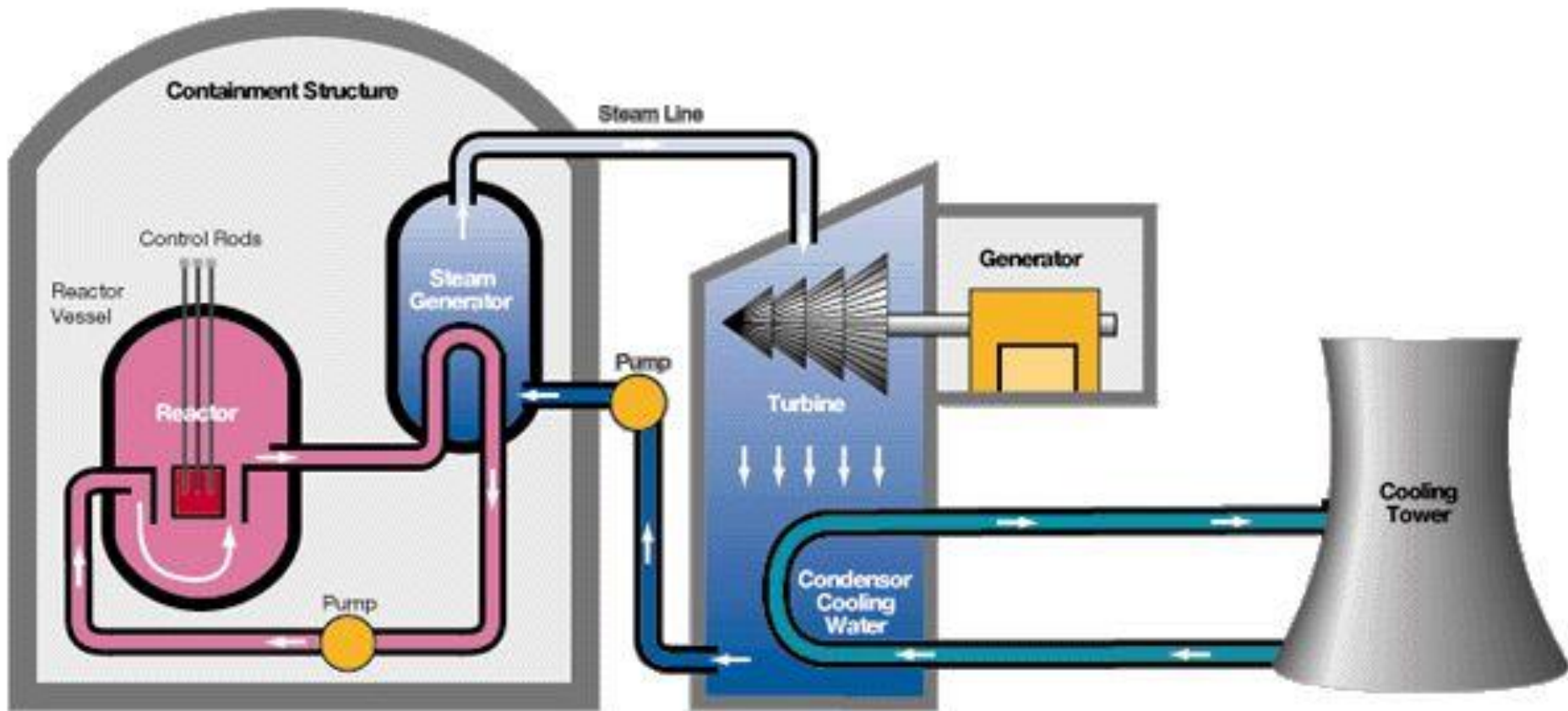
**Total: 9955**



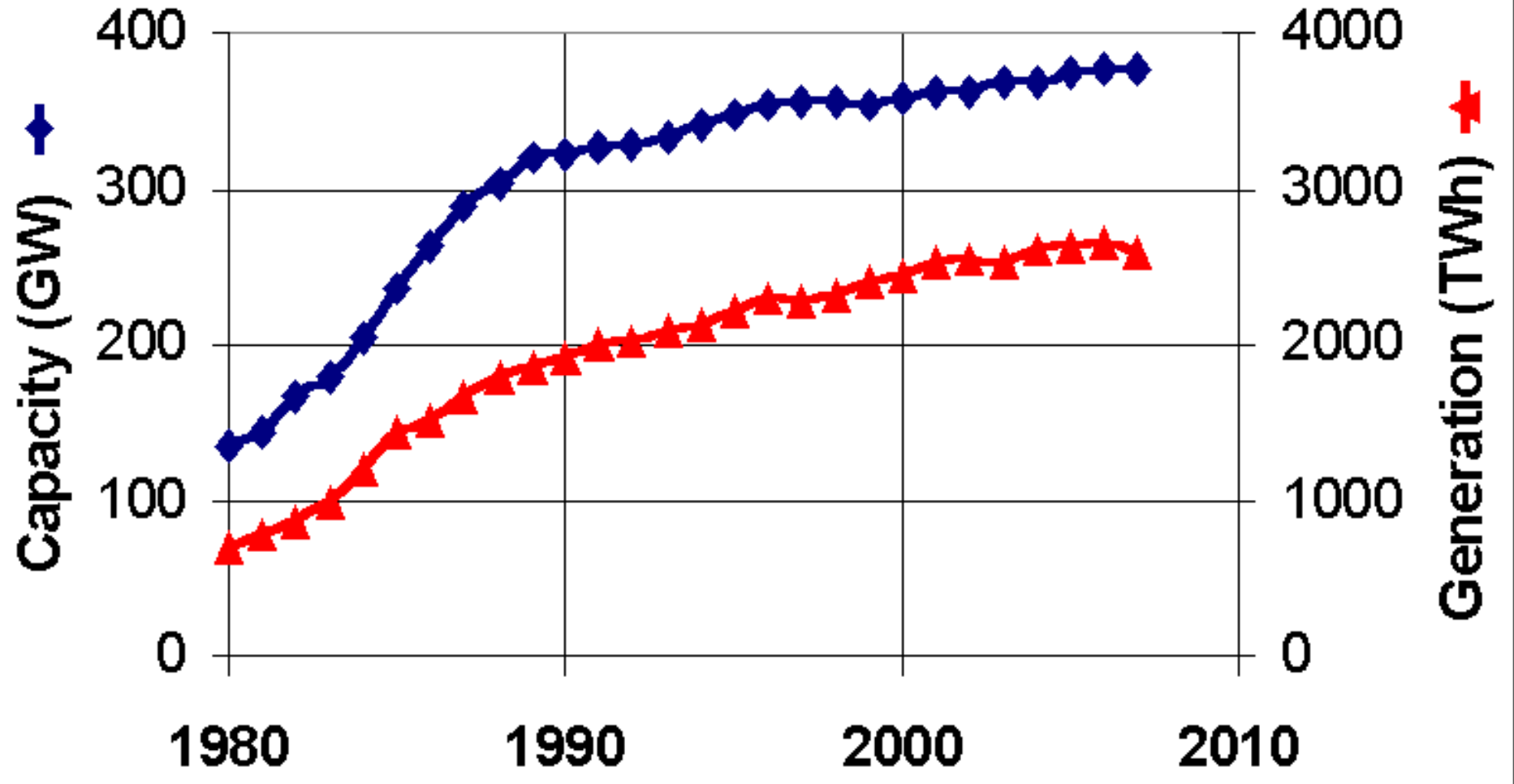


