GRID
UTILITY OF THE FUTURE

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OUR WORLD IS CHANGING

100% RPS Goals

Disruptive Technologies:
- Electric Vehicles
- Distributed Generation
- Automated Demand Response
- Energy Storage
- Cheap Renewable Energy
- Microgrids
- Unknown Unknowns
WHAT DO CUSTOMERS WANT?

Easy Predictions:
- Safe
- Reliable
- Affordable
- State Goals

Harder to Predict:
- Energy Independence
- Clean
- Communication
- “Cool” Technology
- “Keeping Up With the Jones’”
- New Technology (Text Messages?)
UTILITY BUSINESS MODEL EVOLVING

“A business model can only be successful if the role of the utility is aligned with its compensation and the rates to customers are just and reasonable. It is equally important that the service providers and customers are also fairly compensated for their roles in the system.”

Electric Utility Business and Regulatory Models (CPUC, June 8, 2015)
“Competition and regulation share a common purpose—to align private behavior with the public interest. Effective competition induces competitors toward efficiency, customer service, and reliability.”

- Scott Hempling, COMPETITION "VS." REGULATION: HAVE WE ACHIEVED CONVERSATIONAL CLARITY? (PART I), May 2008.
HOW DOES A PRIVATE UTILITY GET PAID?

Transmission → $0.04 per kWh (HECO)

Distribution →

Generation → $0.07 per kWh (HECO)
COMPENSATION CHALLENGES:

• Little or no new generation
• Little or no new transmission
• Distribution investments? Increasingly can be provided by others and will require greater flexibility
As we look at the electric utility sector today, investors, for the most part, remain confident that the regulatory model will be applied fairly to provide them with the opportunity to earn a reasonable and fair return on their investment. Those states that have experienced prior upheavals in their regulatory model (e.g., California) have had to tighten their approach to regulatory cost recovery to convince investors that past problems have been addressed. If a state has not been as receptive to addressing its approach to past problems, then investors will be highly reticent to deploy capital in those jurisdictions.

In reviewing recent sector research reports, the majority of security analysts continue to project future earnings levels based on assumed capital-investment levels and projected costs of capital (a bottoms-up approach). While analysts acknowledge that each rate case carries some degree of uncertainty, there appears to be limited focus in their analysis on service area quality, competitiveness of customer pricing, and the drivers for future service territory growth. No other significant industry is analyzed by Wall Street on a bottoms-up basis; the basis for analysis of non-utility industries is competitive position, sales prospects, and sales margins. In addition, the threat of disruptive forces is given no (or almost no) printed lines in utility sector research. This approach to investment analysis is based upon confidence in utilities' ability to earn a fair return on prudent investment. But, it may expose investors to the future economic risks posed by rapid growth in DER. What will happen as technological advancement in the utility sector provides customers with viable competitive alternatives?
REGULATED MODEL #1:

Utility dominance:

- Utilities continue to monitor safety, reliability, and affordability
- Provider of last resort
- Tasked with achieving renewable standards, storage goals, etc.
- Cost of service still the primary rate setting model
- Utilities compete to offer generation, transmission, and distributed resources
- Utilities offer “fee for services” and compete behind the meter for new products
REGULATED MODEL #2:

New York - Utilities become the “distributed system platform (DSP) provider.”

DSP is defined as an “intelligent network platform that will provide safe, reliable and efficient electric services by integrating diverse resources to meet customers’ and society’s evolving needs. The DSP fosters broad market activity that monetizes system and social values, by enabling active customer and third party engagement that is aligned with the wholesale market and bulk power system.”
REGULATED MODEL #3:

Utility “Poles & Wires” model:

- Utilities own, but do not operate the grid. An independent distribution system operator would run the grid.
- Utilities free to compete.
- Looks much more like the de-regulated telecommunications market
PUBLIC MODEL

Municipality or Cooperative:

• Directly answerable to the public instead of regulators
• Greater commitment to public interest/customer input
• Able to access greater amounts of capital at cheaper rates
Electric bills differ

A survey of electricity providers, comparing October 2014 bills at different usage levels, found that the private companies charge more than municipal utilities.

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Sources: Survey by Southern California Public Power Authority, San Diego Union-Tribune, Los Angeles Times
CASE EXAMPLE: SMUD

- Top-ranked electric utility in customer satisfaction (13 years in a row);
- First California utility to receive 20% of its power from renewable energy sources (now at 30%);
- Profits returned to residents
- SMUD directors have regular community meetings
- Deploying infrastructure and storage at lower prices (no taxes, lower borrowing cost).
- Host of “innovative” services already offered like smartphone services, solar+storage, EV infrastructure, etc.
MAHALO

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