Four D's are Disrupting the Utility Business Model

PRESENTED BY

Ahmad Faruqui, Ph. D.

PRESENTED FOR

Virtual Peaker + Brattle Webinar:

The Intersection of Rate Design & DER Technology

JUNE 8, 2021

Brattle

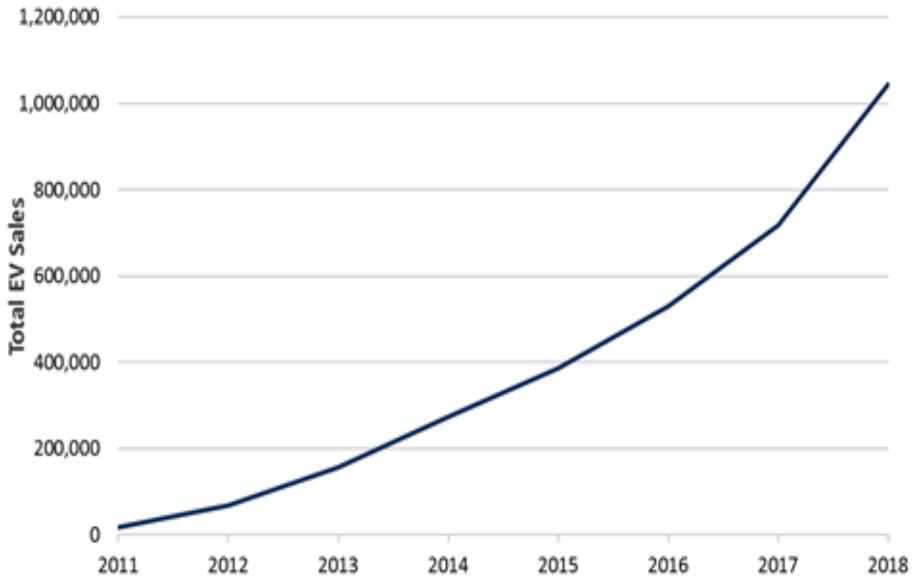
Here are the Four D’s

- Democratization
- Digitalization
- Decarbonization
- Distributed energy resources

Communities are forming CCA's

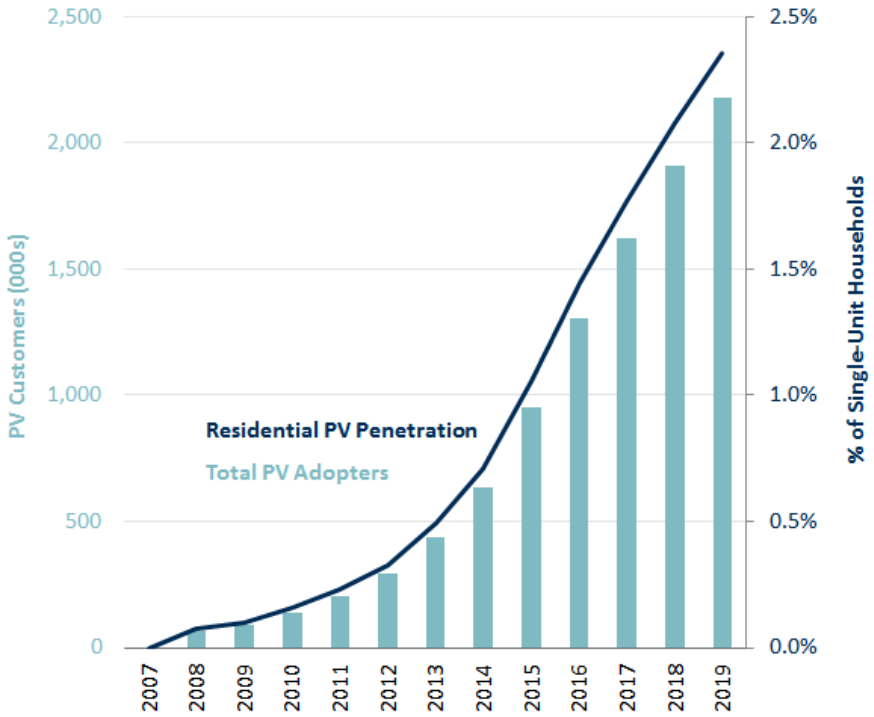
Source: https://cal-cca.org/wp-content/uploads/2019/11/CalCCA-Renewable-Energy-Map-11.7.19-web-view.pdf