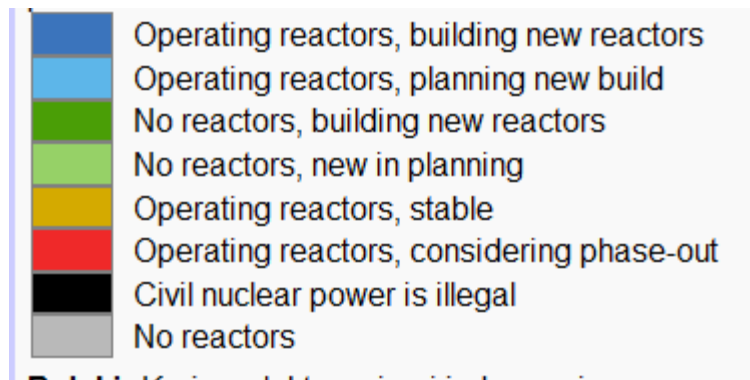
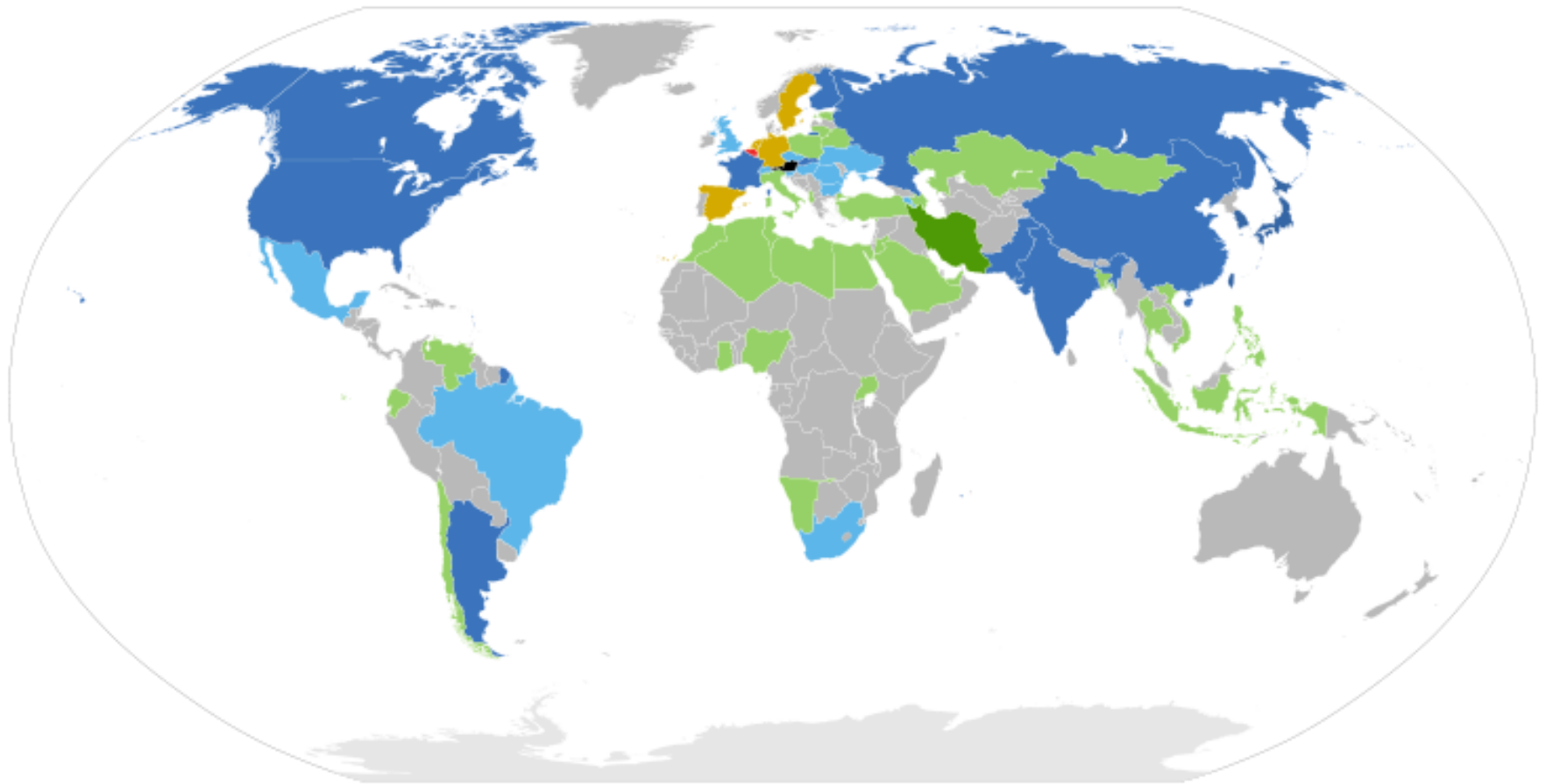
## 4. NÜKLEER (RADYOAKTİF, ATOM) ENERJİ

