Community Wind Energy Policy Models

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There are a number of different policy models used to encourage community wind energy development. All models have their strengths and weaknesses, but experience has demonstrated clearly that some models work much better than others at driving community wind energy projects. In the most successful jurisdictions, a number of complementary policies interact with one another to create a favorable policy environment for community wind energy.

We will look at three of the most commonly used policy models to encourage community wind energy development, leaving aside taxation regimes and other supplementary policies:

1. Net Metering
2. Renewable Energy Quotas (Renewable Portfolio Standards – RPS)
3. Fixed tariffs (Standard Offer Contracts – SOC)

1. NET METERING

Net metering is a policy common throughout North America that allows citizens, farms, and sometimes commercial and industrial electricity users, to connect to the grid and feed electricity they generate back to offset their own consumption. For instance, a homeowner can install a small wind turbine or solar array and have it independently metered to offset what they would otherwise have to consume from the electric grid.

Different mechanisms are in place in different jurisdictions throughout North America concerning the terms offered for surplus electricity generation: some utilities are required to purchase it from the independent power producer at the avoided cost price,[1] while others simply allow the surplus to be carried over to future months, some until the end of the year, others indefinitely.[2]

[1] '*Avoided cost'* price refers to the price it would otherwise cost a utility to supply the same amount of power to the same area. The actual methodology employed to calculate avoided cost differs widely from jurisdiction to jurisdiction, and utility to utility.
[2] Dworkin, Michael, "*Freeing the Grid*", Report No. 01-06, Network for New Energy Choices, November 2006.

Net metering programs generally cap the maximum size a project can attain to benefit from net metering policies, while also capping the overall amount of electricity that can be generated by net metered customers, either as an amount or a percentage of total utility generation.

2. Renewable Energy Quotas (Renewable Portfolio Standards – RPS)

The competitive nature of the bidding process helps to ensure that the projects with the lowest cost per kWh are developed first, as a way of ensuring that any impact on local ratepayers from new energy development is kept to a minimum.

A further characteristic of the Renewable Portfolio Standards is that they are generally used in conjunction with a market in tradable Renewable Energy Certificates (RECs).

> *Renewable Energy Certificates*
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> One of the key components of an RPS system is the Renewable Energy Certificates (RECs) that are earned for every Megawatt-hour of electricity generated from renewable energy sources. These RECs can then be exchanged on an open market based on a market-determined price or, eventually, through a carbon market. The price earned for the credits helps make renewable energy projects more profitable by offering an additional source of revenue above the price of the electricity sold.

In other words, in markets with RPS requirements renewable energy generators produce two marketable commodities: the first is electricity; the second is the renewable energy certificate (REC), which represents the 'environmental attributes' of the renewable energy (see box). These certificates create a way for a price premium to be added on, and can be sold separately from the electricity to other utilities, or to corporations and individuals, who are unable to meet their own portfolio obligations or who want to reduce their environmental footprint.

For instance, if a utility cannot reach its renewable energy requirement by generating a certain number of Megawatt-hours itself, it can buy RECs of one MWh each to make up for the short fall. The fact that virtually all utilities in the northeastern US market have portfolio obligations creates a broad-based demand for renewable energy and/or renewable energy credits, in order for all market participants to meet their portfolio obligations.

In most jurisdictions where RECs are sold, the price of the REC can play a significant role in the financial calculations of community wind energy projects. RECs can be understood as a means of compensating for the externalized costs of power generation that comes from fossil fuel sources, creating a premium that recognizes the environmental benefits of renewable power.

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So far, community-based wind power projects in New Brunswick have been excluded from the Requests for Proposal (RFP) process. This is in part because of the high costs required to put forth a bid in responding to an RFP, and in part because smaller projects generally cannot compete on a direct cost basis with larger ones. This is a situation that has arisen in a number of

other jurisdictions, as other less mature renewable energy technologies cannot compete with large wind projects.

This means that of all the different kinds of renewable energy opportunities, the RPS has almost exclusively helped develop on-shore, large scale wind farm projects. This leaves a wide spectrum of other renewable technologies untapped, while making it impossible for communities or cooperatives to participate.

These considerations have led as many as ten US states to create technology bands to encourage different technology types and/or ownership models by differentiating the RPS to meet different policy goals.[3] By creating different categories for different technologies, or for projects that encourage local ownership, governments can ensure that renewable energy development benefits the widest number of communities and community members possible.

