



Transforming America's Energy Future



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Alabama Energy Profile

Developed by



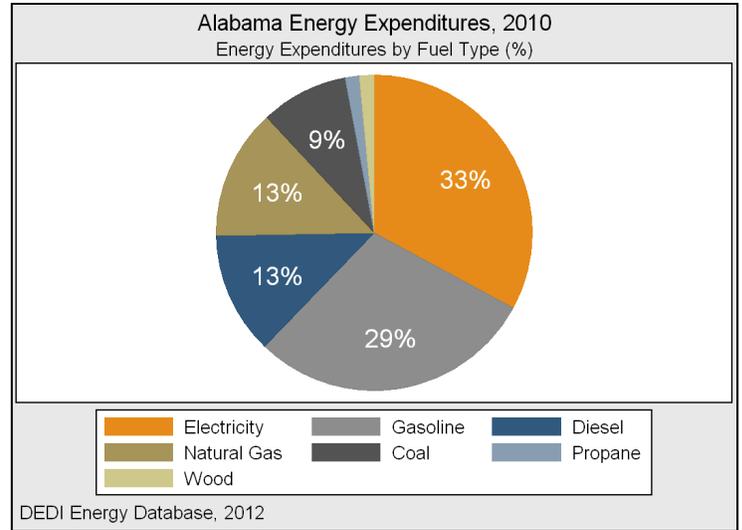
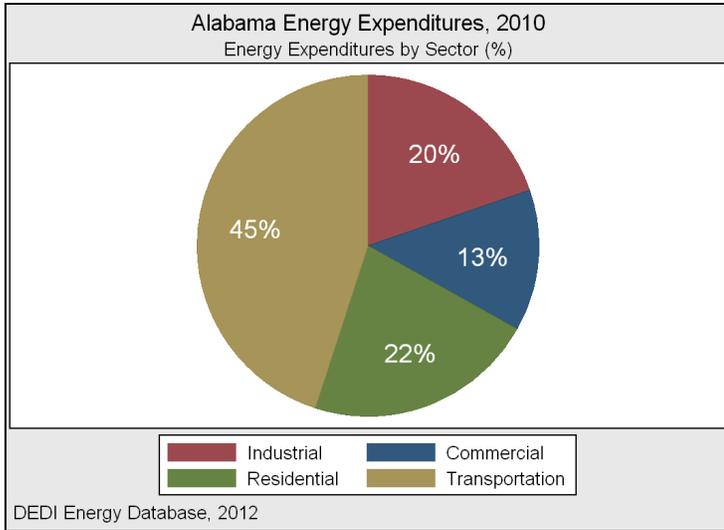
Summary

The first edition of the Alabama Energy Profile is offered by the National Association for State Energy Officials (NASEO) and the Kentucky Department for Energy Development and Independence (DEDI) to function as a quick reference for energy information particular to the State of Alabama. Data has been collected for the most recent year available from a variety of sources such as the Energy Information Administration (EIA), the U.S. Environmental Protection Agency (EPA), the Bureau for Economic Analysis (BEA), the Bureau of Labor Statistics (BLS), and the U.S. Census. This document provides data on the dynamics of energy expenditures, energy consumption, energy production, and electricity generation that describe the economy of Alabama. Summary state-level statistics are provided in aggregate, as well as for specific sectors of the economy and individual commodities. Overall, Alabama was a net importer of energy in 2010, and maintained an industrial sector that was the leading consumer of energy resources.

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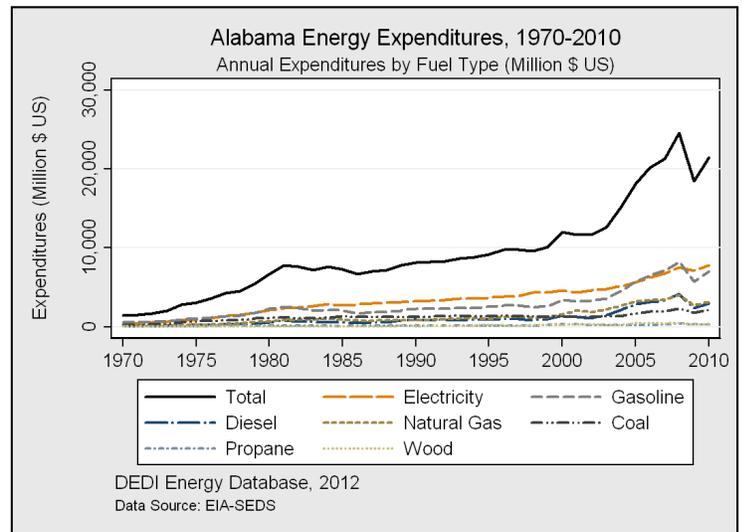
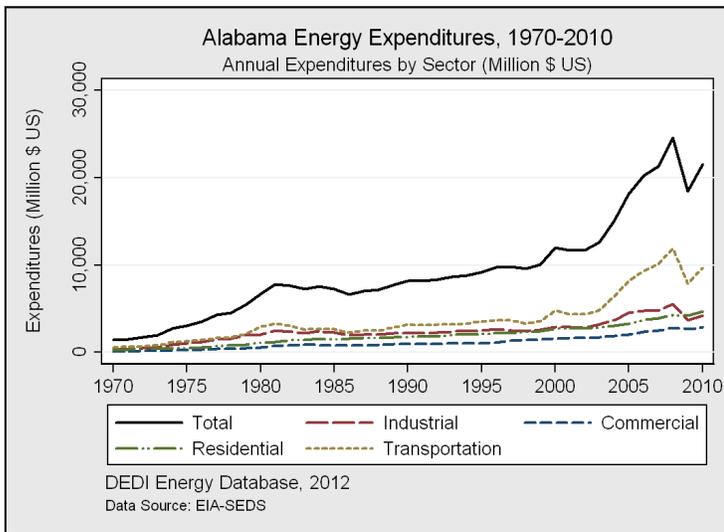
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Alabama Energy Expenditures



Sector	Million (\$ US)	Percentage
Total	21,507	100%
Transportation	9,683	45%
Residential	4,707	22%
Industrial	4,243	20%
Commercial	2,873	13%

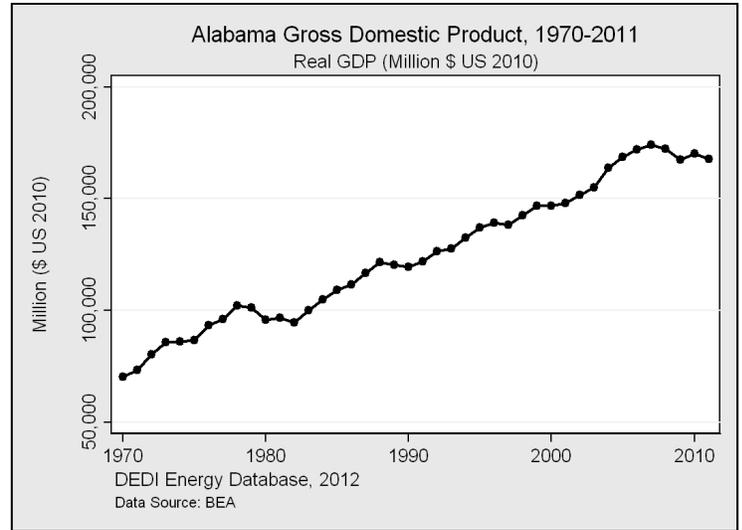
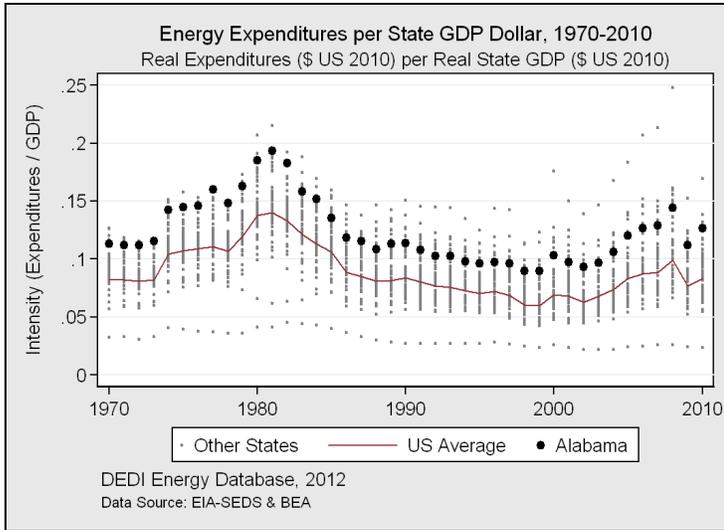
Fuel Type	Million (\$ US)	Percentage
Total	21,507	100%
Electricity	7,833	36%
Gasoline	6,990	32%
Natural Gas	3,181	15%
Diesel	2,984	14%
Coal	2,136	10%



In 2010, total energy expenditures in Alabama were 21.5 billion dollars, an increase of 17% from 2009. Dividing these costs by economic sector, the transportation sector accounted for the largest amount of energy expenditures in 2010.

Analyzing energy expenditures by fuel type, the purchase of electricity was the highest concentration of expenditures in Alabama in 2010. Compared with 2009, total electricity expenditures displayed an increase of 10% in 2010.

