



Entergy Corporation Shareholder Resolution Report on Distribution Generation

Arjuna Capital (Arjuna) and As You Sow are the sponsor of a proposal on the proxy ballot of Entergy Corporation (ETR). We encourage you to support the proposal, which reads:

With board oversight, shareholders request that Entergy create a report by October 2017 (at reasonable cost and omitting proprietary information) describing how Entergy could adapt its company-wide business model to significantly increase deployment of distributed-scale non-carbon-emitting electricity resources as a means of reducing societal greenhouse gas emissions and protecting shareholder value.

Implementing the Proposal would allow investors to better assess what the Company plans to do, if anything, to respond to the proliferation of distributed non-carbon-emitting electricity resources, including but not limited to community solar, energy efficiency, demand response, and electric car charging stations, that are increasingly disrupting the U.S. power sector. **A strong adaptation strategy would indicate a reduction in regulatory risk and improved competitive position.**

Rationale for a YES vote:

1. The rapidly declining cost of carbon free technologies such as solar power -- or even more cost competitive, solar plus storage -- presents a formidable competitive threat to Entergy in the absence of integrating such technologies into the company's business plan. Wall Street analysts predict the power utility business will be significantly transformed by 2030. Companies on the forefront of change will be better positioned to compete.
2. Utilities that do not move swiftly to adapt their business model to changing technology may become subject to the "death spiral" of customer loss to customers moving toward solar and other customer-owned generation. This trend is beginning to occur in many states, and has caused significant losses to European utilities.
3. Entergy lags peers on investment in non-carbon-emitting distribution and technology and has not invested in distributed energy resources beyond a negligible portion of the company's generation capacity.

The Proponents recommend best practice disclosure as follows:

A report adequate for investors to assess the Company's strategy, as referenced in the Proposal, would discuss how the company plans or does not plan to increase deployment of distributed non-carbon-emitting electricity resources.

1. **The declining cost of solar power and energy storage technologies presents a formidable competitive threat to Entergy in the absence of integrating such technologies into the company's business plan. Wall Street banks and analysts predict the utility business will be significantly transformed by 2030, and companies on the forefront of change will be best positioned to compete.**



Research from Barclay's, Goldman Sachs, UBS, and Deutsche Bank all describe a striking transformation in the U.S. electricity sector, in which utilities that currently sell energy generated at large, centralized, coal powered plants must transform into utilities that dispatch many sources of distributed power, i.e., power that is generated near the site where it is consumed.

- In 2014, Barclays downgraded bonds for the entire U.S. electric utility sector due to the rapidly declining costs of solar power and energy storage technologies.¹
- UBS projects solar systems and batteries will cause a huge disruption in the energy industry, noting, "Large-scale power stations could be on a path to extinction. ... Not all of them will have disappeared by 2025, but we would be bold enough to say that most of those plants retiring in the future will not be replaced."²
- Goldman Sachs' analysts report "Decreased reliability from an aging distribution infrastructure, a broadening desire to reduce the carbon footprint, and perhaps most importantly, the reduction of solar panel and battery costs could also work together to make grid independence a reality for many customers one day."³
- The U.S. National Renewable Energy Laboratory (NREL) estimates that rooftop solar could meet 40% of U.S. power demand.⁴

Corporate consultant Ernst and Young (EY) states that companies in the utility sector must move from "defense to offense"; that those best poised to face "the challenge of transformation in the utilities sector" will be more likely to prosper; but notes a malaise in the utility sector that has resulted in slow adaptation:⁵

For decades, the electric power sector — whether regulated or deregulated, wholesale or retail — operated on a simple premise: we have the power, and when our customers need it, we will provide it. Within this context, even with limited or no load growth, the electric power sector had been counting on long-term earnings growth, and therefore, shareholder value creation via the so-called virtuous cycle: capital investment (or rate base growth) leading to satisfied customers, in turn leading to accommodating regulators. Now, in 2014, U.S. power markets are in the early stages of a transformation driven by the adoption of distributed energy.

