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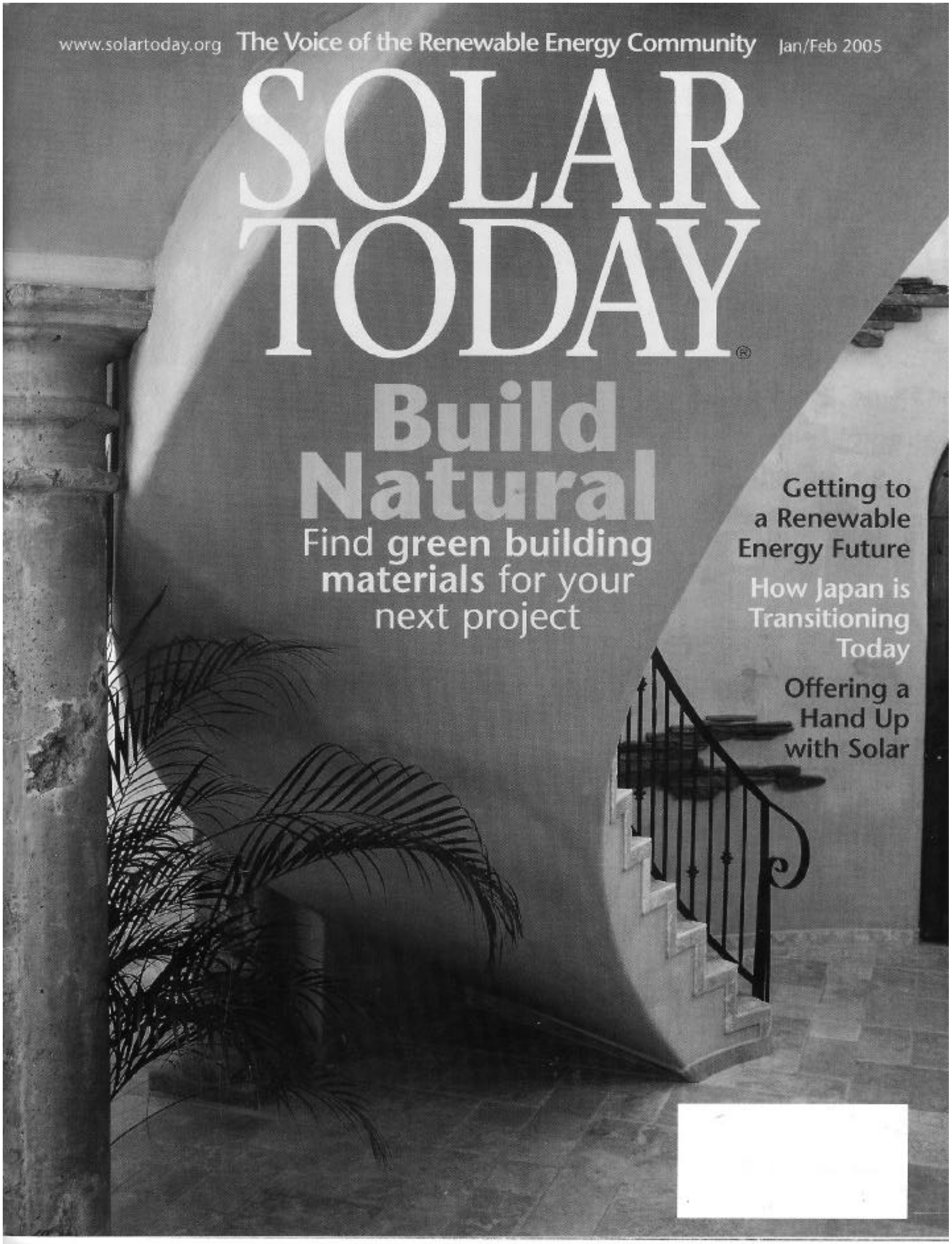

Paying for It

An innovative financing program eliminates the investment barrier for federal wind projects.