Alabama Energy Expenditures

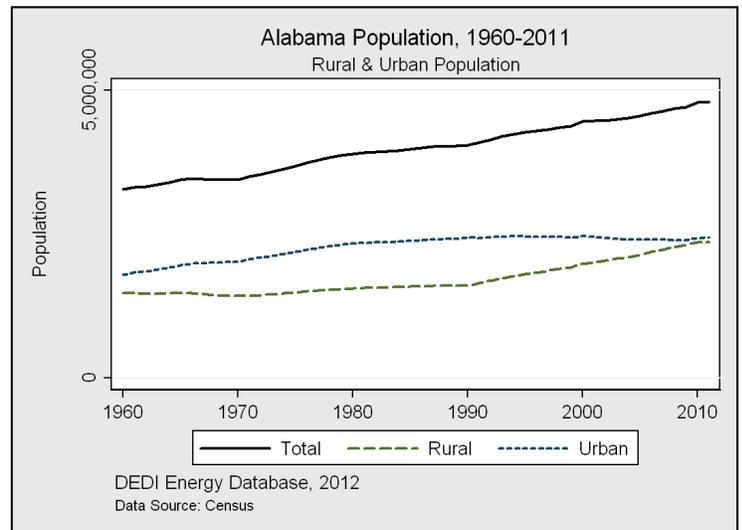
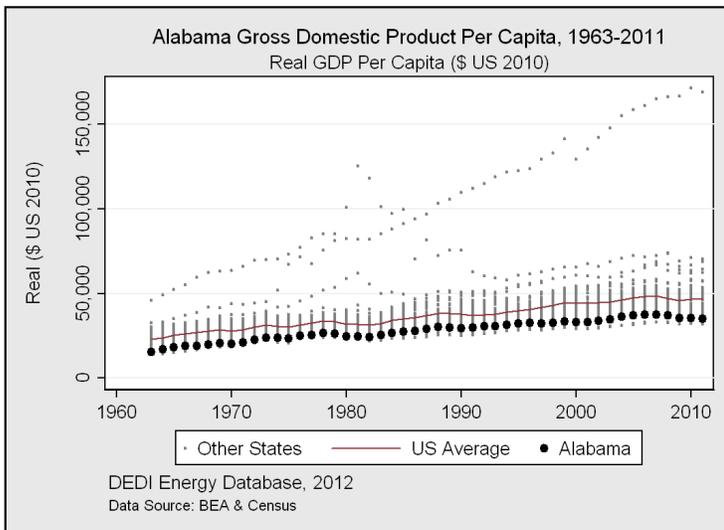


Energy Expenditures & GDP

In 2010, citizens, institutions, and firms in Alabama on average spent \$0.13 on energy commodities and/or energy consumption to produce \$1 of state gross domestic product. This energy expenditure level per dollar of economic output rose by 13% compared with 2009.

Gross Domestic Product

The state gross domestic product of Alabama was \$167.7 billion in 2011. In that year, the state GDP of Alabama fell by 2% in inflation-adjusted 2010 dollars. Since the year 2000, the state gross domestic product of Alabama has risen by 14%.



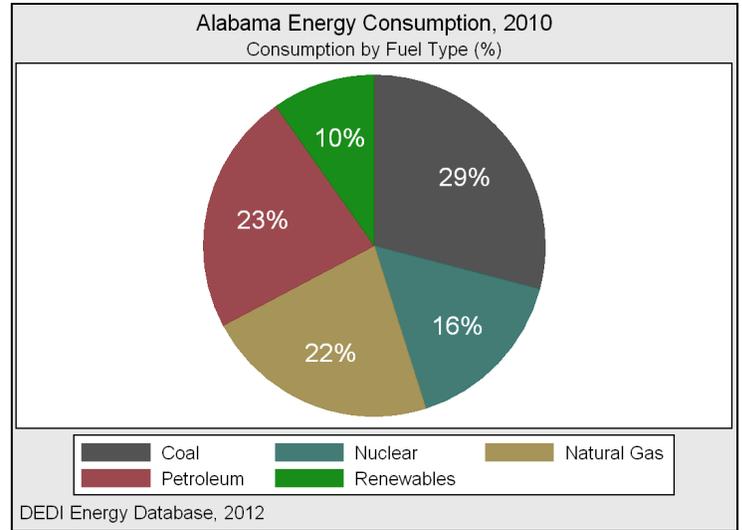
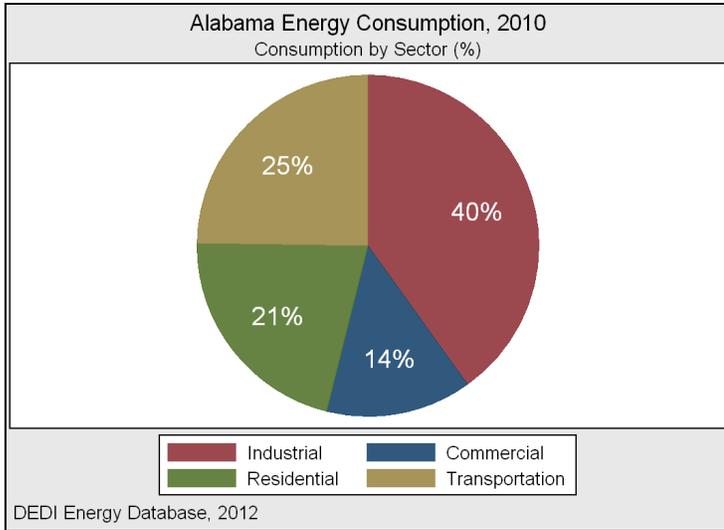
Gross Domestic Product per Capita

The state gross domestic product per capita of Alabama in 2011 was \$34,908. Compared with 2010, state gross domestic product per capita fell by 2%. This statistic uses nominal income data adjusted for inflation to 2010 dollars.

Rural & Urban Population

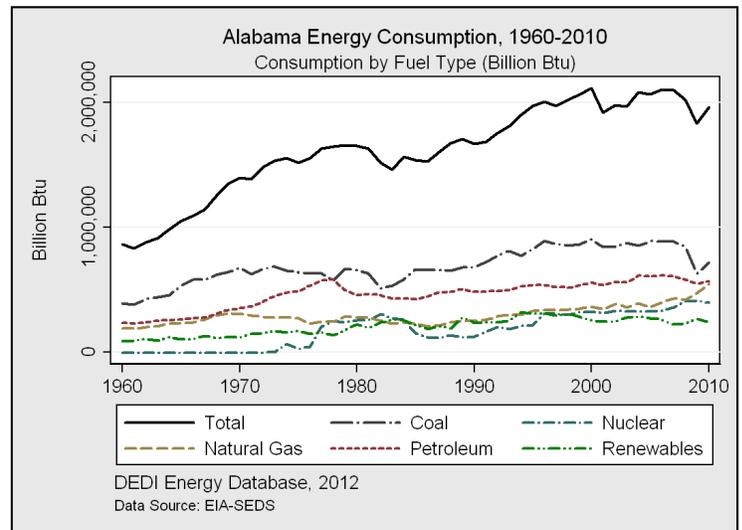
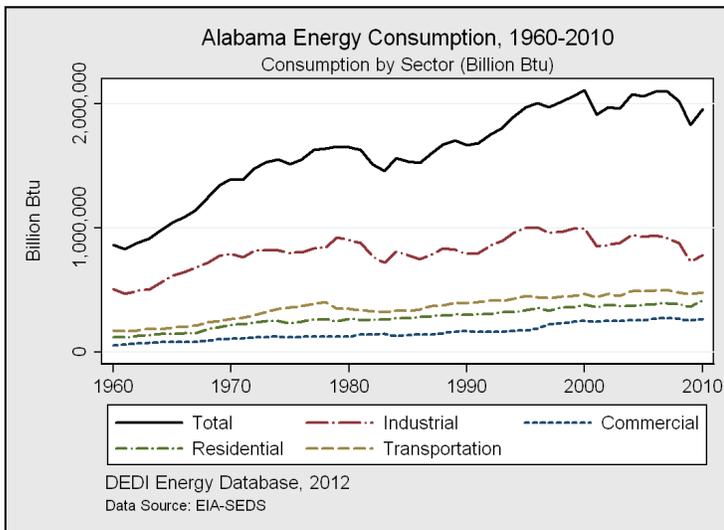
In 2011, the population of Alabama was estimated to be around 4.8 million, with the majority of the population located in urban areas throughout the state. Since the year 2000, the population of Alabama has risen by approximately 8%.

Alabama Energy Consumption



Sector	Billion Btu	Percentage
Total	1,959,696	100%
Industrial	785,810	40%
Transportation	485,514	25%
Residential	417,483	21%
Commercial	270,890	14%

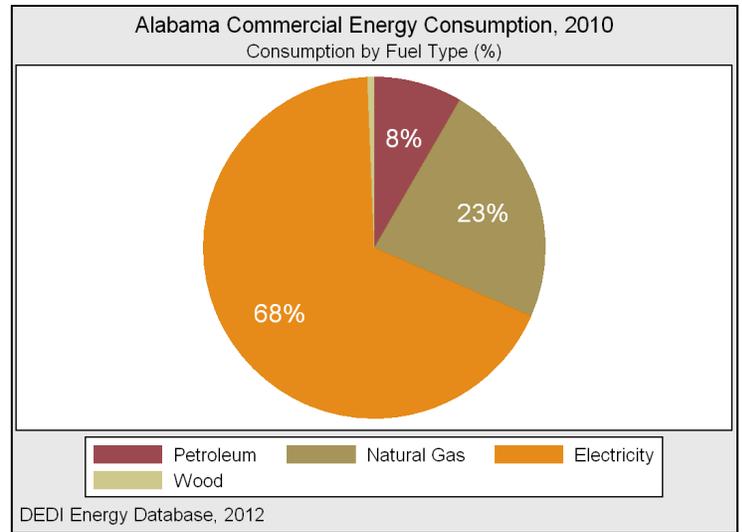
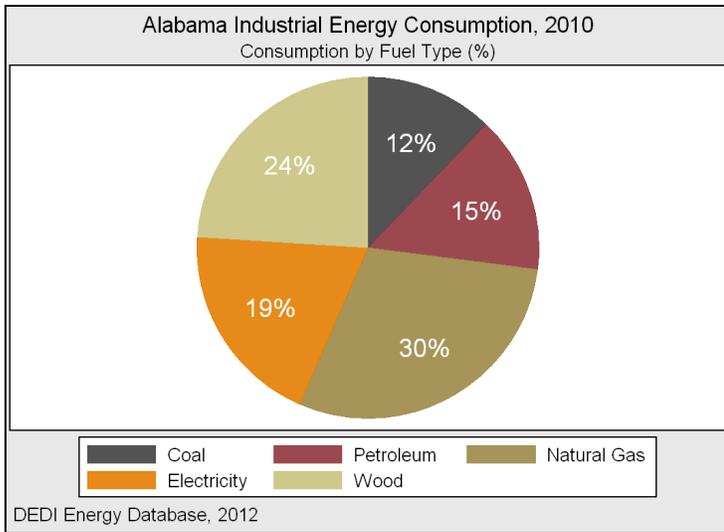
Fuel Type	Billion Btu	Percentage
Total*	1,959,696	100%
Coal	718,736	29%
Petroleum	567,639	23%
Natural Gas	546,917	22%
Nuclear	396,557	16%
Renewables	241,056	10%



In 2010, total energy consumption in Alabama was 1.96 quadrillion Btu, an increase of 7% from 2009. Dividing this consumption by economic sector, the industrial sector accounted for the largest amount of energy consumption in 2010.