Ernst and Young emphasizes that utilities must adapt rather than futilely attempt to stall change: **The threat distributed energy resources (DER) poses to incumbents is significant, and attempting to deny the situation with status quo forecasts or blocking the inevitable outcome by penalizing customers who adopt DER is futile. It's time for the [power] sector to move over to the offensive by developing DER- friendly strategies and business models that focus on creating customer as well as shareholder value.**

¹ Aneiro "Barclays Downgrades Electric Utility Bonds, Sees Viable Solar Competition", Barron's May 2014:

<http://blogs.barrons.com/incomeinvesting/2014/05/23/barclays-downgrades-electric-utility-bonds-sees-viable-solar-competition/>

² Parkinson: "UBS Analysts: 'Large-Scale Power Stations Could Be on a Path to Extinction'", Greentech Media, August 2014: <https://www.greentechmedia.com/articles/read/ubs-time-to-join-the-solar-ev-storage-revolution>

³ Lacey "Wall Street Firms Step Up Warnings About Distributed Energy's Threat to Utilities", Greentech Media May 2014: <http://www.greentechmedia.com/articles/read/wall-street-firms-keep-warning-of-distributed-energy-threat>

⁴ NREL Raises Rooftop Photovoltaic Technical Potential Estimate, March 2016: <http://www.nrel.gov/news/press/2016/24662>

⁵ From defense to offense Distributed energy and the challenge of transformation in the utilities sector, Ernsy&Young, 2014: [http://www.ey.com/Publication/vwLUAssets/EY - From defense to offense/\\$FILE/EY-From-defense-to-offense.pdf](http://www.ey.com/Publication/vwLUAssets/EY - From defense to offense/$FILE/EY-From-defense-to-offense.pdf)



Ernst and Young further recommends integrating distributed energy into utilities' business models: Utilities should adopt a business model that can adapt to changing conditions – one that captures and provides value in connection with distributed energy....Utilities have no choice but to adapt or become extinct like so many businesses in other industries that failed to transform; those dinosaurs became the stuff whereof business school case studies are made.

This analysis is just a sample of the extensive consensus that power market fundamentals are being rewritten by climate change driven technology and market changes. It also underscores the importance of Entergy taking proactive steps to modify its business model to integrate non-carbon-emitting distributed technologies.

2. Utilities that do not move swiftly to adapt business plans to changing technology trends may be vulnerable to the “death spiral” of customer loss to customer’s increasing ownership of distributed energy generation.

As the cost of solar infrastructure continues to plummet, and as coal pollution control costs inevitably escalate, the point at which renewable resources reach “grid parity”, or become equal to or less expensive than retail utility power is coming quickly. Far from tentative, Deutsche Bank predicts total solar photovoltaic power costs will reach parity with average electricity prices (grid parity) in 36 U.S. states as soon as 2017. When solar falls to \$1.50 a watt installed, it will outcompete U.S. utility power nationally.⁶ One solar CEO estimated that solar would be below \$1 a watt by 2017.⁷ The changes that will occur as renewable energy becomes competitive with, or cheaper than, utility power are immediate and must be recognized and treated as such by Entergy.

Renewable grid parity is key, as it empowers utilities' customers to defect from the utility's services. In its 2013 report “Disruptive Challenges”, the power sector's primary industry association Edison Electric Institute describes a cycle in which utility customers gain the ability to withdraw from utility service partially or entirely by adopting technology like customer owned solar, plus storage. This allows customers to be self-sufficient at lower cost and, importantly for businesses, to control and minimize overhead power costs rather than be subject to ongoing utility rate increases. At scale, customer defection to distributed generation could shrink utilities' customer base, creating a cycle in which remaining customers are subject to higher costs, thereby incentivizing more defection.⁸ This cycle is further intensified as utilities add fixed costs to remaining customers' bills, which then lowers the breakeven cost required to defect from the utility.

