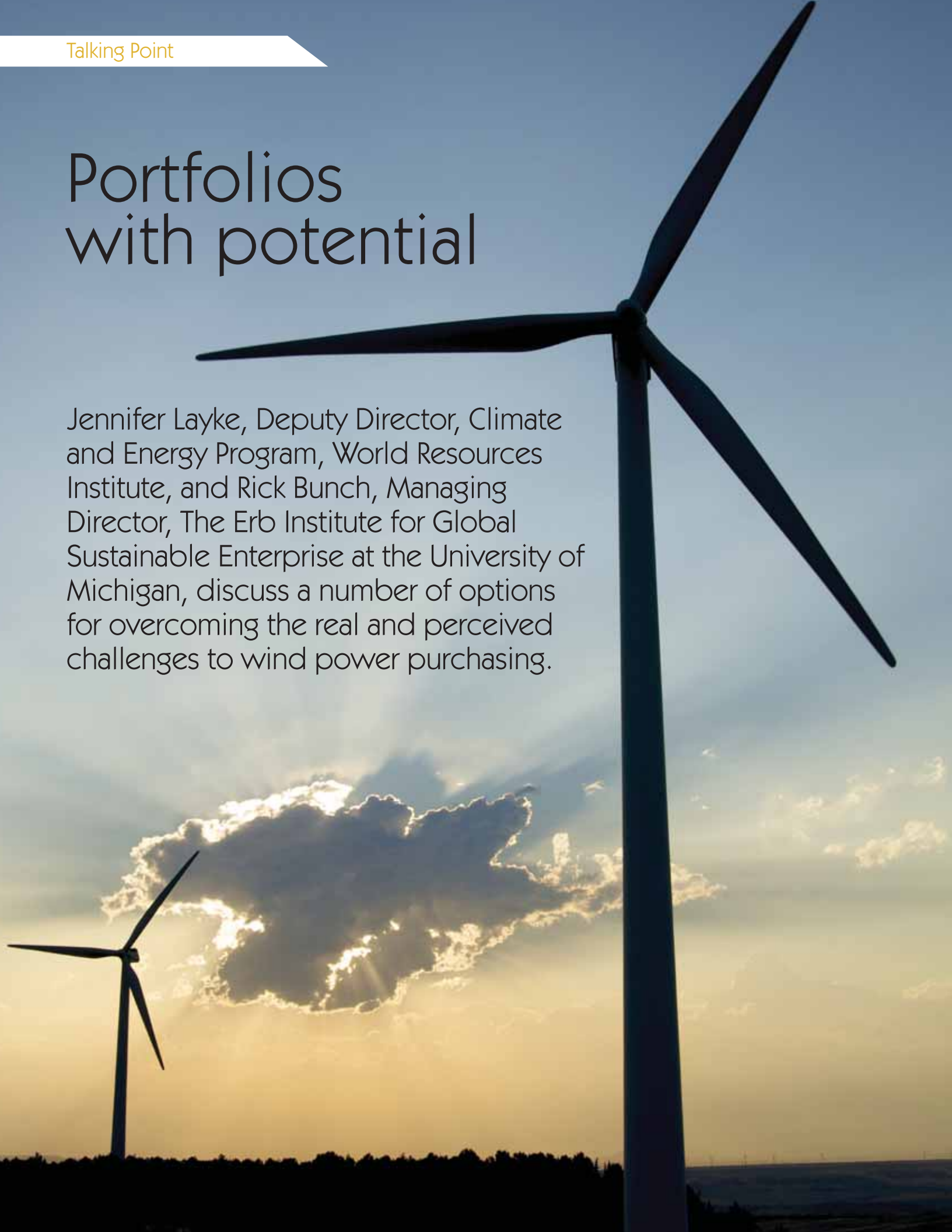


# Portfolios with potential

Jennifer Layke, Deputy Director, Climate and Energy Program, World Resources Institute, and Rick Bunch, Managing Director, The Erb Institute for Global Sustainable Enterprise at the University of Michigan, discuss a number of options for overcoming the real and perceived challenges to wind power purchasing.