Example of RPS 'Bands' or 'Tiers':
In the state of Texas, there is an RPS target of 5880 MW by 2015 for large wind projects, as well as a 500 MW RPS band specifically for "non-wind projects". The state of Montana has a separate RPS band for 75 MW of renewable power that must come from projects that are 100% community-owned. This policy is designed to maximize local benefits from renewable energy development, and encourage local participation, job creation and economic development by keeping the profits from the wind farm in the community. Other states like Colorado, New Hampshire and Washington offer technology bands specifically for solar photovoltaic technologies. These various kinds of specifications allow complementary public policy goals to be integrated into renewable energy development targets. In particular, they can help make it viable for communities and other groups to participate in renewable energy development.

3. FIXED TARIFFS (STANDARD OFFER CONTRACTS – SOC)

Unlike quota-based models like the RPS, where a desired amount of renewable energy is established, Standard Offer Contracts offer a fixed tariff and standard contract terms for electricity sold to the grid. For this reason, they are known as fixed-price policies. By offering a fixed buy-back rate for electricity, they give those who are interested in renewable energy generation a guarantee that they will be able to receive that price for a fixed period of time, generally twenty years. This is why they are known as Standard Offer Contracts – they result in contractual agreements with the local electricity supplier to supply electricity at the fixed tariff price.

Standard Offer Contracts also generally specify a maximum project size; in Ontario, this limit is 10 MW. This ensures that economies of scale do not allow some projects to be much more profitable than smaller ones, while keeping impacts on the grid to a minimum. To address this problem some jurisdictions differentiate the tariffs offered according to the size of the proposed project, smaller projects receiving higher tariffs and vice versa.

Also, in most cases a different buy-back price is offered for different technology types. This ensures that a diversity of renewable energy technologies is encouraged, by setting tariffs according to the overall cost of the technology. For instance, in Ontario's Standard Offer

[3] Grace, Robert C., and Wilson Rickerson, *The Debate of Fixed Price Incentives for Renewable Electricity in Europe and the United States: Fallout and Future Directions*, Heinrich Böll Foundation, May 2007.

Program, solar photovoltaic electricity receives a $0.42/kWh tariff whereas wind power, biomass, and small hydro each receive $0.11/kWh. Other jurisdictions like France and Germany offer even greater differentiation of their tariffs, specifying better tariffs based on the quality of the resource, and offer them to a wider variety of renewable energy resources. In this way, areas with exceptional wind resources, for example, receive a correspondingly lower tariff to ensure that some areas do not make disproportionally large profits. Differentiation by resource intensity also ensures that areas with less wind can participate, by offering them a slightly better tariff. It is for these reasons that France and Germany have what are called Advanced Renewable Tariffs, a stronger policy form of the basic fixed-price model.

Most jurisdictions with Standard Offer Contracts also establish an overall program size cap at the outset, in order to maintain control over the deployment of new energy resources, and to allow impacts on the reliability of the grid to be assessed progressively. Most also limit the ability of qualifying projects to connect to the transmission grid, requiring them to connect at the distribution level instead. For instance, Ontario's Standard Offer Program limits the maximum voltage to 50 kV. Interestingly for communities, this means that electricity produced by local projects will have a higher probability of being locally consumed.

In an interesting policy innovation, the state of Minnesota required its utilities to purchase renewable energy specifically from community owned energy projects under 2 MW at a fixed tariff. They also specified that the projects be owned by Minnesota residents. In this way their fixed-price policy was targeted at promoting local ownership of the resources, as a way of maximizing local economic benefits.

Fixed-price policies vary widely from one another, but taken as a whole, they have been the most successful worldwide at promoting rapid and least-cost renewable energy development. They have the further benefit of encouraging a wide variety of different technologies, while encouraging a wider spectrum of the population to participate. They have been an essential part of promoting community-owned wind energy projects in Europe, and are largely responsible for the tremendous growth in the renewable energy sector there over the last fifteen years.

Ontario is the first jurisdiction in North America to have introduced a full-fledged Standard Offer Contract policy, but judging by recent announcements from states like Illinois, Minnesota and Michigan, and provinces like British Columbia and Québec, it will certainly not be the last.