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FEED-IN-TARIFF EXPERIMENTATION IN THE U.S.: LESSONS AND EXPERIENCES FROM THREE SUNNY JURISDICTIONS

Debate surrounding Feed-in-Tariff (FIT) legislation has been raging over the latter half of 2010 and early 2011. In Europe, solar markets have been forced to adjust to dramatic reductions in FIT prices and necessary capacity cutbacks following the solar generation boom of the past several years. In the U.S., FIT advocates point to the dramatic examples of Germany, Spain, Italy, Portugal and other European territories as proof that FIT contracts are the only proven method for assuring that solar and windpower energy generation becomes a meaningful percentage of the power supply.

Critics of the European-style FIT programs argue that its "intelligent price-setting" approach does not work. Without market forces at work, prices will inevitably be too high, resulting in capacity constraints, potential reductions in technological innovation and unnecessarily higher prices for consumers, or too low, resulting in no impact on rates of new project development. Political debates in the U.S. also center on whether subsidization of renewables should exist at all. The good news is that supporters of continued subsidization of renewables can be found on both ends of the political spectrum, whether based on environmental, economic or national security concerns. The U.S. also has the benefit of hindsight as state utility commissions can learn from other international FIT program designs.

This article provides a synopsis of legislation and experiences in three select territories: Florida, California and Hawaii. It concludes that solar and renewable opportunities are likely to grow for international, and domestic manufacturers, EPC contractors, investors and lenders, as a result of FIT trends in the U.S.

The Gainesville, Florida Experience: European approach

On February 5, 2009, the City Council of Gainesville, Florida approved a city ordinance for its municipal utility, Gainesville Regional Utilities (GRU), to implement the first true solar FIT in the United States. The total scope of the FIT ordinance was 32MW with 4MW to be built each year. The Gainesville FIT was largely modeled after the German FIT by including a 20-year fixed price contract, a first-come, first-served allocation queue, and rate declination for each vintage year based on historic installation costs. Gainesville was interested in distributed generation with a particular emphasis on roof-top

solar, so the municipality restricted the size of ground mounted systems which could be built in each vintage year.

There have been many lessons. In particular, the timing difficulties involved in commercial scale solar development have not always coincided with GRU's expectations, a factor exacerbated by the fact that the program went effective in the middle of the credit crisis. Despite these growing pains, most observers report that the City of Gainesville has succeeded in creating a solar friendly environment. The permitting department, the inspectors, GRU engineers, the solar team at GRU, and the City Council worked very hard to streamline the permitting, interconnect, and PPA processes.

GRU has made sure there is allocation for residential installations, which have been almost exclusively built by local installers. On the commercial side, the financial institutions that finance solar require bankable EPCs with a track record of commercial scale installations. Those bankable EPCs have subcontracted electrical, roofing, engineering, and construction firms in Gainesville and other parts of Florida to perform the work under the EPC's supervision. Gainesville's FIT program has earned accolades from FIT rating groups based on its substantial megawatts per capita.

Hawaii: Multi-Tiered Approach

Hawaii's recently adopted FIT program for solar photovoltaic and other renewable energy generation systems took effect November 24, 2010. The Hawaii model establishes four tiers of FIT classifications and tariff rates based on project size and renewable energy technology. It targets 80 MW of total new development capacity. Pricing has so far only been established for Tier 1 and Tier 2 (capped at 500 kW), but pricing for Tier 3 is expected shortly. Eligible projects in Tier 4 would be capped at 5 MW nameplate capacity.

Despite favorable pricing, as of early 2011 only 2.6 MW of solar PV applications have been received. This result is lackluster in view of Hawaii's robust solar resource and compared to other solar FIT programs that were fully subscribed almost as soon as they went effective. The Hawaii Public Utility Commission (PUC) launched the program with a view that it would learn from the experience and adapt if mistakes are made. Consequently, the program provides for a review process, commencing after two years.

California: "Next Generation" Reverse Auction Mechanism

Until recently, California's FIT program was limited to small generation projects (generally, less than 3 MW) with a total FIT program capacity of 500 MW (scheduled to increase to 750 MW later). The pricing mechanism was a

California Power Utility Commission (CPUC) market-price-referent (MPR) based on the long-term ownership, operating, and fixed-price fuel costs for a new "proxy" 500 MW natural gas-fired combined cycle gas turbine (CCGT), with a time-of-day adjustment. Initially, this mechanism did not offer attractive rates of return to developers.

Following poor reception of California's program in 2009-2010, the CPUC recently launched a major new hybrid FIT program, known as the Reverse Auction Mechanism (RAM). The RAM targets mid-size solar developers (projects greater than 1.5MW but no larger than 20MW). RAM requires the three local investor-owned utilities to purchase electricity from solar or other renewable sources following a biannual competitive auction bidding process. Contracts are to be awarded initially based on lowest viable cost. The program is a 1 GW pilot project viewed as innovative by most analysts.

RAM addresses criticisms of the European style FIT programs because it enables the market to determine efficient prices. While the auction process creates transactional uncertainty and may result in stranded bids, it is generally seen as efficient and potentially ground-breaking. The utilities are expected to announce auction procedures and guidelines in the first quarter, 2011, making this one of the more intriguing programs to follow in 2011.

In conclusion, FIT programs are gaining momentum in the U.S., and the Florida, California and Hawaii experiences demonstrate that different jurisdictions have unique approaches with divergent results. These new FIT experiments highlight the growing commitment of U.S. policymakers to support renewable energy growth and development. In turn, international and domestic manufacturers, EPC contractors, sponsors, lenders and investors are likely to find increasingly attractive opportunities in the U.S. market.

Milbank Contacts:

Gary S. Wigmore Head of Asia project finance +852-2971-4888 gwigmore@milbank.com	Anthony Root China managing partner +8610-5969-2777 aroot@milbank.com	Ed Sun Partner, Beijing +8610-5969-2772 esun@milbank.com	Shepard Liu Senior projects attorney, Beijing +8610-5969-2774 Shepard.liu@milbank.com

This article was written by Allan Marks, C.Thomas Paschall and Ralph Vogel of Milbank.