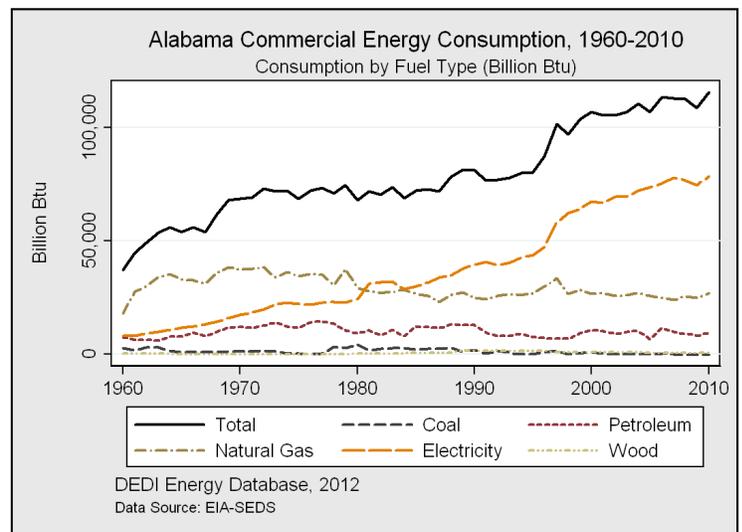
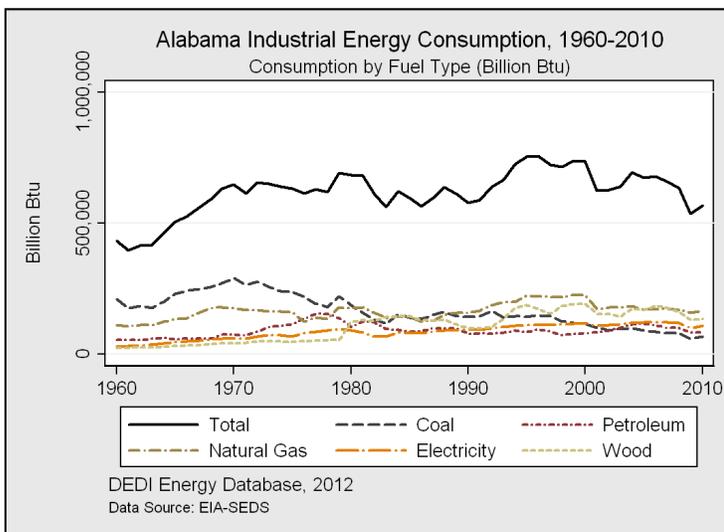
Characterizing energy consumption by fuel type or commodity, the use of coal was the highest concentration of energy consumption in Alabama in 2010. Compared with 2009, the consumption of coal rose by 14% in 2010. *Alabama exported 501,743 Billion Btu of electricity in 2010, which is subtracted from the summation of in-state energy consumption.

Alabama Energy Consumption



Fuel Type	Billion Btu	Percentage
Net Consumed*	567,406	100%
Natural Gas	167,678	30%
Wood Products	135,940	24%
Electricity	110,377	19%
Petroleum	84,499	15%
Coal	68,870	12%

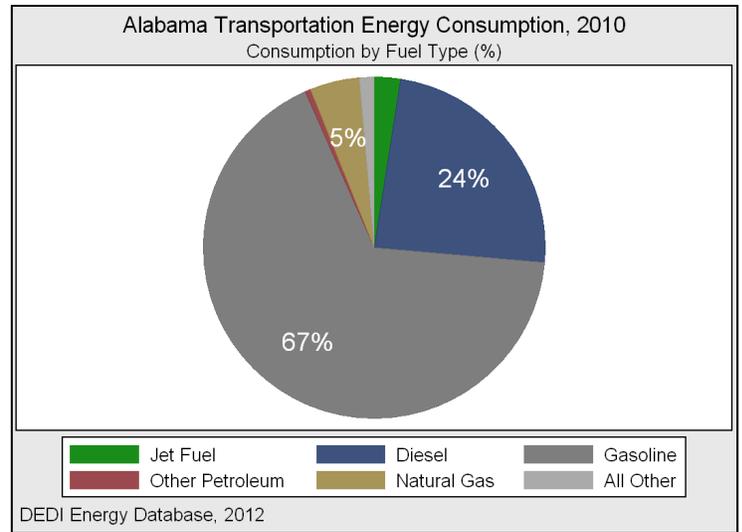
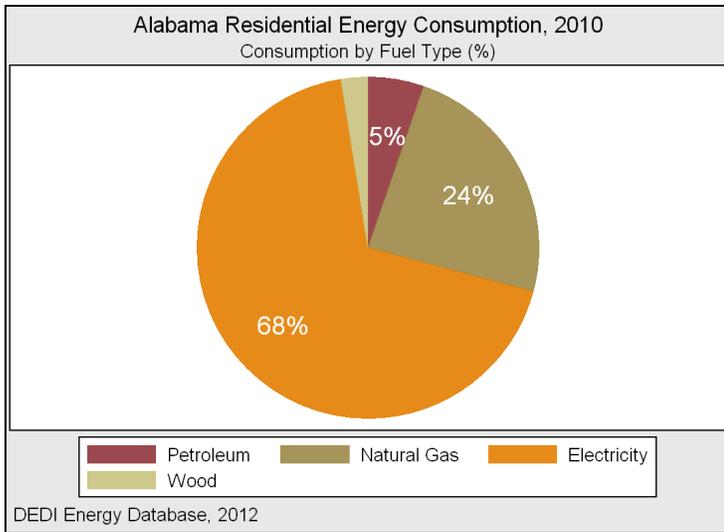
Fuel Type	Billion Btu	Percentage
Net Consumed*	115,718	100%
Electricity	78,421	68%
Natural Gas	26,934	23%
Petroleum	9,612	8%
Wood Products	752	1%
Ethanol	10	<1%



In 2010, net industrial energy consumption in Alabama was 567,406 billion Btu, an increase of 6% from 2009. Accounting for energy use across fuels, natural gas represented the largest amount of industrial energy consumption and rose by 5% compared with 2009. *Net energy consumption does not include the associated energy losses of electricity generation and transmission; therefore, the sum of fuel inputs may differ from the total energy directly consumed by end-users.

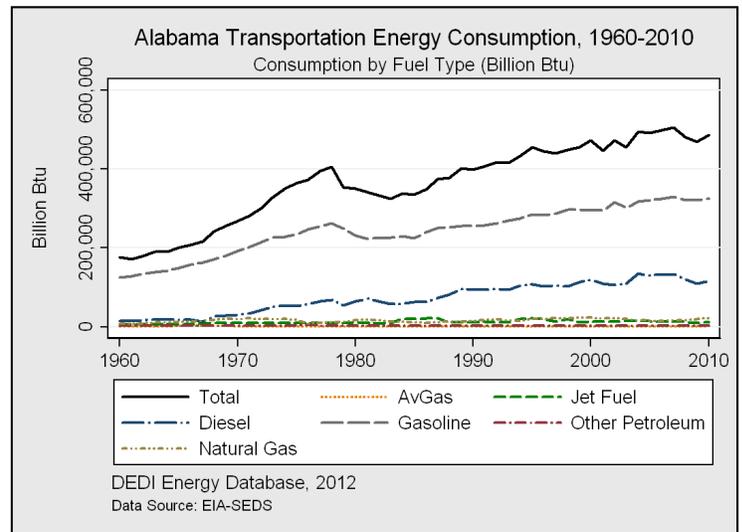
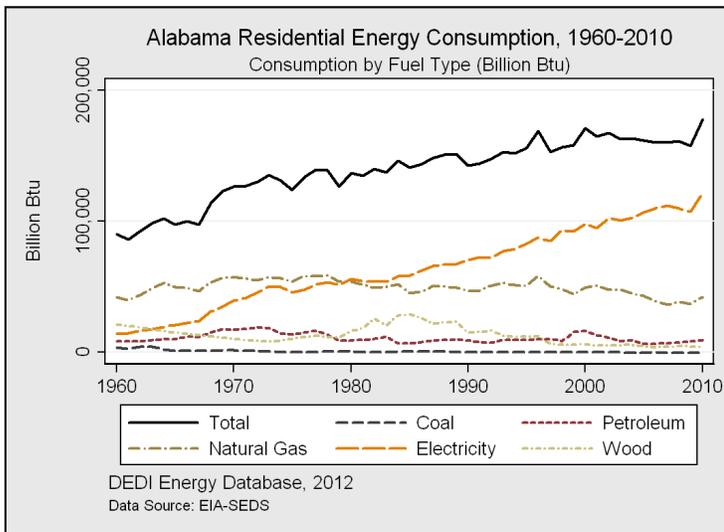
Net commercial energy consumption in Alabama rose by 6% in 2010 to over 115,718 billion Btu. During 2010, electricity constituted the largest portion of commercial energy consumption and rose by 5% compared with 2009. *Net energy consumption does not include the associated energy losses of electricity generation and transmission; therefore, the sum of fuel inputs may differ from the total energy directly consumed by end-users.

Alabama Energy Consumption



Fuel Type	Billion Btu	Percentage
Net Consumed*	177,612	100%
Electricity	121,226	68%
Natural Gas	42,339	24%
Petroleum	9,324	5%
Wood	4,498	3%
Geothermal	96	<1%

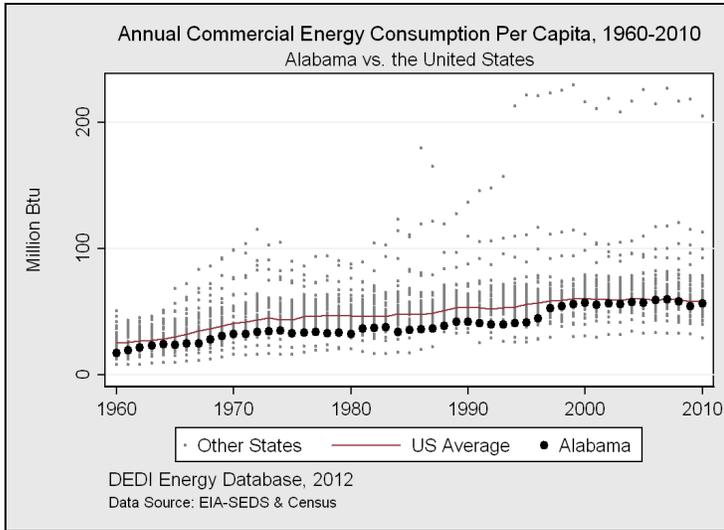
Fuel Type	Billion Btu	Percentage
Net Consumed	485,514	100%
Gasoline	325,184	67%
Diesel	115,939	24%
Natural Gas	22,560	5%
Jet Fuel	11,948	2%
All Other	6,846	1%



Net residential sector energy consumption was 177,612 billion Btu in Alabama in 2010. This amount was an increase of 13% compared with 2009. Overall, residential energy consumption was led by electricity use in 2010. *Net energy consumption does not include the associated energy losses of electricity generation and transmission; therefore, the sum of fuel inputs may differ from the total energy directly consumed by end-users.

