

Executive Summary

Renewable Power and Energy Efficiency: Policies in Iowa and Other States

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Renewable Power and Energy Efficiency: Policies in Iowa and Other States

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Global security and economic uncertainty have led policymakers and leaders to examine the strategic alternatives provided by renewable power generation and energy efficiency measures. The primary sources of renewable power generation are wind, solar, biomass and hydropower. Ethanol and other renewable fuels also represent potential sources of fuel for electric power generation purposes but have more relevance to transportation. In recent years, many states have experimented with policy initiatives related to renewable energy and energy efficiency. This report provides a primer on innovative programs and experiences from other states and current programs in Iowa. Included in the report are responses to four specific questions designed to address this topic:

- What have states done to encourage renewable energy?
- What “best practices” do states use for energy efficiency and to what extent are special charges to consumers used to fund energy efficiency programs?
- What are the experiences in the various states with “net metering” regulations?
- What are the wage levels and benefits for jobs associated with renewable energy?

What have states done to encourage renewable energy?

States use two primary approaches for encouraging renewable energy. First, 47 states offer voluntary incentives to encourage renewable power generation. Voluntary financial incentives include low-interest loans, tax credits, tax exemptions and other incentives for construction and operation of renewable power generation facilities and renewable energy use. Voluntary incentive programs may be funded from general government revenues, tax expenditures, or from targeted charges and fees. The second approach, used by a majority of states, is to require utilities to implement programs. These programs include renewable portfolio standards (RPS) that require utilities to provide specified minimum levels of renewable energy to their customers, net billing requirements for utility customers who generate their own power, and mandatory green-power program offerings for utility customers. Depending on the type of mandated program offering, the regulatory costs and/or savings are absorbed by the affected utilities and/or passed on to some or all customers. Some states have also facilitated the creation of markets for tradable “green certificates.”

Iowa policies include a combination of voluntary incentives and mandatory approaches. Iowa’s voluntary incentives include awareness programs, loans, research grants and selective tax

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exemptions and credits for certain renewable energy sources. Iowa policies include several mandatory programs. Iowa's renewable portfolio standard (RPS) requires rate-regulated utilities to purchase 105 MW of renewable capacity, which has been surpassed. Iowa also mandates net-billing requirements for rate-regulated utilities. Starting in January 2004, all Iowa electric utilities will have to offer green-pricing programs to their customers.

What “best practices” do states use for energy efficiency and to what extent are special consumer charges used to fund energy efficiency programs?

Programs to promote energy efficiency involve an array of public- and private-sector programs including awareness programs and incentives for residential, industrial or public sector facilities, and other specific energy uses. Energy users are often unaware of the potential for savings from adjusting practices and/or applying different technologies. Thus the energy cost savings generated can often be used to finance implementation of energy efficiency practices. Other funding sources include general revenues, tax credits, mandated program offerings and contributions by utilities. So-called “system-benefit charges” (SBC) are charges levied on consumer utility bills. Funds from these charges generate revenues that are used for education, promotion of energy conservation, rebates for energy-efficient appliances, and incentives for incorporating energy-efficient technologies and management practices in new building construction and remodeling projects.

Iowa is recognized as a leader in energy efficiency. The state administers a comprehensive set of awareness and incentive programs that target government, industry and community facilities. While some state and federal revenue sources help fund these programs, energy cost savings are also used to pay for energy management improvements for non-profit facilities such as public and private schools, hospitals, private colleges, and local governments. While Iowa currently does not impose a system-benefits charge on customer bills, since 1990 the Iowa Legislature has required utilities to collect an annual charge on all gas and electric utility intrastate gross operating revenues to provide a limited amount of funding for research on energy efficiency, renewable energy and the environment. In Iowa, energy-efficiency programs offered to customers by investor-owned utilities are reviewed in proceedings before the Iowa Utilities Board, to determine the goals, methods and cost-effectiveness of the proposed programs. The net added costs for energy-efficiency programs are implicitly spread over the utility's customer billings.

What are the experiences in the various states with “net metering” regulations?

