In lieu of federal support for renewables, state-level policies have been some of the main drivers. Now, a growing number of states are Looking into European-style feed-in tariffs.

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The road less travelled

The Federal Energy Regulatory Commission has paved the way for feed-in tariffs in the US. So why are so few going down the path?

For a second, Bill Ball thought he had just witnessed an historic moment. "The yays have it," the chairman of Arkansas's Senate Insurance & Commerce Committee stated after a voice vote had been taken in late March on a proposal for feed-in tariffs (FITs), but one of the nay voters demanded a show of hands, revealing that no majority had been reached. Of the eight committee members, two were not present, two had voted against FITs, and four had voted for them – five yays were needed. "The sad thing is that one of the people not present was expected to vote our way, but then he didn't show up," Ball says.

Had the committee approved the proposal, the matter would have been sent on from the energy committee to the state senate. But as things stand, even getting FIT proposals "out of committee," as campaigners say, is considered relatively successful. To date, only Vermont has implemented proper feed-in tariffs, albeit only on a limited scale. If Arkansas had become the second state, it would have taken many people by surprise; the state is not known for its progressive energy policies. "Although we have been screaming our lungs out, we only managed to draw the attention of a lot of renewables companies late in the game," Ball regrets.

One of the main obstacles Ball and campaigners in other states faced until recently was unclarity about whether European-style feed-in tariffs conflicted with PURPA, a federal law from 1978 that was originally designed to promote non-utility energy generation – but it did so by linking com-

pensation to "avoided cost," whereas feed-in tariffs are based on the cost of generation plus a reasonable profit. And by „avoided cost," PURPA only means avoided fuel costs, not the slew of external costs involved in fossil and nuclear energy.

Over the past decade, Americans have not failed to notice that the countries with the most wind power, solar, and biomass energy used feed-in tariffs to get there. As the first attempts were made to implement the policy in the US, the question was then whether PURPA ruled out FITs all together. Last fall, the Federal Energy Regulatory Committee (FERC) finally cleared up the matter once and for all, seemingly opening the door for full-featured FITs in the USA.

Overcoming the oil crisis

PURPA is a child of its time. In the late 1970s, the focus was on weaning the US off of oil imports, and PURPA was to stimulate domestic power generation. For more than three decades now, PURPA has therefore ensured that distributed generators receive grid access – something that was only guaranteed for all renewables in Germany 22 years later.

Initially, PURPA led to some significant growth, particularly for cogeneration, but once the cheapest options had been exploited, investments in renewables quickly slowed down. As the price of natural gas and oil plummeted in the 80s and remained low into the 90s, the linkage to the avoided cost of fuel proved to be too small an incentive.

Wind power, the cheapest type of new renewable energy, has benefited from another incentive: the Production Tax Credit (PTC), which has the advantage of not conflicting at all with PURPA, since the 33-year-old law does not deal with tax credits.

However, the PTC does not apply to homeowners. So what incentive should be used for domestic photovoltaics? Up to now, the answer has been net-metering; here, your power meter runs backwards, and no money generally changes hands. Mike Nelson, an FIT campaigner and one of the architects behind Washington State's net-metering policy, says he did not try to go for proper feed-in tariffs because of concern about a conflict with PURPA: "In formulating the law, we made sure that net-metering was not defined as a financial transaction. You basically just exchange electrons during the day in the summer against electrons at other times of the year."

Still, not everyone was happy with net-metering. "Our customers installed arrays, and we never heard from them again," says Ed Regan, assistant general manager for strategic planning at Gainesville Regional Utilities. He therefore recommended a pilot program for feed-in tariffs for solar power within the area served by his utility, and in April 2009 Gainesville, Florida, became the first place in the US with a feed-in tariff, albeit with a ceiling of eight megawatts for two years. And this single FIT only applied to photovoltaics – one reason, perhaps, why Americans so often associate feed-in tariffs with solar alone.

Less than two months later, the State of the Vermont adopted the first feed-in tariffs in the US for basically all renewables: not only solar, but also wind, biomass, and even methane from agricultural and landfill waste. Almost two years later, Vermont's policy is unfortunately still considered a benchmark, with only Hawaii having taken things slightly further. While the ceiling in Vermont is at 50 megawatts for the entire program, Hawaii has a cap only slightly higher at 80 megawatts. In addition to separate tariffs by energy source, Hawaii also offers tiers within technology groups for large and small system sizes. Nonetheless, the World Future Council gives both of these states a D in its ranking of international feed-in tariffs – compared, for instance, to an A- in Ontario, Canada.

The poor policy design may be one reason why energy consultants at the Accion Group announced in January 2011 that interest in the policy "has not yet materialized," though the authors of the report

Photo: Craig Morris

In the 1980s, PURPA was crucial in ramping up some early renewables projects, such as this wind farm near Tehacapi, California.

Photo: CLEAN Coalition

Craig Lewis renamed his FIT campaign the „CLEAN Coalition" last year to avoid the negative connotations of the word „tariff" in English, which has made FITs harder to sell.

