

**EXHIBIT NO. ___(RJR-11)
DOCKETS UE-17___/UG-17___
2017 PSE GENERAL RATE CASE
WITNESS: RONALD J. ROBERTS**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

Docket UE-17___

Docket UG-17___

**TENTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

RONALD J. ROBERTS

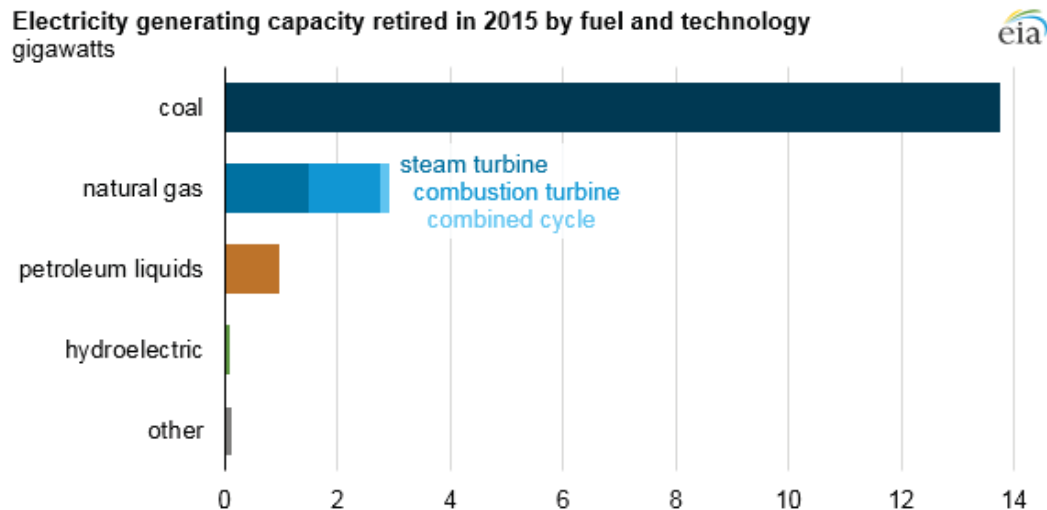
ON BEHALF OF PUGET SOUND ENERGY

JANUARY 13, 2017

Today in Energy

March 8, 2016

Coal made up more than 80% of retired electricity generating capacity in 2015



Source: U.S. Energy Information Administration, *Preliminary Monthly Electric Generator Inventory*

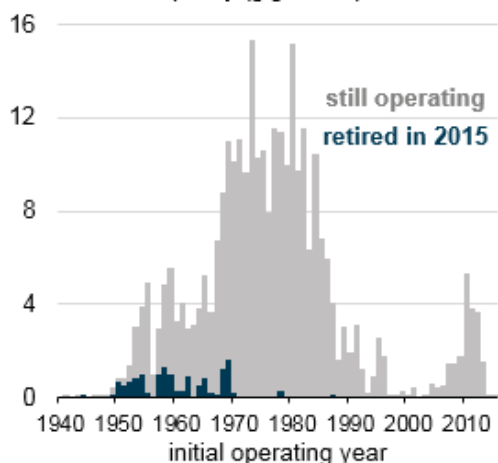
Nearly 18 gigawatts (GW) of electric generating capacity was retired in 2015, a relatively high amount compared with recent years. More than 80% of the retired capacity was conventional steam coal. The coal-fired generating units retired in 2015 tended to be older and smaller in capacity than the coal generation fleet that continues to operate.

Coal's share of electricity generation has been falling, largely because of competition with natural gas. Environmental regulations affecting power plants have also played a role. About 30% of the coal capacity that retired in 2015 occurred in April, which is when the U.S. Environmental Protection Agency's *Mercury and Air Toxics Standards (MATS)* rule went into effect. Some coal plants applied for and received one-year extensions, meaning that many of the coal retirements expected in 2016 will likely also occur in April. Several plants have received additional one-year extensions beyond April 2016 based on their role in ensuring regional system reliability.

