Energy Efficiency in the Future
The Sixth Northwest Power Plan, 2010

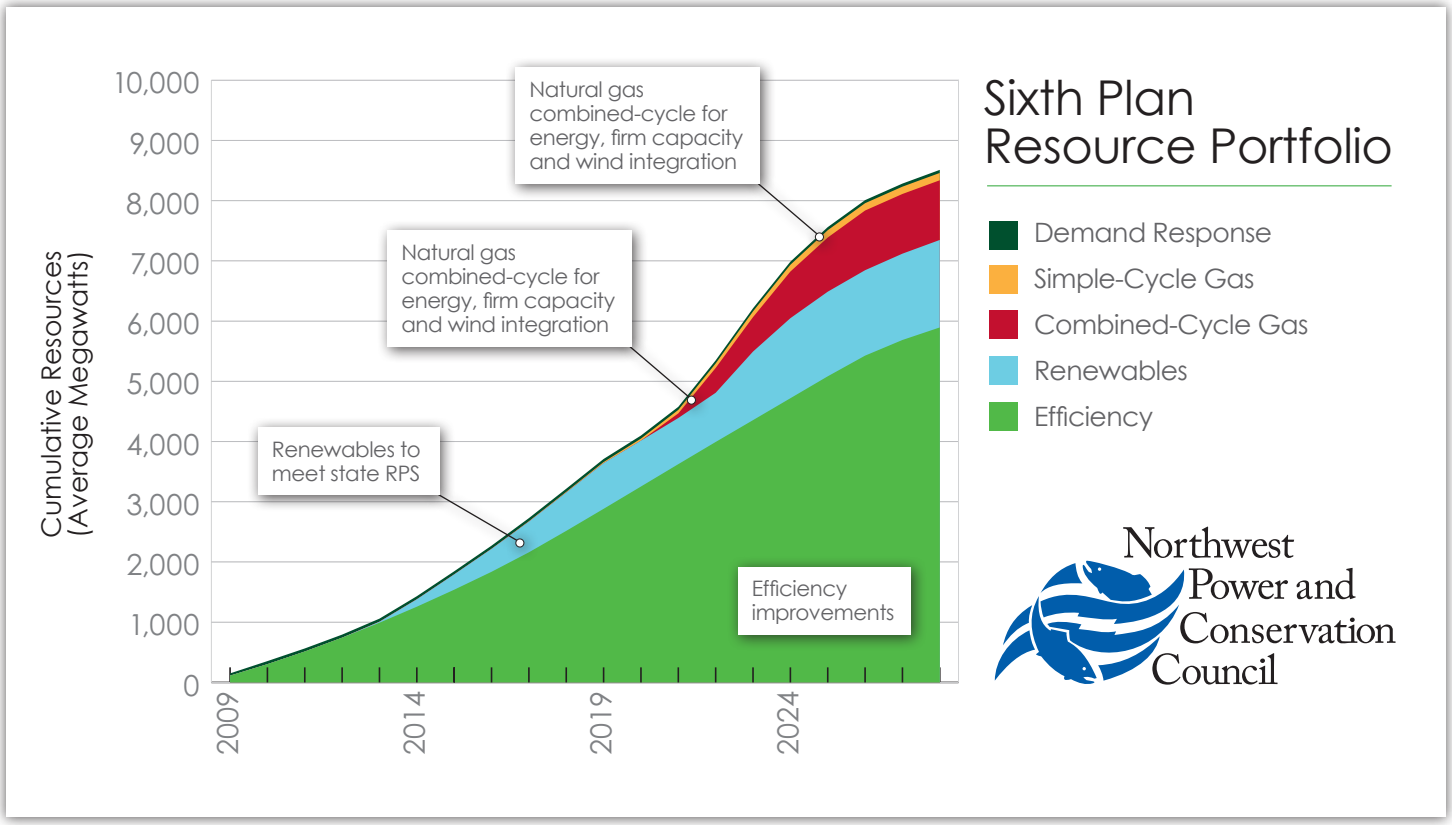
Energy efficiency is at the heart of the Sixth Northwest Power Plan, which the Northwest Power and Conservation Council adopted in February 2010.

The plan, the sixth five-year revision of the regional plan first adopted by the Council in 1982, guides the Bonneville Power Administration.

According to the plan, Northwest population will increase from about 13 million to 16.7 million by 2030, and load (the ongoing electricity requirement) will increase from about 21,000 average megawatts today to about 28,000 average megawatts by 2030, an increase of about 1.4 percent.