Photo: Stellar Sun

Bill Ball has been campaigning for renewables in Arkansas for some 35 years and says the state may adopt feed-in tariffs in the next two years.

say that the "reasons for the level of response are unknown."

California begs the question

California already had its own "feed-in tariff" in 2008 – just not one that Europeans would consider a true FIT (the tariffs were not based on what a particular source of renewable electricity costs) and, more importantly, not one that led to any major market volume. So in 2010, the California Public Utilities Commission (CPUC) was looking into revising its policy and asked FERC to settle the concern about a conflict with PURPA once and for all. "It was a surprising request," comments John Geesman, a former member of the California Energy Commission and a supporter of FITs, "because the CPUC generally does not want FERC intervening in its business."

After so many years of dancing around the issue, this time FERC responded quickly with an answer that is a bit complicated, but clearly shows that FERC intends to give states the right to set whatever prices they want for renewables – in other words, FERC has given the go-ahead for FITs.

In European feed-in tariffs, the basic formula is quite straightforward: divide total system cost by the number of probable kilowatt-hours over 20 years of operation, and you get the cost per kilowatt-hour; now add on whatever profit margin you wish to offer (generally around 5-7 percent). FERC's decision does not allow this calculation to be made directly. Instead, in staying with PURPA diction, it specifies – in a footnote, no less – that states can include all kinds of things as avoided cost: "a state may appropriately recognize procurement segmentation by making separate avoided cost calculations."

The phrase "procurement segmentation" refers to a differentiation between not only technologies, but also system sizes. In other words, a state can decide that it wants to have, say, 500 megawatts of small domestic PV and is willing to pay more for that than for its target of 1,000 megawatts of utility-scale, ground-mounted photovoltaics. Here, the states simply argue that they are partly avoiding the cost of what does not have to be built otherwise. You can also add in "external environmental impact costs." In practice, you can simply decide what feed-in tariff level would ramp up the market – just as is done in Europe – and then use these various definitions of avoided cost to justify the tariff in terms of PURPA. As Jennifer Gleason, a lawyer at the Environmental Law Alliance Worldwide, puts it, "states can now implement strong feed-in tariffs under PURPA."

Ball not rolling

So why aren't they? The answer differs from one state to another, and there are efforts to implement FITs in quite a large number of states at present. The CPUC, whose question led to FERC's decision to begin with, has chosen instead to implement a reverse auction (sellers of renewable power bid against each other, and the lowest price wins), which organizations like Vote Solar say will cost ratepayers less than feed-in tariffs would.

To return to Arkansas, Bill Ball says that FERC's ruling caused quite a lot of commotion at the time (at the end of 2010), but in the end it was simple vested interests that stopped FITs this year. "The power market in Arkansas is roughly spread across large IOUs [investor-owned utilities, ed.], rural co-ops, and smaller munis [municipal utilities, ed.]," Ball explains. He says that the first two groups in particular see distributed generation as unwanted competition. When asked why rural co-ops, which are nonprofits, do not allow their farming communities to make their own energy, Ball says, "the IOUs count customers by the mile; the co-ops, miles per customer. So the co-ops are worried about thinning out their geographical distribution even more. This concern apparently outweighs the support of farming associations for FITs." He says that countless farmers in Arkansas are ready to generate their own heat and power from farm waste as soon as the state allows them.

In the desert state of Nevada, biomass is not much of an issue, but the state has considerable solar and moderate wind potential – and, since April, an FIT proposal that is not only "out of committee," but also passed the Senate with bipartisan support. Bob Tregilus, a chief campaigner for FITs from northern Nevada, says he still has his work cut out for him. "Politicians have to cover all the issues, so they often rely on lobbyists in designing energy policy. And a lot of energy insiders here are fierce opponents of FITs," he says. The specific rates have yet to be worked out, but the policy is designed

to fill a program gap for systems between 100 kilowatts and three megawatts. Tregilus expects the state Assembly to adopt the Senate's bill, but he is sure the governor will veto it – "and I'm not sure if we have a two-thirds majority."

It sounds surprising to Europeans, but some solar companies – especially developers – oppose FITs in states like Nevada, where giant utility-scale solar is an option. "Utility-scale is sold as the cheapest way of making renewable power, but without distributed generators all the power literally stays in the hands of the big companies," Tregilus argues.

The impact on ratepayers is an issue everywhere, it seems, and in many places the program volume is expressed as a limit on retail rate price hikes. For instance, Fort Collins, Colorado, will be voting on FITs this summer, and the retail rate is not to be increased by more than one percent. Fort Collins could be the first major success story for California's CLEAN Coalition, which campaigns for FITs in the US and is led by Craig Lewis, who assisted the city in designing its proposal. Lewis says he thinks that the FERC decision will eventually turn out to be a breakthrough for FITs though things are still moving slowly.

Over in Indiana, FIT campaigner Laura Arnold says that the FERC decision is actually hurting, not helping, her work in northern Indiana, where FITs are also on the table. "My political opponents are actually arguing that the FERC ruling allows utilities to pick and choose projects that are eligible for FITs," she explains. The problem is the limited project volume, which means that someone has to decide who is in and who is out. So ironically, FIT opponents are interpreting the FERC ruling as justification for unequal grid access in Indiana.

