Feed-in Tariffs - Overview

FITs: what are they and how do they work?

- FITs are a ***mechanism***; while Renewable Portfolio Standards (RPSs) set a ***goal;***
- RPS requires regulated utility to get X% of electricity from renewable energy (RE) by a certain date; in Arizona: 15% by 2025, with a 30% carve-out for distributed generation;
- FITs are why **Germany** has **53% of the world's total installed solar PV; currently getting 15% of electricity from RE at a cost of $52.00 U.S. per household per year;**

FITs are distinguished by:

- **long (15-20 year) contract term**;
- **different price for different types of RE generation** (example: small wind pays more than big wind; building-integrated solar PV pays more than ground-mounted);
- **tariff decreases over time**; (example: 35 cents/kWh for solar PV year 1, drops to 20 cents/kWh by year 10);
- - open, transparent process that pays a modest profit;
- - fosters local ownership rather than large corporations;
- - fosters **development of RE industry and manufacturing**;

FITs v. Net Metering v. Renewable Portfolio Standards

- FITs, RPSs and net metering are NOT mutually exclusive and can work together;
- Net metering generally covers a person's or business' own use but not much more – although in AZ 125% of use can be net metered[1]
- FITs in Germany are designed so that you don't need to be a customer to sell electricity; you can just put up panels or a wind turbine and start selling electricity.
- However, there are models in the U.S. that are hybrids – i.e. a person's own use is net metered, and then any excess is sold at a higher rate (in IL, there's a proposal to sell excess electricity back to the grid at 200% of retail rate). This higher rate is "fair" because the incremental value of peak power is very high.
- California is allowing electricity to be sold back to the grid based on time-of-use; for example peak summer power can be sold to the grid at 31 cents/kWh, which is what it probably costs the utility to provide peak summer power.

What about cost and how much power are the Germans getting from solar?

- Europeans pay about twice as much for electricity on average as the U.S: 20 cents/kWh in Germany v. 10 cents/kWh in the U.S.;
- However, the German FIT cost per household is only **US$52.00 per year**.
- Bavaria Germany: solar power is contributing **2% overall, but 20% at peak times**;
- Germans are not having grid integration problems (i.e. the grid absorbing fluctuations in electricity, such as lots of solar electricity at peak times);

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[1] APS net metering: http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=AZ22R&state=AZ&CurrentPageID=1&RE=1&EE=1 ; net metering for SRP, TEP and general info, see: http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=AZ24R&state=AZ&CurrentPageID=1&RE=1&EE=1

How would FITs benefit AZ?

- FITs facilitate distributed generation AND local ownership;
- In Germany, most wind and solar is community-owned due to broad ownership rights, which allows communities to build infrastructure, not just large utilities.
- Spain's FIT model is different;[2]
- **FITs would help AZ reach its high distributed generation (DG) set-aside,**
- FITs spur innovation in areas like solar because solar is expensive; if we only chose RE by price, wind would always win.

Vermont, City of Gainesville FL and Province of Ontario Canada Recently Passed FIT Laws

- VT's FIT passed May 2009, considered a true German-style FIT;[3]
- - costs are borne by ratepayers, not taxpayers
- - program cap is 50 MW; project size cap is 2.2 MW
- **- Wind tariff: less than 15 kW is 20 cents/kWh; over 15 kW is 14 cents/kWh**
- **- Landfill and biogass tariff: 12 cents/kWh**
- **- solar tariff is 30 cents/kWh**
- - tariffs are differentiated by size, technology
- - tariff = cost of RE plus profit (based on VT utility Rate of Return)
- - regular review of tariffs by Public Service Commission

Many States Are Considering FITs

- California, Michigan, Illinois, Rhode Island, Minnesota, Hawaii, New Jersey, Massachusetts, New York

Amounts of Solar PV Around the World[4]

- Solar industry is growing 30-40% annually around the world

Country (or state)	Solar PV – end of 2008
Canada	26 MW
China	100 MW
Germany	**5,722 MW**
Japan	**2,100 MW**
Israel	3 MW
Italy	120 MW
California (state of)	**480 MW**
United States	**1,265 MW**
Spain	**3,000 MW**

[2] Need to do more research on Spain's FIT model.
[3] See article at: http://www.grist.org/article/2009-05-29-vermont-feed-in-tariffs/
[4] From Global Solar Report Card by Green Cross International and USA Global Green, 2008: http://globalgreen.org/climate/initiatives/solarreportcard/