Energy in the South – Fueling the Nation's Economy

Kenneth J. Nemeth
Executive Director and Secretary

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Energy Resource Highlights of the South

- South produces over ½ U.S. energy supply, serves 40% of population
  - 7 of top 10 southern states lead manufacturing jobs per capita
  - Robust, innovative energy supply: traditional fuels, renewables and energy efficiency
  - $5 Trillion economy

- Key energy production
  - 3 of top 5 coal, oil, and natural gas producing states in South
  - 66% of natural gas supply from South
  - 4 states produce >50% of U.S. domestic crude oil
  - WV, KY & TX produce 25% of nation’s coal (among top 6 coal states)

- South leads nuclear and renewable fuels output
  - 26 nuclear plants operating, 5 units under construction
  - TX, OK and WV have 16 GW of wind capacity

- States adopting energy efficiency measures
  - WV and MS -‘Most Improved’ energy efficiency programs (2014 ACEEE Scorecard)
  - AR prioritizing energy efficiency
Trending … in the Energy World

- Electricity growth flat
  - Pre-Recession growth has not returned
  - Continued energy efficiency improvements drive down growth
- Natural gas prices low (v. coal)
  - Natural gas combined cycle plants being built
  - Gas units dispatch ahead of coal in some cases
- Utility IRPs: Coal retirements best option
  - Coal capacity aging
  - Environmental regulations increasing risk & cost of coal
- Price of renewable energy dramatically dropped in 2-3 years
- Nuclear energy in the South to increase (6 GW at 5 new units)
EPA Proposed Standards for CO$_2$ Emissions for the Coal Fleet

- Standards for existing coal fired power plants – June 2015 Final Rule
  - Clean Air Act 111(d) requires EPA to establish standards for existing stationary sources
  - Standards will become a part of State Implementation Plans to be completed by June 2016

- Standards for new coal fired power plants – June 2014 Final Rule
  - Clean Air Act 111(b) requires EPA to establish standards for new and modified stationary sources
  - Standard reflects degree of emissions limitation achievable through the application of best system of emission reduction that has been adequately demonstrated
Energy Facts in the South (2013)

- **Electricity consumption**: 47% of national consumption
  - 50% of residential consumption
  - 48% of commercial/industrial consumption

- **Electricity production**: 42% of national electricity generated
  - 52% of natural gas generation nationwide generated in the southern region
  - 43% of coal fired generation
  - 41% of nuclear power generation
  - 30% of wind generation

- **Electricity Prices (South v nationwide)**
  - Residential: 10.96 cents/KWh vs 12.12
  - Commercial: 8.97 cents/KWh vs 10.29
  - Industrial: 6.09 cents/KWh vs 6.82
  - Average: 9.08 cents/KWh vs 10.08

www.sseb.org
## Electrical Generating Resources Vary in SSEB Region - 2013

### Predominantly Coal
- WV, Kentucky >93%
- Missouri 83%
- Arkansas 52%
- Maryland, Tennessee, OK 40-45%
- NC, TX, AL, GA 30-39%
- MS, LA, FL, SC, VA <30%

### Predominantly Natural Gas
- Mississippi, Florida >60%
- Louisiana 51%
- Texas 47%
- Oklahoma 41%
- Missouri, WV, TN, KY ~5%+/-

### Predominantly Nuclear
- South Carolina 57%
- TN, VA, MD, North Carolina 30-41%
- Georgia, Alabama 27%
- Oklahoma, Kentucky, West Virginia 0%
Electricity Consumption 2013 – SSEB & U.S.

SSEB Region Electricity Consumption by Sector, 2013

- Residential: 41%
- Commercial: 35%
- Industrial: 24%

United States Electricity Consumption by Sector, 2013

- Residential: 38%
- Commercial: 36%
- Industrial: 26%

Source: Kentucky Energy Database, EEC-DEDI, 2014
Electricity Consumption – Arkansas & Kentucky

Arkansas Electricity Consumption by Sector, 2013

Kentucky Electricity Consumption by Sector, 2013

Arkansas Energy Consumption by Sector, 2013

- Industrial: 39%
- Commercial: 25%
- Residential: 36%

Kentucky Energy Consumption by Sector, 2013

- Industrial: 32%
- Commercial: 25%
- Residential: 43%
Electricity Consumption – Missouri & Florida

Missouri Electricity Consumption by Sector, 2013

Florida Electricity Consumption by Sector, 2013
Electricity Consumption Per Capita
1960 – 2013
Alabama & Maryland

Electricity Consumption Per Capita – 1960-2013: Alabama

Electricity Consumption Per Capita – 1960-2013: Maryland

Kentucky Energy Database, EEC-DDE, 2014
Data Source: EIA Form 861 & 826 & Census
Industrial Electricity Use Per Capita 1960 – 2013
West Virginia & Virginia

Electricity Consumption Per Capita – 1960-2013: West Virginia

Electricity Consumption Per Capita – 1960-2013: Virginia

[Graphs showing industrial electricity consumption per capita for West Virginia and Virginia from 1960 to 2013, comparing to other states and the US average.]
Florida Consumption Per Capita (1960-2013)
Industrial, Commercial, Residential

**Industrial**
Industrial Electricity Consumption Per Capita, 1960-2013
Florida Compared to Other States

**Commercial**
Commercial Electricity Consumption Per Capita, 1960-2013
Florida Compared to Other States

**Residential**
Residential Electricity Consumption Per Capita, 1960-2013
Florida Compared to Other States
Electricity Generation – SSEB & U.S.

SSEB Region Electricity Generation by Fuel, 2013

United States Electricity Generation by Fuel, 2013
Electricity Generation – Oklahoma & South Carolina

Oklahoma Electricity Generation by Fuel, 2013

- Coal: 41%
- Natural Gas: 15%
- Wind: 15%
- Hydro: 8%
- Wood: 2%

South Carolina Electricity Generation by Fuel, 2013

- Coal: 57%
- Natural Gas: 26%
- Petroleum: 13%

Sources: Kentucky Energy Database, EEC-DEDI, 2014
Electricity Generation – Texas & Arkansas

Texas Electricity Generation by Fuel, 2013

Arkansas Electricity Generation by Fuel, 2013
Renewable Electricity Generation
1990 – 2013
Tennessee & Texas

Tennessee Renewable Electricity Generation by Fuel, 1990-2013

Texas Renewable Electricity Generation by Fuel, 1990-2013

Kentucky Energy Database, EEC-DEDI, 2014
Data Source: EIA Electric Power Annual
Historical Net Energy Imports or Exports (1960 – 2012)
Mississippi & North Carolina

Mississippi Energy Consumption & Production, 1960-2012

North Carolina Energy Consumption & Production, 1960-2012
U.S. Power Plant Additions 2013

U.S. power plant capacity additions in 2013
megawatts (MW)

- Natural gas: 6,861 MW
- Solar: 2,959 MW
- Coal: 1,507 MW
- Wind: 1,032 MW
- Biomass: 549 MW
- Hydroelectric: 384 MW
- Other: 214 MW
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Southern States Energy Board
6325 Amherst Court
Peachtree Corners, GA 30092
nemeth@sseb.org | 770.242.7712