More and more people are driving EVs



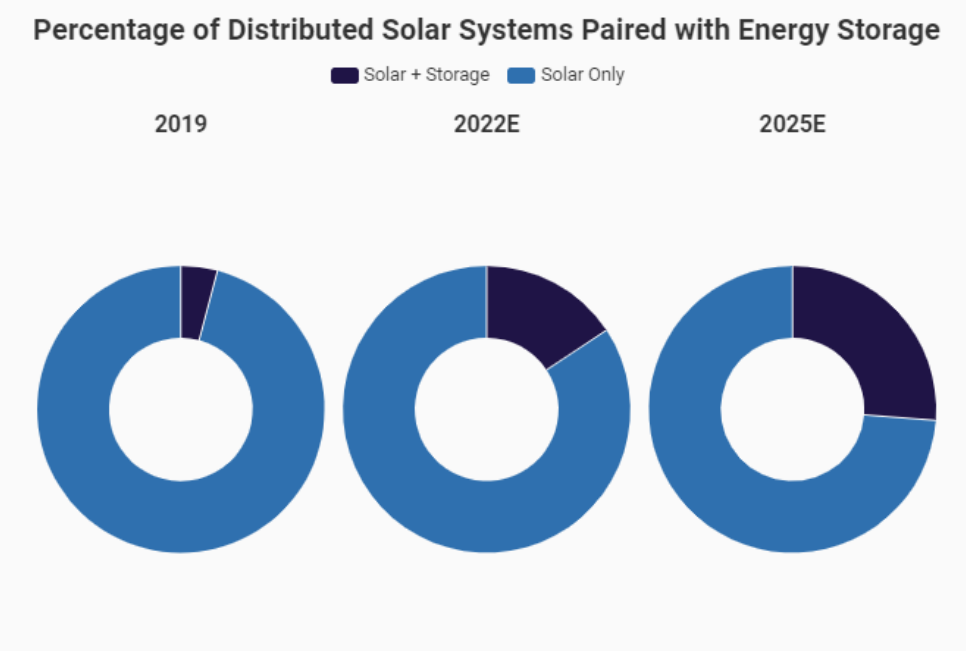
Source: EV sales from Atlas EV Hub

Many of these same people are installing solar (PV) panels on their roofs



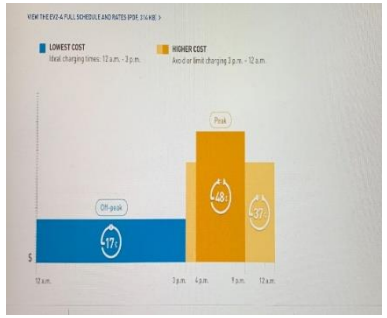
Source: Residential PV adopter counts from Form EIA-861, “Net Metering” data. Residential PV penetration calculated as Residential PV Adopters over total number of single-unit households, using U.S. Census data.