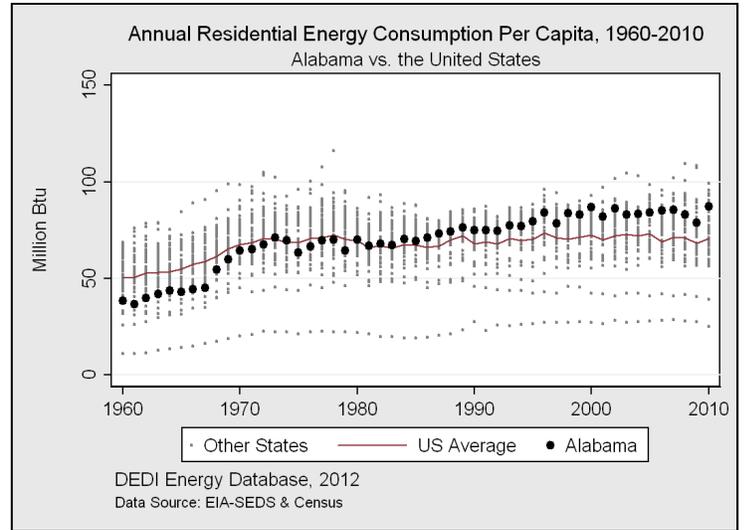
In 2010, the transportation sector of Alabama consumed 485,514 billion Btu of energy commodities. This total reflected an increase of 4% in transportation energy consumption compared with the previous year. Unsurprisingly, gasoline was the largest source of transportation sector energy consumption in 2010.

Alabama Energy Intensity



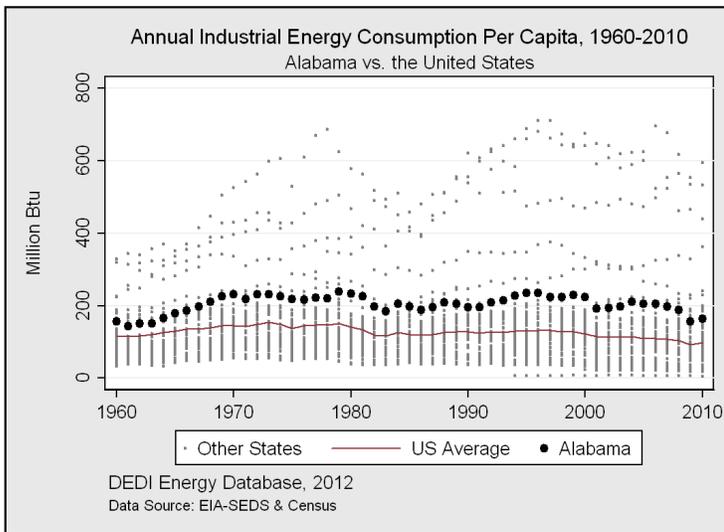
State	MMBtu per Capita	Rank
Wyoming	113	1st
Alabama	57	33rd
Hawaii	29	50th

Alabama ranked 33rd lowest nationally for commercial energy consumption per capita in 2010, an increase of 4% compared with 2009. (MMBtu = 1 Million Btu).



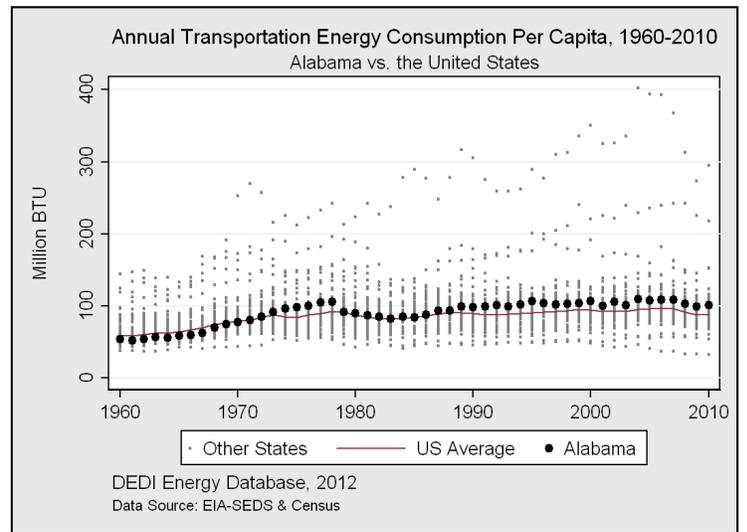
State	MMBtu per Capita	Rank
North Dakota	99	1st
Alabama	87	12th
Hawaii	25	50th

Alabama's residential sector consumed 87 Million Btu of energy per capita in 2010, an increase of 11% from 2009. Alabama ranked 12th highest by state.



State	MMBtu per Capita	Rank
Louisiana	595	1st
Alabama	164	11th
New York	18	50th

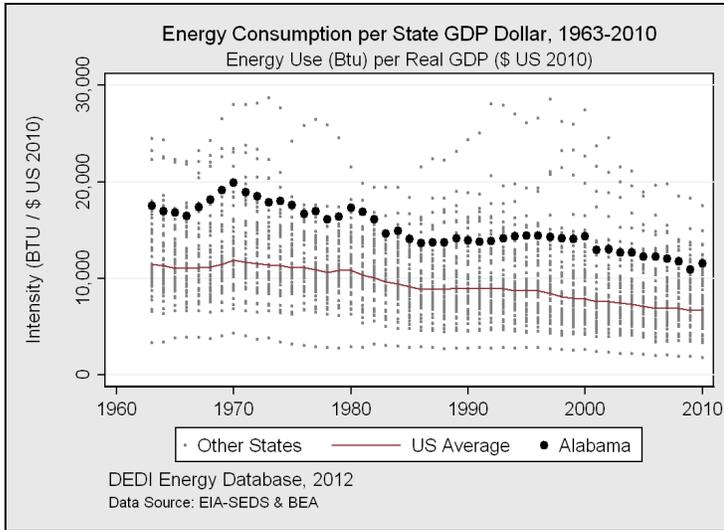
Industrial energy consumption per capita in Alabama was 11th highest in the country in 2010. Compared with 2009, industrial energy use per capita rose by 5%.



State	MMBtu per Capita	Rank
Alaska	295	1st
Alabama	101	13th
New York	54	50th

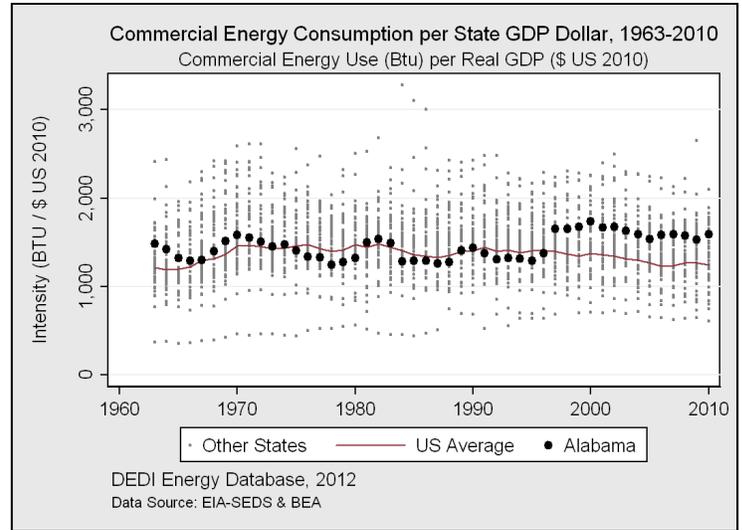
Transportation energy consumption per capita in Alabama rose by 2% in 2010. Alabama ranked 13th highest in the country for this metric.

Alabama Energy Intensity



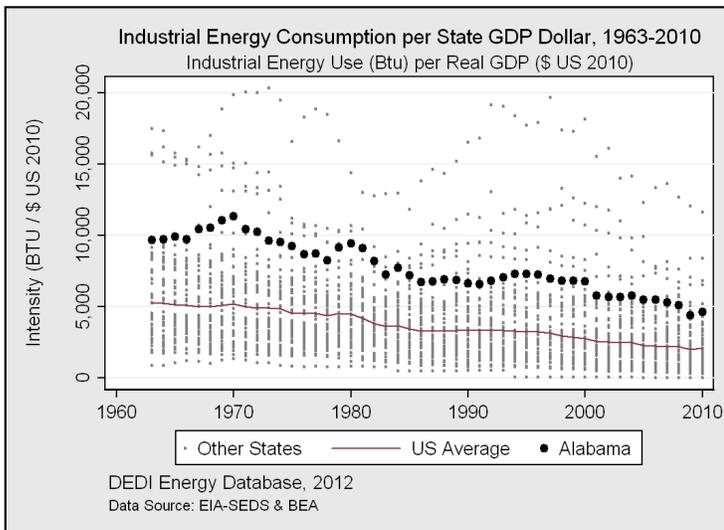
State	Btu / \$US GDP	Rank
Louisiana	17,493	1st
Alabama	11,513	8th
New York	3,303	50th

Alabama ranked 8th highest for energy consumption used to produce one dollar of state GDP in 2010. This measurement rose by 5% compared with 2009.



