



# PG&E SmartMeter<sup>®</sup>

Energy Resources & Environment  
Committee of NARUC

Jana Corey, Director  
Energy Information Network

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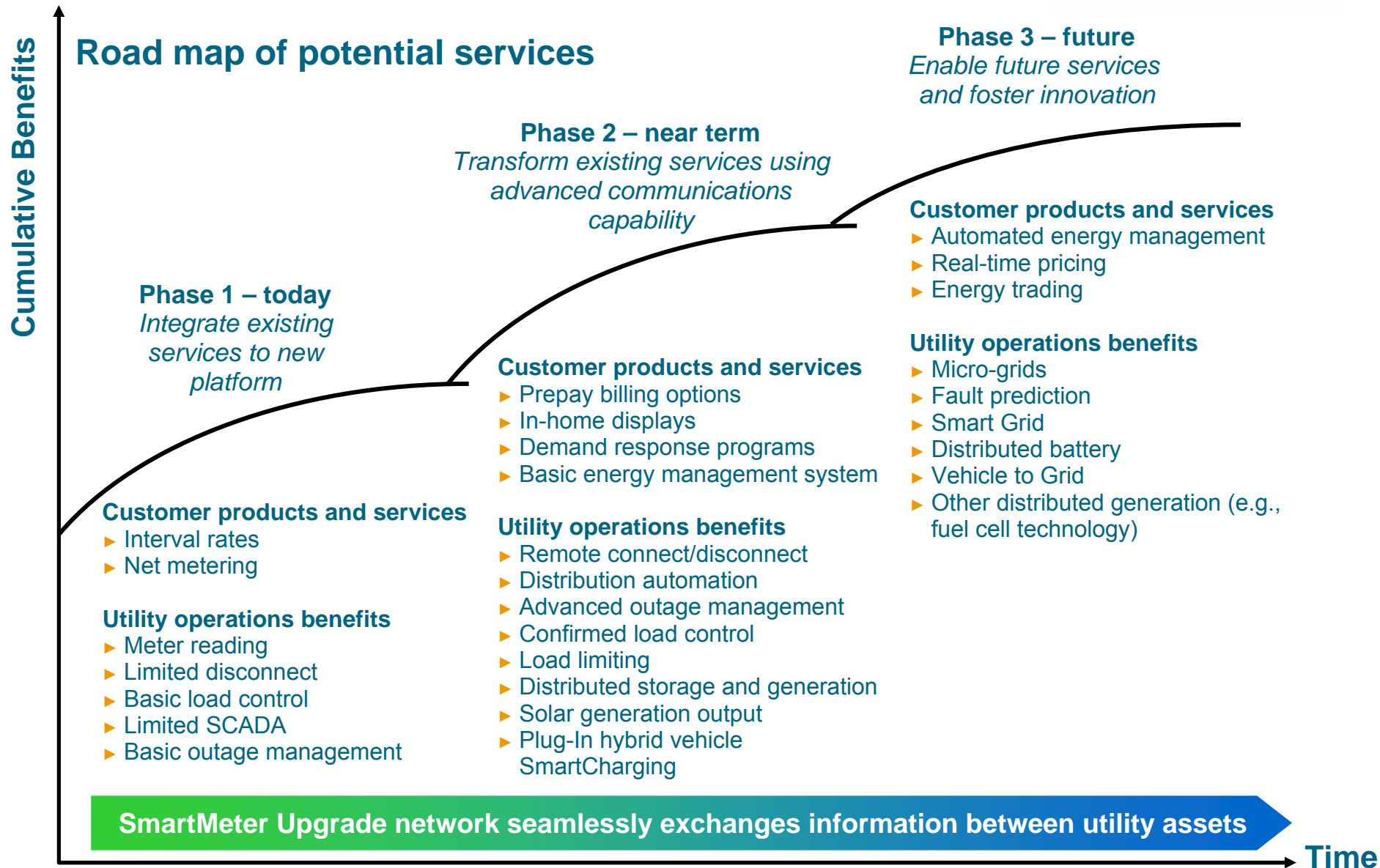


# The PG&E SmartMeter Program

- ▶ **Automated meter reading for all customers**
  - ▶ 10 Million meter upgrades
  - ▶ A network to collect meter reads remotely and communicate with the meters
  - ▶ IT systems to manage and store the reads, and make them available to PG&E business applications and customers
- ▶ **Frequent meter reads - daily for gas, hourly or 15 minute interval for electric**
  - ▶ Enables electric prices that vary by time of day
- ▶ **Enhanced capabilities over time**



