

Energy Issues

IEP Newsletter

U.S. Primary Energy Consumption by Source/Sector

By: Thomas D. Mull, PE, PEM, CEM



In 2014* the United States consumed approximately 98.3 Quadrillion Btus of energy from all sources. The Energy Information Administration (EIA) has broken down the consumption by source and sector. The chart below details the total consumption by source and the percentage of each source that went to the various sectors. Since the chart may be difficult to read highlights are noted below.

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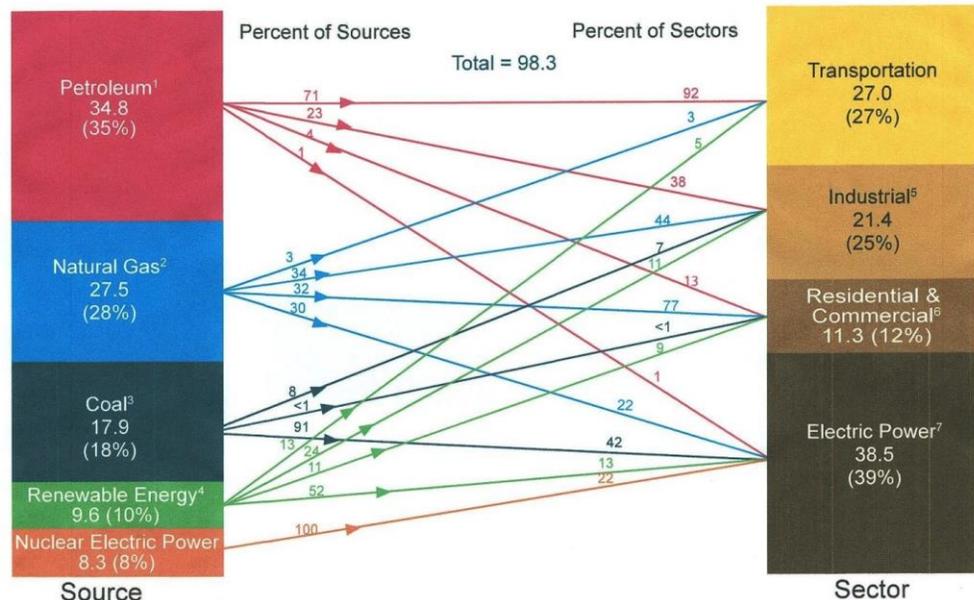
“Fossil fuels comprised 80.2% of the total U.S. consumption in 2014.”



Coal train for electrical generating plant

Primary Energy Consumption by Source and Sector, 2014

(Quadrillion Btu)



- *Petroleum* accounted for approximately 35% of the total consumption, 71% going to transportation.
- Consumption of *natural gas* accounted for about 28% of the total, with the usage being nearly equally distributed between the Industrial (34%), Residential and Commercial (32%) and Electric Power (30%).
- Coal provided 18% of the total, with almost all (91%) being used for the generation of electricity.
- Renewable Energy sources yielded almost 10%. The major sectors were Electric Power, with 52% and Industrial with 24%.
- Nuclear Power was at slightly more than 8% with all going to the generation of electricity.

* Latest data available.

Top 10 Countries Using Solar Power

By: IEP Staff Writer

Following is a listing of countries with the highest reported installed capacity of solar PV. Note that the latest reported values for some were as of second and third quarter 2015, while others were as of year-end.

- | | |
|---------------------------|---------------------------|
| 1. China: 38.2 GW | 6. United Kingdom: 8.7 GW |
| 2. Germany: 35.8 GW | 7. France: 5.4 GW |
| 3. United States: 24.1 GW | 8. Spain: 4.7 GW |
| 4. Japan: 23.3 GW | 9. Australia: 4.1 GW |
| 5. Italy: 18.5 GW | 10. Belgium: 3 GW |



Picture – Carlos Barria Reuters

China surpasses Germany in installed solar PV capacity in 2015.

U.S. Supreme Court Blocks EPA in Regulating Plant Emissions

By: Thomas D. Mull, PE, CEM

In early February the United States Supreme Court blocked the Environmental Protection Agency's efforts to regulate emissions from coal-fired power generating plants. As a result of the order, an appeals court must consider an expedited challenge from twenty-nine (29) states, industry groups and multiple corporations objecting to the proposed restrictions. After the lower court ruling it is likely that the case will return to the high court. However, the Court's willingness to block the ruling with a 5 to 4 vote, while the case proceeds, is unusual and an indication that the case could face a skeptical reception upon its return.

The Court's decision could significantly weaken or even imperil the international global warming accord reached in Paris less than two months ago, according to "climate diplomats". The US President gave assurances that the United States would enact strong policies to significantly reduce carbon emissions. This decision now puts the United States' commitment, and possibly China and India's as well, in question.

It is unclear how the recent death of Justice Anthony Scalia, a noted Constitutional voice on the court, will potentially impact this case.



Jim Bridger Power Plant, WY
Credit – Jim Urquhart/Reuters

Website Updates

By: IEP Staff Writer

The IEP website has been updated to reflect a number of changes. Specific changes include:

- General update information,
- Addition of past quarterly Newsletters starting with the Winter 2012 issue,
- An updated listing of the Board of Directors,
- Attachment of a revised IEP Brochure, and
- The new screen for payment of PEM examinations and certification renewals utilizing credit cards.