By Kathy Belyeu

One of the perennial problems facing wind energy is that project costs are upfront, in the form of capital costs for the purchase and installation of wind turbines. The high initial outlay can discourage individuals and business or government customers, even when the benefits of the investment over time are clear. But with the first-ever application of an innovative financing contract to a federal wind project, federal facilities now have the opportunity to eliminate capital budgeting and upfront costs for these installations. The promising model could eventually be adapted and extended to commercial projects.

The benefiting facility is a new prison in Victorville, Calif. Under a Department of Energy (DOE) contract developed by NORESCO, a Massachusetts-based energy services company (ESCo), the purchase, installation and long-term maintenance of a wind turbine, solar panels and energy-efficiency systems are being financed with the energy cost savings that they will bring the customer.

This kind of energy-savings performance contract is common with federal energy-efficiency projects, largely as a result of green power purchases by government agencies that must be financed or offset by energy savings. Under this type of contract, an ESCo conducts an energy-efficiency audit at the facility, installs a number of energy-saving technologies, finances the upgrades, and then recovers those costs from a portion of the energy cost savings. In essence, the investment for the equipment and upgrades is paid from verified energy savings generated by the project. The customer sees reduced energy costs and receives new equipment. The ESCo receives enough profit to stay in business and offer the same contract to another customer, and the general public benefits as the projects use fewer fossil resources and create less pollution.

NORESCO will finance a 750-kilowatt wind turbine similar to these, along with solar panels and other efficiency systems, using the energy cost savings they bring.

The Victorville prison project is the first time an energy-savings performance contract has ever been used to finance a wind energy project. The new facility will receive one 750-kilowatt (kW) Micon NM 48 wind turbine from Vestas, along with a parking structure made of solar panels, and heating, ventilation, air conditioning and control-systems upgrades. The wind turbine was scheduled to arrive on-site Dec. 21, with the entire project due for completion in February.

ESCo Provides Capital, Reaps Savings

The project is financed under a DOE program called a super energy savings performance contract (ESPC). NORESCO, a pioneering ESCo, is developing the project, providing the investment capital and guaranteeing that the energy savings are being realized. NORESCO also structured the financing of a 19-year service

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phase. Even though the wind speeds are lower than what would usually interest developers, the overall project economics proved to be attractive to the customer thanks to state and utility incentives, grants, the long-term financing and the fact that the electricity generated offsets retail rates. Because the owner is a federal facility, the wind turbine is not eligible for (and also not hostage to) the wind energy production tax credit.

The wind turbine is expected to produce up to 30 percent of the facility's peak energy demand, and nearly 10 percent of the average annual demand.

State incentives established to encourage new renewable energy projects were critical to this project's success. To finance the project, NORESCO has taken advantage of one of California's incentive programs for renewables, the Self-Generation Incentive Program (SGIP). That program provides financial incentives to customers who install renewable, on-site, distributed generation up to 1.5 megawatts in rated capacity. SGIP was designed primarily with

business and large institutional customers in mind. The California Energy Commission offers a similar program to customers who install renewable generation sources with rated capacity of less than 30 kW.

In addition, the local utility also is awarding some incentive payments to the facility. Under its "nonresidential standard performance contract" program, the utility offers cash payments to both large and small nonresidential customers for custom-designed energy-saving retrofits. The project also received a DOE grant.

After subsidies, the installed cost for the wind, solar and energy-efficiency equipment totals about $3.8 million. With annual energy savings of $420,000, planners expect payback in about nine years. NORESCO found that installation costs for the wind turbine totaled more than the often-quoted figure of $1,000 per kilowatt that applies to large wind farms. The company found that costs were higher because the project could not take advantage of any economies of scale that usually lower development and construction costs. However, these costs were offset by the state incentives, high retail electricity rates and long-term financing.

Opportunity for Wind Industry?

Already, NORESCO has received calls from other federal sites and companies interested in pursuing wind energy projects with the model used at Victorville.

Although some of the features of this project are unique to California, other features should be replicable at other on-site generation projects. The DOE Super ESPC Program is available to all federal facilities in the United States. A similar energy savings performance contract model for renewable projects at nonfederal facilities could be developed easily, potentially opening a new market for the wind industry.

For more information about this project or the DOE Super ESPC Program, contact Scott Debenham of NORESCO at 619.334.9541. ●

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