# SmartMeter to Smart Grid Vision



# Customer Home Area Network (HAN)

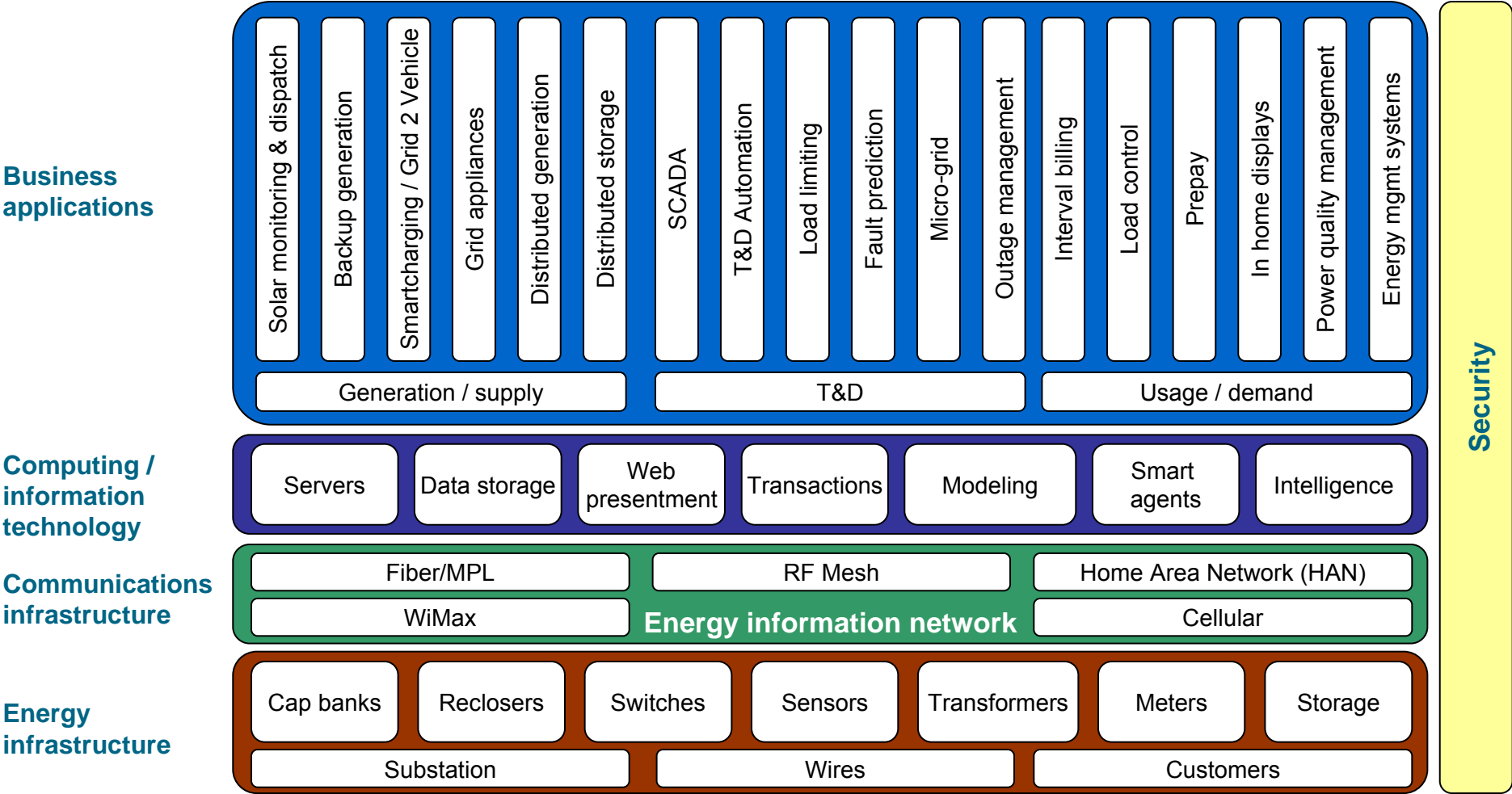
*Customers will use energy management systems (EMS) to tie together HVAC, IP-enabled appliances and distributed generation into integrated Home Area Networks (HAN)*

*The **SmartMeter** HAN gateway enables PG&E to communicate with the customer's home area network*



# The SmartGrid: What is it?

## SmartGrid Components



# Key Questions for a Regulator to Ask

- ▶ What are the current trends in the market for Advanced Metering? Smart Grid? Home Area Networking?
- ▶ What is available? Meters with disconnect? Meters with HAN? Networks with IP? Proprietary or open networks? Developments on the horizon?
- ▶ What are the key objectives for your utility? Meter Reading? Demand response? Energy efficiency programs? Smart Grid?
- ▶ How does your specific regulatory structure provide for cost/benefit analysis? How will you recognize societal benefits? Optionality?
- ▶ What kind of performance do these objectives require? Bandwidth? Latency?
- ▶ How do you plan to reach all of your customers? Multiple networks? Cost versus operational complexity tradeoffs? Networks optimized for geographic differences?
- ▶ What can we do to promote common standards? Encourage interoperability? Simplify integration efforts?
- ▶ How do we minimize the security risks?
- ▶ How can we ensure our system is “Future Proof”?