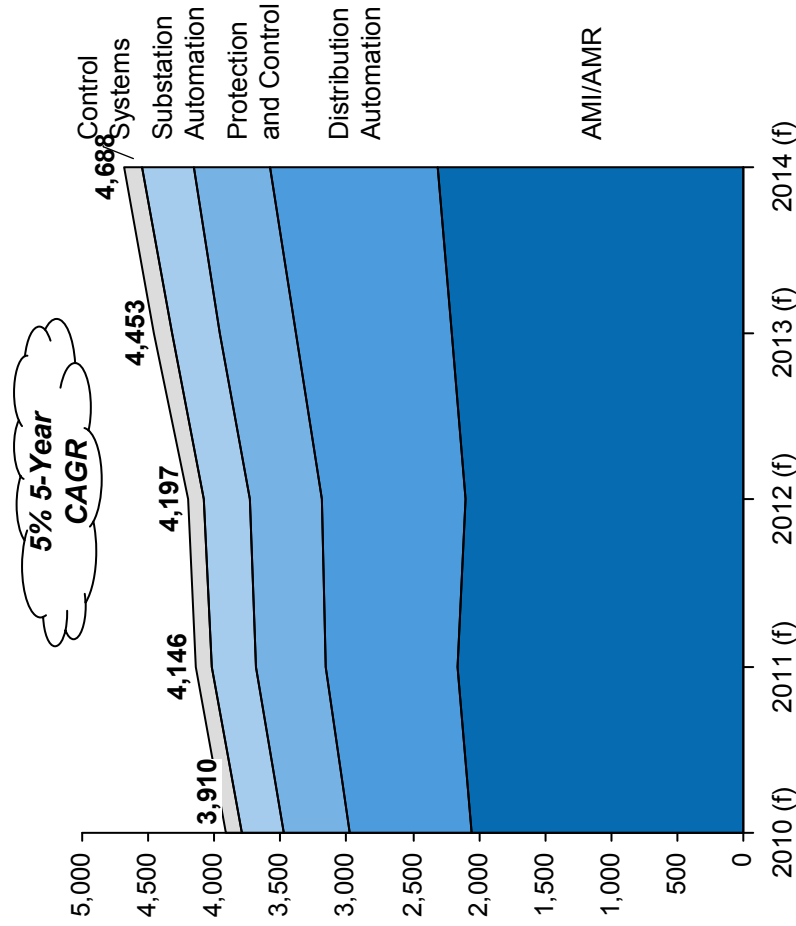

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NARUC- Mid-Atlantic Conference of Regulatory Utility Commissioners

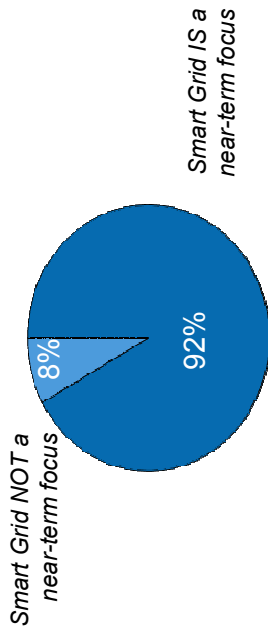
Smart Grid School - New Players and New Participants Changing The Game

The smart grid market in North America is expected to grow consistently over the next five years

Smart Grid Spending Forecast: 2010 - 2014
North America, Millions USD



Smart Grid Activities in Planning Horizon
North American Utility Survey



Growth Drivers

Policy Initiatives

- SGIG program providing \$3.4B of grants in support of \$24.6B in total spend; will be spent over next 2-3 years (2010 to 2012/3)
- Pending energy legislation in Congress providing further support (e.g., Waxman-Markey)

Infrastructure Investment Cycle

- EEI estimates \$880 B of T&D investment between 2010 and 2030 for IOUs alone
- Grid modernization is likely to be front and center in this cycle

Technology Convergence

- The industry is beginning to coalesce around SG standards and platforms, which will reduce investment risk
- Convergence should help support customer acceptance of DSM/EE technologies

Note: Excludes conventional T&D spending
Source: Newton-Evans Research Company, Inc., Booz & Company analysis

It is an attractive market which has stimulated brisk M&A activity...

