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R STREET SHORTS NO. 9
May 2015

GOVERNANCE IN DISTRIBUTED GENERATION: A NEVADA CASE STUDY

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INTRODUCTION

Disruptive innovation has hit electricity markets. Just as disruptive technologies and services have revolutionized telecom and urban-transportation markets by expanding consumer choice, electricity customers can now take advantage of advances in electricity generation and metering technology to make their own power at home.

This is creating a massive structural change in electricity markets and presenting a significant challenge to the state regulators and utilities forced to determine how this new market can and should look. Gradually diminishing is the staid model of a single, large energy producer and a distribution network pumping electrons toward end users. Now, every user can become a power producer and, however briefly, sell that power to their neighbors.

This policy brief examines examines the case for distributed generation (DG) in Nevada and examines how that state

currently deploys the resource. It also provides recommendations for how the state can leverage current legislative interest in DG to create a robust, competitive market for all users and producers.

THE CASE FOR DISTRIBUTED GENERATION

Distributed generation aligns well with the conservative psyche, encouraging self-reliance and market competition. Where the electricity deregulation movement of the early 1990s fell short, DG presents a market-based option to challenge the model of heavily regulated monopoly utilities.

Conservatives value competitive markets for very good reason: competition spurs innovation, reduces costs, fosters abundance and generally separates the wheat from the chaff through price signals and consumer choice. Competition in electric markets can be achieved through rolling back abundant mandates, subsidies and preferential treatment for certain types of power, as well as by allowing customer-generators to sell excess power on the same grid as utilities.

To ensure that DG is integrated appropriately, there is a strong and necessary role for state public utility commissions (PUCs) to establish rules of the road. To enable DG to become an effective opportunity for competition, regulators oversee rate structure and cost-sharing schemes intended to ensure all users and producers pay their fair share. It is the duty of these PUCs both to enable freedom of choice and to maintain a robust, reliable electrical grid.

As regulators grapple with expanding consumer DG options, they are beginning to understand the difficulty of integrating multiple new generators and pricing new generation to ensure costs are shared appropriately. These issues must be addressed.

First, the grid must be built out to accommodate additional sources of DG. If we are committed to fostering competition in the electricity market, we need a grid that can accommodate all sources of power. Certainly, customer-generators should bear responsibility for a portion of that build-out. But if a truly competitive market is in the public interest, there's a fair argument that all users should bear some portion of the costs.

Second, rate and tariff structures must be structured to allocate costs appropriately. Under the commonly used net energy metering (NEM) model, customer-generators who reduce their own demand and sell power back to the grid are credited at the retail rate of electricity. This retail rate captures not just the cost of power, but also the cost of maintaining and operating the power grid and providing additional public services. Recognizing the unique role of DG, PUCs must

establish payment structures that allow customer-generators to share in the costs of planning, building and maintaining the grid while also receiving credit for the quantifiable benefits provided by distributed, diverse supply.

The possibility can't be denied that, administered in certain ways, DG may increase power costs for all users, at least for the near term. This would present regulators and policymakers with a choice between the most expedient near-term solution and a principled long-term interest in a diverse, freely competitive market.

ELECTRICITY CHOICE IN NEVADA

Nevada state electricity policy has evolved rapidly over the past few years. On the whole, state policy favors an increased share of electricity coming from renewables and allowing individual Nevadans to assume the role of customer-generator. These policies include:

- **NEM Tariff** – All customer-generators have access to the NEM tariff, which enables users to sell any excess electricity back to the utility at retail rates, exclusive of public-purpose charges. Additional customer-generators can sign up until the collective capacity of these systems matches 3 percent of peak-generation capacity.
- **NV Energy's Renewable Generations Program** – Nevada's public utility, NV Energy, provides financial incentives to some DG installations. Since inception, this program has provided nearly \$200 million in subsidies to DG users of all sizes. Recent reforms call for it to provide more modest incentives to a larger number of interested parties.
- **Renewable Portfolio Standard (RPS)** – State law requires that 25 percent of Nevada's electric generation will come from renewable resources by 2025. The law includes a multiplier to encourage more solar investment. Through 2016, each megawatt (MW) of utility-scale solar counts for 2.4 MW toward the RPS and each MW of DG solar counts for 2.45 MW of power.
- **Federal Subsidies** – Federal incentives – in particular, the Investment Tax Credit – offset a portion of the capital costs associated with DG. The credit currently covers 30 percent of capital costs; beginning in 2017, the ITC will drop to 10 percent of capital costs.

