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*US portfolio standards*

*Given the success of portfolio standards in the US in promoting the renewables sector, the coal and nuclear industries are calling for portfolio standards of their own. Elisa Wood reports*

**T**wenty eight US states now require that a certain percentage of electricity sales come from green energy. Analysts credit this policy – called the renewable portfolio standard (RPS) – for spurring many of the new wind farms and solar panels dotting the nation's landscape and rooftops.

Given that the policy worked for renewables, the lagging nuclear and coal industries are now pushing for portfolio standards of their own.

"Imitation is the best form of flattery," says Patricia Stanton, vice-president of Clean Energy Markets at Massachusetts-based Conservation Services Group, and a former Massachusetts energy regulator. "This particular regulatory mechanism is gaining traction. There is a big political discussion about who gets into the club."

The RPS began more than a decade ago in the US. Similar requirements exist in Australia, China, Japan, Belgium, Sweden, Italy, the UK,

Poland and some areas of India and Canada, according to a report by the Lawrence Berkeley National Laboratory (LBNL) *Renewable Portfolio Standards in the United States*.

In the US, rules vary from state to state, but in essence, the approach creates a market for renewable energy by requiring that a certain portion of power sold by utilities come from wind, solar, biomass and other green sources. California, for example, requires that 20% of its power be green by next year; Arizona calls for 2% this year growing to 15% by 2025; Massachusetts mandates 4% this year rising to 15% in 2020. Some utilities meet the standard by building their own plants; others buy green power from independent companies, or

secure tradable credits that represent the power. States typically escalate the amount of green electricity they require each year and impose penalties on utilities that fail to meet any annual requirement.

More than half of the green power developed in the US up until the end of 2007 – about 8,900 megawatts – came from states with portfolio



# FORCING THE ISSUE



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standards, according to the LBNL report. And in 2007 alone, RPS states accounted for 76% of renewable capacity additions. If they meet all RPS requirements, by 2025 the states will add more than 61 gigawatts of renewables capacity.

**Pennsylvania first to open club to coal**

Given this rapid RPS-driven expansion of green energy, it is little surprise that other fuel producers are keen to replicate the concept. In 2004, Pennsylvania, a coal-producing state, decided to use the concept to promote

coal-fired generation – a first in the nation. The northeastern state created what it calls an alternative energy portfolio standard that includes coal as one of the resources utilities can select to meet the requirement.

Eric Raskin, a trader at Good Energy, which provides energy supply management in several states, says Pennsylvania was driven by the desire to keep its power prices low and use its vast amounts of coal waste – thousands of acres of coal mined but discarded in piles because it has low energy value. Advances in coal-fired boiler technology now offer

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the opportunity to burn waste coal more efficiently.

Pennsylvania divides eligible resources into two tiers, with Tier I representing the more typical forms of generation found in an RPS: solar, wind, low-impact hydropower, geothermal energy, methane gas, fuel cells and biomass. Utilities must provide 2.5% of their electricity from one or more of these in 2009. Tier II represents less-typical RPS resources: waste coal, integrated combined coal gasification (IGCC), distributed generation, demand-side management, large-scale hydro, municipal solid waste and wood byproducts. The state requires 4.2% from these forms of generation in 2009.

The waste-coal industry took quick action to make use of the Pennsylvania standard. Between 2005 and 2007, waste-coal generators registered over 35 million of the 89 million credits available in Pennsylvania for utilities to meet the Tier II requirements. In 2007, alone, waste coal accounted for 59% of the available credits.

Since then, several other states have adopted – or are considering – some form of coal RPS to bolster their coal industry, create jobs, or advance new coal technologies, such as IGCC. Michigan approved a law in October 2008 that lets utilities meet portfolio standards from what the state describes as advanced cleaner energy facilities, including coal gasification and coal-fired facilities that capture and sequester 85% of carbon dioxide emissions. In April, West Virginia lawmakers sanctioned a proposal by Governor Joe Manchin that requires 25% of electricity to come from renewables and various coal-generation technologies by 2025.

Massachusetts – not a coal producer, but a technology leader – initiated an alternative energy portfolio standard in January that requires 1% of the electricity that utilities or retail suppliers sell comes from either coal gasification,



5% of their electricity from clean coal beginning in 2015.

The law sets strict standards for plant eligibility. Coal gasification projects must include carbon dioxide capture and storage and they must emit no more sulfur dioxide, nitrogen oxides, carbon monoxide, particulates and mercury than a combined cycle natural gas generating plant. The



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*Craig Moyer, Manatt, Phelps & Phillips*

combined heat and power, fly wheel technology (a device that stores energy using a disk spinning on an axis) or paper-derived fuels (cellulose waste from paper production). The standard increases to 5% by 2020. Meanwhile, Indiana's state legislature is considering a bill (SB 420) that would allow utilities to use clean coal and nuclear power towards meeting a renewable portfolio standard.