Notable Smart Grid-Related Transactions

June 2008 to Present

| Date | Acquirer | Target | Acquisition Rationale |
|----------|--------------------------------|--|---|
| May 2010 | ABB | Ventyx | \$1B purchase of smart grid software firm to strengthen network management business |
| May 2010 | Honeywell | Akuacom | Expands scope from building automation to open source demand response |
| Apr 2010 | Cooper Industries | Eka Systems | Cooper integrates Eka's wireless network product into its automation system |
| Mar 2010 | Black & Veatch | Enspira | Acquired in order to increase integration capabilities |
| Sep 2009 | Cisco | GridNet (equity investment) | Equity investment in smart meter maker whose first product is built on WiMAX technology |
| Sep 2009 | Silver Springs Networks | Greenbox | Expanding from pure network player to home energy management |
| Aug 2009 | Siemens | Energy4U (60 percent) | Investment in software for intelligent metering and billing |
| May 2009 | Trilliant | Sky Pilot | Smart Grid network maker acquires wireless mesh network make to expand scope |
| Jan 2009 | Cisco | Richards-Zeta Building Intelligence | Expands Smart Grid initiative through acquiring a building and IT networking system company |
| Nov 2008 | SmartSynch | Applied Mesh Technologies | Purchased competitor to facilitate growth |
| Aug 2008 | GE | Kelman Limited | Acquired for advanced monitoring and diagnostics technology for transformers |
| Jul 2008 | ABB | Kuhlman Electric | ABB adds significant player in the automation segment of Smart Grid |
| Jun 2008 | GE | MapFrame Corp. | GE expands its mobile mapping and field automation software presence |

...And, attracted a number new entrants from across industries - many with promising, and disruptive, technologies

There are a number of large companies with the savvy and resources...



Market Cap:
~\$196B



Market Cap:
~\$138B



Market Cap:
~\$95B



Market Cap:
~\$27B

When listing Smart Grid as a priority for Cisco, John Chambers, its CEO, said, "Almost all devices won't only be connected to the electrical grid, they're going to be connected to the data grid, aren't they?" 5/19/ 2009 WSJ

...as well as a number of promising 'start ups' with focused solutions...



