

## Harvard Electricity Policy Group Remarks

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Thank you for asking me to participate in this panel. I've long admired the work of the Harvard Electricity Policy Group. I'm especially pleased to have been asked to speak about fuel resource allocation and portfolio development in a market-driven environment.

I will discuss resource allocation and the creation of a balanced energy portfolio from my perspective as chairman and CEO of a large Midwestern energy company that has made fuel diversity a priority. I will look at how we developed our portfolio and its importance to our current and future business. And, I will examine how developing a strategic plan to ensure the right mix of fuels is essential from an environmental, customer and economic perspective.

By way of background, Wisconsin Energy Corporation is a \$10 billion holding company. Our major business is electric and natural gas utility operations. We serve over 1 million electric customers in Wisconsin and Michigan's Upper Peninsula and about a million natural gas customers in Wisconsin. In 2000 we announced a growth strategy that featured our 10-year, \$7 billion *Power the Future* plan as its cornerstone. *Power the Future* is a creative, aggressive strategy to upgrade our generation and distribution system in a reliable, cost-effective and environmentally responsible manner.

We looked at a variety of energy market and supply trends when we were developing our *Power the Future* plan. We plan to add 2,320 megawatts of new generating capacity to our service territory, including the first coal units to be built in Wisconsin in over 20 years.

Our generation strategy is based on several factors. First, energy demand in Wisconsin is increasing at a small but relentless rate of about 2 or 3 percent annually. Second, meeting that growing demand requires three types of plants -- base-load plants that operate continuously, intermediate-load plants that operate primarily on weekdays, and peaking plants that operate at times of peak loads and often in a particular season.

Third, new generation must complement the existing portfolio of plants and strengthen the utility's overall efficiency, reliability and environmental performance. And fourth, fuel supply,

price, transportation, environmental impact and public opinion must be considered in deciding what types of plants to propose.

With that strategy in mind, we developed a plan for resource allocation that called for a balanced fuel portfolio. We believe this approach is a built-in hedge against what surely will be market fluctuations in one resource or more at a given time. The market for fuels is dynamic. And it's subject to a range of economic, political, social and environmental factors. Therefore, it is difficult, if not impossible, to predict with great accuracy what will happen to a market over the long-term. Consequently, a diverse fuel mix is good not only for hedging costs but also for protecting against supply disruptions and vulnerabilities.

Market forecasts certainly are one way of evaluating fuel supplies. Through forecasts, you try to anticipate trends and movements. But if you rely solely on a snapshot of current market conditions to determine your choice of fuel sources, ultimately you will limit your fuel supply, and that can affect decisions on building new plants.

The fact is, building plants based on only one type of fuel can produce unwanted reliability, economic and environmental consequences that will have a negative impact on customers and shareholders. Besides, even the best market forecasts won't tell you which direction the market will take in the long term or how volatile it will be.

To avoid such pitfalls, we made a firm commitment to fuel diversity as we developed our *Power the Future* plan. For example, at the same time we were pursuing coal and natural gas as primary fuel choices for our new generating plants, we committed ourselves to an aggressive program to promote renewable sources such as wind, solar and biomass generation.

In fact, we have targeted 5 percent of our electricity to come from renewable sources by 2011. That's not only an admirable goal, but it's also about double what state law requires. In addition, we have approved plans to apply for a 20-year license extension at our Point Beach Nuclear Power Plant.

From a supply standpoint, we felt that a blend of renewable sources and coal made the most sense for the base-load generation part of *Power the Future*. According to the American Coal Foundation, 23 of the 25 lowest cost electric generation plants operating in America are fueled by coal. We have more than 200 years of proven coal reserves, compared with about 10 years of proven natural gas reserves.

Availability is one reason why the price of coal has remained relatively stable over the years. In addition, significant improvements in environmental control technology made the use of coal both an environmentally and economically sound choice for base-load generation.

Despite coal's obvious benefits, we wanted our plan to include a broad portfolio that comprised, in addition to coal, nuclear, natural gas, renewable sources and conservation measures to ensure fuel diversity and price stability for our customers. We reasoned that limiting our portfolio to one or two fuel sources would have adverse consequences in terms of cost and availability and subject our customers to broad price swings.