Due in part to strong policy support for renewable energy, European utilities have sustained breathtaking losses resulting from the ‘death spiral’.⁹ However, U.S. utilities are beginning to show symptoms of the death spiral as well. In response to stagnant load growth, and to discourage customers' solar adoption, U.S. utilities nationally are increasing their customers' fixed costs, regardless of their

⁶ Rhodes, “When Will Rooftop Solar Be Cheaper Than the Grid?”, USNews 7 world Report, March 2016: <http://www.usnews.com/news/articles/2016-03-31/when-will-rooftop-solar-be-cheaper-than-the-grid>

⁷ Wesoff “First Solar CEO: ‘By 2017, We’ll Be Under \$1.00 per Watt Fully Installed”, July 2015: <http://www.greentechmedia.com/articles/read/First-Solar-CEO-By-2017-Well-be-Under-1.00-Per-Watt-Fully-Installed>

⁸ Kind, *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*, Edison Electric Institute 2013: <http://www.eei.org/ourissues/finance/Documents/disruptivechallenges.pdf>

⁹ Gray, Leaton, Fulton. *Coal: Caught in the EU Utility Death Spiral*, Carbontracker, June 2015: <http://www.carbontracker.org/wp-content/uploads/2015/06/CTI-EU-Utilities-Report-v6-080615.pdf>



volume of electricity use.¹⁰ Similarly, many large commercial customers are aggressively adopting renewable power, often building it themselves where collaborating with the utility was not possible. In 2015 and 2016, the *RE 100* pledge, in which commercial brands commit to procuring 100% renewable power, has over 55 signatories including some of the world's biggest brands.¹¹

As regulations necessary to respond to climate change increase and impact fossil-fuel powered generation, the move to grid parity will intensify and utilities will become even more vulnerable to the death spiral.

3. Entergy lags peers on investment in non-carbon-emitting distribution and technology and has not invested in distributed energy resources beyond a negligible portion of the company's generation capacity.

Though Entergy is one of the largest utilities in the U.S., it has not adopted renewable energy at the rate of its peers, and is among the lowest ranked utilities on renewable energy deployment.¹² Entergy was ranked 28th of 32 on renewable energy sales; 30th of 32 on incremental annual energy efficiency; and last for annual energy efficiency savings.¹³ The Company's forward looking projections are bleak. Entergy's 2015 integrated resource plan for Louisiana, where it expects load growth, plans for no renewable energy adoption and is instead adding all new capacity as natural gas.¹⁴ Similarly, in its Arkansas integrated resource plan, Entergy does not commit to a specific planning scenario but considers three possible plans in which natural gas is either 100% or 73% of new capacity.¹⁵ Both of these integrated resource plans focus heavily on retaining coal plants and incurring high costs of regulatory compliance, which could be avoided with more renewable energy adoption.

Entergy's utility peers' aggressive clean energy investments provide a stunning contrast with Entergy's meager investment in both renewable energy and distributed energy resources. Entergy reports having financed approximately 83.5 Megawatts (MW) of solar and proposals for an additional 320 MW.¹⁶ In comparison, Sempra Energy plans to invest in over 2,000 MW of renewable power by 2018.¹⁷ Southern Company has added more than 3,800 MW of renewable energy¹⁸ since 2012 in Southeastern and Midwestern states (like states where Entergy operates) that lack policy support for such procurement.¹⁹

¹⁰ Ackerman, De Martini "Future of Retail Rate Design" Edison Electric Institute
<http://www.eei.org/issuesandpolicy/stateregulation/Documents/Future%20of%20Retail%20Rate%20Design%20v4%20021713%20eta%20-%20pjd2.pdf>

¹¹ RE100: <http://there100.org/>

¹² Ceres. "Benchmarking Utility Clean Energy Deployment", 2014: <http://www.ceres.org/resources/reports/benchmarking-utility-clean-energy-deployment-2014> p.6

¹³ Ceres. "Benchmarking Utility Clean Energy Deployment", 2014: <http://www.ceres.org/resources/reports/benchmarking-utility-clean-energy-deployment-2014> p. 17; p.19; p.21.

¹⁴ Entergy, Louisiana Integrated Resource Plan (IRP), 2015:
http://www.entropy-louisiana.com/content/irp/2015_0803_Louisiana_Final_IRP_Public.pdf p. 38, 39, 40.

