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THIRD QUARTER 2015

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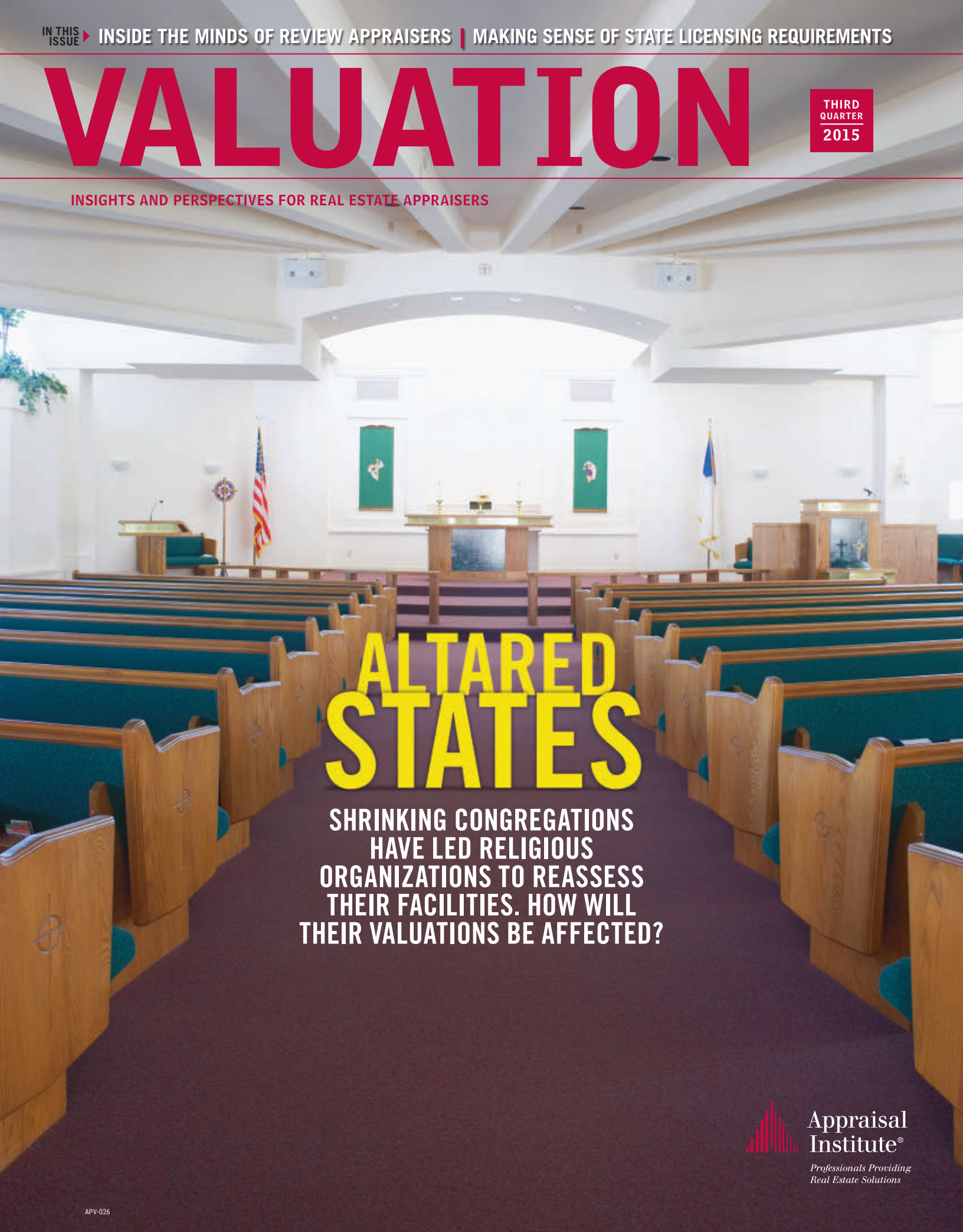

ALTARED STATES

SHRINKING CONGREGATIONS HAVE LED RELIGIOUS ORGANIZATIONS TO REASSESS THEIR FACILITIES. HOW WILL THEIR VALUATIONS BE AFFECTED?