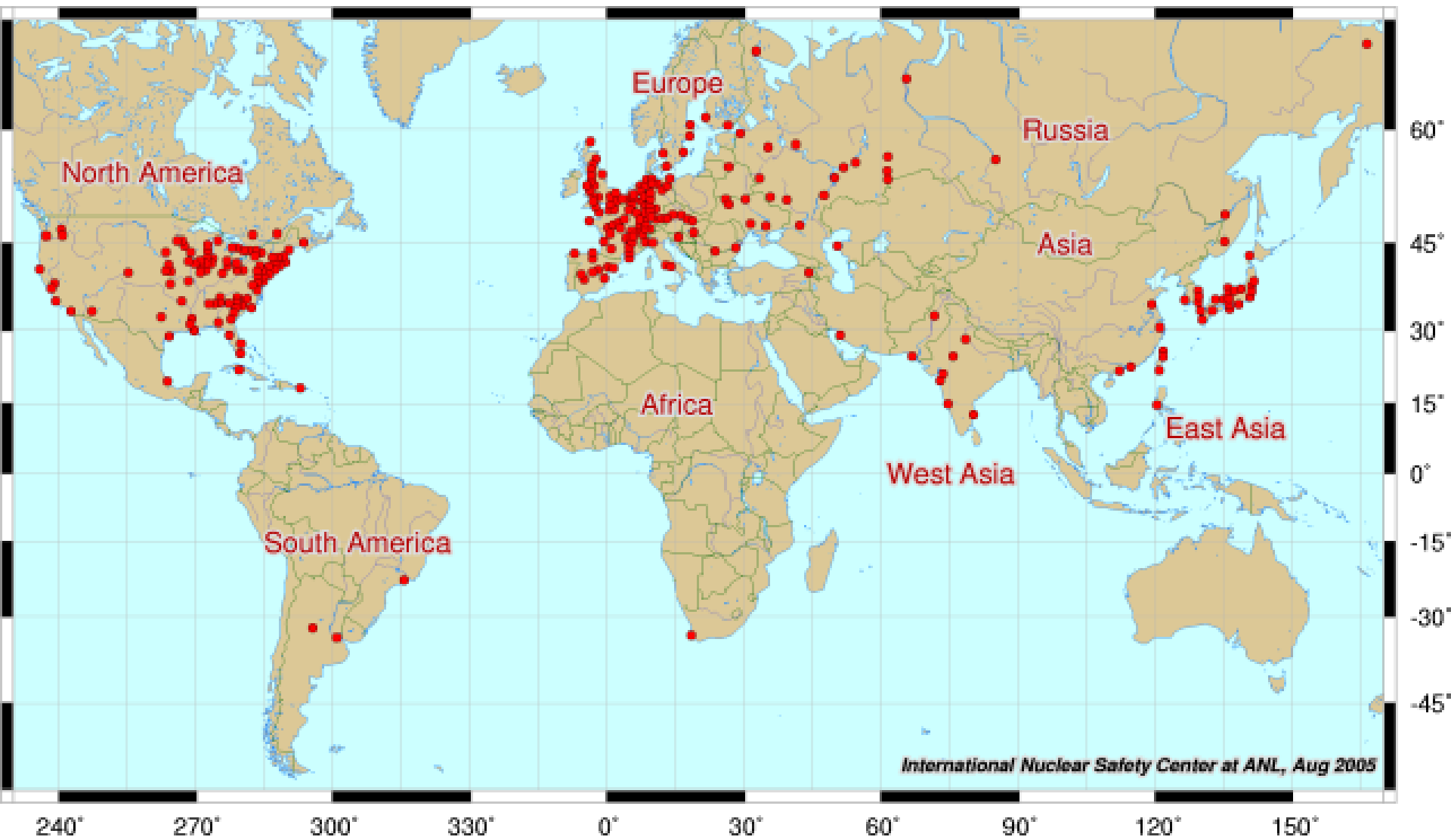




# Nuclear Power











## II. YENİLENEBİLİR ENERJİ KAYNAKLARI

Su