Wind power is increasingly sought as an environmentally friendly part of companies' energy purchasing portfolios, but many organizations don't know how to source, use or get value from this resource. Energy portfolio managers may find it difficult to get clear information about wind power – its availability, costs, benefits and effectiveness – which has hampered wind power investment.

Despite the challenges associated with wind power investments, there are significant potential opportunities. Early adopters and purchasers of wind power are seeing a return on their investment that often exceeds the initial costs, and are demonstrating that wind power can be a viable option that reduces price volatility because it requires no purchased fuel inputs. The timeframe from investment to return is also shrinking as wind technology component production matures.

There are clear signs that wind power will bring fresh air to companies struggling with ever-higher energy costs, including regulatory restrictions on emissions, and increased public pressure for greener corporate operations. An assessment of companies' current strategies to access wind power offers insight into the big hurdles to wind investments and the approaches for getting over them.

#### Challenges – both perceived and real

Power analysts, environmentalists and public officials agree that there is increasing demand for wind turbines. Since 2000, demand for wind energy has risen 30 percent per year, and in 2007, wind power constituted almost a third of new electric-generating capacity in the US. The potential for renewable wind energy to transform the aging American power grid is real, but challenges remain both in terms of perception and infrastructure limitations.

Recent research by The Erb Institute for Global Sustainable Enterprise at the University of Michigan, for example, shows that in the Midwest, wind generation in 2008 was 14.6 terawatt hours, which is enough energy to power 1,304,872 homes. This represents nearly 30 percent of total US wind power generation, but growth of wind power adoption is hampered mainly by a lack of infrastructure to transmit the best wind resources to areas where there is the highest energy demand. In addition,

human capital investments are needed to train the next generation of utility service personnel to manage wind and other renewable resources including installation of new transmission lines.

## A number of companies have begun purchasing certificates for wind power and other green energy sources

At the same time, there is a lack of clarity in the minds of many, including corporate energy managers, about the production capabilities of wind generation facilities. They wonder, do these new stations really produce enough power, consistently and during peak demand times, to keep large-scale manufacturing and other operations running? Wind is an intermittent resource, and many are skeptical about the ability for wind to provide value if it needs to be "backed up" by a fossil fuel resource to provide reliable power.

Finally, high up-front capital costs to wind production have caused many companies to postpone wind-related investments. Again, this is a challenge both of perception and of reality. The average cost of investing in wind power over traditional power is often unclear because there's imperfect information in the market about those costs. So the perception might be that up-front investment is prohibitively high.

There is a lot of evidence to back up this perception. Research from the World Resources Institute (WRI) shows that prior to the recession, the market was facing rising development costs due to increasing demand for wind turbines that far exceeded supply, unfavorable exchange rates, and price increases in key commodities such as steel. Companies looking to purchase wind saw higher costs and long wait times for turbines as a result of these challenges. In 2009 however, prices and supplies are more favorable to buyers, and the federal incentives help make wind projects economically viable.

At the same time, however, corporate wind power purchasing decisions often undervalue the benefits of procuring wind power. Wind power offers a zero carbon power source that reduces the

demand on other power sources help keep long-term energy prices stable. Wind also reduces budgetary exposure to volatile fossil fuel prices, and on-site wind can decrease regulatory exposure

for air pollutants from corporate power generation. And finally, there can be many stakeholder benefits associated with corporate citizenship efforts that include supporting renewable resources.

#### Strategies for wind power purchasing

Despite the challenges, an increasing number of companies are starting to consider procuring wind power or evaluating on-site wind options. Interestingly, diversifying energy purchasing and improved corporate social responsibility are no longer seen as diverging objectives: the cost of environmental business-as-usual is too high as regulatory changes, public opinion and fossil fuel prices converge to put unprecedented pressure on companies to operate sustainably.