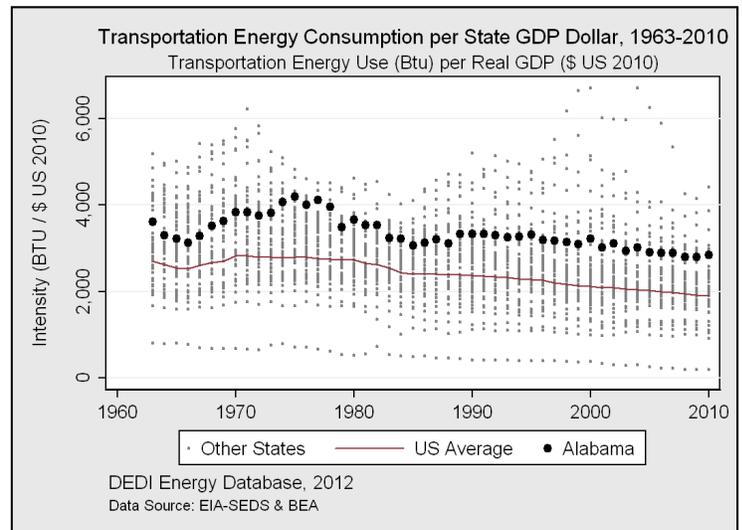
State	Btu / \$US GDP	Rank
Montana	2,095	1st
Alabama	1,591	16th
Hawaii	607	50th

Alabama's commercial sector ranked 16th highest for the ratio of energy use to state GDP dollar in 2010, an increase of 4% from 2009.



State	Btu / \$US GDP	Rank
Louisiana	11,636	1st
Alabama	4,616	9th
New York	307	50th

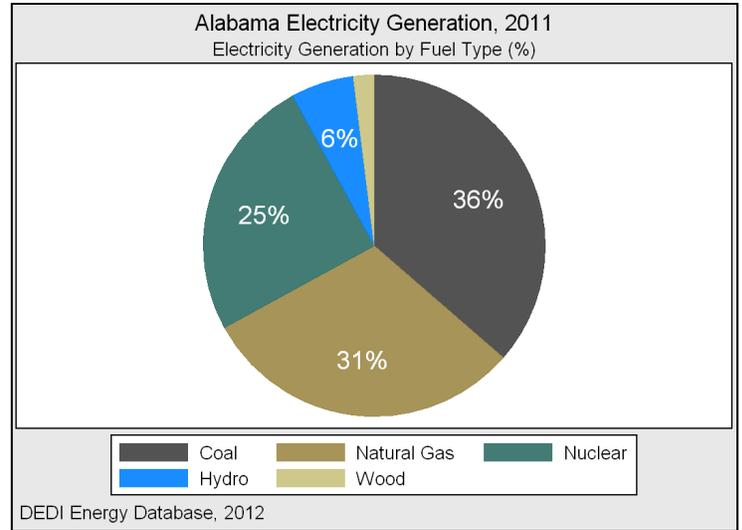
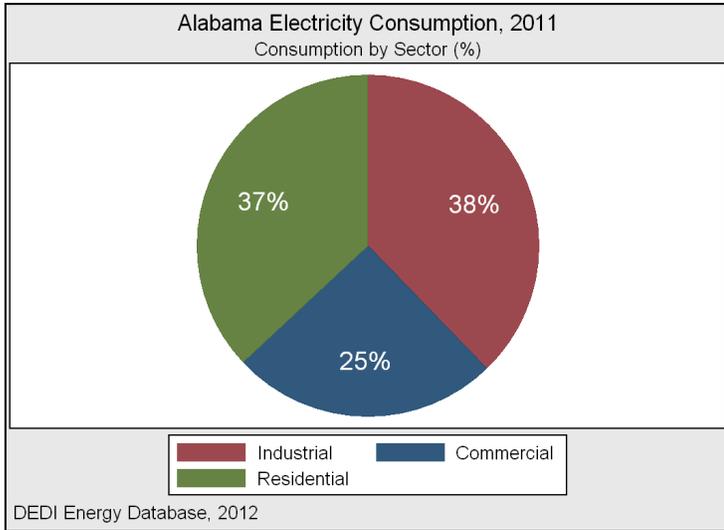
Industrial energy consumption per dollar of state GDP in Alabama was 9th highest in 2010. Compared with 2009, industrial energy intensity rose by 5%.



State	Btu / \$US GDP	Rank
Alaska	4,415	1st
Alabama	2,852	10th
New York	923	50th

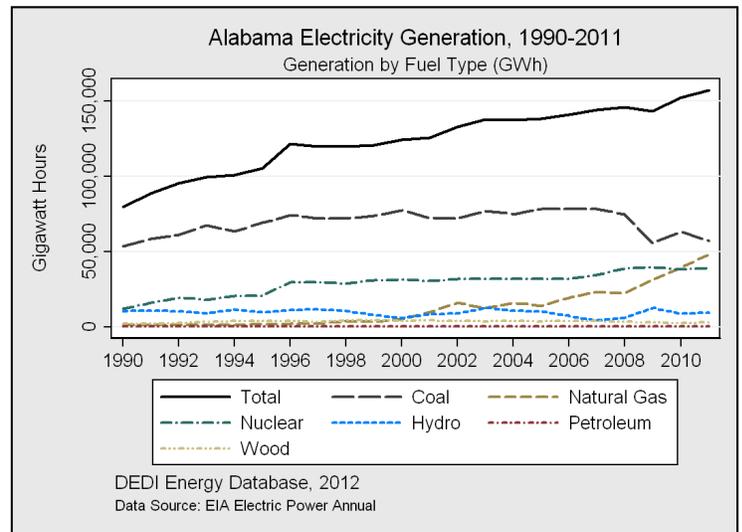
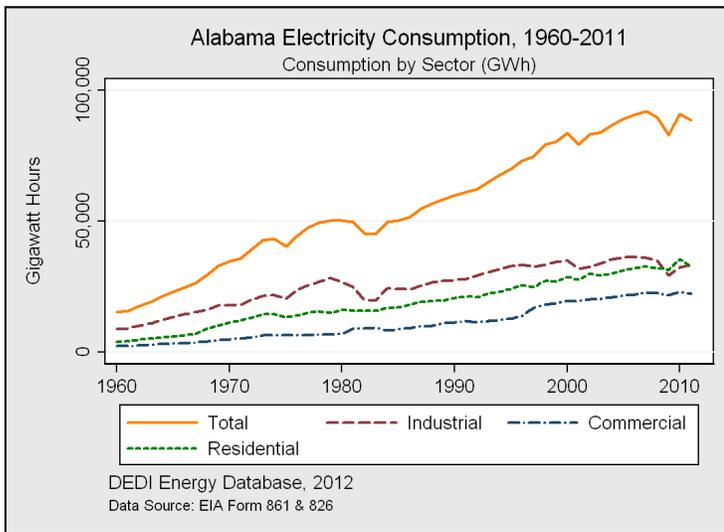
Transportation sector energy intensity per state GDP dollar in Alabama rose by 2% in 2010. Overall, Alabama ranked 10th highest in the country for this metric.

Alabama Electricity



Sector	Gigawatt Hours	Percentage
Total	88,589	100%
Industrial	33,468	38%
Residential	32,765	37%
Commercial	22,356	25%

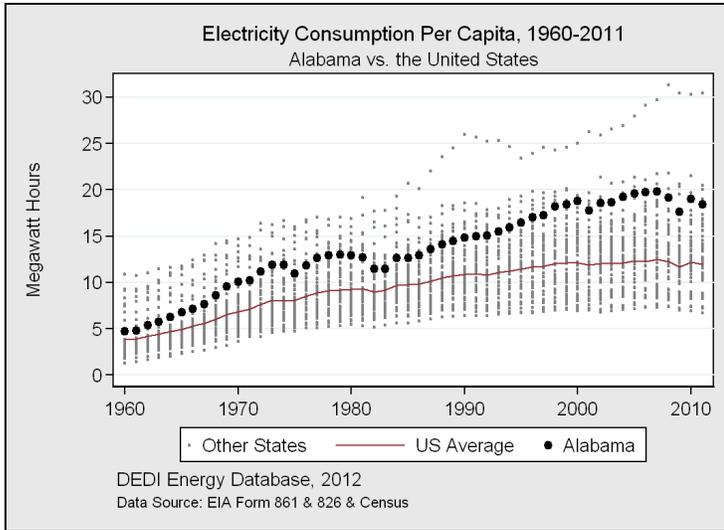
Fuel Type	Gigawatt Hours	Percentage
Total	157,169	100%
Coal	57,056	36%
Natural Gas	48,068	31%
Nuclear	39,356	25%
Hydro	9,383	6%
Wood	3,050	2%



In 2011, citizens, institutions, and firms in Alabama consumed 88,589 gigawatt-hours of electricity. Compared with 2010, total electricity consumption fell by 3%. Dividing electricity consumption by economic sector, industrial customers were the largest consumers of electricity in Alabama in 2011.

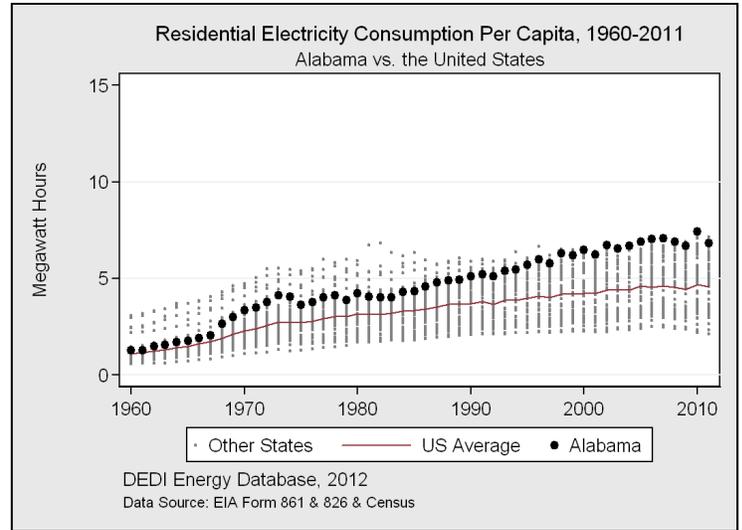
Electric power facilities in Alabama generated over 157,169 gigawatt-hours of electricity in 2011. The use of coal represented the largest portion of this electricity, accounting for 57,056 gigawatt-hours. Overall, electricity generation rose by 3% versus the previous year.