After much public debate, the Public Service Commission in late 2003 gave us approval to build 1,230 megawatts of state-of-the-art supercritical pulverized coal units at an existing site south of Milwaukee. We had already received permission in 2002 to re-power a 60-year-old generating plant north of the city, converting it from coal to two 545-megawatt natural gas, combined-cycle, intermediate-load generating units. Construction of the first unit began last summer. Completion is targeted for mid-2005.

In 2003, the Public Service Commission approved our recently completed contracts to purchase the energy output of an additional 214 megawatts of wind turbines planned for 2005. When the turbine project is completed, Wisconsin will have the largest installed wind capacity of any state east of the Mississippi River.

In terms of resource utilization, we believe that in our region natural gas use for power generation should be limited to peaking and intermediate-load generation. Natural gas is a finite resource that is subject to price and supply volatility. Dramatic swings in natural gas prices raised a number of issues with consumers last winter.

We believe that natural gas use should be directed to home heating, hospitals and other purposes, but not for base-load generation. The huge quantities of natural gas needed by base-load plants would drive up natural gas prices and, therefore, costs for other uses competing for limited resources and infrastructure.

We felt that coal, nuclear and wind should be used for base-load generation. When our *Power the Future* plan is completed in 2010, nuclear will account for about 14 percent of our electric generating capacity. Coal will make up 51 percent, natural gas and oil 32 percent and renewables -- primarily wind -- 3 to 4 percent.

On an energy basis, in 2010, 23 percent will come from nuclear, 63 percent from coal, 10 percent from natural gas and oil and almost 5 percent from renewable sources.

As we are developing new generating capacity, we are also investing \$4.3 billion over the next decade to meet our environmental obligations. The two new coal plants, which are expected to be operational by 2009 and 2010, will mean cleaner air for southeastern Wisconsin. Advanced environmental technologies will remove over 95 percent of sulfur dioxide, 85 percent of the nitrogen oxides and 80 percent of mercury from the plants' emissions.

By 2013, when additional environmental improvements are made, total emissions from our generation assets will be reduced by about 65 percent from 2000 levels. That will make them among the cleanest and most efficient plants in the nation -- and the air in our region will be substantially cleaner.

While we are making a large commitment to renewable energy, we realize there is a limit to how much we can count on it. As an organization with a commitment to serve our customers, a utility must take reliability very seriously, which we do. We know, for example, that only a small percentage of wind turbine installed capacity can be counted as reliable by current standards.

What's more, you can't cycle wind turbines the way you can coal and natural gas units. You can't follow load up or down with wind turbines the way you can with coal, oil or natural gas. When the wind is blowing, you have to use the power generated, even if it isn't the most economical option or causes base-load plants to back down below normal levels. I believe this feature of wind energy will limit the level of power to be developed from this source while significant breakthroughs are made in storage devices.

Of great importance to the fuel selection process is strategic planning. Sound strategic planning is essential in determining resource allocation and utilization needs and the implementation of a balanced energy portfolio. Planning should be done at the utility level and not as part of some centrally driven master plan. In Wisconsin, each utility conducts a Strategic Energy Assessment that it submits to the Public Service Commission, which coordinates the plans.

Resource planning must address economic factors, environmental considerations, transmission limitations and reliability issues, among others. The energy portfolio should take into account the region's characteristics and needs. Obviously, southeastern Wisconsin has no native fuel

resources, but has rail and water access for receiving coal. That means we have different needs and opportunities than, say, Texas, which is sitting on large natural gas fields, while Wisconsin is limited by pipeline constraints for natural gas.

With their contact with customers, regulators, suppliers and the like, utilities are uniquely positioned -- and qualified -- to develop a comprehensive energy portfolio. So when it comes to planning, we must do so with great care and at the utility level.

Clearly, the market for fuels plays a role in resource allocation and utilization, but fuel selection and portfolio management cannot be based on the market alone. Effective planning is important, as is weighing a range of alternatives and applying the utility's unique knowledge of the area served to determine the choice of fuel that best suits the area's needs in a reliable, cost-effective and environmentally responsible manner. Thank you.

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