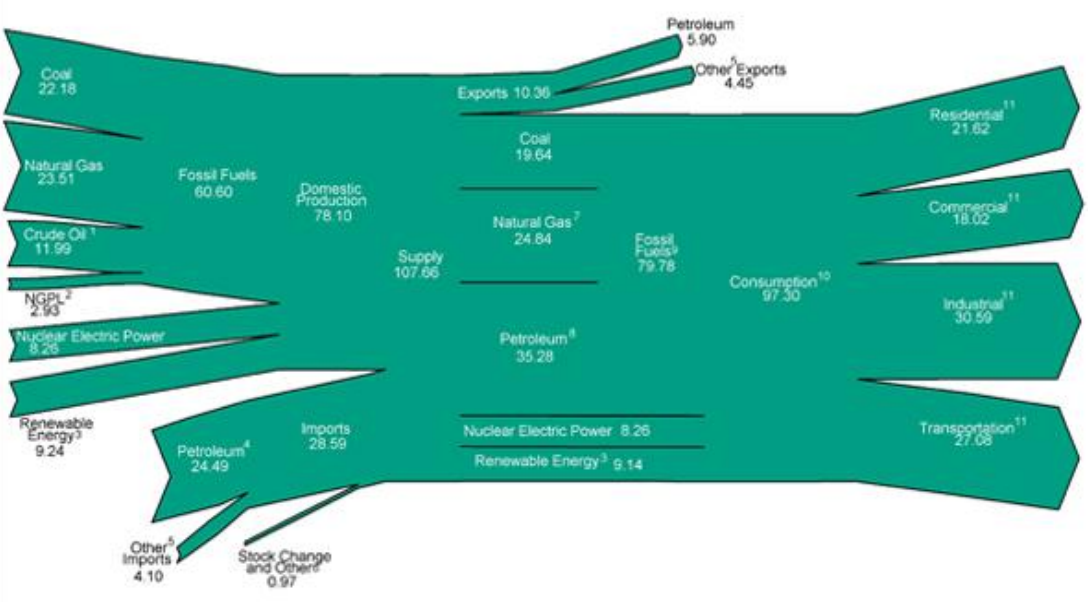
CURRENT AND FUTURE ENERGY SOURCES OF THE USA

Looking at the U.S. Energy Profile, one can see that the U.S. is the world's largest energy producer, consumer, and net importer.

The U.S. also ranks:

- First in worldwide reserves of coal;
- Sixth in worldwide reserves of natural gas;
- Eleventh in worldwide reserves of oil.