Alabama Electricity Intensity



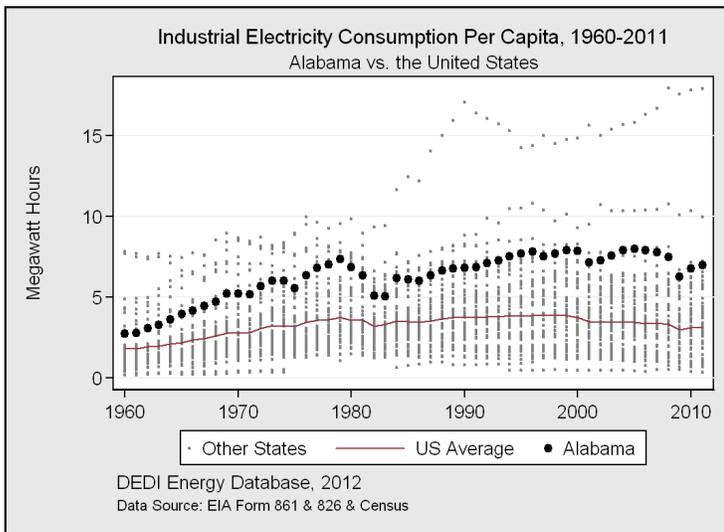
State	MWh per Capita	Rank
Wyoming	30.5	1st
Alabama	18.4	5th
California	6.7	50th

At 18.4 MWh, Alabama ranked 5th highest nationally for total electricity consumption per capita in 2011, a decrease of 3% from 2010.



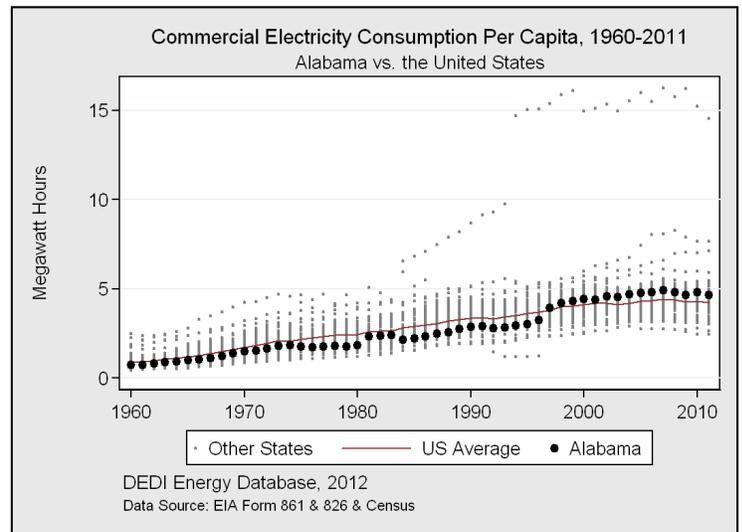
State	MWh per Capita	Rank
Louisiana	7.1	1st
Alabama	6.8	2nd
Hawaii	2.1	50th

Residents of Alabama used on average 6.8 MWh of electricity in 2011. Representing a decrease of 8%, this amount ranked Alabama 2nd highest by state.



State	MWh per Capita	Rank
Wyoming	17.9	1st
Alabama	7.0	4th
New York	0.7	50th

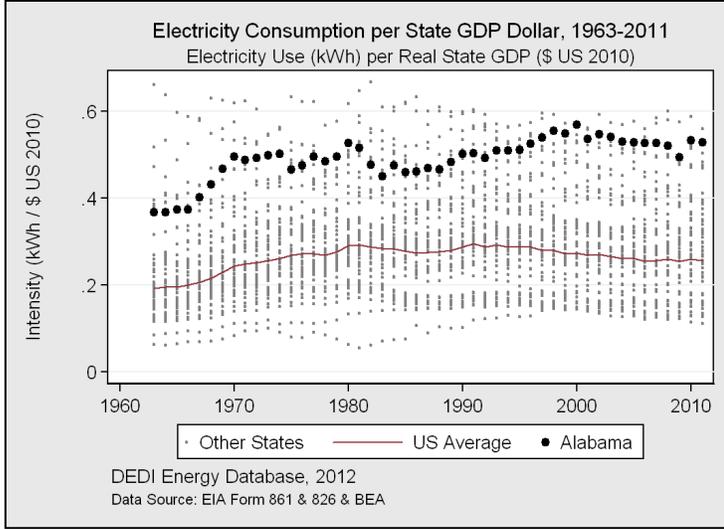
Industrial electricity consumption per capita in Alabama was 4th highest in 2011. Versus 2010, industrial electricity consumption per capita rose by 3%.



State	MWh per Capita	Rank
Wyoming	7.6	1st
Alabama	4.7	17th
Hawaii	2.4	50th

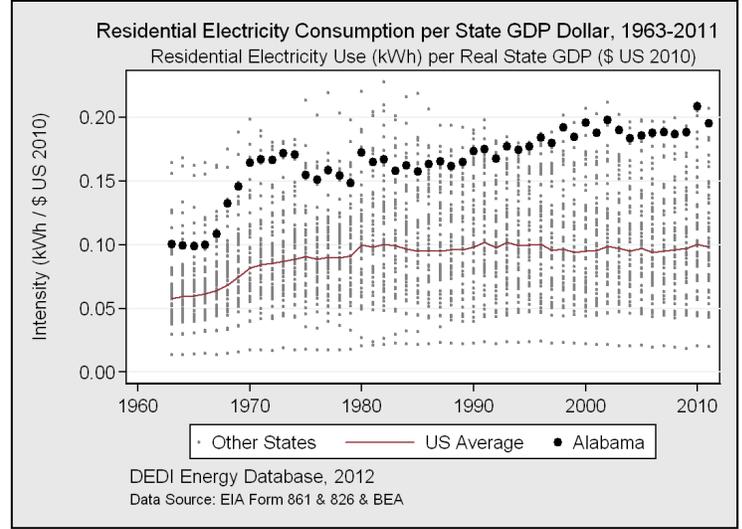
Alabama's commercial electricity consumption per capita fell by 3% in 2011 to 4.7 MWh. Overall, Alabama ranked 17th highest in the country for this metric.

Alabama Electricity Intensity



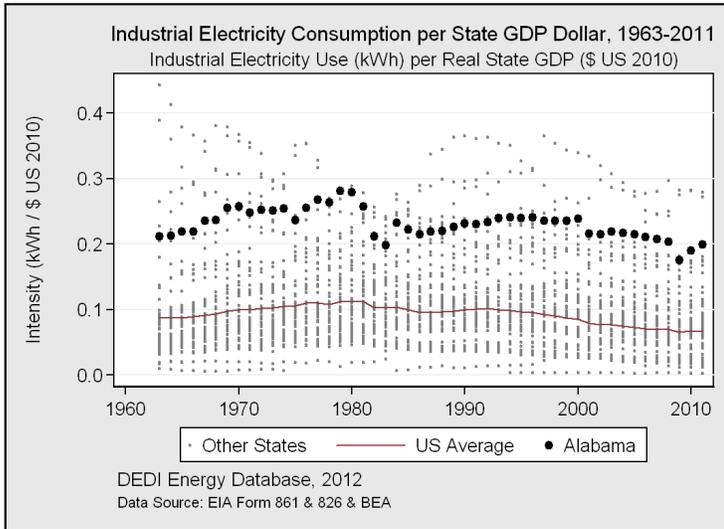
State	kWh / \$ US GDP	Rank
Kentucky	0.56	1st
Alabama	0.53	2nd
Alaska	0.13	50th

Alabama ranked 2nd highest nationally for total electricity consumption per state GDP dollar in 2011. This amount fell by 1% to 0.53 kWh per dollar for the year.



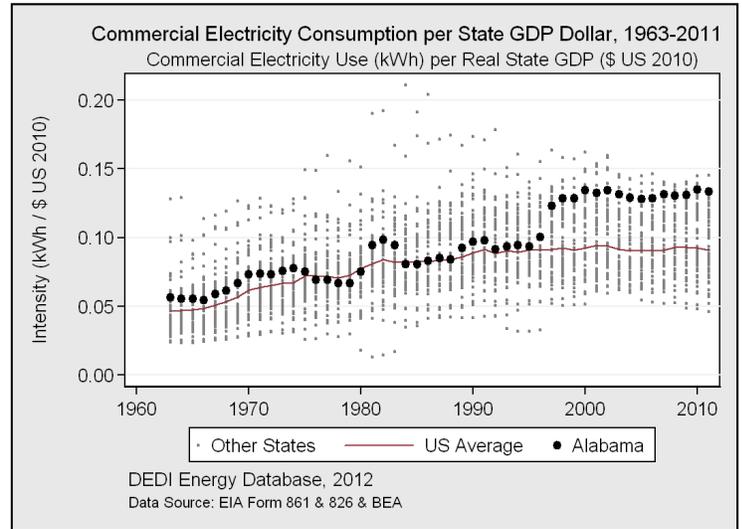
State	kWh / \$ US GDP	Rank
Mississippi	0.21	1st
Alabama	0.20	2nd
Alaska	0.04	50th

In 2011, Alabama ranked 2nd highest for residential electricity use relative to one dollar of state GDP. This metric fell by 6% compared to 2010.



State	kWh / \$ US GDP	Rank
Wyoming	0.28	1st
Alabama	0.20	3rd
New York	0.01	50th

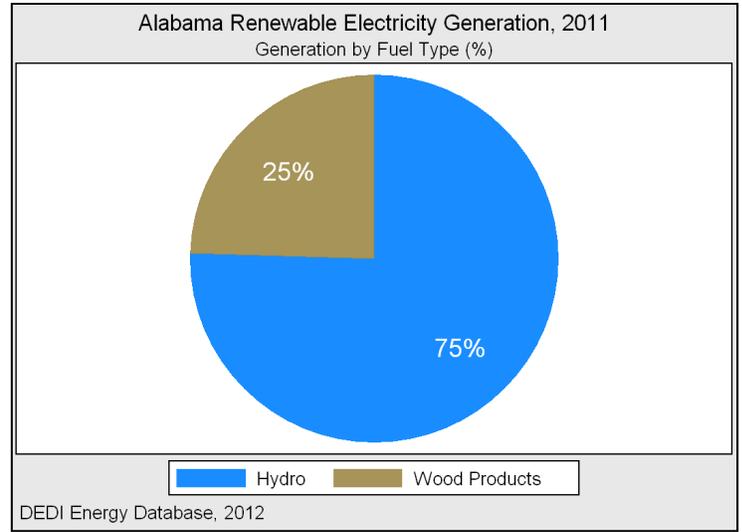
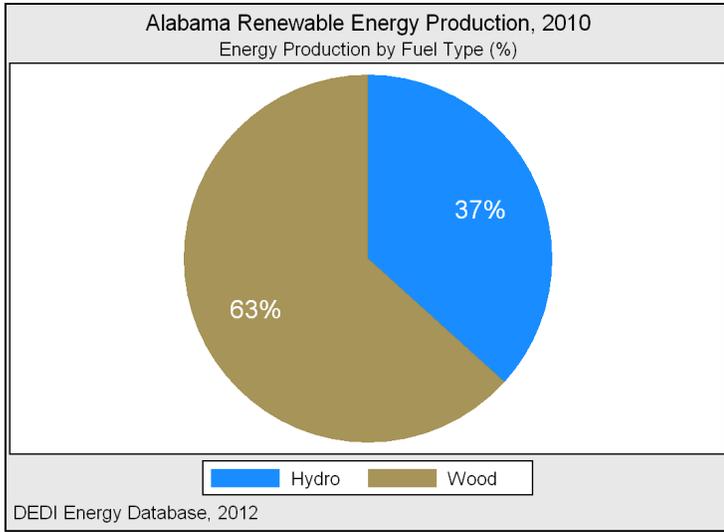
Industrial electricity consumption per state GDP dollar in Alabama was 3rd highest in the country in 2011. Versus 2010, industrial electricity intensity rose by 5%.