The city of Indianapolis, Indiana, has had feed-in tariffs of sorts for two years now, but with surprisingly high lower limits for required system size: 50 kilowatts for wind power and 20 kilowatts for PV. The latter basically rules out the domestic PV market entirely, for most homeowners will not be able to install arrays larger than three or four kilowatts. This policy limitation is a feature, not a bug, for the utility says it does not wish to have to read all of those meters for small generators.

National FITs?

Clearly, the FITs implemented in the US up to now are not what Europe is used to seeing, and Americans have yet to accept that renewable power supply will cost more – and that that's okay. By way of comparison, FITs have added roughly 15 percent to the retail rate in Germany, but since 2000 the share of renewables in German power supply has risen from six percent to 17 percent.

While any local savings bank in Germany has lots of experience financing solar roofs for homeowners, Bill Ball is frustrated in Arkansas. "It's easy to get a bank to fork over 20,000 dollars for a bass boat, which is always going to cost you more than you get out of it, but the banks around here won't touch PV arrays even though they actually provide some income in any case," he complains.

But Ball has been doing business with renewables in Arkansas for 35 years, and he has seen harder times. "For about the first 20 years, I used to say that I was unemployed in the renewables sector," he jokes. During those years, he made his living designing and building custom homes, but solar equipment was a slow seller. "People would fork over 10,000 dollars for tiles without batting an eye, but when I wanted to sell them solar thermal equipment for 10,000 dollars, they suddenly wanted to know how much money it would save them." Here, perhaps, lies the ultimate reason behind the sluggish adoption of feed-in tariffs in the US: Americans see renewables more as a cost than as an investment.

Over the past years, however, business has picked up for Ball, so he is hopeful that the FERC ruling on FITs and PURPA will provide more momentum. "FITs are inevitable in Arkansas. We are definitely going to get them in the next legislative session, but it's just going to take another two years."

In the end, Ball and other FIT campaigners have one eye on Washington DC, where Senator Bernie Sanders of Vermont has announced his intention to amend PURPA at the next opportunity. The change would be small, but far-reaching; in just a few sentences, Sanders would remove the linkage of avoided cost in PURPA for renewables and allow states to set whatever feed-in tariffs they want – period. The change would not require a major energy bill, which seems highly unlikely for the next two years, but would instead ride piggyback on some other legislation – and could therefore come at any time completely unexpectedly. Or perhaps not at all. ■

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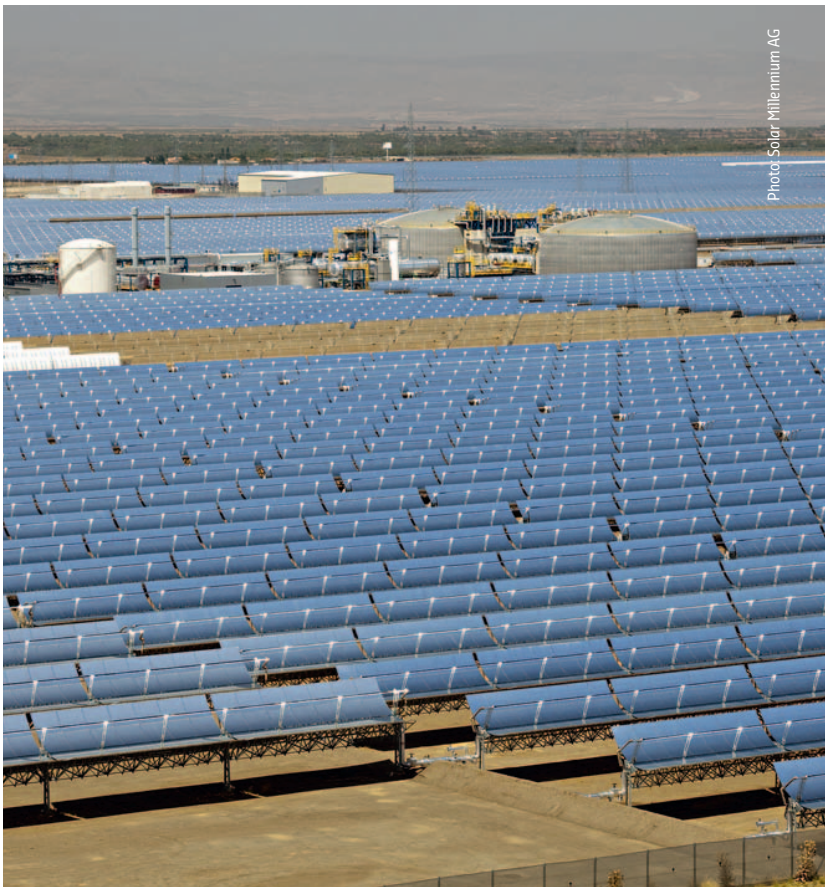

Photo: Solar Millennium AG

In the US, firms like Germany's Solar Millennium are beginning to install some of the world's largest solar power plants ever like Andasol 3 in Spain, but press spokesperson Susanne Krebs says the Spanish projects wouldn't have gotten going without Spain's feed-in tariffs.