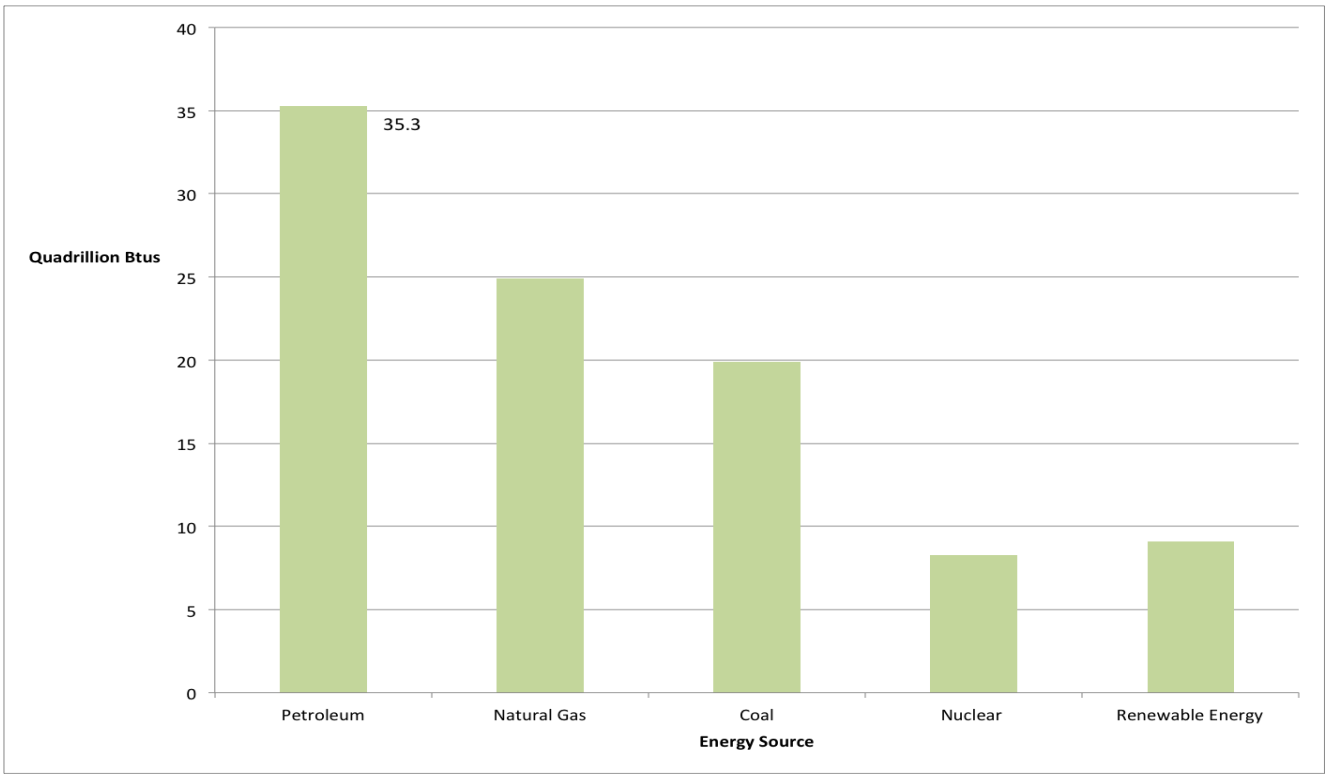


Total Energy Flow, 2011(Quadrillion Btu).

US Energy Consumption by Source

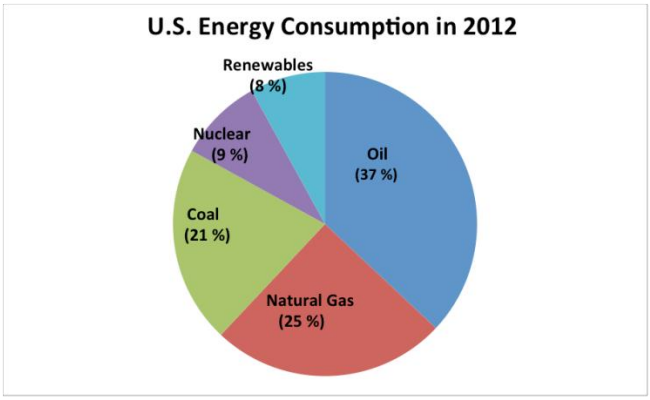
The graph shows how dependent the U.S. is on our petroleum supply, as it accounts for almost 40% of our energy.

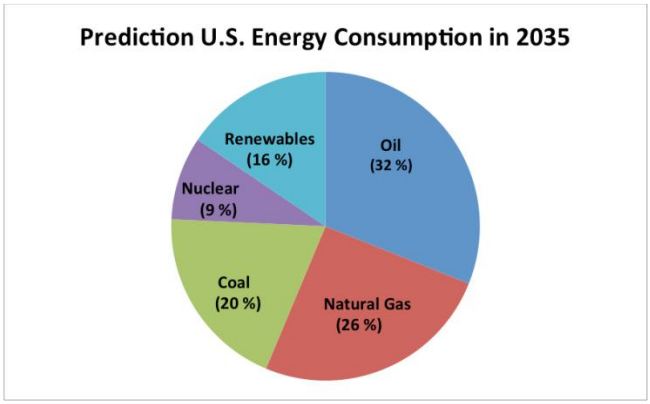
Our next two highest sources of energy, like petroleum, are non renewable and include natural gas and coal. Only a very small percentage of our energy comes from renewable energy sources such as wood and water (hydroelectricity).



US Energy Consumption over Time

U.S. energy consumption is expected to increase more rapidly than domestic energy supply, and net imports will constitute 35.1 percent of consumption in 2035, up from 20.5 percent in 2009.





Text alternative to the Energy Consumption over Time graph

The U.S.A.'s Energy Sources and Their Future Outlook.

The table below summarizes the U.S.'s energy sources and their future outlook.