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FRONT LINES *Stories and insights from the field*

TOWERS OF POWER

Wind farms and the frontier of renewable power generation

By **P. BARTON DELACY, MAI**

The real estate encumbered by a wind farm may seem incidental when compared to its power and profits, but appraisers have an important role to play in the siting, taxation and financing of these massive turbine generators, where blades can be more than 200 feet long and the tower installation can stand close to 400 feet — taller than the Statue of Liberty.

My work in this field has taken me across the continent — and then some — from Vermont to Hawaii to Toronto to the Grand Canyon. Responding to client needs, being open to learning this business and understanding how to speak "megawatt" has opened doors to assignments for all types of power generating facilities, from an anaerobic bio-digester* in Maine to a geothermal central heating plant in the Midwest.

My introduction to wind farms came in 2002 when I was hired by a developer to help with the impact study for a project in the Pacific Northwest where I was based at the time and where the land-use approval process is as public as it is political. Determining whether or not the massive turbine towers adversely affect property values is one of the hurdles wind projects must clear. Other issues: Birds — do massive turbine blades pose a danger to them? Noise? Shadow flicker?

Ideally, impact studies rely on paired sales to demonstrate diminution in value. Unfortunately, it is nearly impossible to assemble a reliable data set in rural areas, so I have had to survey the entire country looking for wind farm developments that could help me understand their impact.

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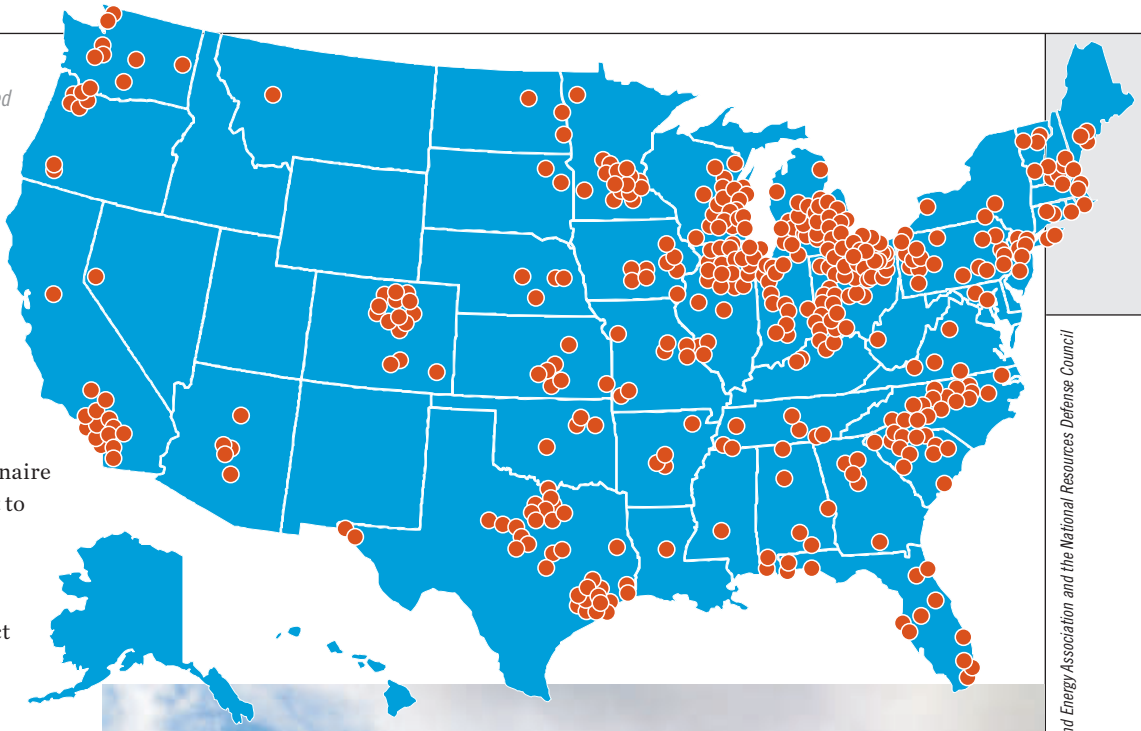
Growing with the Industry