Thirty-seven states require utilities to offer “net billing” or “net metering” to customers who wish to generate electricity from their own power generation equipment. Net billing allows utility customers with their own generators to put power on the utility's distribution grid when a surplus of power is generated and to buy power from the utility when external power is needed. Some states require that all utilities offer net billing to their customers, while others require only some utilities to do so. The systems and fuels that are eligible for net metering also vary, but typically include wind, hydro and solar. The methods for calculating and crediting consumers for the net excess generated (NEG) power to be purchased by the utility vary by state. Limits on system size, and grid connection requirements and costs also vary by state.

Iowa has a number of rural electric cooperatives and municipal utilities that voluntarily offer net-billing programs to customers. Only rate-regulated utilities — MidAmerican Energy and

Alliant Energy — are required to offer net metering in Iowa. These two utilities account for approximately 70 percent of Iowa's power. Each has a unique net-metering program. Alliant subsidiary Interstate Power and Light pays an "avoided cost" rate for the customer's net excess generated above their own usage. The utility's avoided costs are typically similar to the cost at which the utility buys energy. So, a customer that generates excess power is paid at a lower rate than the full retail price that customers pay the utility. For customers with systems that generate less than 500 kW in capacity and that generate more power than they use, MidAmerican Energy provides a credit to the customer's account for the net excess generated and allows the customer to use the credits in the future.

What are the wage levels and benefits for jobs associated with renewable energy?

Wages earned by workers in many renewable energy fields are currently below the statewide averages for electric and natural gas production and distribution workers. However, they compare very favorably with prevailing wages in the non-metro counties where many of these facilities are located. For example, after construction is complete, a utility-scale wind farm may provide a dozen jobs at \$38,000 to \$48,000 with standard benefits. Such wages are often 50 percent to 100 percent above the local county average wage. Average wages for renewable energy sectors can be expected to grow over time relative to the other sectors given the relative newness of renewable energy jobs compared to jobs reported for similar Standard Industrial Classification (SIC) codes in the state. As a new industry matures, the wages paid in the sector will reflect greater lengths of employment that are more typical for other sectors of the economy.

Finally, the fiscal impacts of renewable energy facilities on nearby communities are likely to depend on the scope and scale of operations and the business structure of the owners. Several studies suggest that the direct employment for renewable energy facilities may be small in relation to the indirect employment generated. Utility-scale operations are more likely to attract additional specialized equipment manufacturing functions to the area. Also, in the case of wind farms, the farmland lease payments to landowners are likely to be small in relation to the returns to capital investment in turbines, etc. So to the extent that such renewable facilities generate profits for owners, a greater share of the profits will be retained in the local area if the facilities are owned by municipal utilities, cooperatives, and/or local private investor groups in contrast to ownership by nationally traded public companies.

Policy Implications and Observations

Our review of Iowa policies and innovative programs from other states provides a basis for identifying several potential policy options for Iowa:

■ Increasing the Iowa Renewable Energy Purchase Requirement.

Iowa requires regulated utilities, through a renewable portfolio standard (RPS), to use a small amount of renewable energy. Iowa's existing RPS of 105 MW of renewable capacity was met in 1999 and has been surpassed. A goal of 1,000 MW by 2010 was proposed by the Governor's Energy Policy Task Force in 2001 but has not been adopted legislatively. Iowa policy makers have both a rationale and precedent for raising the RPS. The effectiveness of this policy approach has been demonstrated to work for Iowa. Goals set by the Governor or by

planning commissions carry less weight than establishing minimum requirements through law. While it may be encouraging that utilities have made new investments, or pledged to do so, such announcements may be in partial response to federal incentives that are scheduled to sunset during 2003. The developments provide an opportunity for Iowa to contemplate even higher RPS levels of renewable power generation in the future.

■ **Explore the Development of Green Power Certificate Markets.**

Green power certificate markets are emerging nationally. Certificates are sold by utilities that generate or use green power. Certificates are bought by utilities less able to use green power due to location and other factors. Certificate markets develop in response to state programs requiring utilities to (1) purchase minimum amounts of renewable energy and/or (2) offer renewable energy purchase options to consumers. Iowa requires rate-regulated utilities to purchase renewable energy, but purchases by rural electric cooperatives and municipal utilities occur on a voluntary basis. States such as Texas and Wisconsin require all utilities to purchase "green power." Having a certificate market becomes more important if Iowa considers requiring all utilities to purchase green power. But even if Iowa doesn't, a certificate program may still be beneficial due to Iowa's consumer purchase option. Starting in January 2004, all Iowa electric utilities (rate-regulated, rural electric cooperatives, and municipal utilities) are required to offer their consumers a green power purchase option. A certificate market would encourage even greater renewable power generation because the renewable power can be used more efficiently. Recently, a certificate market was authorized for Iowa wind power production tax credits, so Iowa has established a related model and precedent for consideration.

