



Washington State Academy of Sciences *Annual Meeting and Symposium*

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Washington State quick facts

- ▶ The Grand Coulee Dam on Washington's Columbia River is the largest hydroelectric power producer in the United States, with a total generating capacity of 6,809 megawatts.
- ▶ In 2011, Washington was the leading producer of electricity from hydroelectric sources and produced 29 percent of the Nation's net hydroelectricity generation.
- ▶ Although not a crude oil-producing State, in 2011, Washington ranked sixth in the Nation in crude oil refining capacity.
- ▶ Washington ranked sixth in the Nation in net generation of electricity from wind energy in 2011.
- ▶ The State of Washington's Energy Independence Act requires large electric utilities to obtain 15 percent of their electricity from new renewable energy resources by 2020 and to undertake cost-effective energy conservation.

More quick facts: Washington State rankings

Consumption

Total Energy per Capita	29
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Production

Total Energy	18
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Crude Oil	--
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Natural Gas	--
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Coal	26
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Electricity	9
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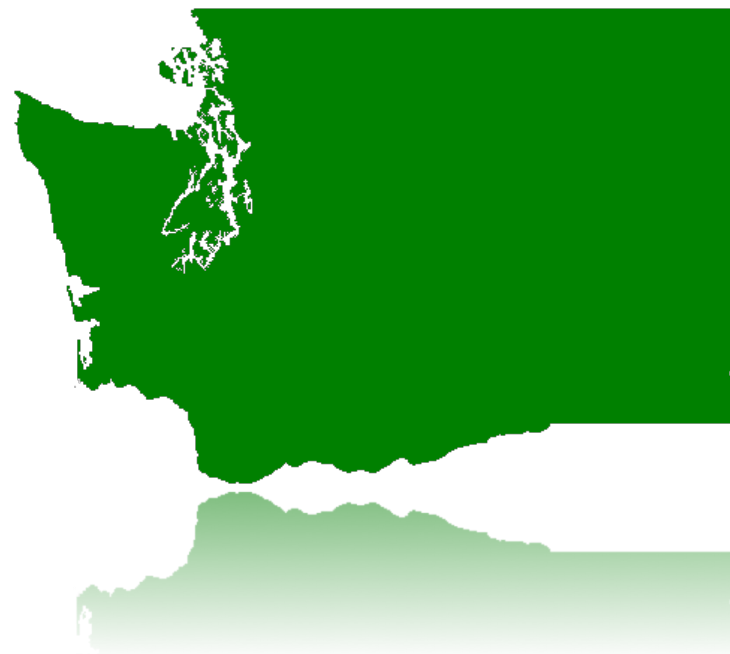
Prices