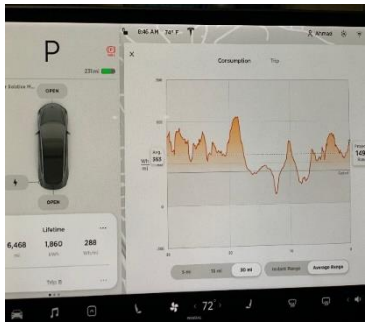
By 2025, more than 25% of all behind-the-meter solar systems will be paired with storage, compared to under 5% in 2019



Source: SEIA/Wood Mackenzie, "U.S. Solar Market Insight 2019 Year-in-Review," https://www.seia.org/us-solar-market-insight

Yesterday’s customer is today’s prosumer and tomorrow’s prosumager

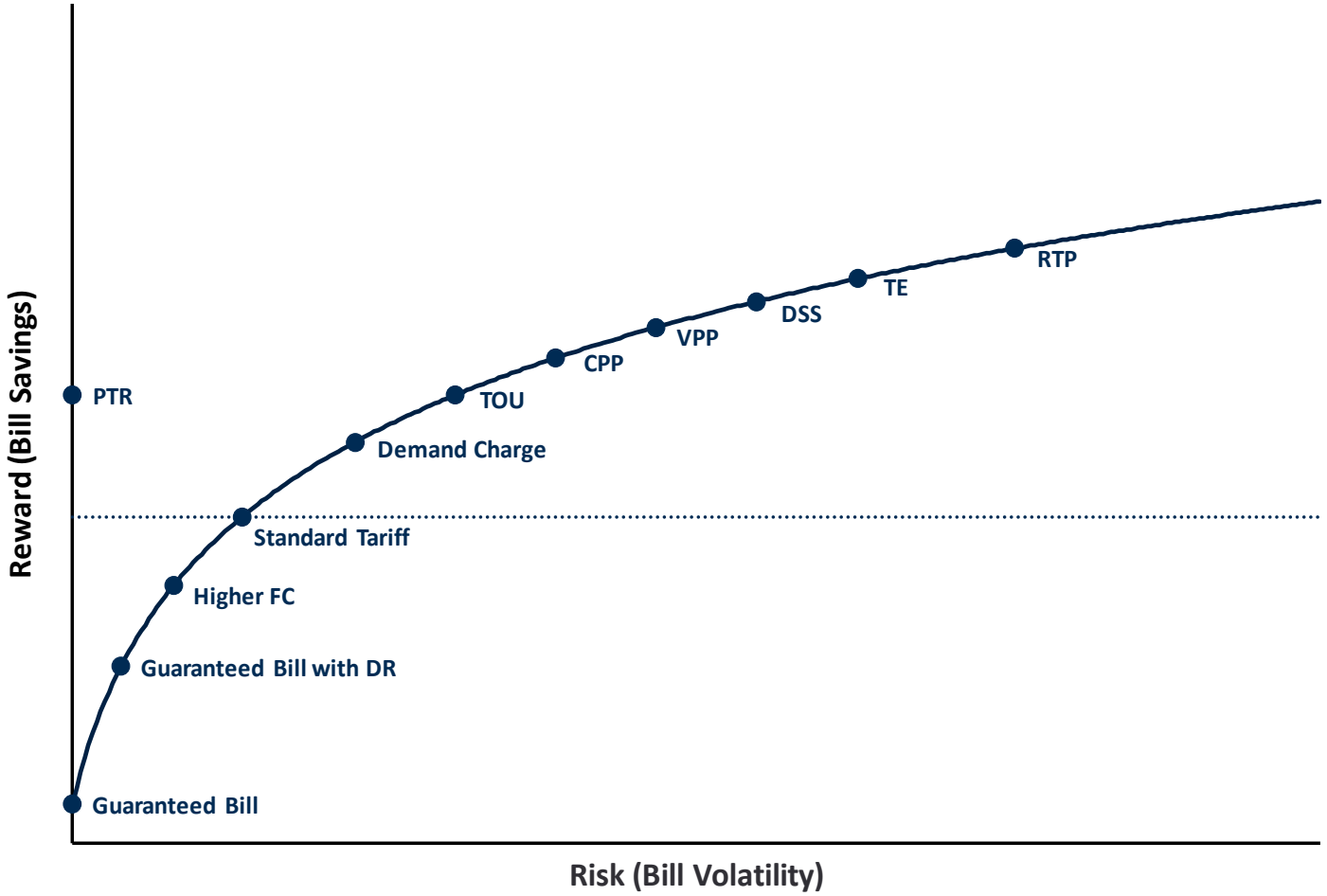




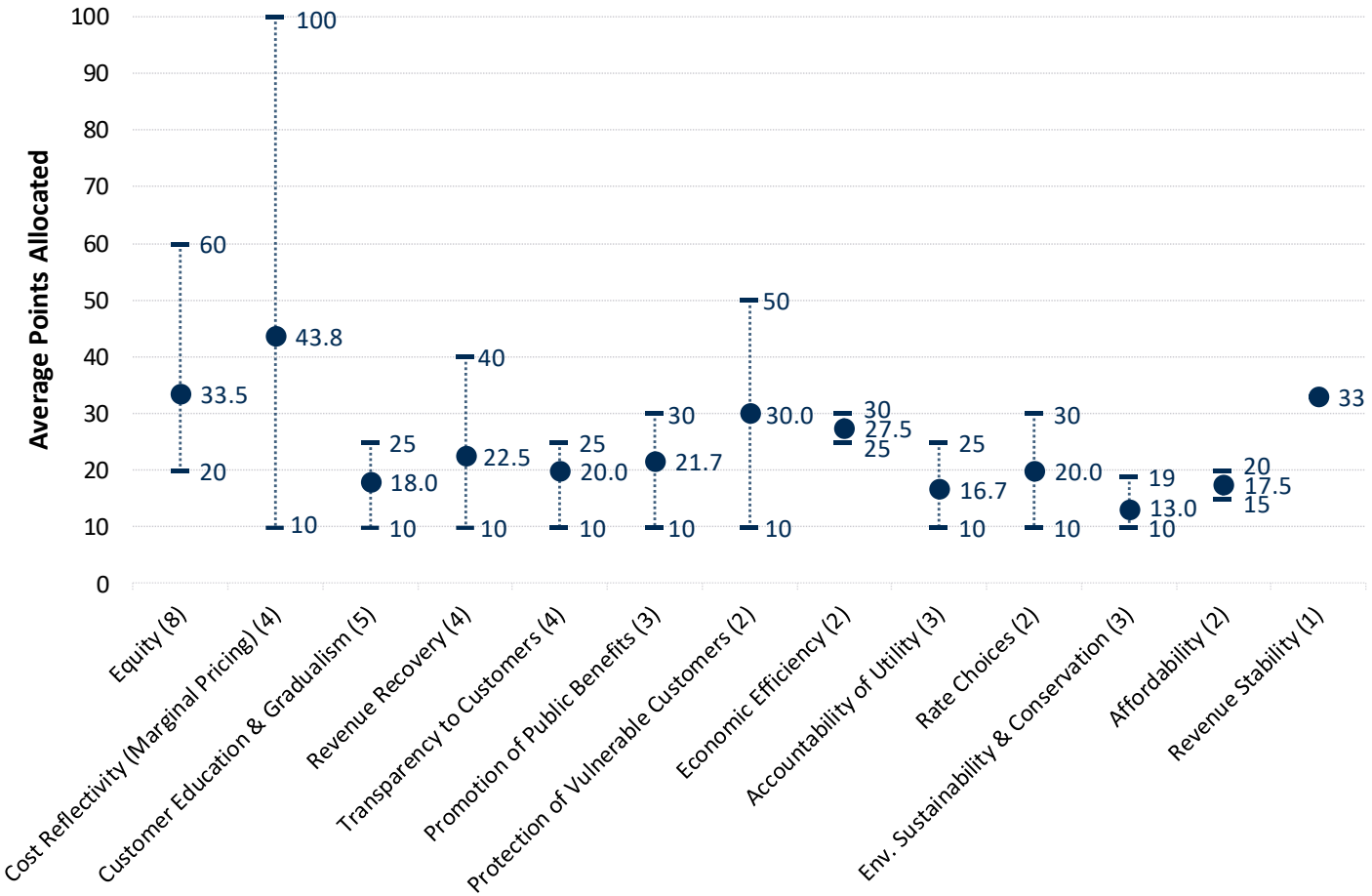
In response, utilities are seeking to modernize their tariffs

