



## Feed-in Rates at Electric Utilities

### Contracting for Clean Local Energy Accessible Now (CLEAN)

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#### Background

A feed-in rate is a published rate offered by a utility company to developers of renewable energy projects to purchase the energy they produce. The utility then engages in a long-term power purchase agreement at the published rate, called a CLEAN contract, with the renewable energy project developer. Projects developed under feed-in rates are typically developed solely for the purpose of selling that power to the grid. CLEAN contracts positively impact the community by supporting local renewable energy developers and the growth of homegrown power from clean energy resources.

#### How feed-in rates, CLEAN contracts work<sup>1</sup>

Communities first study the average costs for producing renewable energy from various sources. Since different forms of alternative energy differ in cost, the study typically determines individual costs for a broad array of technologies. For instance, the cost to produce utility-scale wind differs from the cost to develop solar power on local commercial building rooftops. Communities then use cost data to help determine adequate feed-in rates, typically based on the average cost of the technology plus a rate of return for the developer. In the above example, the rate offered to developers for rooftop solar energy might be different than the rate offered to purchase energy from large-scale community wind projects. Standardized long-term contracts are then created and signed with developers to purchase the energy they produce for a certain number of years, and utilities roll contract costs into the customer rate base. Cost data is monitored constantly.

As the technology improves over time, the cost declines and so do the rates offered by the utility. As a result, contracts entered into in year one of the feed-in rate program pay higher rates than contracts entered into in the second year. This is because renewable energy is a manufactured science, rather than a scarce resource, and as we engage in research and development and achieve economies of scale, the technology becomes more efficient, effective, and the energy cheaper to produce.

Higher rates may be offered for energy produced within the community itself, if technology is manufactured locally, or if local labor is employed. These incentives help maximize the economic value to the community of CLEAN contracts.

#### Key findings

- Utilities are publishing feed-in rates at which they are willing to purchase locally produced clean energy.
- Utilities then engage in long-term CLEAN contracts with renewable energy generators.
- Feed-in rates and CLEAN contracts spur renewable energy development in the community.

<sup>1</sup> ICLEI presentation by Richard Caperton, Center for American Progress.

## Key elements of feed-in rates and CLEAN contracts (TLC)<sup>2</sup>

**Transparency:** Standardized contract that is cost-based.

**Longevity:** Long-term 15-25 year contracts enable developers to secure project financing.

**Certainty:** These are “must-take” contracts. Whatever the developer produces under the contract, the utility promises to purchase. The utility offers a fixed price that declines over time depending on the contract start date. Contracts entered into today, for instance, will receive higher prices than contracts entered into in future years. This encourages project development sooner rather than later and accounts for the expectation that technology will improve over time.

## Adapting feed-in tariffs to a community’s characteristics<sup>3</sup>

**Consumer protections:** For consumer protection, communities can consider capping the total program size, so that total costs of the program are clear. Since rates are published, a cap on the number of megawatts to be purchased will provide enough information to assess maximum possible cost to the consumer. Other possible consumer protection measures include capping electric rate increases, exempting low-income consumers from program costs, or refunding any rate increases to low-income consumers.

**Local ownership:** Communities can include a price multiplier for projects with local ownership, or create a carve-out for small projects or local ownership, such as community wind or solar.

**Growing the local economy:** Communities can incentivize the use of local workers and the use of locally made products.

## Gainesville, Florida, program spurs competition among solar developers<sup>4</sup>

Home of the University of Florida, with 250,000 residents, Gainesville has a municipal utility that serves both the city and the surrounding suburban area. Utility services include electric, gas, water/wastewater and telecom. Gainesville relies heavily on utility revenues, which contribute up \$35 million of the city budget. The Gainesville feed-in rate program targets projects developed specifically to feed power generated into the grid. Developers are offered a flat rate that is based on expected cost to the developer plus a reasonable rate of return. 2012 contracts offered 24 cents per kilowatt-hour for ground-mounted systems and 22 cents for roof-mounted solar. In 2010, Gainesville offered 32 cents per kilowatt-hour for rooftop solar projects, and 26 cents for ground-mounted projects. Prices have dropped significantly due to competition in the community. To manage the rate impact to consumers, there is a cap on the amount of renewable energy the utility will purchase of four megawatts in 2010 and 2.7 in 2011. The line for these projects fills quickly.