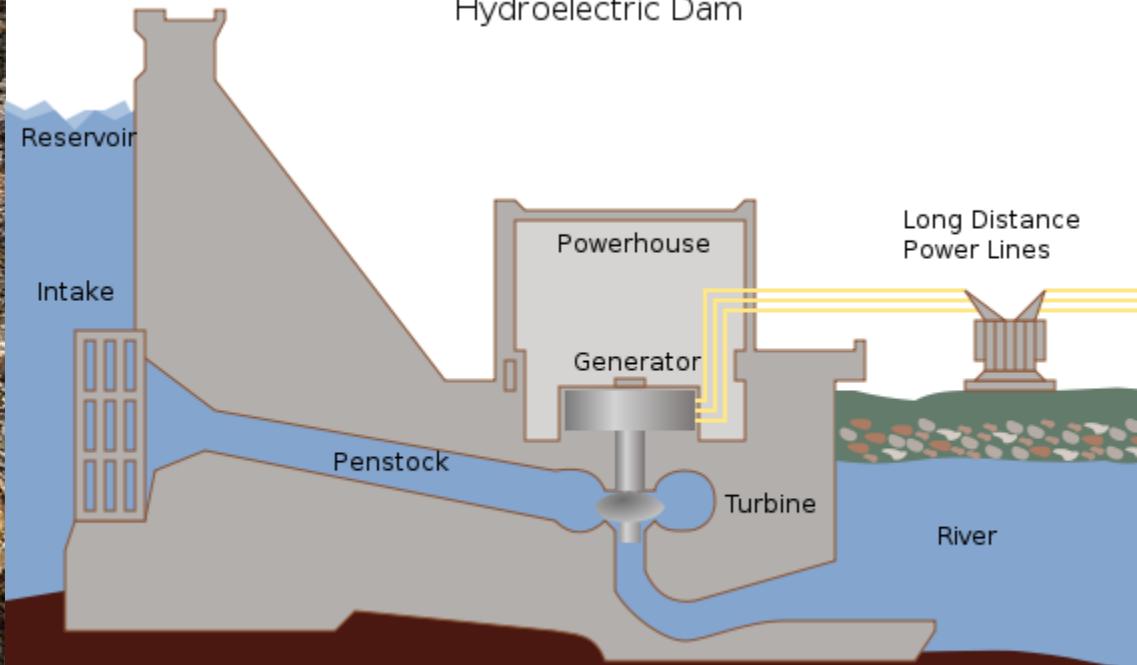
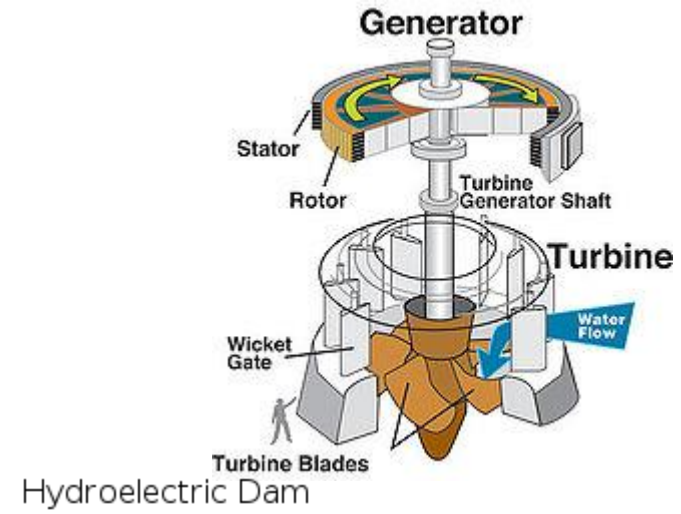
Rüzgar