Like many other Americans, Nevadans are responding to these incentives. By the start of 2014, NV Energy was servicing more than 3,300 individual NEM systems. That amounted to more than 70 MW of installed capacity, with an

additional 234 MW of capacity expected to come online by 2016. All of these installations are increasing power production, reducing electricity bills and crediting thousands of individuals at the retail rate of power.

To monitor the result of these policies and determine future impacts, the Nevada Assembly directed the Nevada PUC to commission a report from electricity-market consulting firm E3 to forecast the costs and benefits of renewable-generation systems under the existing NEM program. That report, "Nevada Net Energy Metering Impacts Evaluation," details how NEM programs impact electricity customers, customers who install distributed generation systems (customer-generators) and the electricity market in Nevada as a whole.

The report makes very clear that the compensation structure for DG is enormously relevant to the distribution of costs and benefits between customer-generators and non-generating customers. If priced appropriately, and if the state continues its trend toward removing preferential subsidies and treatment for DG systems, non-generating customers will face no significant costs or benefits from allowing the NEM program to operate. Successful allocation of true costs between users also will strengthen arguments to roll back or remove subsidies and incentives that distort the cost of power.

The report also makes one quite interesting observation for which the PUC does not yet account. E3 projects that DG will allow the utility to defer certain distribution system upgrades. If those deferred capital investments are incorporated into projections, DG may save the utility and its customers in excess of \$1 billion. This is just one example of quantifiable benefits that can and should be attributed to DG in the creation of an appropriate rate and tariff structure.

POWERING CHOICE THROUGH THE FUTURE

Nevada needs electric policies that serve the changing electricity market appropriately. Recently circulated draft legislation aims to empower the PUC to oversee changes in the net-metering tariff and rate structure. As Nevada lawmakers consider this and future pieces of legislation intended to yield an electricity market that encourages competition while appropriately allocating costs, we suggest these two overarching guidelines.

- **Lift the limit on distributed generation/solar** – The 3 percent limit on electric generation from distributed sources is completely arbitrary. The limit represents an artificial restriction on choice for all but the earliest actors among Nevada's electric consumers. Unless the policy is changed, the limit will be reached sometime in the second half of 2015. The PUC should approve increases in distributed-generation capacity at a pace that takes into consideration the capital

investments necessary to expand the NEM user base and the experience grid operators need to ensure that reliability is never sacrificed.

- **Establish a fair NEM tariff** – The only way to ensure successful application of DG and NEM services in the future is to require all users contribute appropriately toward the cost of maintaining the electrical grid. Customer-generators will depend on the electrical grid for reliability and supply, just as non-generating customers do. But they also rely on the grid to sell power. To ensure that NEM users do not impose costs on the grid without paying their fair share, the PUC should identify an equitable pricing structure for customer-generators. This could be accomplished by creating a new electricity rate class or by imposing a unique tariff that accounts for the infrastructure costs and public-support programs embedded in electrical rates. Every precaution should be taken to avoid any cost shift between users.

CONCLUSION

As technology continues to evolve and customers have more options to generate and store electric power on-site, the task of governing the electricity market will only grow more complicated. An early commitment to establishing clear and fair pricing and adequately maintaining common infrastructure will allow such innovations to progress without imposing costs on electricity-market participants in the future.

With distributed generation capacity in Nevada approaching the 3 percent limit imposed by law, it's time for Nevada to choose between encouraging an innovative, competitive electric market and deferring to monopolistic interests. The recent draft legislation suggests significant interest in getting DG right. With proper guidance, the PUC is the ideal forum for adjudicating the amount of power from DG and the tariffs and rate structures necessary for this market to operate optimally.

It's time for Nevada to shift its thinking on electricity markets. A robust, reliable grid is a common good, and electrons from any source are equally valuable to end-users.

ABOUT THE AUTHOR

Catrina Rorke is director of energy policy and a senior fellow at the R Street Institute, where she promotes smart, small-government solutions to energy and climate challenges.

Prior to joining R Street, Katrina founded the energy program at the American Action Forum, a center-right policy institute that specializes in actionable research and analysis. While at AAF, she emphasized free-market policies and critiqued administration regulatory efforts.

Catrina got her start as a Presidential Management Fellow at the National Oceanic and Atmospheric Administration. As part of her fellowship, she did a six-month rotation to the office of former U.S. Rep. Bob Inglis, R-S.C. That six months stretched to two years, during which she served as his staff to the House Committee on Science and Technology and helped him craft the first Republican-sponsored carbon tax bill.

Catrina is a graduate of the University of North Carolina at Chapel Hill, where she studied public health, creative writing and basketball dynasties. She also has a Master of Public Administration degree in environmental science and policy from the School of International and Public Affairs at Columbia University.