"These are very recent developments, often triggered by the realisation that the state has a heavy dependence on coal and real doubts about where its new sources of energy are going to come from," says Ivan Gold, an attorney who represents energy companies for international law firm Perkins Coie.

The state of Illinois took groundbreaking action in January with approval of a portfolio standard dedicated solely to clean coal. *The Clean Coal Portfolio Standard Act* requires that utilities purchase up to

first plant ready to go gets a special incentive. The state will award the project a 30-year power purchase agreement. The contract cannot increase customer electric rates by more than 2.015% after the plant begins operation. The state is granting the contact in a bid to help the first project secure private financing – not an easy task for a relatively new technology with high capital costs.

Nebraska-based Tenaska, one of the US' largest independent power producers, appears poised to win the contract with its 600-MW Taylorville Clean Coal Plant, which requires only one more permit to win approval.

"It is always harder to do the first project," says Bart Ford, Tenaska vice-president. "Ultimately, people agreed to get the lowest cost financing, we needed a stable base of revenue, and it was in the interest of ratepayers to provide for a contract," he adds.

The Illinois Coal Association had pushed the coal standard saying that



Ivan Gold,  
Perkins Cole



clean coal will make good use of the state's 100 billion tons of recoverable coal, which contains more energy than found in all the oil in Saudi Arabia and Kuwait. But the concept also won support from an unusual mix of health, environmental and labour groups, as well as the state attorney general's office. "The fact that Illinois is a significant coal state and progressive on the environmental side made for a strong coalition," Ford adds.

The project is now undergoing an intensive engineering and design study, which the Illinois General Assembly will review in spring 2010. If the General Assembly approves the study, Tenaska will be awarded the power purchase contract and will begin construction of the \$3.6 billion project, which is expected to take four years.

Not all states welcome coal as much as Illinois. In fact, the resource is under strong attack in much of the nation. Although coal provides about half of the nation's electricity, it has become difficult for developers to win approval for new plants because of opposition from environmentalists. For example, 18 coal-fired projects were cancelled in the US last year; both environmental and economic concerns played a role.

### Going nuclear

The mood is different, however, for nuclear power, which supplies about one-fifth of the nation's electricity. Nuclear power is gaining new-found support from environmentalists because it produces no carbon dioxide emissions. This comes after a long, dry spell – no new nuclear plants have come on line in the US since 1996. But now 17 companies are seeking licences for 30 new plants, according to the Nuclear Energy Institute (NEI), a Washington-based policy organisation for the nuclear technologies industry.

Some states hope to boost nuclear's new support with portfolio-style

policies. Ohio has led the way, according to the NEI, with what the state calls an Advanced Energy Portfolio Standard that requires 25% of electricity sold to come from designated sources. At least 12.5% must come from renewable energy, but the remaining requirement can be met with alternatives, including new nuclear plants and improvements to existing facilities. Meanwhile, Utah recently approved legislation that makes new nuclear plants eligible for the same incentives currently available to renewable projects in the state. The South Carolina legislature is considering legislation that would redefine renewable energy resources to include nuclear, and Florida lawmakers are looking at including nuclear within a new state renewable portfolio standard.

States are pursuing portfolio standards, rather than other means to attract resources, because it provides a "low overhead" way to tailor resources within the power market, says Clean Energy Markets' Stanton. Portfolio

standards can replace state or utility-sponsored power solicitations, which often become stalled in legal wrangles and bidder complaints.

The next question becomes what will happen if the US adopts a national renewable portfolio standard, a cause President Obama champions and Congress is expected to take up this year. Will coal and nuclear resources be included?

"There are many environmental groups that don't want to see any further discussion on coal, and they will fight to prevent any precedent that might be used in the national debate," says Craig Moyer, chair of the energy, environment & natural resources practice at Manatt, Phelps & Phillips, a national law firm. "With nuclear, we'll have to see how it shakes out. It is harder to make an argument against nuclear," says Moyer.

A strong push exists to allow states to tailor their own renewable portfolio standards even if a national standard becomes law. Under that scenario, the states would be required to supply a certain minimum threshold of their power from green energy. But individual states could require a greater amount if they chose, or they could add tiers with coal, nuclear other non-renewable resources. So ultimately the drive for non-renewable standards – the alternative to the alternatives – may remain a state-by-state strategy, one driven by local economic interests. ■



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