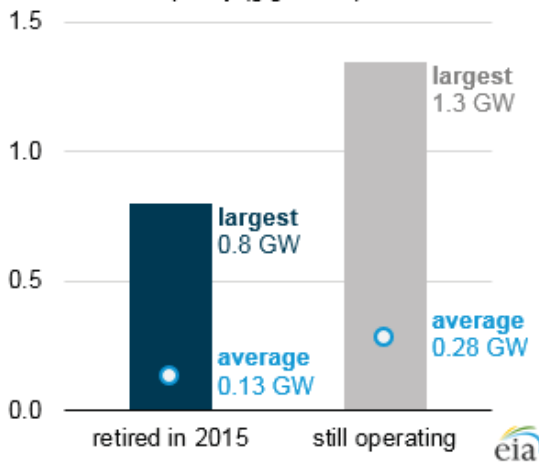
Much of the existing coal capacity in the United States was built from 1950 to 1990 during a time when electricity sales were growing much faster than population and gross domestic product. In more recent years, electricity sales growth has slowed or fallen, and net capacity additions (of all fuel types) have been relatively low. The coal units that were retired in 2015 were mainly built between 1950 and 1970, and the average age of those retired units was 54 years. The rest of the coal fleet that continues to operate is relatively younger, with an average age of 38 years.

The coal units retired in 2015 also tended to be smaller than the rest of the coal fleet. The net summer capacity of the average retired coal unit was 133 megawatts (MW), compared with 278 MW for the rest of the coal units still operating.

Existing coal units by initial operating year
net summer capacity (gigawatts)



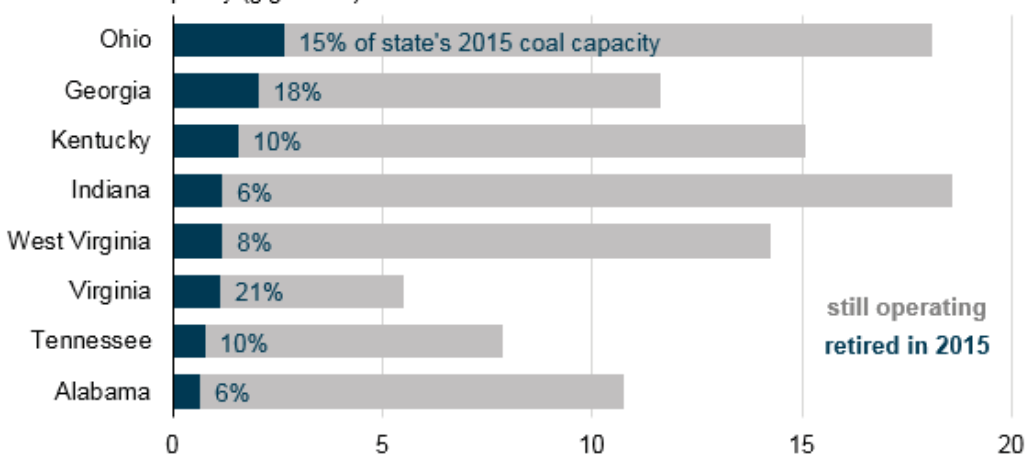
Coal units' range and average capacity
net summer capacity (gigawatts)



Source: U.S. Energy Information Administration, Form 860-M, *Preliminary Monthly Electric Generator Inventory*

The amount of coal capacity retired in 2015 was about 4.6% of the nation's coal capacity at the beginning of that year. Nearly half of the 2015 retired coal capacity was located in three states—Ohio, Georgia, and Kentucky—and those states each retired at least 10% of their coal capacity in 2015. Other states that traditionally have had high levels of coal-fired electricity generation, such as Indiana, West Virginia, and Virginia, each retired at least one GW of coal capacity in 2015.

Coal plant operating status in selected states
net summer capacity (gigawatts)



Source: U.S. Energy Information Administration, Form 860-M, *Preliminary Monthly Electric Generator Inventory*

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