What needs to be „smart“?

- Transmission System are relatively intelligent and controlled on the basis of reliable data.
- Medium and low-voltage grids are controlled virtually “blind”.
- Make these grids smarter to be able to control them actively at all.
- Not a single smart meter is necessary to achieve this.

The Role of a Smart Grid

- Spread of renewable energy will make energy feed-in more volatile.
- Consumption must be capable of reacting to input.

The Role of Smart Metering

- Volatile feed-in results in price fluctuations on the wholesale markets.
- Smart meters enable consumers to respond to price fluctuations, e.g.:
  - recharge the batteries of their electric cars
  - run appliances at a cheaper rate
- Use of these methods must be financially worthwhile!

A Smart Market Design

- American Recovery and Reinvestment Act of 2009: $11 billion
- Industry initiatives such as $200 million competition for clean-energy innovation funds

Smart Grid Initiatives

- Independence and Security Act of 2007: $100 million
- European Commission Smart Grid Task Force
- Example sites such as Demo grid Gotland / Sweden
- German pilot projects
- German government is about to set the legal framework for a smart metering
Facilitate Innovation

- Huge discrepancies between innovation cycles for metering and communications
  - "basic meter" separated from the communication and processing modules
  - Bundesnetzagentur will in future define minimum standards and interfaces for smart meters
- Market forces will bring forth innovative applications
- Government policies should therefore define basic functionalities rather than standardize every detail

Leverage Synergies

Develop smart grids and markets: Know-how of energy and ICT industry is needed

- Cooperation between energy- and ICT industry
- Use of existing infrastructure
- Joint grid expansion

Thank You For Your Attention!