Over time, my assignments have tracked the trajectory of the wind industry, which still is a dominant provider of renewable power generation (second only to hydro) and supplies nearly 5 percent of the nation's electricity, according to the U.S. Department of Energy. For a number of years, I worked on siting issues for planned projects before I moved into market studies where I helped determine land lease rates. When I was engaged for work in the project finance arena, it involved feasibility and valuation engagements. However, when tax credit programs expired in 2013, the development of new wind farms slowed and my work shifted to assisting with property tax appeals to mitigate wind farm operating costs.

I also became familiar with cash flow models and tax-advantaged ownership structures used to support project financing. I saw how much more than just wind resources factored into the decision to build or not to build.

A Pacific Proposal

One particular project I worked on in Hawaii stands out because of how all the factors determining feasibility came together. It was touted as the state's largest wind farm: 200 turbines to be powered by trade winds blowing across the island of Lanai and producing up to 400 megawatts of electricity. It was slated for construction in 2009, but it couldn't overcome bureaucratic delays and the cost of a 68-mile underwater cable to carry the power off the island. In 2013, the developer, Castle



As of 2010, there were more than 400 wind-related manufacturing facilities in the United States (right). In the following year alone, 3,464 new turbines were erected, and wind power now supplies electricity to over 11 million homes in the U.S. Below, Foundation Windpower installed two 1.5 MW wind turbines to power a gravel mine near Palm Springs, Calif. Electricity is directly delivered to the site instead of being uploaded to a regional power grid.

Sources: American Wind Energy Association and the National Resources Defense Council

& Cooke, sold the island to Oracle billionaire Larry Ellison, who canceled the project to pursue resort development.

While this venture failed for reasons beyond our control, Hawaii was well suited for this renewable-energy project for multiple reasons, including:

- The state's heavy reliance on burning fossil fuels (heavy oil) to generate electrical power, and the fact that the oil had to be imported through vulnerable shipping lanes,
- Hawaii's energy costs are nearly triple the prices on the mainland,
- Its power purchase agreement rates are high enough to provide adequate return without significant tax credits or incentives, and
- Local political interests were aligned in support of the project.

Given the environmental, cultural, ownership and land-use hurdles that typically challenge Hawaiian developments, Lanai had significant advantages:

- Unitary ownership limited any "not in my backyard" protests,
- The arid part of the island was isolated from tourist areas, and
- It was an excellent wind resource.

Looking ahead, the future may be small wind farms that distribute the power locally versus the massive projects in the Northwest and Texas. While the cost of the fuel — i.e., wind — is free, capital construction costs of $3 million to $5 million per installed turbine can run much higher than a conventional fossil-fueled power plant in terms of dollars-per-megawatt of power produced.

Wind Power Politics

It's been said that all politics is local; well, so are property taxes. Federal policies that offered tax breaks and investment tax credits to encourage wind farm construction can be excised by local property-taxing districts. There's nothing like a $100 million wind farm investment to whet the appetite of a rural school district funded by local property taxes.

While many states have adopted Renewables Portfolio Standards to encourage regional utilities to purchase electric power generated by qualifying non-carbon-based fuels, local taxing districts are threatening the economics of wind power by assessing purpose-built wind farms based on their cost and not on their actual value.

Appraisers should be alert for similar situations where well-intentioned but clashing public policies create economic imbalances. Eventually, this becomes a real estate problem and clients will need our counsel.

** Anaerobic digestion is the process by which microorganisms break down biodegradable material in the absence of oxygen to produce fuels and/or manage waste.*