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Defining renewable

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Guy Wanegar, the president of the Connecticut Geothermal Association, installs a geothermal water furnace in a house in Niantic on Feb. 6. Guy and a few others are working to get their green technologies certified as Class I renewables, which would create quite the windfall of dollars.

The Connecticut General Assembly will consider redefining renewable energy this session, possibly opening up billions in state incentives for previously unchosen technologies.

Technologies such as geothermal, solar thermal, large-scale hydro, and biodiesel fuel soon could qualify for pricey renewable energy credits, or RECs, if the legislature decides to classify them in the top tier of clean technologies.

"The energy world is a very fast-changing, fast-paced world," said State Sen. Bob Duff (D-Norwalk), co-chair of the legislature's Energy & Technology Committee. "The technologies that are available today weren't necessarily available five to 10 years ago."

The Energy & Technology Committee typically reviews the definition of renewable power annually, although the discussion will be different this year because Gov. Dannel Malloy is pushing, through the state's comprehensive energy strategy, for large-scale hydro to be included in the highest tier of renewable.

The hydro push is part of Malloy's goal to make energy cheaper, cleaner, and more reliable. Electricity from big hydro

dams is much less expensive than solar, wind, and fuel cells, and reclassifying hydro will help the state meet its renewable portfolio standard goals over the next 10 years while avoiding the projected $100 annual increase to ratepayer bills.

"So many renewable companies are fearful of this, concerned that (hydro) can be delivered so cheaply that is will literally flood and fulfill all of our RPS goals, making it impossible for other renewables to compete and grow and remain in business," said State Rep. Lonnie Reed (D-Branford), the other Energy & Technology co-chair.

Renewable energy in Connecticut is split into three classes. Class I technologies must produce electricity and includes solar, wind, fuel cells, landfill gas, ocean and tidal power, and run-of-river hydro that produces less than five megawatts.

Class II also must produce electricity and includes trash-to-energy and biomass plants.

Class III can be electric or thermal systems, including solar thermal, geothermal, and combined heat and power generators.

"Class I is where the REC money is," Reed said.

The difference between REC prices between Class I and Class III is $56 per megawatt vs. $10 per megawatt.

Guy Wanegar, president of the Connecticut Geothermal Association, said a Class I definition would be a significant boon for the geothermal industry, helping companies to install the heating and cooling systems at a much more competitive cost.

"Geothermal is still more expensive than conventional heating," Wanegar said.

The key is convincing Connecticut that heating and cooling using renewable technologies is just as valuable as generating electricity from renewables, Wanegar said. New Hampshire and Maryland already have changed their definitions, and Massachusetts and Vermont are considering the change.

"That is going to be a challenge for all our industries to change Connecticut's mind on that," Wanegar said. "They are going to have to because solar thermal is really going to try for Class I."

Reed said the list of companies and industries lobbying for the Class I designation grows and grows with each passing day. The big pushes are coming from solar thermal and biodiesel companies, particularly Greenleaf Biofuels, which is building a 10-million gallon plant in New Haven.

"They argue that they are contributing to our overall clean energy portfolio by de-carbonizing the atmosphere," Reed said.

The Energy & Technology Committee hasn't scheduled its hearing on redefining Class I, as members are waiting for the final version of the comprehensive energy strategy coming out in mid-February.

"Opening up the Class I category is a big deal and not something one undertakes lightly," Reed said. "Clearly, companies and investors like some level of consistency and dependability when we create these programs."

The solar industry already considers solar thermal to be on par with solar photovoltaic and other Class I technologies, said Michael Trahan, executive director for industry advocate Solar Connecticut. The legislature or state regulators just need to clear that up so solar thermal can get incentives.

Trahan has encouraged solar thermal installers to participate in the state's $1 billion ZREC/LREC program launched last year.

"Solar thermal has sort of been in the shadows of PV," Trahan said. "It is a long-proven technology, and we should be installing more of it here."

One emissions-free technology not pursuing any renewable definition is nuclear. Despite not emitting greenhouse

gases, nuclear remains contentious because the spent uranium produced in fission.

Dominion — owners of the nuclear Millstone Power Station in Waterford that generates about 45 percent of Connecticut's electricity — has no plans for seeking Class I, II, or III status.

"That is not something we are advocating or pursuing at this time," Dominion spokesman Ken Holt said.

The station doesn't need the incentives that come with the definition either, as nuclear power is one of the cheapest forms of electricity once the reactor has been built.

Large-scale hydro also does not need incentives to be economical. The electricity Connecticut would tap largely would come from dams in Quebec that already have been built.

Because redefining large-scale hydro as Class I would help the state meet its goal of having 20 percent of its electricity come from renewable sources by 2020 in a much less expensive way, the legislature could consider separating the RPS goals from the incentive programs.

Under that scenario, the RPS goals could be met by certain types of renewable technologies, but the incentives are limited to an even more select group of technologies. That way, Connecticut doesn't break the bank using a large portion of clean power in its supply, but less cost-competitive technologies such as solar, wind, fuel cells, geothermal can be incentivized to grow and install.

"We are trying to be as comprehensive as possible," Duff said. "We try to stay ahead of the curve as much as we can."