WRI's research, including work with the Green Power Market Development Group, a coalition of corporations interested in wind power and other renewable and clean energy technologies, shows that companies typically take one of six approaches to adding wind to their purchasing portfolio. Those approaches are outlined below:

Renewable Energy Certificates (RECs) – A number of companies have begun purchasing certificates for wind power and other "green" energy sources. Each REC represents one megawatt-hour (MWh) of green energy use, and enables even those companies in areas that do not have significant wind production (the American Southeast, for example) to buy into wind power and green their energy consumption.

Green pricing programs – Working with utilities and marketers, some organizations are paying a slight premium to purchase wind and other renewable sources as part of their overall energy bill. In 2006, for example, the

premium ranged from \$0.01 to \$0.088 kWh. About 25 percent of utilities in the US now offer this kind of green pricing program and wind energy represents the largest portion of the alternative sources offered in these programs.

**Hedging** – Energy purchasing portfolio managers might work with utilities, state agencies or power marketers to enter into a contract with a wind generator directly and secure the support of their power company to “shape and firm” the wind resource. By signing this type of contract the buyer is locking in to a fixed price for power for a long period and providing a direct contract to the wind generator. This approach often carries a greater level of complexity in terms of accounting and financial reporting, but can offer price certainty and stability to organizations that foresee fossil fuel consumption playing a continued role in their energy portfolio.

**Aggregation** – Some companies are looking at partnerships with marketers and suppliers to support initial investment in wind energy projects that are initially capital-intensive. Most energy consumers don’t have the flexibility to sign the long-term contracts that most wind generators require to support initial capital investments, but they can partner with suppliers whose business model lets them take a longer view, perhaps selling RECs to recoup costs in the interim.

**Investing in wind projects** – Direct wind project investment has generally been done by utilities and federal entities, though in recent years, financial firms have begun exploring this area. This level of investment requires a unique skill set and in-depth knowledge of energy markets, wind technologies and the financial products structured around them. Because of this, direct wind project investment is not suitable for most companies, with the exception of a few diversified multinationals.

**On-site wind projects** – Installing wind turbines on-site at a company facility or leasing land to a wind project developer can provide both green power benefits and untapped revenue streams to reduce the overall cost of energy consumption. It is important to understand state net-metering rules, especially for facilities with 24/7 operations that need power during off-peak wind generation times, before undertaking this sort of project.

### Making wind power work for your company

Wind power purchasing isn’t simplistic. Evaluating wind power purchase options involves weighing a complex array of financial, regulatory, environmental, marketing and operational factors that can stall decision making in the typical busy work environment. Corporations need to be sure they have the right people in place to analyze the information and make smart decisions.

One approach is to bring in emerging alternative energy experts from the new breed of MBA/MS students who are earning degrees in both the science and the business of sustainability. Organizations such as The Erb Institute at the University of Michigan, and other academic members of the Alliance for Research on Corporate Sustainability are providing this kind of education; summer internships are a great way to leverage these students’ expertise even before they graduate.

Regardless of its initial complexity, wind power can bring significant bottom-line benefits while supporting an overall corporate sustainability strategy for most companies in most regions of the US To make wind power work as part of a greener energy purchasing portfolio, consider the following approaches:

- Aggregate energy consumption across corporate locations to maximize wind power or REC usage
- Put it out to bid: issue RFP for specific power needs within a deregulated environment or, in a regulated environment, issue an RFP for RECs
- Make your suppliers work for your green business: consider switching suppliers if yours can’t provide the right mix of alternative and traditional energy options
- Institute energy efficiency initiatives to reduce costs and reinvest the savings in renewable power purchasing
- Consider equity investment in nearby wind projects

Overcoming the real and perceived challenges to wind power purchasing will take time, but the immediate solutions are apparent. Using proven approaches and innovative strategies including supplier partnerships and competitive bidding processes, companies can realize true and immediate cost savings from this renewable energy source. ▴

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