Natural Gas	22
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Electricity	51
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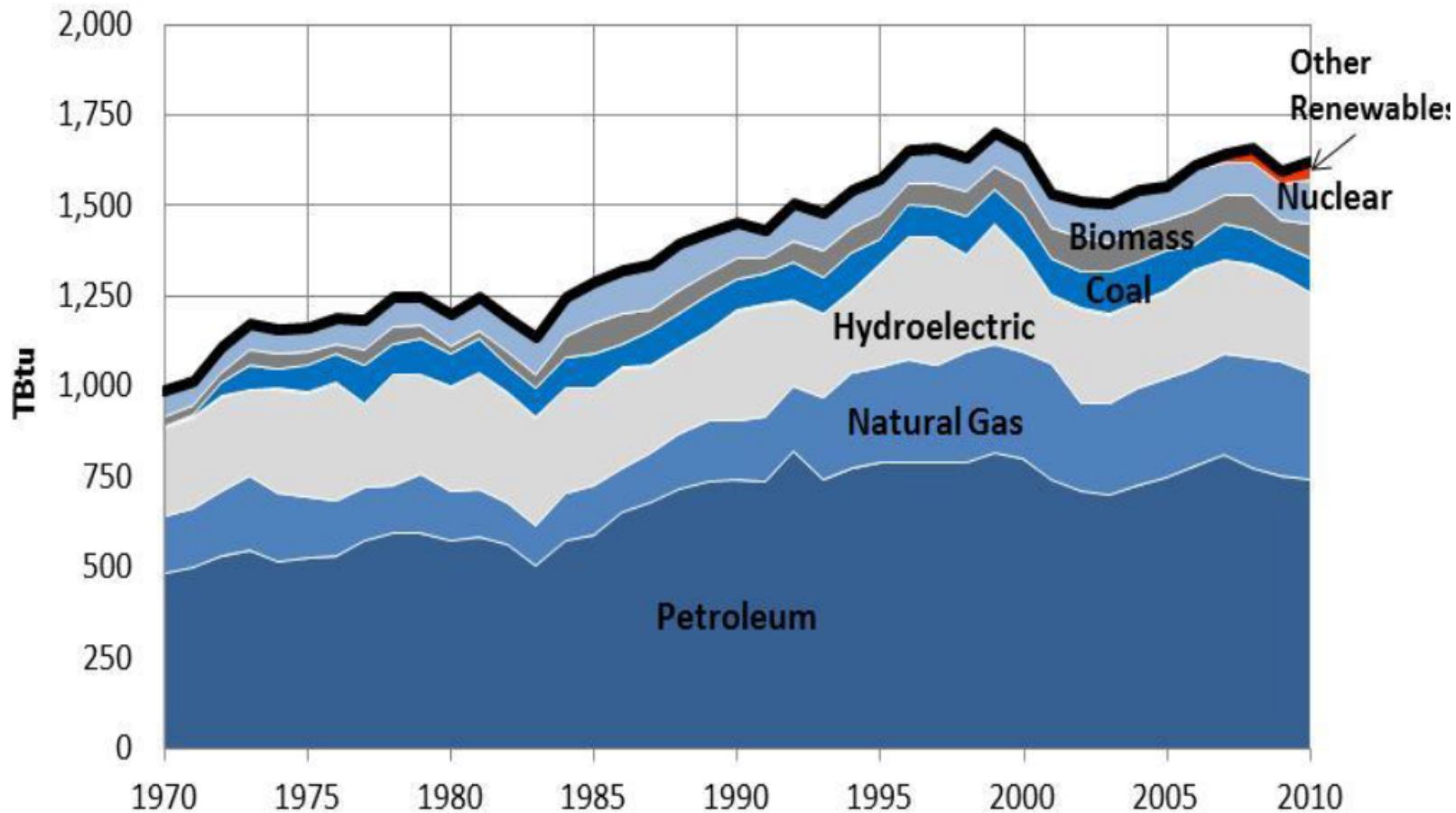
Environment