Cost-effective energy efficiency could meet 85 percent of the new load over the next 20 years (about 5,900 of 7,000 average megawatts). This efficiency, combined with new renewable energy, could delay investments in new fossil-fuel power plants until future environmental legislation is clear and alternative low-carbon energy sources have matured in technology and cost. The resource strategy in the Plan includes five specific recommendations:

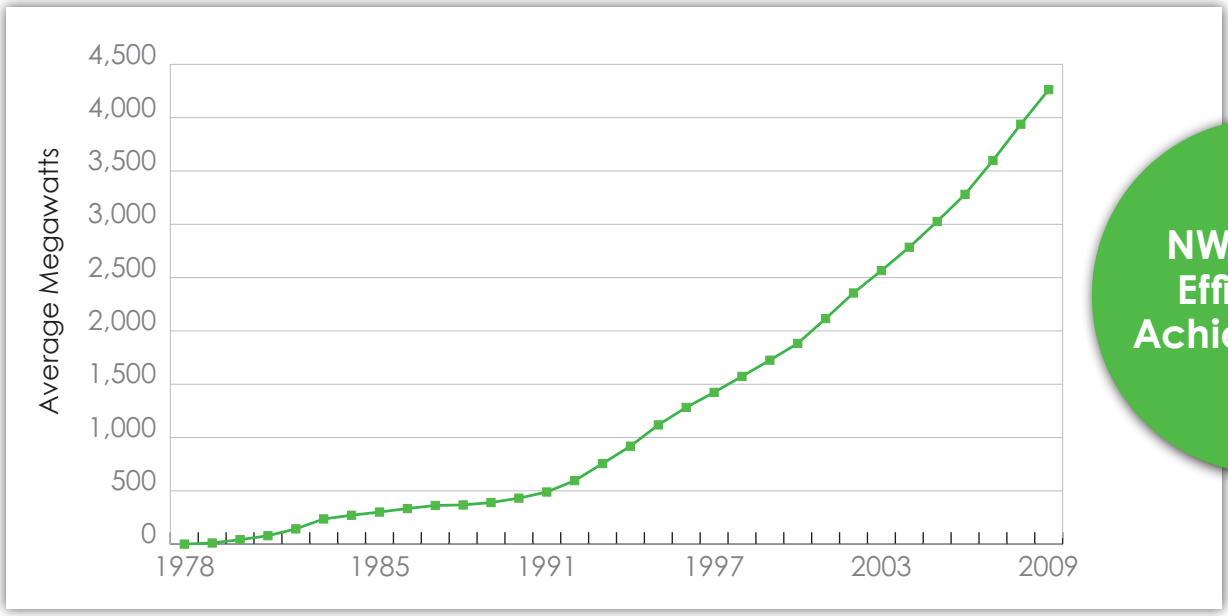
1. Develop cost-effective energy efficiency aggressively — at least 1,200 average megawatts by 2015, and equal or slightly higher amounts every five years through 2030.
2. Develop cost-effective renewable energy as required by state laws, particularly wind power, accounting for its variable output.
3. Improve power-system operating procedures to integrate wind power and improve the efficiency and flexibility of the power system.
4. Build new natural gas-fired power plants to meet local needs for on-demand energy and back-up power, and reduce reliance on existing coal-fired plants to help meet the power system's share of greenhouse gas-reduction goals and policies.
5. Investigate new technologies such as the "smart-grid," new sources of energy efficiency and renewable energy, advanced nuclear power, and methods of reducing emissions of greenhouse gases from power plants.



Northwest Efficiency Achievements

How much energy efficiency has been achieved?

- Through 2010 (the latest year for which we have data) regional savings were over of 4,700 average megawatts. Expressed as generated electricity, that is enough to power all of the state of Idaho and Western Montana all year, with enough left over to meet the needs of a city the size of Eugene, Oregon.
- In 2010, the region's electric utilities set an all-time record for acquiring energy efficiency - 258 average megawatts in one year (as generation, enough for 174,000 Northwest homes at the average electricity use of 13,000 kilowatt-hours per year per home).
- Since 1980, more than half of the growth in demand for electricity in the Northwest has been met with energy efficiency.
- As a result of the improved efficiency, fewer new power plants that burn coal or natural gas were built, meaning that millions of tons of greenhouse gasses were not emitted into the atmosphere — an estimated 18 million tons in 2010 alone.
- The average cost of these savings to utilities has been less than 2 cents per kilowatt-hour, which is less than the roughly 3 cents per kilowatt-hour the Bonneville Power Administration charges its electric-utility customers. Energy efficiency costs about half as much as wind power, which utilities currently purchase for 6-8 cents per kilowatt-hour.
- Because consumers didn't have to buy 4,700 average megawatts of electricity in 2010, they paid $2.5 billion less for electricity — even after accounting for the cost of energy-efficiency programs in their electric rates.



Where Is The Energy Efficiency, Past and Future?

- Major sources have been home weatherization (insulation, windows), improved efficiency in commercial lighting, improved irrigation efficiency (fewer leaks, more efficient pumps, lower water pressure), industrial motors, and lighting (installation of compact fluorescent lights, particularly).
- Future savings are expected to come in large part from energy-efficiency improvements in televisions, clothes washers, and water heaters, and from high-performance windows and improved energy efficiency in industrial plants. There also is a significant potential available from improving the efficiency of utility distribution systems with better voltage management, higher-efficiency transformers, and other utility-level improvements. There even are significant electricity savings available in dairy farm equipment.

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