■ **Special Consumer Charges to Encourage Energy-Efficient Purchases.**

Iowa could implement "system-benefits charges" to consumers, providing funds for rebates for purchase of energy-efficient appliances. The current phaseout of the state sales tax on residential energy bills offers nearly three more years in which the impact of the new charges on customers could be offset. As currently scheduled, the phaseout runs through Jan. 1, 2006, when the sales tax is scheduled to be totally removed. A communitywide experiment in Bern, Kansas, involved replacement of old washing machines with energy-efficient machines, creating an estimated 36 percent savings in water and 57 percent savings in electricity. This experiment involved the use of Maytag Neptune washers, which are produced in Newton, Iowa, and demonstrates how encouraging use of energy-efficient products also can have spin-off benefits in the Iowa economy.

■ **Investment Preferences for Local Institutions to Retain Local Benefits.**

Wage rates earned by workers in renewable energy are likely to compare very favorably with prevailing wages in the counties where these facilities are located. To the extent that such renewable facilities are profitable, a greater share of the returns will be retained to benefit the local area if facilities are owned by local private investor groups, area cooperatives, and/or municipal utilities in contrast to ownership by nationally traded public companies. Policies that encourage locally oriented or Iowa-based ownership encourage higher levels of retained regional benefits from profits and returns on capital investment.

■ **Equal Access to Policy Incentives.**

Different rules govern various energy providers in the area of renewable portfolio standards,

net metering and energy efficiency programs. This means Iowa utilities and their customers do not necessarily possess equal access to renewable energy development opportunities or energy efficiency measures. Certain projects that may be feasible for one utility may not be as feasible in another utility's service area. Iowa has taken a step toward creation of a level playing field through the state's Mandatory Utility Green Power Option. Starting in January 2004, each utility – rate-regulated, rural electric cooperative or municipally owned – must file a green power plan and tariffs with the Iowa Utilities Board. A regular review of the differences in these plans, by the IUB and General Assembly, would potentially contribute to harmonizing the implementation of the state's renewable energy policies and provide more awareness and clarity of direction for stakeholders.

■ **Technology-Neutral Policy Incentives.**

Policy efficiency and effectiveness in attaining a higher level of renewable energy can be achieved by creating a "level playing field" for all renewable generation technologies whatever their source. Establishing differential incentives or preferences often results in pitting fledgling energy industries against each other. Incentives for wind energy can be balanced with incentives for other renewables, such as solar or biomass. If the incentives are technology-neutral, then the policy allows emerging technologies with the most potential for efficiently enhancing productivity and economic returns to successfully emerge from the incentive framework. If the incentive structure favors one technology over the others, then the potential for achieving maximum benefits for society from renewable energy become arbitrarily limited. It must be recognized, however, that state policies may not always be able to offset imbalances created by federal policy.

■ **Public Information on Prices and Contracts.**

While some utility and wind-generation interests may want price information to be confidential for competitiveness reasons, the lack of public pricing information for renewable energy projects may impede the ability of other potential project sponsors from assessing opportunities and feasibility of new projects. If an open market is desired, buyers and sellers should have equal access to market information, such as prices paid and contract terms. Public information on market prices and purchase contracts can be key elements in generating feasibility studies for potential investors. It can be argued that public access to prices and contract terms is a necessary condition, if the state wishes to encourage a wide range of investors to consider renewable energy projects that are economically feasible for the long term. Public price and contract reporting can also be justified to help assure that predatory pricing does not occur by utilities that both generate their own renewable power and purchase renewable power from smaller captive suppliers with less market power. In addition, many suppliers of renewable energy have received public assistance in achieving their industry standing.

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