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Study: Clean energy can meet Arizona's need for new power

Energy efficiency, wind and solar can satisfy demand

Arizona, one of the fastest growing states in the country, can meet the majority of its rising demand for electricity by investing in energy efficiency and renewable energy, according to a new report prepared by Western Resource Advocates.

"If current trends continue, electricity consumption in Arizona will double in about 20 years," said report author David Berry. "We have an opportunity now to transition from conventional, polluting fossil fuels such as coal to cleaner sources like solar power. What's more, we can do it reliably at about the same cost as conventional generation and with less financial risk."

"Arizona now has real opportunities to meet our growing energy demand through clean energy resources," said State Representative Lucy Mason (District 1, Prescott). "These new technologies will create new jobs and invest energy dollars at home, in Arizona resources."

The analysis, "A Clean Electric Energy Strategy for Arizona," maps out how the state can move from its current dependence on fossil fuels to cleaner sources of energy that have more stable costs and much smaller environmental impacts. The report aims to inform utility managers and regulators planning for new resources about the clean energy options available to Arizona.

Savings from energy-efficiency measures aimed at new and existing customers, buildings and appliances could meet about one third of the growth in demand for electricity, according to the Arizona analysis. Renewable energy such as wind, solar and geothermal would meet another third. And the remainder of the state's load growth could be met with natural gas-fired generation and a small amount of new technologies such as advanced coal generation with carbon capture.

The strategy detailed in the WRA report also provides a way to sharply reduce emissions of global warming pollution – a goal shared by many Arizonans, according to public opinion polls. Two-thirds of Arizona voters have said they favor steps to curb global warming, and a majority believes that state and federal governments should do more to address the problem.

Arizona is a charter member of the Western Climate Initiative and Gov. Janet Napolitano has set a goal of reducing greenhouse gas emissions in Arizona to 2000 levels by 2020, and cutting them 50 percent by 2040.

"We can help meet that goal by increasing energy efficiency programs and encouraging emerging technologies such as solar power with thermal storage," said Jessica Youle, Senior Director of Energy Policy, Arizona Department of Commerce. "And the beauty is that tapping Arizona's vast renewable energy potential will create jobs and help fuel our economy."

The WRA analysis found that transitioning to clean energy has a number of benefits, including:

Stabilizing costs and cutting risk
A more diverse portfolio of renewable energy and energy efficiency would deliver stable prices for Arizona utilities and ratepayers, thanks to minimal fuel costs and low carbon dioxide emissions, the analysis concluded. Uncertainty over the costs associated with impending federal caps on global warming pollution, for example, makes continuing to rely on pulverized coal-fired power financially risky. If compliance costs $20 per metric ton of CO_2 – a mid-range estimate used by many analysts – generation costs at a 500-megawatt coal plant would rise by about $70 million per year, or by about 1.9 cents per kilowatt-hour. Construction costs for new coal-fired power plants also are spiraling upward, another cost factor, that when combined with the projected price tag of new global warming pollution limits, has led power companies and regulators to shelve plans for more than 50 coal-fired power plants across the nation in 2006 and 2007.

Energy efficiency is best bet for ratepayers
The most cost-effective way to meet growing demand for electricity is to invest in energy efficiency. Efficiency programs that cut demand cost about 2 to 3 cents per lifetime kilowatt-hour saved. In comparison, electricity from coal currently costs about 5 to 6 cents per kilowatt-hour, not including the CO2 emission costs.

Stabilizing CO_2 emissions
If Arizona utilities meet the growth in demand for electricity with new coal- and gas-fired power plants, carbon dioxide emissions would increase from about 45 million metric tons in 2006 to about 84 million metric tons in 2025. Under the clean energy strategy, however, total carbon dioxide emissions in 2025 would be about 52 million metric tons, a much smaller increase over 2006 emission levels. To achieve further reductions in carbon dioxide emissions, it will also be necessary to retire older coal-fired power plants (some dating to the 1960s) and replace them with cleaner resources, or capture and store the carbon dioxide emissions from existing coal-fired power plants.

Call for new policies to support clean energy
Although Arizona has already adopted a number of aggressive clean energy policies, including a Renewable Energy Standard, the report recommends additional policies aimed at boosting clean energy development even further:

- Encouraging technological innovation, such as through a statewide research and development program
- Developing transmission capacity to support renewable energy resources
- Increasing the renewable energy standard from the current 15 percent by 2025 to 20 percent by 2022
- Significantly increasing energy-efficiency programs, and removing financial obstacles to large-scale utility efficiency programs.

"These policies can make Arizona a leader in energy sustainability," added Rep. Mason.

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Western Resource Advocates is a nonprofit environmental law and policy organization dedicated to restoring and protecting the natural environment of the Interior American West. ***A link to the report will be available after the embargo has lifted at http://westernresourceadvocates.org/***