State	kWh / \$ US GDP	Rank
Mississippi	0.15	1st
Alabama	0.13	3rd
Massachusetts	0.05	50th

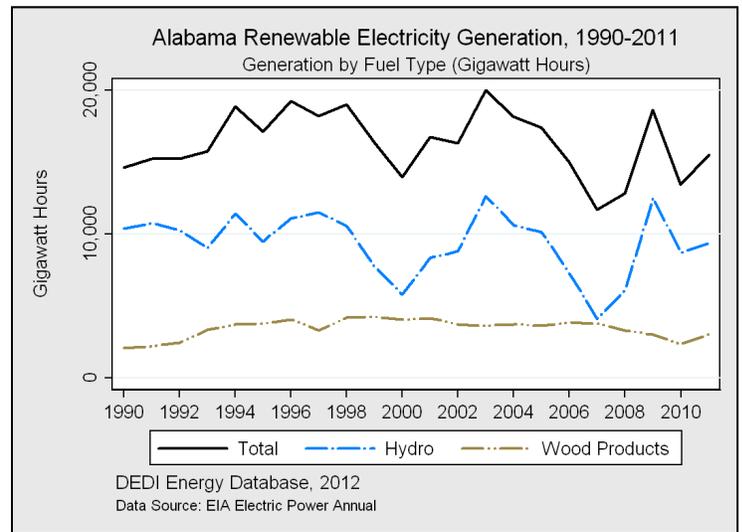
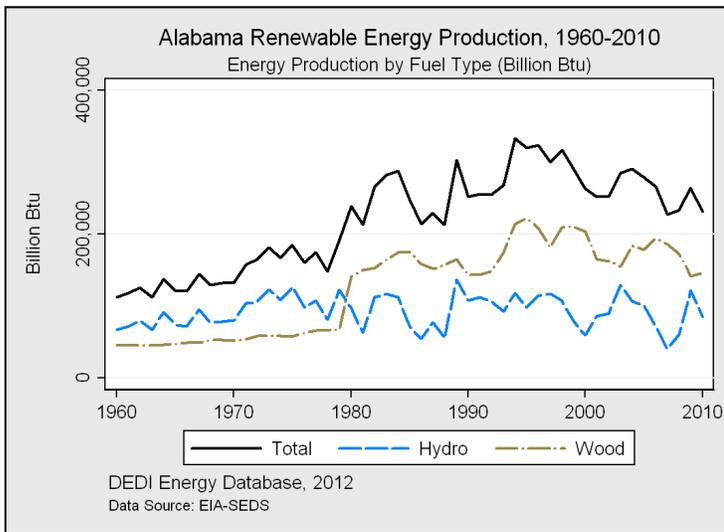
Alabama's commercial sector used 0.13 kWh of electricity to generate one dollar of economic output. A decrease of 1%, this ratio ranked the state 3rd highest.

Alabama Renewable Energy



Fuel Type	Billion Btu	Percentage
Total	231,591	100%
Wood & Biomass	146,405	63%
Hydro	84,919	37%
Geothermal	138	<1%
Solar	129	<1%

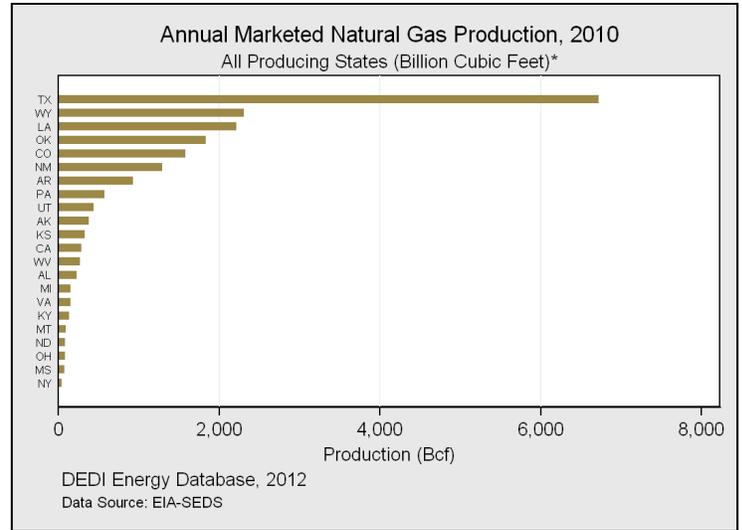
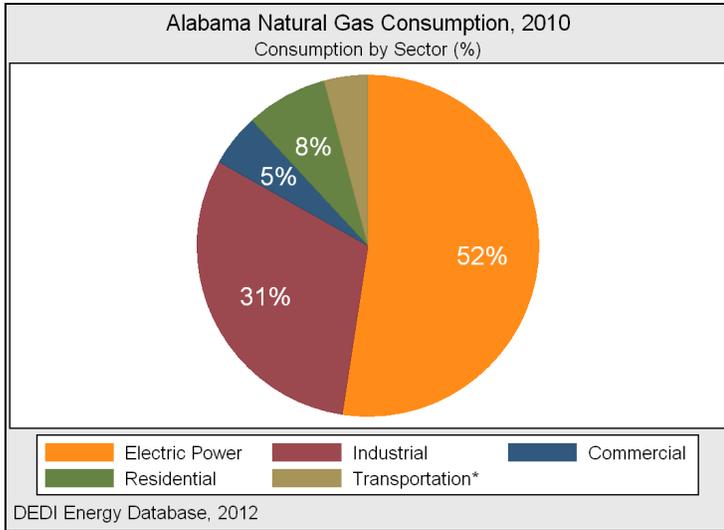
Fuel Type	Gigawatt Hours	Percentage
Total	12,443	100%
Hydro	9,383	75%
Wood	3,050	25%
Biomass	10	<1%



In 2010, renewable energy production in Alabama was 231,591 billion Btu, a decrease of 13% from 2009. Dividing this production by fuel type, wood & biomass resources accounted for the largest amount of energy production in 2010.

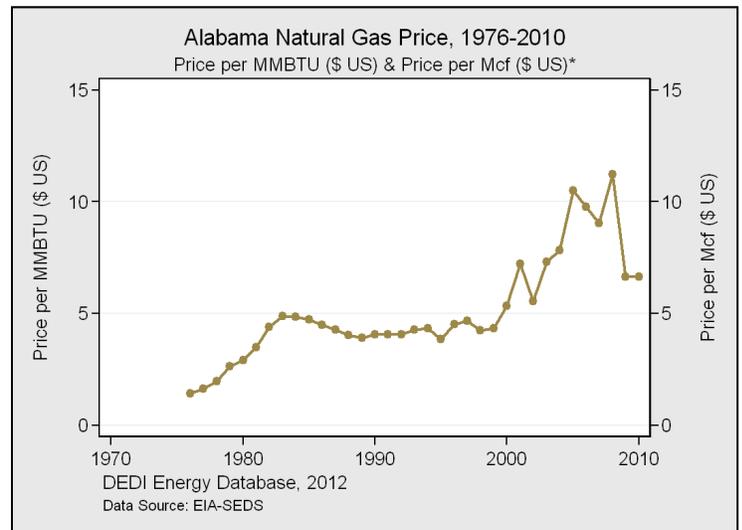
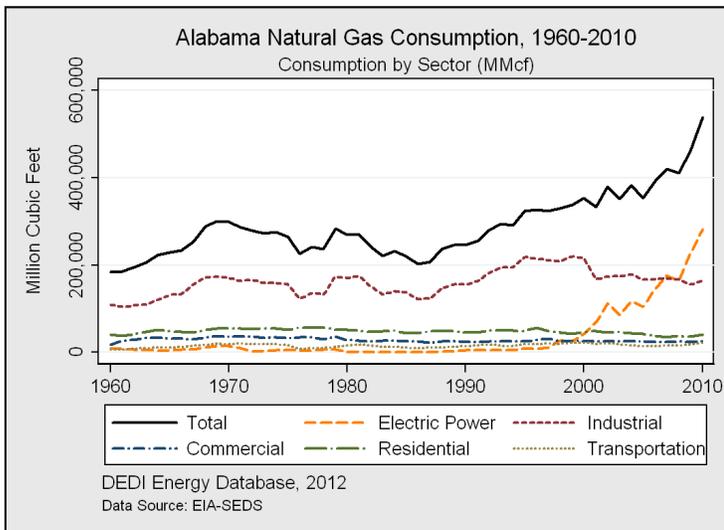
Describing renewable electricity generation by fuel type or commodity, the production from hydroelectric facilities represented the largest portion of renewable electricity generation in Alabama in 2011. Compared with 2010, the electrical output of hydroelectric facilities rose by 8% in 2011. (Total biomass generation is divided between wood products - labeled Wood - and other biomass resources - labeled Biomass - such as landfill gas).