- Assumed 24% market share in ~2 years
- Secured \$100M in financing in December



- GE made equity investment in October in the tens of millions of dollars

...who can all change established interactions along with the usual suspects



SIEMENS



Johnson Controls

Potential Impact Areas

Access Decisions

Investment Priorities

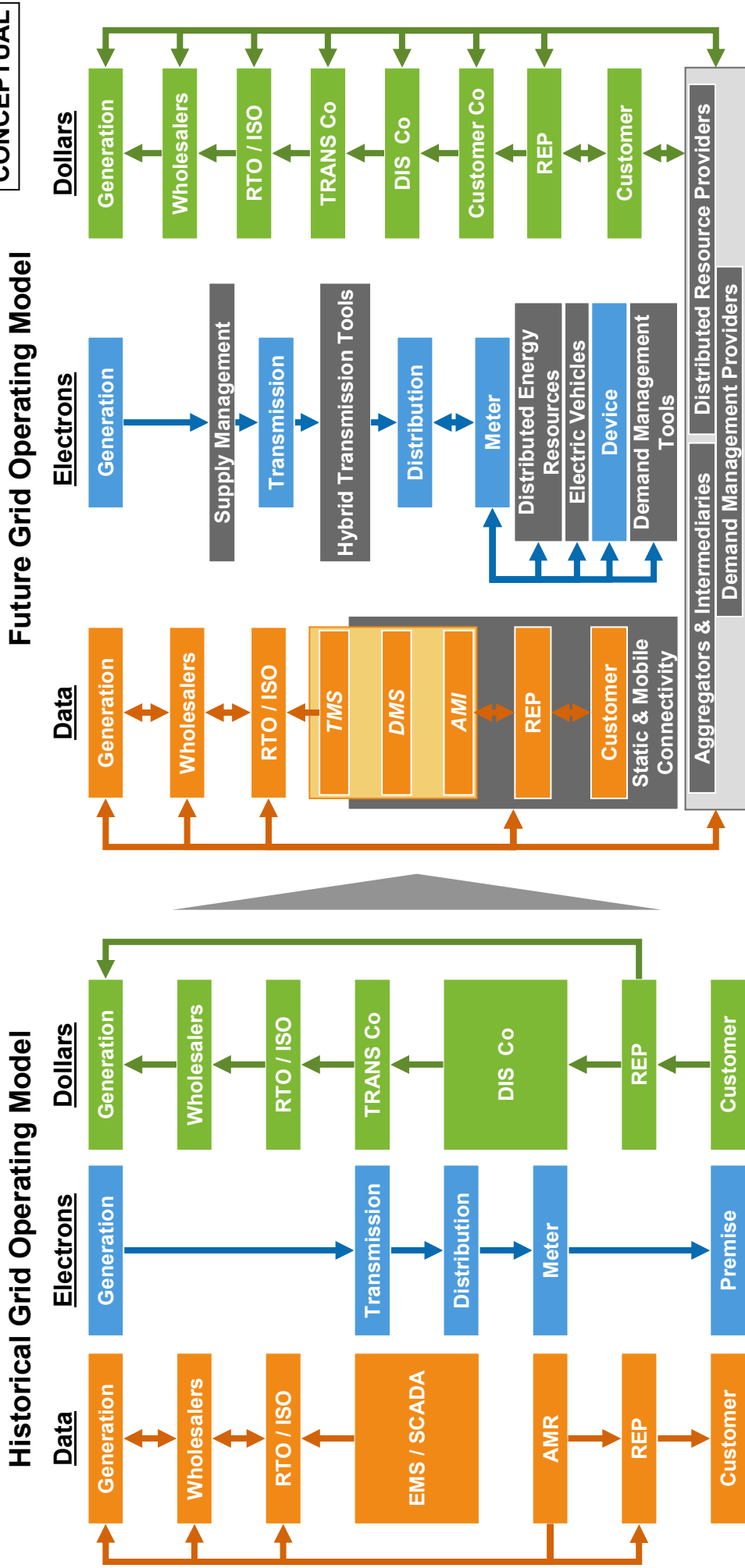
Resources Dispatch

Demand Management

Electrification

Whether established or emerging, all are looking to tap into new revenue pools that will likely depend on data as much as electrons