**Impact to the community’s energy portfolio.** To start, the community’s fuel mix was 60 percent coal, 20 percent gas, 1 percent renewable, 15 percent purchased power, and 5 percent nuclear. By 2013, however, Gainesville will have drastically increased renewable energy sources to 22 percent of its total power. In addition, Gainesville will cut natural gas use in half, and implement energy efficiency reductions equivalent, saving enough energy to power 4,900 homes. While the city will

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<sup>2</sup> ICLEI presentation by Richard Caperton, Center for American Progress.

<sup>3</sup> See the Center for American Progress 2011 report on CLEAN contracts, available at <http://bit.ly/XC9uBN>.

<sup>4</sup> Former Gainesville Mayor Pegeen Hanrahan, feed-in tariff panel at ICLEI conference on sustainability.

continue to rely on coal for 62 percent of its energy, a slight increase from the current 60 percent, it will no longer import a large bulk of its electricity from elsewhere.

**Rate impact to consumer.** The customer rate impact of the feed-in rate program is \$.70 per customer per month. Prior to enacting the program, the utility conducted a representative survey and found that 75 percent of customers would support solar if it cost less than one dollar per month.

**Economic impact to the community.** The city estimates the economic impact of their feed-in rate program includes: a \$5 million investment in renewable energy by feed-in rate customers; an estimated \$24 million to be spent annually going forward; 261 estimated jobs created; \$240,000 to 25 owners in CLEAN contract payments; and 1,000 kilowatts in new installed solar photovoltaics in the first 16 months. There are 3.8 megawatts under construction – two large projects, one commercial-sized rooftop. Indirect benefits include location of solar companies, capital infusion, solar-friendly zoning rules, dramatic improvement in cost per watt, competition in the solar market, and a new market in leasing rooftops.

Other feed-in rate examples	
<b>Indiana</b>	Northern Indiana Public Service Company launched a three-year pilot program in 2011 with a cap of 30 MW and 15 year contracts. Since then, solar installations have increased dramatically.
<b>Michigan</b>	<a href="#">Consumers Energy</a> offers a pilot FIT program that started in 2010 which is very popular and quickly oversubscribes.
<b>Minnesota</b>	Nearly all of Minnesota's community-owned wind generation, which amounts to 239 MW or 10 percent of the state's total generation capacity of 2500 MW, was installed under its Community-Based Energy Development (CBED) program.
<b>Wisconsin</b>	Public interest prompted several utilities in Wisconsin, both municipal and investor-owned, to launch feed-in rate programs. Alliant Energy offers 10-year contracts for solar, landfill gas, wind, biomass and anaerobic digestion. Madison Gas & Electric (investor-owned public utility) offers 10-year contracts for solar projects. River Falls Municipal Utilities (municipal utility) does 10-year contracts for small systems (up to 4 kW) with a 10 kW program cap. We Energies (a subsidiary of Wisconsin Energy Corporation) does 15-year contracts for biogas from anaerobic digestion. Xcel Energy offers production incentives for wind, biogas and biomass systems between 20 and 800 kW, systems that are too big to qualify for their net metering program with the program capped at .25 percent of retail sales.
<b>Tennessee Valley Authority</b>	The <a href="#">Tennessee Valley Authority</a> has a goal to achieve 100MW of renewable energy. To achieve that goal, they are entering into long-term contracts with midsize renewable energy generators with a standard offer based on time-of-day average price charts. Projects located in the following states can participate: Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia.
<b>California</b>	US. California Assembly Bill (AB) 1969 of 2006 created a feed-in tariff requirement for all California's investor-owned utilities (challenged and amended in 2009). The utility is in the process of developing rates, which will need to be approved by the public service commission. See <a href="http://bit.ly/STnem4">http://bit.ly/STnem4</a> .
<b>Palo Alto</b>	Palo Alto Utilities offers 10-, 15-, and 20-year contracts with published rates that increase with the length of the contract (currently 12.3 cents per kw-h for 10-year contract to 14 cents per kw-h for 20-year contracts). The program entered into CLEAN contracts for up to 4 MW of renewable energy in 2012.