Alabama Natural Gas



Sector	Million Cubic Feet	Percentage
Total	537,246	100%
Electric Power	281,722	52%
Industrial	165,102	31%
Residential	41,689	8%
Commercial	26,520	5%
Transportation	22,213	4%

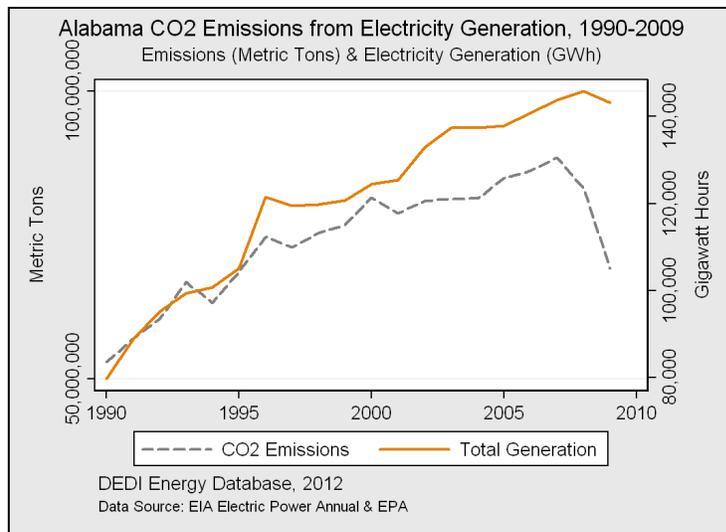
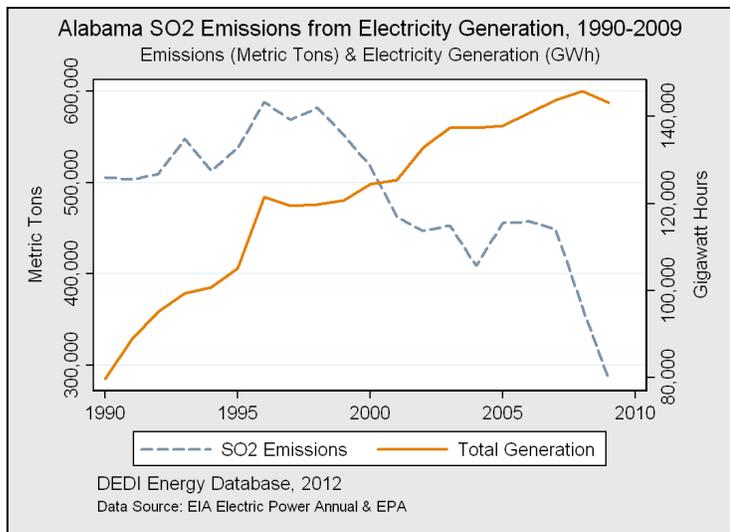
Alabama registered 222.9 billion cubic feet of marketed natural gas production in 2010. Versus 2009, natural gas production in the state fell by 6% through 2010. Comparing in-state production levels with in-state consumption levels, Alabama was a net importer of natural gas for the year.



In 2010, natural gas consumption in Alabama was 537 billion cubic feet. Compared with 2009, total natural gas consumption rose by 16% on the year. Dividing natural gas use by economic sector, the electric power sector was the largest consumer of natural gas in Alabama in 2010. (Natural gas consumption by the Transportation Sector is the summation of direct, vehicle fuel use and natural gas used by transmission and distribution pipelines).

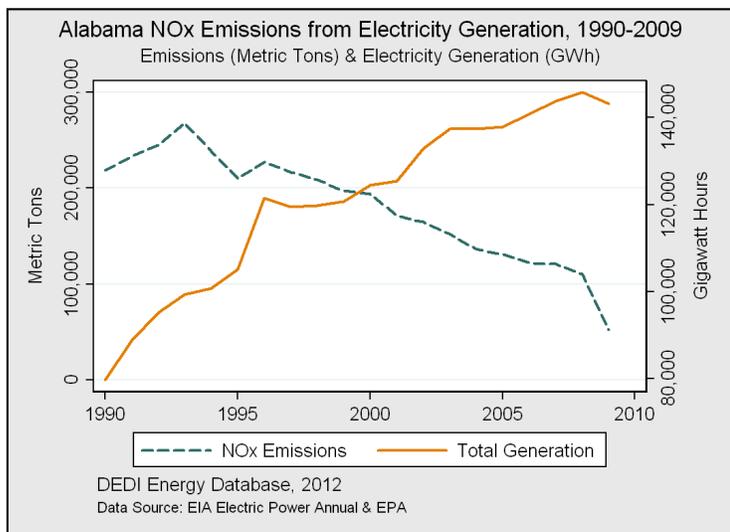
The average city gate price of natural gas in Alabama was \$6.65 per thousand cubic feet in 2010. Versus the previous year, this average annual price rose by less than 1%. The city gate price of natural gas is typically reported at the connection where a natural gas distribution company or utility takes control of natural gas delivered by a pipeline or transmission company.

Alabama Power Plant Emissions



Emission	Metric Tons	Since 1990
Carbon Dioxide	69,238,676	31%
Sulfur Dioxide	284,909	-44%
Nitrogen Oxides	52,587	-76%

Sulfur dioxide is a highly reactive gas and major pollutant that is monitored and regulated at the State and Federal level. In 2009, the electric power sector of Alabama emitted 284,909 metric tons of sulfur dioxide, representing a decrease of 22% compared with 2008. Overall, the electric power sector of Alabama has decreased sulfur dioxide emissions by 44% since 1990.

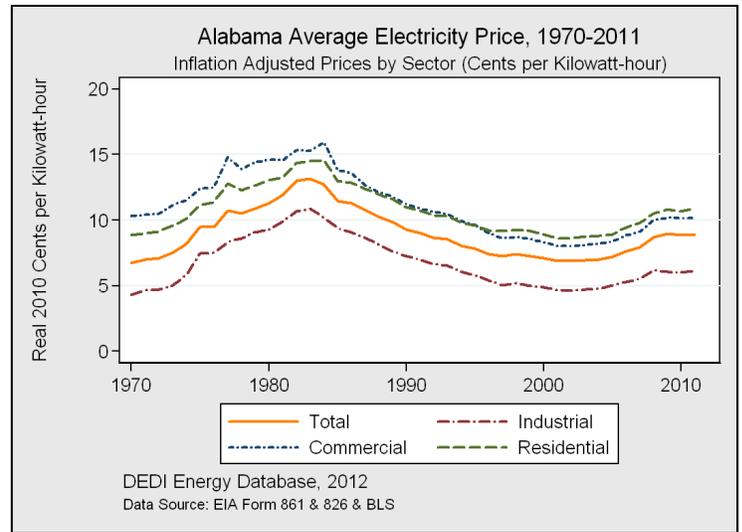
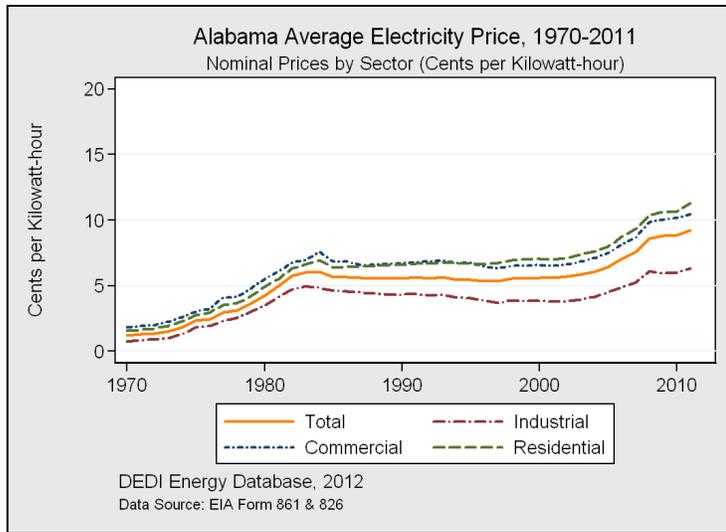


Nitrogen oxides are a group of highly reactive regulated pollutants. In 2009, the electric power sector of Alabama emitted 52,587 metric tons of nitrogen oxides, representing a decrease of 53% compared with 2008. Overall, the electric power sector of Alabama has decreased nitrogen oxides emissions by 76% since 1990.

Carbon dioxide emissions from fossil fuel power plants are monitored at the State and Federal level. In 2009, the electric power sector of Alabama emitted 69,238,676 metric tons of carbon dioxide, a decrease of 17% compared with 2008. Overall, power plants in Alabama have increased carbon dioxide emissions by 31% since 1990.

The last major amendments to the Clean Air Act were implemented in 1990. These amendments focused on National Ambient Air Quality Standards and the mechanisms which would ensure compliance with emission reduction targets. Subsequently, the emission of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) from electric generating plants were regulated and scheduled for reduction. The dual display of electricity generation and regulated emissions indicates that over time, though electricity demand and generation have increased, the release of targeted pollutants has actually decreased. Therefore, both the aggregate emission as well as intensity of emission per gigawatt-hour of criteria pollutants, such as sulfur dioxide and nitrogen oxides, have been decreasing nationally since 1990. The reductions have been made through a combination of fuel switching and the installation of pollution mitigation systems at power plants.

Alabama Electricity Prices



Sector	Cents / kWh	Since 2000
Average	9.21	64%
Industrial	6.33	64%
Commercial	10.47	59%
Residential	11.30	60%

Nominal \$US

Fuel Type	Real Cents / kWh	Since 2000
Average	8.92	26%
Industrial	6.13	25%
Commercial	10.14	22%
Residential	10.94	23%

Real 2010 \$US

Electricity usage in Alabama is billed in terms of cents per kilowatt-hour of electricity consumed, with differences in price by classification and electric utility. However, while the price of electricity varies from sector to sector and from one utility to another, the above data illustrates the average price of electricity delivered to each economic sector.

In 2011, the average price of electricity across economic sectors in Alabama was 9.21¢ per kilowatt-hour. With an increase of 4% versus 2010, this overall, weighted-average price ranked Alabama 21st highest in the country in terms of electricity. Since 2000, the average price of electricity in Alabama has risen by 64%.

Adjusting for inflation over time, the trends in the real cost of electricity in Alabama between 1970 and 2011 can be placed in context to the adjacent, nominal graphic. Resetting historical price data to inflation-adjusted 2010 values, the price of electricity in real economic terms in Alabama has risen by 26% since the year 2000. Additionally, in 2011 Alabama ranked 21st highest in the nation for the real price of electricity.

Since 1990, the two most influential factors explaining the changes in both nominal and real electricity prices have been the type of generation portfolio developed within a state, and the price of fossil fuel inputs for the electric power sector. Specifically, these factors involve the type of generation technology (i.e. coal, gas, nuclear) used within a state, the share of each technology in supplying baseload power, and the price of the primary fossil fuel commodities.