¹⁵ Entergy Arkansas, Integrated Resource Planning, 2015: http://entropy-arkansas.com/content/transition_plan/07-016-U_49_1.pdf, p. 51

¹⁶ Entergy 2016 Integrated Report http://integratedreport.entropy.com/2016_Entergy_IR.pdf p.23

¹⁷ "Growing Responsibly" Sempra 2014: <http://responsibility.sempra.com/wp-content/uploads/2015/08/Sempra-Energy-2014-CR-Report-FINAL.pdf>

¹⁸ It is worth noting that, with 50,000 MW of capacity, Southern Company's 3,800 MW of renewable energy, while more volume than Entergy, represents a small fraction of Southern Company's total energy mix, and in fact suggests a need for even greater renewable energy adoption at Southern Company.

¹⁹ "Southern Company subsidiary and Turner Renewable Energy acquire Calipatria Solar Facility in California", Southern Company 2016: <http://www.southerncompany.com/news/2016-02-15-spc-Calipatria.cshhtml>. It should also be noted that at 50,000 MW of capacity, Southern's level of renewable adoption is also poor, by proportion to its total portfolio.



Even Southern Company's subsidiary, Alabama Power, plans to add 500 megawatts of renewables by 2021.²⁰

Many utilities are responding to the challenges in the power market by becoming *purveyors of distributed generation* themselves.²¹ As Southern Company's CEO Tom Fanning put it, "If distributed generation is eroding your growth, own distributed generation!"²² Other utilities work with third-party solar system providers. For example, Great Plains Energy, a smaller utility than Entergy, located in Missouri, has teamed with the solar company Sungevity on a small project and anticipates greater solar investments in the future, telling the press that, "We believe in solar. We believe in its environmental benefits, and we believe over the long term it's a cost-effective source of power."²³ Great Plains further stated that:

In the future, we would like to work with companies like Sungevity and look at putting solar on rooftops as an economic and feasible way to diversify where energy comes from on the grid and just from a reliability standpoint, distributing generation at different points around our service territory, . . . We'd like to see solar become a bigger part of people's energy future in our service territory, and so this is really just the beginning.²⁴

Following shareholder action from As You Sow, Arjuna Capital, and other investors, utilities such as Avista and Duke Energy have recently committed to publish additional information on how they are integrating distributed non-carbon emitting energy resources into their business planning.

Entergy competes for investor capital with the companies noted above, and with utilities that have even greater renewable energy adoption such as XCEL and PG&E.²⁵ Where many leading utilities have acknowledged the evolution of the U.S. power industry and are taking proactive steps to move toward non-carbon emitting, distributed resources, Entergy is a holdout. Entergy's lack of investment in distributed energy resources represent a weak value proposition that should alarm investors.

Conclusion

Entergy, which claims to recognize the importance of a "diverse, modern, and efficient" generation has not invested in distributed non-carbon emitting energy resources beyond a negligible portion of the company's portfolio. Investors will be best served with a more comprehensive understanding of the company's strategic direction through the requested report.

²⁰ Pillion, "PSC approves Alabama Power's renewable energy project request, with modifications", Al.com, 2015: http://www.al.com/news/index.ssf/2015/09/psc_approves_alabama_powers_re.html

²¹ Pyper, "Utilities See Distributed Generation as a Challenge- and Owning it as a Solution", Utilitydive, February 2016: <http://www.greentechmedia.com/articles/read/utilities-see-distributed-generation-as-a-challenge-and-owning-it-as-the-so>

²² Bade: "EEI 2015: 5 major utility CEOs on the transformation of the energy system", UtilityDive June 2015: <http://www.utilitydive.com/news/eei-2015-5-major-utility-ceos-on-the-transformation-of-the-energy-system/400530/>

²³ Alonzo. "Building KC: KCP&L sees sunny forecast for solar's potential", Kansas City Business Journal, November 2015: <http://www.bizjournals.com/kansascity/print-edition/2015/11/20/building-kc-kcp-l-sees-sunny-forecast-for-solar-s.html>

²⁴ Alonzo. "KCP&L: Solar proposal is 'just the beginning'", Kansas City Business Journal, November 2015: <http://www.bizjournals.com/kansascity/news/2015/11/18/great-plains-energy-solar-plans.html>

²⁵ Ceres. "Benchmarking Utility Clean Energy Deployment", 2014: <http://www.ceres.org/resources/reports/benchmarking-utility-clean-energy-deployment-2014>