- In Arizona, APS and SRP offer TOU rates on an opt-in basis to their residential customers
- In California, SMUD deployed default TOU rates two years ago and the three investor-owned utilities are in the process of moving to default TOU rates
- In Colorado, Fort Collins has mandatory TOU rates and Xcel Energy has been authorized to move ahead with deploying TOU rates as it rolls out smart meters
- In Illinois, ComEd and Ameren offer RTP to residential customers
- In Maryland, BGE and Pepco offer peak time rebates on a default basis
- In Michigan, Consumers Energy is moving to default all its residential customers to TOU rates this month
- In Oklahoma, OGE offers variable peak pricing paired with smart thermostats

They are offering a choice of tariffs to customers



But stakeholders hold differing views on what objectives should govern the pricing of electricity



Conclusions

- The utility business model is under siege from a number of different directions
- It has to be reinvented for the age of prosumers and the world of digital technologies
- Utilities will have to become customer centric and revamp their corporate strategy
- Price reform, long delayed, will have to take center stage in the strategy

References

- Faruqui, Ahmad, “Refocusing on the consumer,” *Regulation*, Spring 2020.

- Faruqui, Ahmad, “Customer centricity: Lynchpin of strategy,” *Public Utilities Fortnightly*, November 1, 2019.

- Faruqui, Ahmad and Cecile Bourbonnais, “The Tariffs of Tomorrow: Innovations in Rate Designs,” *IEEE Power and Energy Magazine*, vol. 18, no. 3, pp. 18-25, May-June 2020.

Ahmad Faruqui

PRINCIPAL | SAN FRANCISCO

Ahmad.Faruqui@brattle.com

+1.925.408.0149

Ahmad Faruqui is an internationally recognized authority on tariffs, demand response, energy efficiency, distributed energy resources, advanced metering infrastructure, plug-in electric vehicles, energy storage, inter-fuel substitution, combined heat and power, microgrids, and demand forecasting. He has worked for nearly 150 clients on 5 continents, including electric and gas utilities, state and federal commissions, governments, independent system operators, trade associations, research institutes, and manufacturers.

Ahmad has testified or appeared before commissions in Alberta (Canada), Arizona, Arkansas, California, Colorado, Connecticut, Delaware, the District of Columbia, FERC, Illinois, Indiana, Kansas, Maryland, Minnesota, Nevada, Ohio, Oklahoma, Ontario (Canada), Pennsylvania, Saudi Arabia, and Texas. He has presented to governments in Australia, Egypt, Ireland, the Philippines, Thailand, New Zealand and the United Kingdom and given seminars on all 6 continents. He has also given lectures at Carnegie Mellon University, Harvard, Northwestern, Stanford, University of California at Berkeley, and University of California at Davis and taught economics at San Jose State, the University of California at Davis, and the University of Karachi.

His research been cited in *Business Week*, *The Economist*, *Forbes*, *National Geographic*, *The New York Times*, *San Francisco Chronicle*, *San Jose Mercury News*, *Wall Street Journal* and *USA Today*. He has appeared on Fox Business News, National Public Radio and Voice of America. He is the author, co-author or editor of 4 books and more than 150 articles, papers and reports on energy matters. He has published in peer-reviewed journals such as *Energy Economics*, *Energy Journal*, *Energy Efficiency*, *Energy Policy*, *Journal of Regulatory Economics* and *Utilities Policy* and trade journals such as *The Electricity Journal* and *Public Utilities Fortnightly*. He is on the editorial board of The Electricity Journal. He holds BA and MA degrees from the University of Karachi, both with the highest honors, and an MA in agricultural economics and a PhD in economics from The University of California at Davis, where he served as a research fellow and was the recipient of a grant from the Kellogg Foundation.