US risks losing clean electricity if nuclear plants keep closing, report says
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Four nuclear power plants, sources of low-emissions electricity, have announced closings this year. If plants continue to shut down instead of extending operations the nation risks losing 60 percent of its clean electricity starting in 2030, according to a new report, Renewing Licenses for the Nation's Nuclear Power Plant by the American Physical Society.

Power plants across the country, including ones in California, Wisconsin, Florida and Vermont, are being shuttered as utility companies opt to build natural gas plants rather than extending operation of nuclear reactors. Operators of an additional 38 reactors in 23 states are facing decisions on whether to extend operating licenses. Currently, there are approximately 100 nuclear reactors in the United States.

"Nuclear power plants provide the nation with a source of clean energy at a time when renewables such as solar and wind are not yet ready to fill the potential gap in the nation's base power needs created by the loss of nuclear power. Utilities should consider extending the licenses of power plants, which unlike coal and natural gas plants, do not emit any major air pollutants as identified in the Clean Air Act," said Roy Schwitters, chair of the APS report.

Although natural gas is cheap, its future remains uncertain. Questions abound concerning the availability of the gas in the U.S. and infrastructure and environmental costs associated with fracked wells.

Four prominent climate and energy scientists recently released an open letter to world leaders, calling on them to support safer nuclear energy systems as a practical way to address global warming. "While it may be theoretically possible to stabilize the climate without nuclear power, in the real world, there is no credible path to climate stabilization that does not include a substantial role for nuclear power," states the letter from Ken Caldeira (senior scientist, Department of Global Ecology, Carnegie Institution); Kerry Emanuel (atmospheric scientist, MIT); James Hansen (climate scientist, Columbia University Earth Institute); and Tom Wigley (climate scientist, University of Adelaide and the National Center for Atmospheric Research).

Extending operating licenses for reactors in a safe and reliable way is a smart move, as they are a "near carbon-free source of energy," according to the APS report. The Nuclear Regulatory Commission allows power plants to operate up to 60 years, but extensions are available for an additional 20 years. The report finds that there are no technical show stoppers to running some plants for up to 80 years.

Furthermore, it urges utilities to consider the financial and environmental consequences of carbon emissions in their business decisions regarding nuclear and natural gas plants. Such considerations can also be factors for socially responsible investors who are concerned about increased carbon emissions in the U.S. Investors, with more than $3 trillion in assets and who use an environmental, social and governance criteria, have been effective at encouraging companies to consider environmental consequences in their business decisions.

The APS report specifically recommends the following:

- An Enhanced Energy Strategy Pathway—As long as licenses can be safely renewed, U.S. energy strategies should make renewal a feasible choice. For example, for energy security and climate change reasons, the federal government or individual states could enact policies that support lowest-carbon sources; or, financial institutions could weigh environmental
impact in valuating utilities and banks that finance utilities.

- An Enhanced Research Pathway—A more substantial, fundamental research effort, with a long-term commitment, would better inform the assessments that will drive a decision whether to seek continued operation beyond the current license period. With additional resources, the current program at the U.S. Department of Energy would grow both deeper and broader, serving to reduce financial risks and uncertainties.

- An Enhanced Leadership Pathway—The U.S. government should have a concentrated program to support the development, manufacturing and licensing of new nuclear reactors that can be built, operated and eventually decommissioned in a manner that is safe, environmentally sound and cost-effective.

More information:
www.aps.org/policy/reports/pop … ad/nuclear-power.pdf

Provided by American Physical Society