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## Forward-thinking utilities embracing renewables

### Changing market driving distributed generation

August 1, 2013

**SHARE** By Craig Lewis

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The concept of distributed generation (DG) has existed for decades, but only in the past few years have utilities in the United States actively begun to diversify their energy portfolio with local renewables.

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#### Embracing local renewables

Most recently, Georgia Power -- an investor-owned utility serving more than two million customers -- unveiled its Advanced Solar Initiative, which will bring 210 MW of local solar power online in its service territory by 2016 at no additional cost to consumers. Given changing market conditions, the shift from centralized power plants toward distributed generation is not surprising.

Craig Lewis, executive director, Clean Coalition

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At least two major factors are driving utilities to embrace greater levels of distributed generation. First, falling costs of renewable technologies -- particularly solar PV -- have made DG renewables financially attractive. As the energy economics improve, utilities face ever-increasing pressure from customers who want to be renewable energy generators, instead of just energy consumers. 2012 was another record-breaking year for solar PV installations, and residential and commercial markets look poised for sustained and rapid

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growth in the coming years.

Second, independent studies and utility-funded analyses have found distributed renewables to provide significant benefits to utilities and customers alike. Distributed renewables, in many instances, provide a clear and cost-effective way for utilities to keep energy rates low. Generating energy close to load reduces the need for massive investments in transmission infrastructure and avoids transmission inefficiencies in the form of line and congestion losses that drive up costs. Additionally, well-sited DG projects help utilities meet local capacity requirements and reduce the need for new -- and expensive -- peaker plants to meet high demand.

A recent Stratagen study, based on California Energy Commission assumptions, found the levelized cost of generation for a simple cycle gas-fired peaker plant to be \$0.492 per kilowatt-hour. Investment into new peaker plants is a far costlier way to meet peak demand than utilizing distributed solar, which is coming online across the country at about a third of that peaker plant price while providing clean and reliable capacity when and where utilities need it most.

**Vital grid services**

Distributed renewables provide other vital grid services besides generating energy. The availability of advanced inverters now enables distributed renewables to provide voltage support at any time -- helping utilities keep this critical dimension of the electric grid in balance.

More generally, DG also provides grid resilience value by reducing vulnerability to outages resulting from major storms or human error. Local energy production from smaller, distributed generators mitigates the impact of any single power station or transmission line failure.

The value offered by DG in terms of generation, disaster recovery, and ancillary services are significant. All told, a study conducted for Arizona Public Service concluded that every dollar spent on distributed solar provided \$1.54 worth of value.

**CLEAN Programs**

Forward-thinking utilities are already addressing these changing market conditions -- providing opportunities for customer participation in generation while maximizing the benefits offered by DG renewables. By implementing Clean Local Energy Accessible Now (CLEAN) Programs, which are feed-in tariffs with streamlined interconnection procedures, utilities are satisfying demand for distributed renewables while also retaining enough control to drive the deployment of distributed renewables to key points on their grid where DG services are most valuable. Locational requirements can be designed into CLEAN Programs so DG projects only connect to the distribution grid where interconnection is straightforward or where energy capacity and voltage and/or frequency support are needed.

The ease of implementation and proven effectiveness of CLEAN Programs have made them popular among utilities, including Georgia Power, which implemented a 90 MW CLEAN Program as part of their 210 MW solar initiative. In another Southeastern example, Gainesville Regional Utilities (GRU) found that implementing a CLEAN Program was very efficient -- requiring less than one full-time equivalent staff member to design, implement, and administer. Straightforward requirements for a project to qualify eliminate the need for comparative evaluation or interpretation, and additionally, the process to assign program capacity to qualifying projects is objective and automated. In addition, a standardized, fixed-rate contract and interconnection agreement for all projects

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By streamlining procurement and interconnection processes, CLEAN Programs reduce the cost of deploying local renewables -- for both the utility and the project developers -- making CLEAN Programs efficient and cost-effective for meeting renewable energy objectives. Through a CLEAN Program implemented in 2010 by the Sacramento Municipal Utility District (SMUD), 100 MW of local solar came online within two years. The 100 MW of local solar vastly exceeded SMUD's renewable energy requirement without any ratepayer impact. Notably, two SMUD distribution engineers were able to complete interconnection studies for all of the projects deployed in the utility's CLEAN Program in just two months.

Similarly, the Los Angeles Department of Water and Power (LADWP) will exceed its renewable requirement through its CLEAN LA Solar Program, which recently launched and is experiencing favorable results. Since opening the first 20 MW tranche in February, LADWP has received applications totaling more than 115 MW – signaling strong demand for solar DG and correct pricing. Notably, many of the proposed projects will bring DG to underserved communities with a high solar resource and to areas with minimal interconnection costs.

The rapid growth of the distributed renewables market signals that DG renewables are poised to play an increasing vital role in the energy system. [CLEAN Programs](#) can strategically guide the development of local renewable capacity, and all utilities would be well-served to explore this policy tool.

#### **About the Author**

*Craig Lewis is the executive director of the Clean Coalition, a nonprofit organization whose mission is to accelerate the transition to local energy systems through innovative policies and programs that deliver cost-effective renewable energy, strengthen local economies, foster environmental sustainability, and provide energy resilience.*

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