Güneş

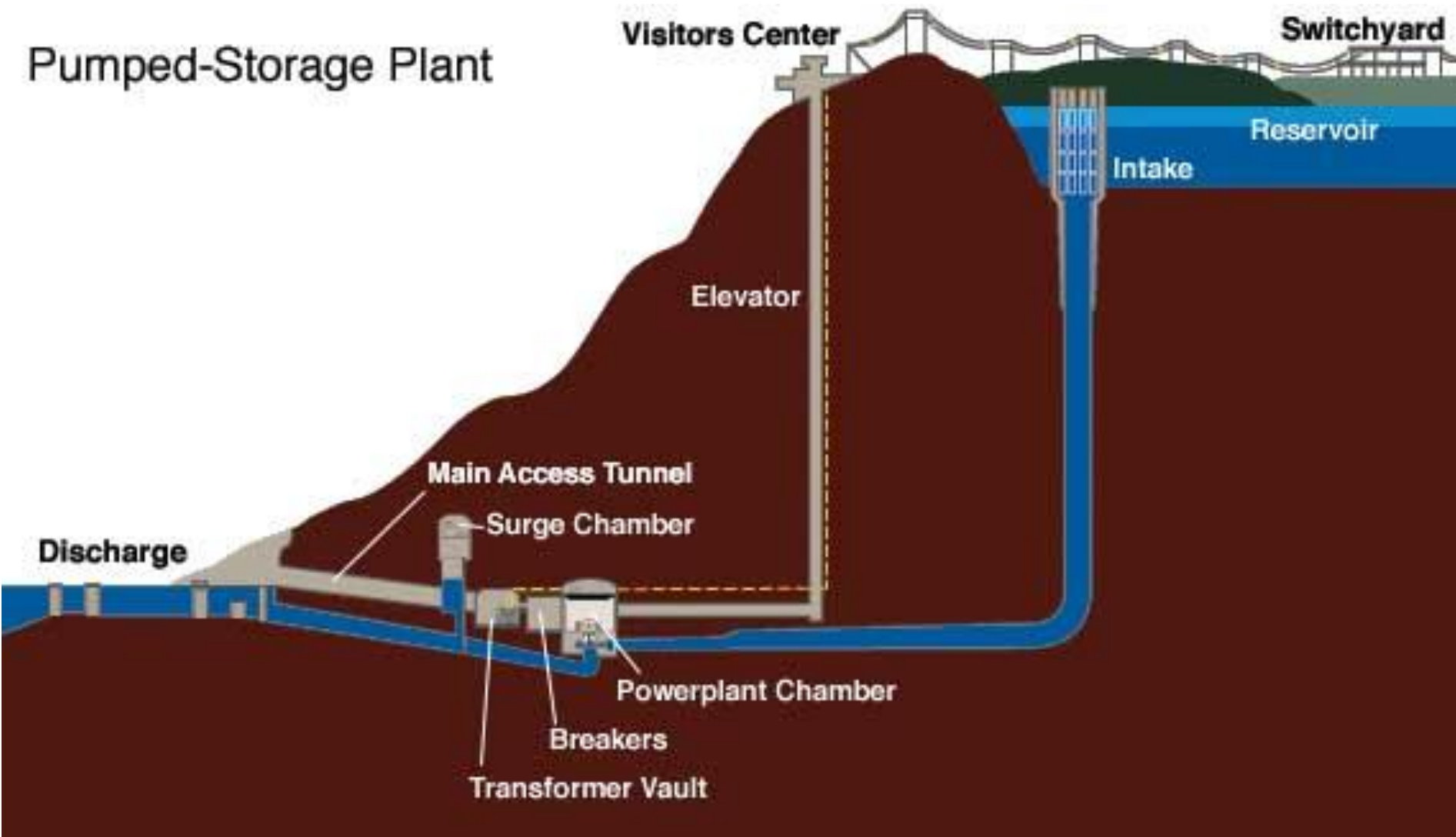
Jeotermal

Canlı (biyo) enerji

# 1. HİDROELEKTRİK ENERJİSİ

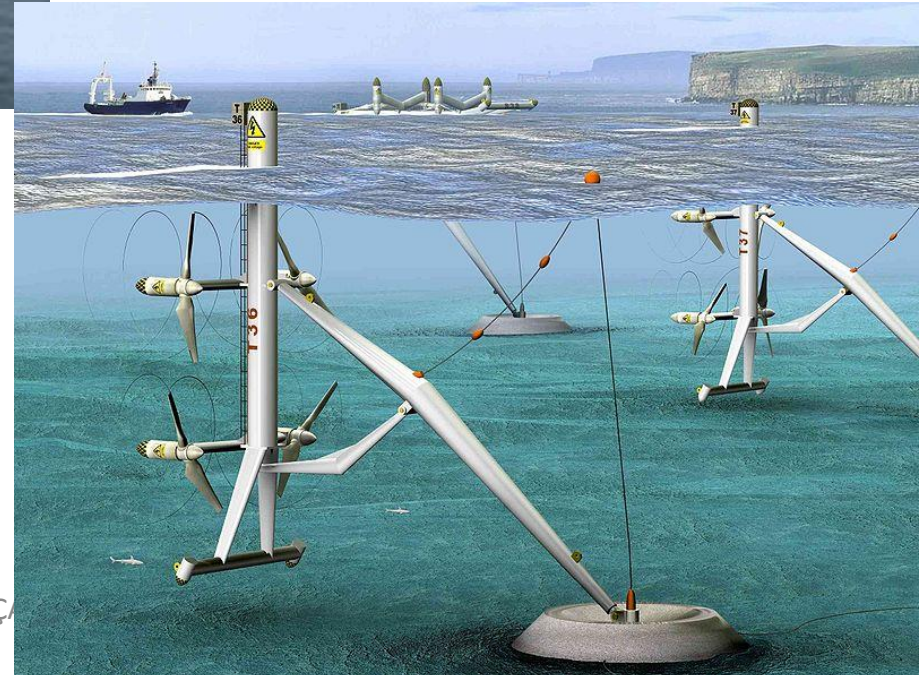


# Pumped-Storage Plant





## Gel-git akım jeneratörleri



# Hidroelektrik Enerji Üretiminin Coğrafi Dağılışı

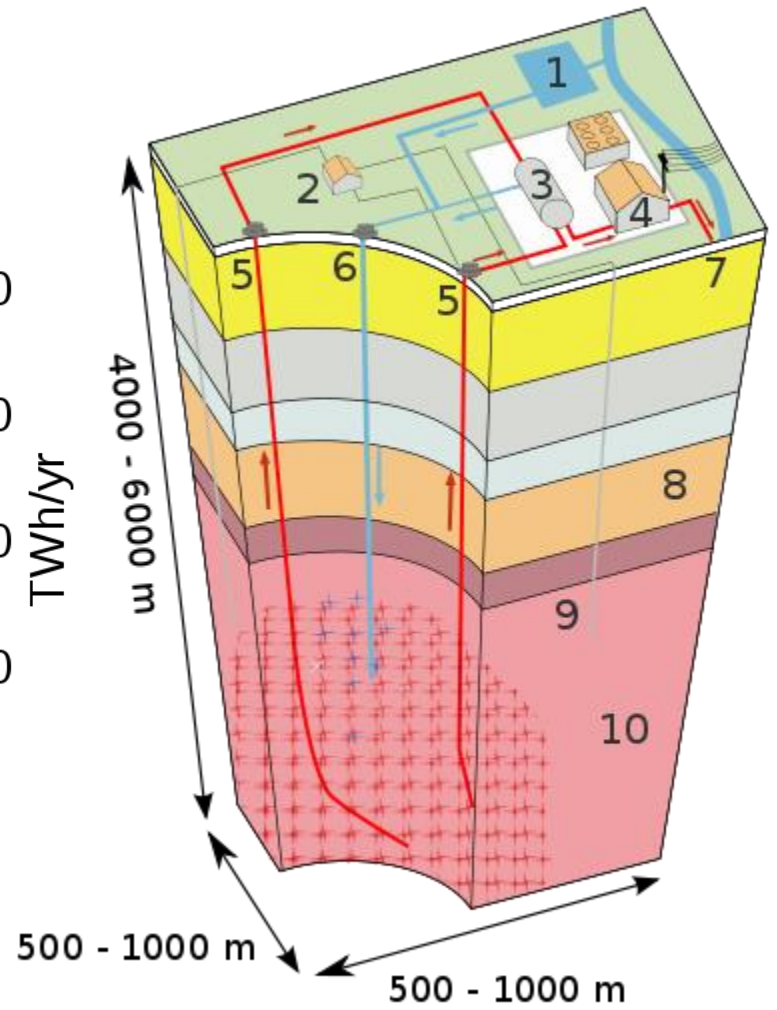
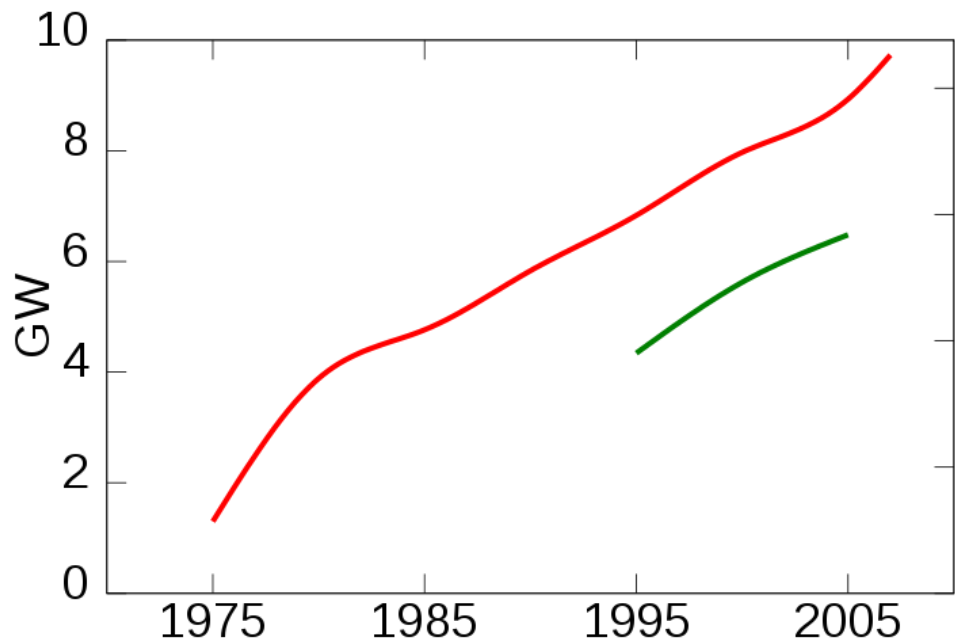
## Ten of the largest hydroelectric producers as at 2009

Country	Annual hydroelectric production (TWh)	Installed capacity (GW)	Capacity factor	% of total capacity
<a href="#">China</a>	652.05	196.79	0.37	22.25
<a href="#">Canada</a>	369.5	88.974	0.59	61.12
<a href="#">Brazil</a>	363.8	69.080	0.56	85.56
<a href="#">United States</a>	250.6	79.511	0.42	5.74
<a href="#">Russia</a>	167.0	45.000	0.42	17.64
<a href="#">Norway</a>	140.5	27.528	0.49	98.25
<a href="#">India</a>	115.6	33.600	0.43	15.80
<a href="#">Venezuela</a>	85.96	14.622	0.67	69.20
<a href="#">Japan</a>	69.2	27.229	0.37	7.21
<a href="#">Sweden</a>	65.5	16.209	0.46	44.34