Carbon Dioxide Emissions	27
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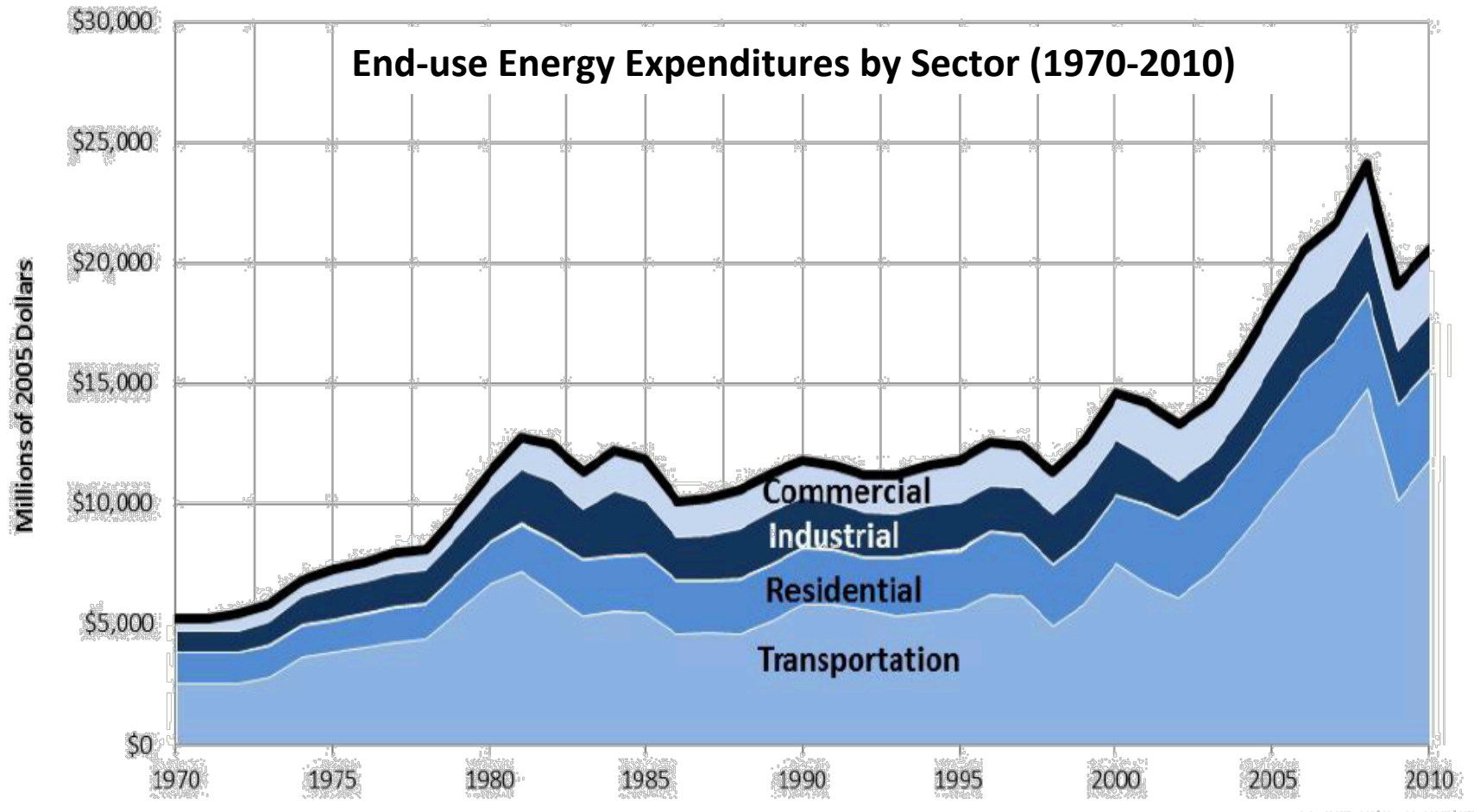


Petroleum, natural gas and hydro dominate as fuel source for Washington State

Total Primary Energy Consumption by Source



End-users spend \$20B for energy in Washington State



95% of electricity used in Washington State comes from hydro, coal and natural gas !

Fuels Used to Generate Electricity Purchased by Washington Energy Consumers

Fuel	Generation <i>MWh</i>	Share
Hydro	66,847,397	73.37%
Coal	12,900,636	14.16%
Natural Gas	7,003,278	7.69%
Nuclear	2,390,245	2.62%
Wind	1,017,702	1.12%
Biomass	446,890	0.49%
Waste	336,948	0.37%
Petroleum	68,539	0.08%
Landfill Gases	49,209	0.05%
Other	45,429	0.03%
Total	91,106,272	100.00%

Washington State energy prices (relative to national average)

