Unleashing the potential of smart grid
Energy efficiency & consumer choice, control & convenience

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Time to reboot

- **Evolution of information revolution**
  - First: Measurement
  - Two: Enablement
  - Three: Engagement

- **What does it mean for “utility” business model?**
  - Demand growth erosion
  - Rise of “prosumers”, distributed generation, zero net energy
  - Unsustainable business paradigm
    - And why this matters
Step 1
Measurement

Fereidoon P. Sioshansi
Step 2: Enablement

Source: PG&E Home Energy Report
Step 2
Comparing to your peers?

Source: PG&E Home Energy Report
Step 3: Engagement

The wholly grail

- Why home energy management may be the next big thing
- In case you have not heard of them, new generation of companies are attempting to finally crack the nut
  - Tendril
  - Opower
  - Aclara
  - Silver Spring Networks
What does it mean?
Need new “utility” business model

- Demand growth erosion
- Rise of “prosumers”
- Rise of distributed generation
- Rise of zero net energy
  - Need new definition of “utility”
  - Need new definition of “services”
  - Need new “cost-allocation & revenue recovery models”
Declining electricity growth rate

United States 1950-2010

Source: US Energy Information Administration
US Per Capita Elect. Consumption
1990-2011, kWh/pp

Source: Smart Grid Watch, *How fast is U.S. electricity consumption growing?* April 6 2012
End of demand growth?
Not only feasible but cost-effective

Source: IEE white paper, May 2011