Three of the USA's largest energy sources		
Source	**Future Outlook**	**Advantages / Disadvantages**
Oil	In 2010, domestic supply was 14.72 million barrels per day and net imports were 9.17 million barrels per day. The trend of increasing U.S. dependence on imported oil in the past decade is expected to continue. Net imports, which accounted for 62.3 % in 2010, are expected to decline to 53 % in 2030 and then increase to 56 % in 2035. Petroleum demand is projected to grow from 19.17 million barrels per day in 2010 to 19.9 million barrels per day in 2035.	Approximately 72.1 % of the petroleum in the U. S. is used for transportation and about 22.5% is used by the industrial sector.
Natural Gas	U.S. natural gas production and consumption were nearly in balance through 1986. When consumption began to outpace production, imports of natural gas rose	Energy Information Administration

	to meet U.S. requirements for the fuel. In 2009, production stood at 20.65 trillion cubic feet (Tcf), net imports at 2.68 Tcf and consumption at 22.85 Tcf. The projections for domestic natural gas consumption in 2030 is 26.1 trillion cubic feet per year, as compared with 24.13 trillion cubic feet in 2010. In the reference case, natural gas consumption in the electric power sector is projected to increase from 7.38 trillion cubic feet in 2010 to a peak of 8.08 trillion cubic feet in 2015. Natural gas use in the electric power sector declines after 2020, to 7.87 trillion cubic feet in 2025, as new coal-fired generating capacity displaces natural-gas-fired generation. Continued growth in residential, commercial, and industrial consumption of natural gas is roughly offset by the projected decline in natural gas demand for electricity generation. As a result, overall natural gas consumption is almost flat between 2020 and 2025.	forecasts greater dependence on more costly supplies of natural gas, such as imports of liquefied Natural gas (LNG), and remote resources from Alaska and the Mackenzie Delta in Canada. LNG imports, Alaskan production, and production in the 48 States from nonconventional sources are not expected to increase enough to offset the impacts of resource depletion and increased demand. The industrial sector was the largest consuming sector of natural gas. Production of gas from shale (such as Marcelleus) is likely to change

		the natural gas usage very quickly. Gas can be converted to oil. New gas to liquid fuel plants is US are likely to change the oil imports scenario in the next two decades.
Coal	World coal use has been in a period of generally slow growth since the 1980s, and that trend is expected to continue through the projection period. With the projected decline in coal consumption averaging 2.2 percent per year from 2010 to 2015. The growth in coal production is projected to be even stronger from 2010 to 2035, averaging 0.4 percent per year, as substantial amounts of new coal-fired generating capacity are added and several Coal to Liquids (CTL) plants are brought on line.	The primary reason for the change in the rate of growth is a substantial increase in projected coal demand for electricity generation resulting from higher natural gas prices. Coal is projected to play a more important role in future additions to electricity generation capacity, particularly in the later years of the forecast. It is projected that a total of 1,137 million tons of coal will be consumed in 2035.

US Vehicle Fuel Consumption

The table below shows the vehicle fuel consumption and travel between 1960 and 2010.

US Vehicle fuel consumption and travel between 1960 and 2010.							
-	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2010**
Vehicles registered (thousands) [a]	73,858	111,242	161,490	193,057	225,821	241,194	250,272
Vehicle-miles traveled (millions)	718,762	1,109,724	1,527,295	2,144,362	[R]2,746,925	2,989,807	2,966,494
Fuel consumed (million gallons)	57,880	92,329	114,960	130,755	[R]162,554	179,100	169,679
Average miles traveled per vehicle (thousands)	9.7	10.0	9.5	11.1	12.2	12.4	11.8
Average miles traveled per gallon	12.4	12.0	13.3	16.4	16.9	16.7	17.5
Average	784	830	712	677	[R]720	743	678

fuel consumed per vehicle (gallons)							

Key: R = revised [a] Includes personal passenger vehicles, buses, and trucks. Source: 1960-94: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics Summary to 1995, FHWA-PL-97-009 (Washington, DC: July 1997), table VM-201A.

Electricity

World net electricity generation is projected to increase by 84 percent, from 19.1 trillion kilowatthours in 2008 to 25.5 trillion kilowatthours in 2020 and 35.2 trillion kilowatthours in 2035. US electricity generation is expected to grow from 3,992 billion kilowatthours in 2010 to 4558 kilowatthours in 2035.
Growth in electricity use for computers, office equipment, and electrical appliances in the residential and commercial sectors is partially offset by improved efficiency in these and other, more traditional electrical applications, by the effects of demand-side management programs, and by slower growth in electricity demand for some applications, such as air conditioning.

Most capacity additions over the next 10 years are natural-gas-fired plants, increasing the natural gas share to 26 percent and lowering the coal share to 20 percent in 2035. Nuclear and renewable generation increase as new plants are built stimulated by Federal tax incentives and rising fossil fuel prices.

The nuclear generation (about 9 percent of total electricity supply in 2012) is projected to remain at about 9 percent in 2035. Generation from renewable resources is expected to rise from 8 percent in 2012 to 16 percent in 2035.

Source: https://www.e-education.psu.edu/egee102/node/1930