▶ **Gasoline** ↑ 4-17%

▶ **Natural Gas** ↑ 5-17%

▶ **Electricity**

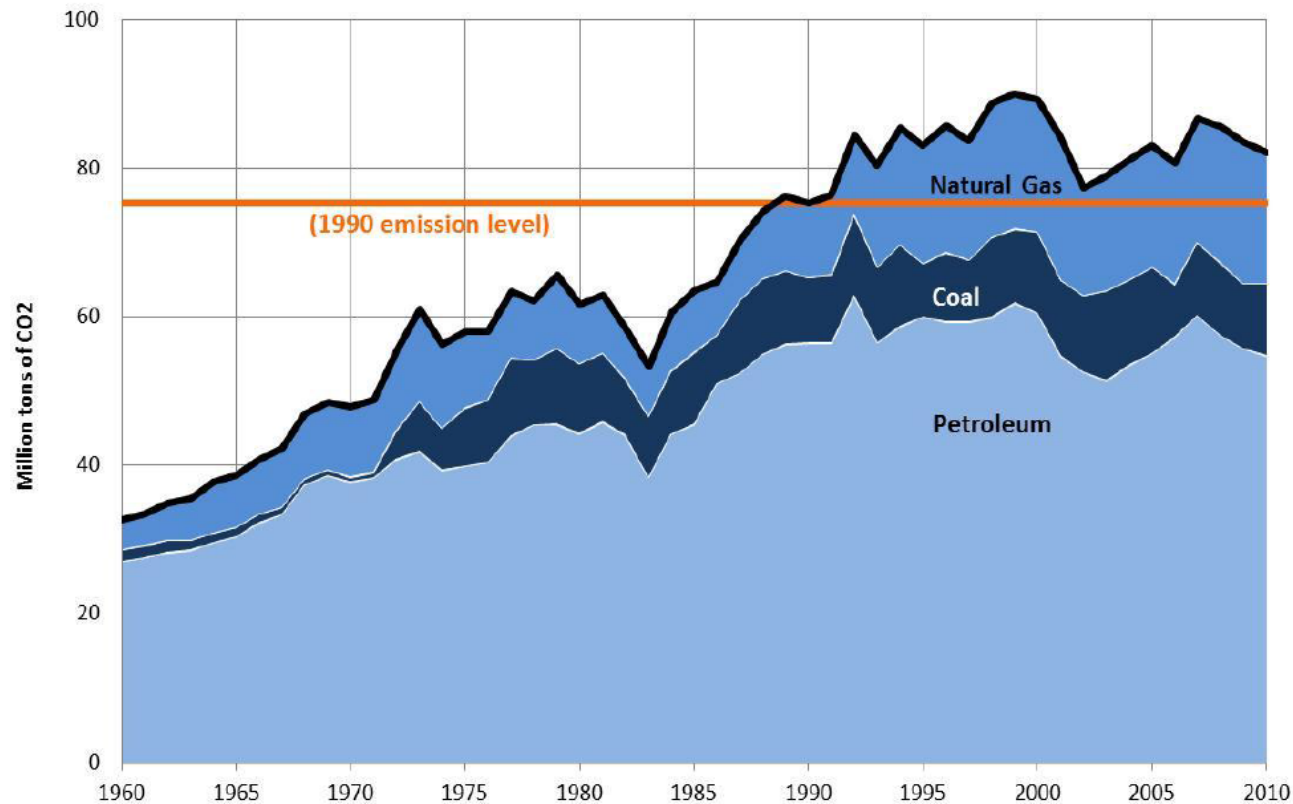
■ Residential ↓ - 30%

■ Commercial ↓ - 25%

■ Industrial ↓ - 40%

Carbon dioxide emission have grown over the last 25 years

Carbon Dioxide Emissions from Energy Use by Fuel Source (1960-2010)



Energy: Environmentally Acceptable Choices for Washington State

- ▶ What does Washington State need:
 - Low cost, clean energy alternatives
 - Diverse supply base
 - Robust energy infrastructure

- ▶ Options that address:
 - 15% renewable by 2020 and all cost-effective conservation
 - Washington State GHG emission reduction limits