<b>Los Angeles</b>	The Los Angeles Department of Water and Power is offering CLEAN contracts for up to 10 MW in 2012. However, applicants were asked to provide their lowest base price of energy. Offers will be made based on applicant information provided plus increases based on time of day provided. Contracts terms will last up to 20 years.
<b>Oregon</b>	Oregon passed a small solar feed-in-rate-like program in 2009 (Public Utility Commission finalized rules in 2010), with a 25 megawatts (MW) cap and a requirement that solar photovoltaic (PV) systems be installed by 2014, and 15-year contracts. For projects under 100kw, grid connection is guaranteed. The price paid by the utility for the power is cost based.
<b>Maine</b>	The Maine Community Based Renewable Energy Production Incentive, a pilot project launched in 2010, focuses on community-owned projects (requiring projects to be at least 51 percent locally owned). The program involves 20-year contracts that pays \$.10 per kWh, 1.5 times the cost of a renewable energy credit, or the "cost of the project" for wind, solar, or hydro energy projects that are one MW or smaller.
<b>New York</b>	The <a href="#">Long Island Power Authority</a> has a solar feed-in rate. They offer 20-year contracts at 22 cents per solar kw-h generated for medium and large projects sized between 50kW and 20MW.
<b>North Carolina</b>	<a href="#">Progress Energy Carolinas</a> solar feed-in rate program offers 20-year contracts for solar power, at a rate of 15 cents per kw-h generated. The program will purchase 5 MW per year.
<b>Vermont</b>	Vermont has a small FIT program available statewide. It involves 15 to 20-year contracts for biomass, wind, hydro, landfill methane, and agricultural methane and 25-year contracts for solar power. Costs are based on production plus a reasonable rate of return. There is a program cap of 50 MW.
<b>Ontario, Canada</b>	The Ontario Power Authority (OPA) has 20-year feed-in rate contracts for nearly 400 megawatts of community-owned renewable energy projects within the province. The policy was designed to enable farmers, community groups, Native Americans, and Native Canadians to participate directly in the production and development of their own renewable resources. Ontario's aboriginal population will build nearly one-third of the capacity. The feed-in rate program pays varying rates for generation from wind turbines, solar, biomass, and small hydro. Most recently, they launched a FIT program for capturing waste heat (200 MW, \$90/mwh). Ontario also includes per kilowatt-hour bonus payment for projects owned by native Canadians, and a per kilowatt-hour bonus payment for community-owned projects. Ontario's separate microFIT program, developed for homeowners and farmers wanting to generate electricity with smaller-scale solar panels, currently has 20,000 applications for microFIT contracts. Within a few years, Ontario will have the largest installation of community-owned renewable resources outside Denmark and Germany. <a href="http://www.powerauthority.on.ca/">http://www.powerauthority.on.ca/</a>

**Sources:** Database of State Incentives for Renewables and Efficiency, [Search for Production-based incentives](#); Paul Gipe, [Provincial feed-in tariffs spurring community power](#) (NOV 2010); Mathew Burger, InsideClimate News, [States look to Feed-in Tariffs to Boost Renewable Energy](#); John Ferrell, Institute for Local Self Reliance, and the New Rules Project, [Feed-in Tariffs for Renewable Energy](#)

## Additional resources

- Center for American Progress, [CLEAN Contracts: Making Clean Local Energy Accessible Now](#)
- See the [Guide to FITs](#) put out by the National Renewable Energy Laboratory (NREL).
- For general information and regular updates, see the [CLEAN Coalition](#) and their [Local CLEAN Program Guide](#)
- See UC Berkeley Study for [Economic Benefits Of A Comprehensive Feed-In Tariff: Analysis Of The Reesa In California](#)