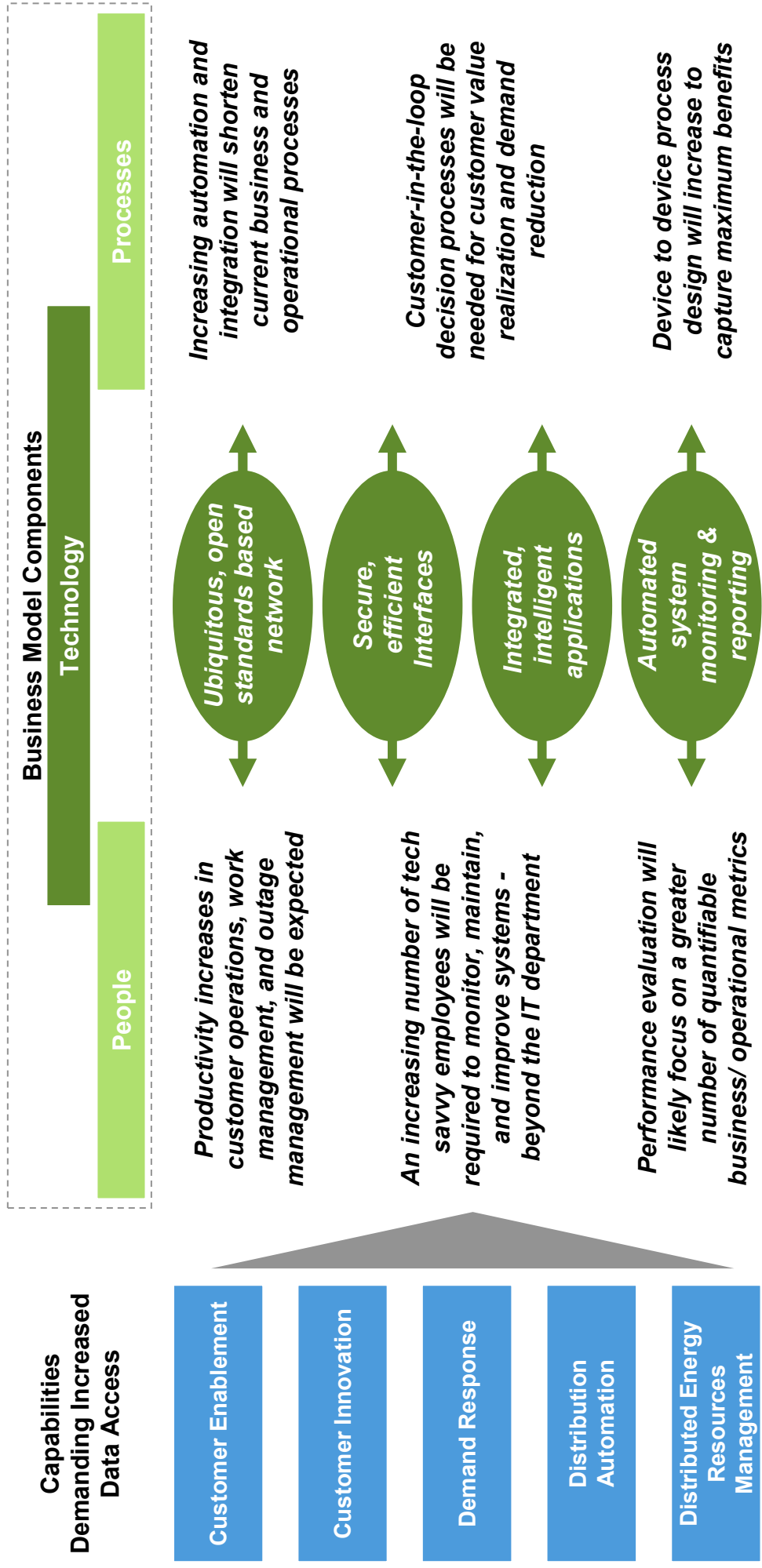
CONCEPTUAL



■ Areas likely to attract investment and new entrants

The rising importance of data in a smart grid world is challenging the traditional utility business model

Smart Grid Business Model Implications for Utilities



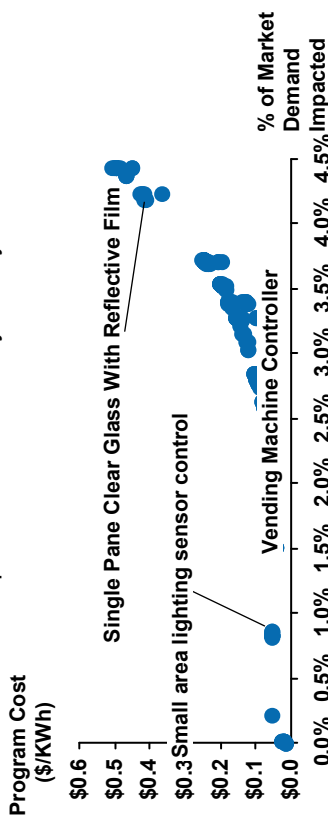
There is also a consistent belief that smart grid products and services will finally empower and attract customer involvement

New products introduce technology, interoperability and security risks

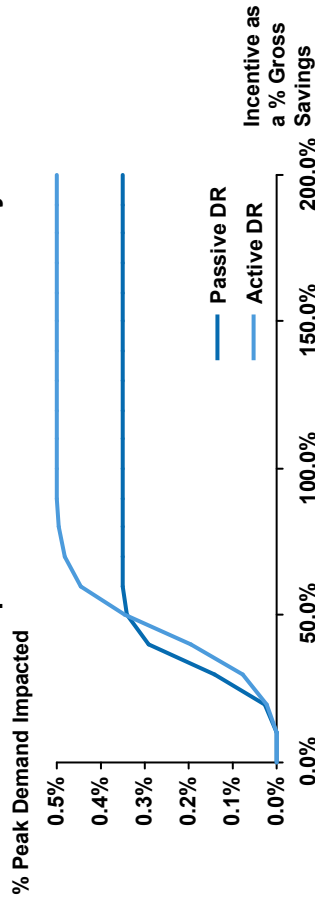
Demand reduction/ management tools will test customers' acceptance of behavior changes

| Technology Readiness Level | Description |
|--|---|
| Initial Technology Conception | Lowest "level" of technology maturity. Scientific research begins to be translated into applied research and development. |
| Proof Of Concept In Laboratory Environment | Basic proof of concept in laboratory. Basic technological elements must be integrated to establish that the "pieces" will work together to achieve concept-enabling levels of performance for a system. |
| System Prototype Demonstration In A Relevant Environment | Proof of technology in its relevant environment outside the laboratory environment - proven at pilot scale |
| Initial Demonstration Of Scaled Solution | Proof of solution in relevant environment to operational scale no proven commercial model |
| Commercialized Scaled Solutions | Mature technology proven multiple times to scale in operational settings and with proven business model |