## 2. JEOTERNAL ENERJİ

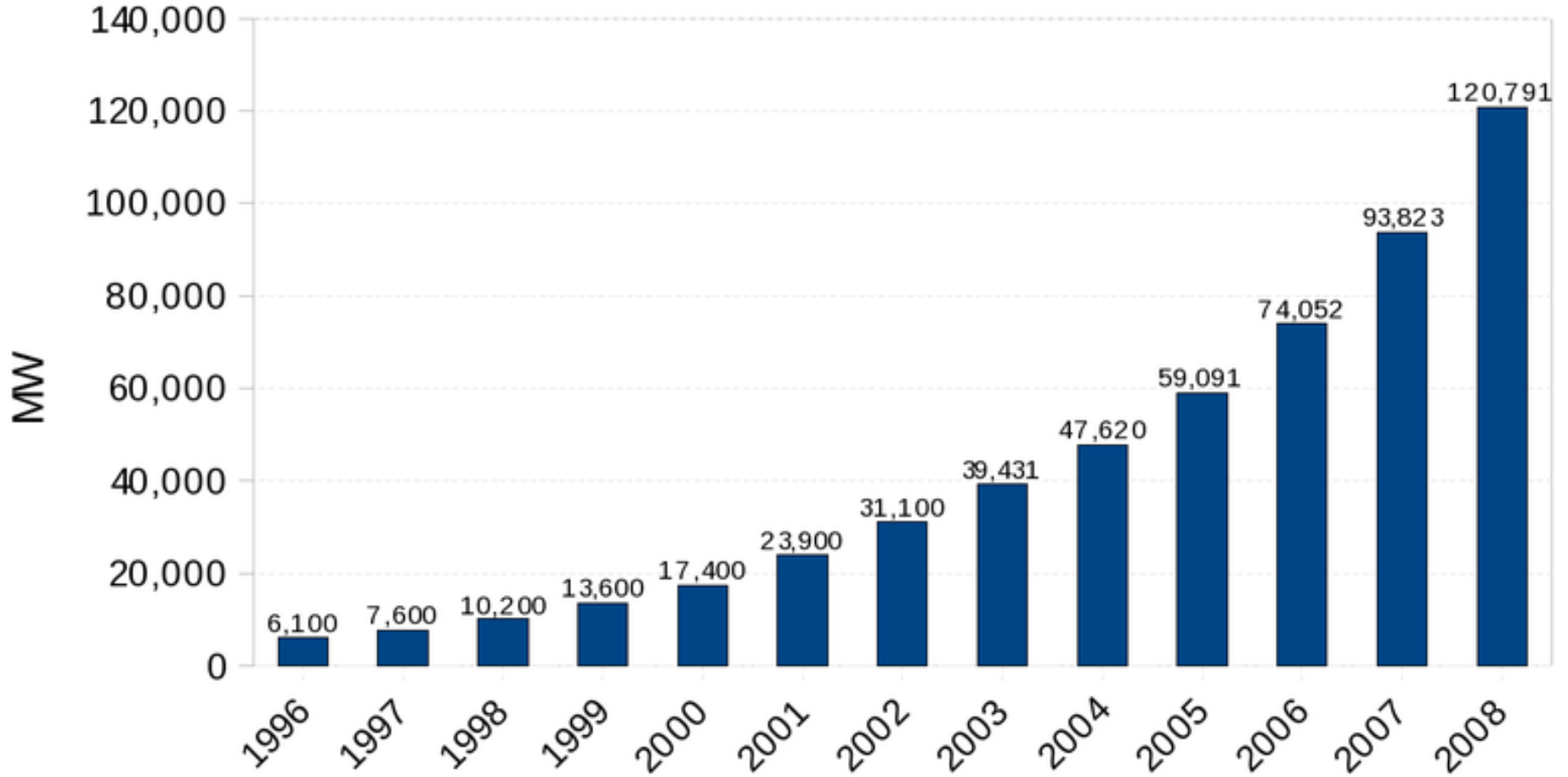




## Installed geothermal electric capacity

Country	Capacity (MW) 2007 <sup>[19]</sup>	Capacity (MW) 2010 <sup>[42]</sup>	Percentage of national production
<a href="#">USA</a>	2687	3086	0.3%
<a href="#">Philippines</a>	1969.7	1904	27%
<a href="#">Indonesia</a>	992	1197	3.7%
<a href="#">Mexico</a>	953	958	3%
<a href="#">Italy</a>	810.5	843	
<a href="#">New Zealand</a>	471.6	628	10%
<a href="#">Iceland</a>	421.2	575	30%
<a href="#">Japan</a>	535.2	536	0.1%
<a href="#">El Salvador</a>	204.2	204	14%
<a href="#">Kenya</a>	128.8	167	11.2%
<a href="#">Costa Rica</a>	162.5	166	14%
<a href="#">Nicaragua</a>	87.4	88	10%
<a href="#">Russia</a>	79	82	
<a href="#">Turkey</a>	38	82	
<a href="#">Papua-New Guinea</a>	56	56	
<a href="#">Guatemala</a>	53	52	
<a href="#">Portugal</a>	23	29	
<a href="#">China</a>	27.8	24	
<a href="#">France</a>	14.7	16	
<a href="#">Ethiopia</a>	7.3	7.3	
<a href="#">Germany</a>	8.4	6.6	
<a href="#">Austria</a>	1.1	1.4	
<a href="#">Australia</a>	0.2	1.1	
<a href="#">Thailand</a>	0.3	0.3	
<b>TOTAL</b>	9,731.9	10,709.7	

