Questions and Answers on Feed-In Tariffs

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QUESTION: Who measures the kWh produced and pays out the appropriate feed in tariff amounts earned to the multiplicity of green producers? Who collects the money from other utility customers which are redistributed via feed-in tariff payments? Finally, is there any regulatory oversight?

MS: I believe the prevailing practice in Europe is to task the utilities with reading the meters and making tariff payments. Utilities are, after all, the ones signing the 20-year power purchase agreements at the tariff rate. Utilities are also responsible for billing and collecting the monthly charges that fund the tariff payments. Paying generators for kilowatt-hours and adding surcharges to bills are things that utilities do in their normal course of business anyway, so the regulatory oversight of these activities under a feed-in law isn't really an added burden.

I can think of several ways to improve on the European tariff model. First, the funding to cover tariff payments should not be collected using throughput-based surcharges on utility bills unless it can be done in a way that isn't economically regressive. Given the widespread economic benefits that result from the tariff, there may be a good case for collecting the revenues for it via the tax base rather than the rate base.

Second, the tariff rate offered should be based on the locational strategic value of the generator to the grid. If it's downstream of a bottleneck such that it frees up needed capacity and delays or obviates a line upgrade, it's worth more. At the end of a long feeder that sags under load, or in a place that needs VAR support, it's worth a lot more. The Electric Power Research Institute has software models and reports showing how to assess the value of strategically placed resources.

Finally, the tariff should be used to meet other objectives, rather than just being a tool to promote renewable energy. This can be done by setting qualifying standards for the tariff program. For instance, the tariff language could require that each generator be owned within the community where it is located, which would increase local retention of energy dollars. As another example, biomass generators could be required to have an independent certification showing that the wood was sustainably harvested. The possibilities are endless.

QUESTION: Does the local utility install a time-of-use (consumption/production) meter, so my consumption rate is appropriately charged (on/shoulder/off-peak)? I assume the feed-in tariff would be the same regardless of time of production, but hope I'm wrong.

MS: I don't know whether time-of-use metering is required for generators in Europe, but California recently required it for small PV generators and then quickly rescinded the requirement. The requirement forced homeowners who had installed very small PV systems (ones that meet only a fraction of their load) to switch to a rate structure that was disadvantageous for their *purchases* of energy, and bills actually went up even though less energy was purchased. So for small systems, California allows the system owner to make the decision on time-of-use metering. I think above some threshold size, TOU metering is required, however.

QUESTION: If I have a PV installation on my roof, does the local utility charge me a stand-by charge for my share of costs of the distribution and transmission grid?

MS: This question reflects a common misunderstanding that DG is somehow burdensome to the grid. That limited view of DG has held up over time because unfortunately there's a hint of truth in it. Fortunately it's only that – a hint. The very first small generator added to a power grid probably *is* a burden. New standards and practices have to be in place, and since a lone generator can't be relied upon, the utility must hold some spare generating capacity at the ready in case it fails. Any capacity freed up by the new generator can't be trusted either, for the same reason. But once there are many distributed generators installed, running on a multitude of fuels and technologies, the mathematics changes. Any insurance actuary can tell you how quickly the backup argument begins to evaporate with the second or third generator, let alone the hundredth or thousandth generator.

And that's precisely where we need to go. Denmark and the Netherlands are already there, and a dozen other countries are charging toward it. Active distribution networks, in which the grid becomes a robust, agent-based system of distributed resources making decisions based on local conditions is the new standard. The new architecture offers radically higher system efficiency, lower system cost, higher reliability, and greater public benefit due to improved economics.

QUESTION: California utilities are working hard to achieve their 20% of retail sales from renewable energy by 2010 goals, but thereafter, don't serious issues arise regarding how much additional wind and solar the system can accommodate?

MS: Under current RPS-based incentive programs I could see that the scope may be limited because the incentive doesn't encourage optimum placement or selection of the distributed generators. But a well-structured feed-in tariff designed to bring online a variety of sources installed in strategic locations could go much, much further. Based on the success in Nordic countries, it looks as if the optimal method is to keep going until the last central power plant turns off.