Demand Destruction By DSM Program
Client example based on industry survey data

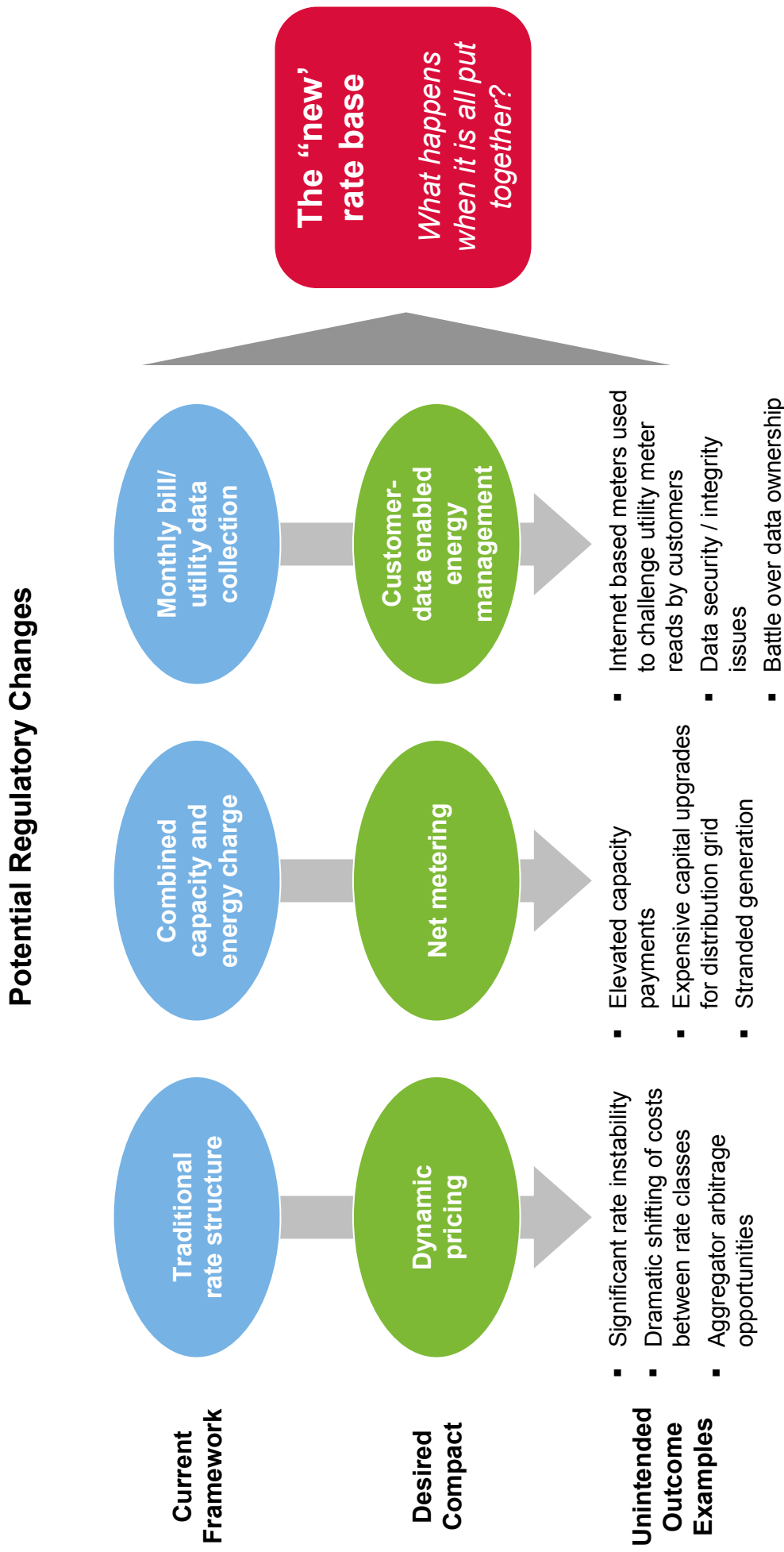


Demand Response Incentive-Benefit Analysis



Note: Adapted from the National Aeronautics and Space Administration (NASA) Technology Readiness Levels

The confluence of these factors are likely to challenge regulatory constructs - creating intended and unintended consequences



Thus, the question becomes - how to deal with these challenges effectively?

Smart Grid Framing Questions

- Which market-shaping factors are outside of your control or those you regulate?
- What type of behavior do current incentives promote?
- Do these incentives enable or hinder capturing smart grid benefits?
- What are the risks associated with achieving the benefits of smart grid?
- Are those best equipped to handle these risks motivated to do so?

Thank you for your time

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