### 3. RÜZGAR ENERJİSİ



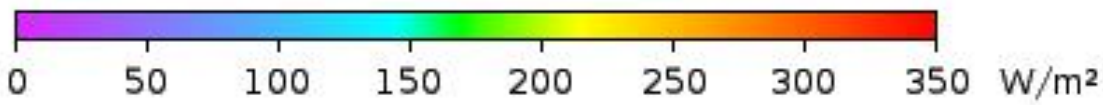
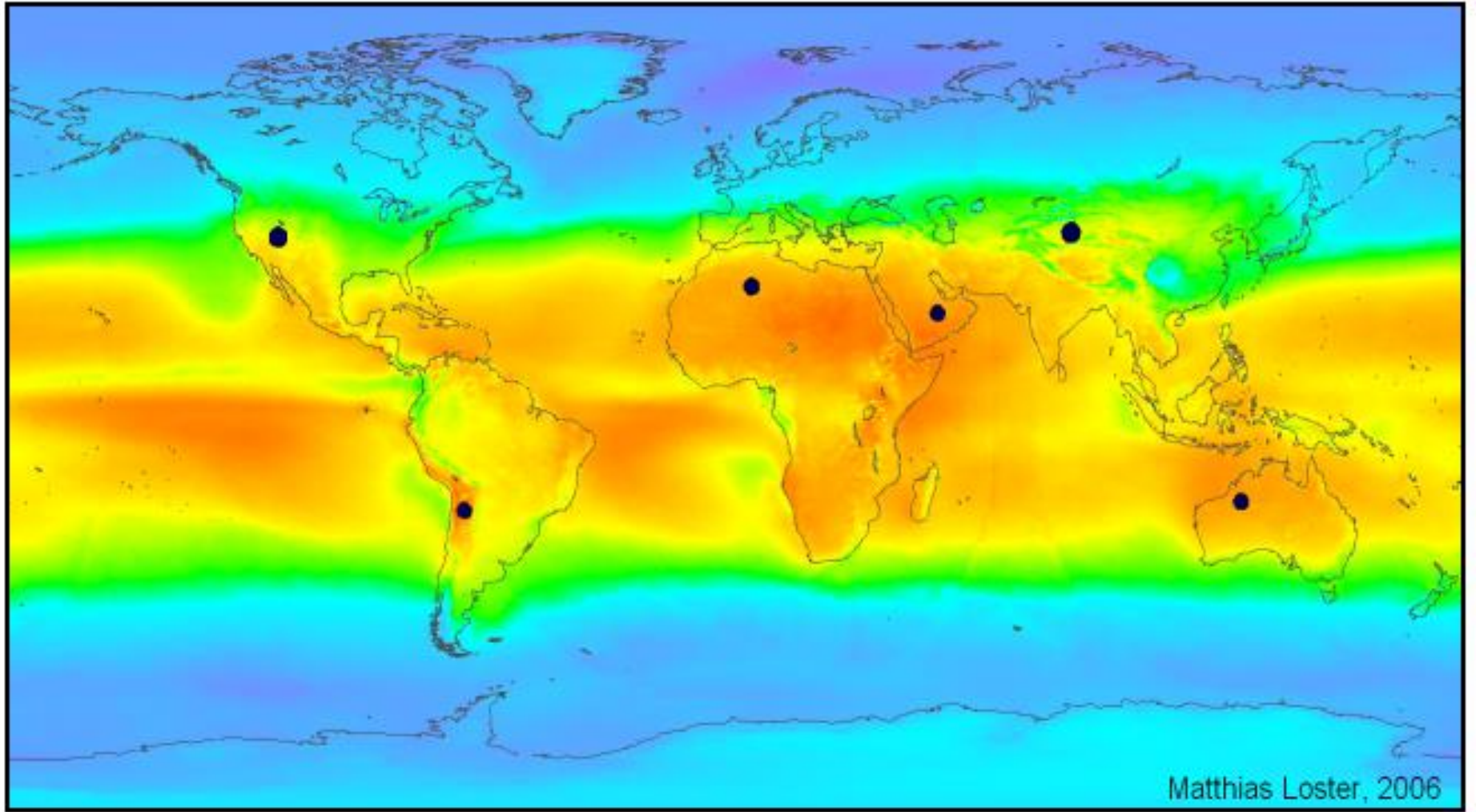
## Top 10 wind power countries (March 2011)<sup>[51][52]</sup>

Country	Windpower capacity (MW)
China	42,287
United States	40,180
Germany	27,214
Spain	20,676
India	13,065
Italy	5,660
France	5,660
United Kingdom	5,204
Canada	4,009
Denmark	



## 4. GÜNEŞ ENERJİSİ





$$\Sigma \bullet = 18 \text{ TWe}$$







## 5. CANLI GAZ (Biyogaz)