Payment of PEM examination fees and certification renewals can now be made utilizing credit cards at the IEP Homepage

Around the World

IEP Staff Writer

Internal Energy Agency Oil Market

Report — After a 2015 global oil production five-year high (1.6 million barrels/day), demand for crude oil is forecasted to reduce to 1.2 million barrels/day. The slowdown is a result of increased inventories and reduced demand in China, Europe and the U.S.

Global production dropped by 0.2 million barrels/day in January 2016, a result of reduced non-OPEC output that was partially offset by increased (280,000 barrels/day) OPEC production. For 2016 non-OPEC output is expected to continue to decline.

On February 16th Qatar, Saudi Arabia, Russia and Venezuela announced that they would freeze output at January levels, ending hopes of a cut in production. Oil producer Iran swiftly dashed hopes of a deal however, saying it would not abandon its share in the oil market.

Statoil Strengthens its Position in

Uruguay — Statoil, a major international energy company with interests in more than 30 countries, has signed an agreement with Tullow Oil, a leading independent oil exploration & production company, to acquire a 35% working interest in an offshore exploration block, deepening its position in Uruguay.

Recently, Statoil announced its entry into Uruguay as partner in another exploration block. By accessing this new adjacent block Statoil continues to pursue this regional geological trend.

Australian Pumped Storage Project

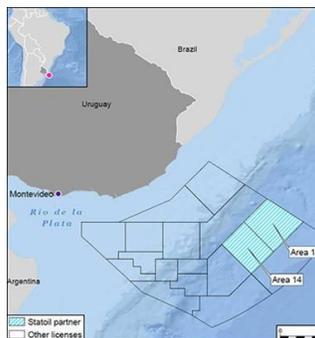
to Use Closed Mine — The ARENA Group Limited is contributing \$4 million to continue a feasibility study by Genex Power Limited for the technical and commercial feasibility of constructing a 330 MW pumped storage hydroelectric facility. The proposed pumped hydro power plant at the closed Kidston Gold Mine in North Queensland is projected to cost \$282 million.



Kuwait Oil Facility



Qatar



Courtesy of Statoil



Closed Australian Mine Site

Mr. Ian Kay, CEO of ARENA, stated that “Energy storage is becoming increasingly important as more renewables are connected to Australia’s electricity grids. Pumped hydro storage can provide a cost-effective alternative to large-scale battery storage and concentrating solar storage.

Low Oil Prices – Energy Security

Risk – IEA Executive Director Dr. Fatih Birol said low oil prices may increase energy security risks, especially given recent developments in the Middle East. In an interview with the Sydney Morning Herald he said that if prices do not recover, governments may need to take action, such as cutting taxes or royalties, to relieve pressure on the oil sector and avoid further drops in investment that could undermine future supply.



Around the World

(Continued)

BP Extends Development of Oman's Khazzan Gas Field – BP and Oman Oil have signed an agreement with the Government of the Sultanate of Oman committing to amend the Oman Block 61 exploration and production sharing agreement (EPSA), extending the license area of the block and enabling a further development of the major Khazzan tight gas field. BP is the operator of Block 61 with a 60% interest and Oman Oil holds the other 40%.

Under the amended EPSA, the extension will add over 1,000 km² to the south and west of the original 2,700 km² Block 61. The extension will allow a second phase of development, accessing additional resources in the area that have been identified by drilling activity within the original block. Development of this additional resource is subject to final approval of the Government of Oman and of BP; both expected in 2017.



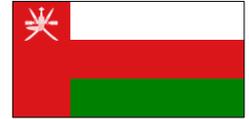
US Oil Drillers Cut Rigs to Least in 6 Years – During the second week in February U.S. energy companies cut oil exploration rigs. This was the eighth such weekly reduction in a row and brought inventory to the lowest level since 2010. Pressure from reduced crude oil prices is causing continuing firm cutbacks.

Some analysts forecast the rig count will decline for a few more months before recovering later this year, with anticipated increases in the price of crude oil.

Crude oil futures are expected to be around **\$35 per barrel** for the balance of **2016** and just **below \$42 for 2017**.

Gamesa, Siemens Negotiating Wind Merger Terms – On Wednesday February 10th two sources told Reuters that Siemens and the Spanish renewable energy group Gamesa are finalizing negotiations to merge their wind power assets.

At the end of 2014 Spain had an estimated 23 GW of wind generating capacity, representing 20.4% of their total requirement.



Oman



Spanish Wind Turbines

New IEP Contact Information

Bv: IEP Staff Writer

Effective February 1, 2016 a new *Institute of Energy Professionals* e-mail address became effective. When contacting IEP for information about *Professional Energy Manager* (PEM) requirements or general information about IEP use ContactUs@theiep.org. The previous e-mail address (danmull@theiep.org) will still be available for more detailed issues and questions.



Professional Energy Manager

IEP Contact Information:

Phone (USA):
1-919-280-3480

E-mail:
Contactus@theiep.org

Website:
<http://www.theiep.org>