

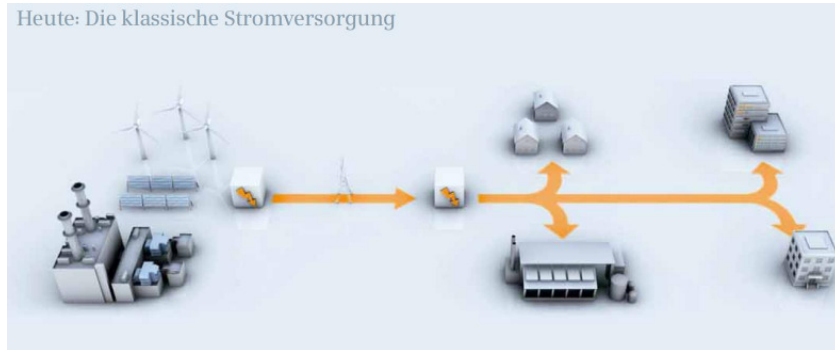
# Energy efficiency in Electricity and Heat Markets

Berlin Seminar on Energy and Climate Policy  
Berlin  
2011-10-06

Bastian Bohm  
Vattenfall Europe Wärme AG

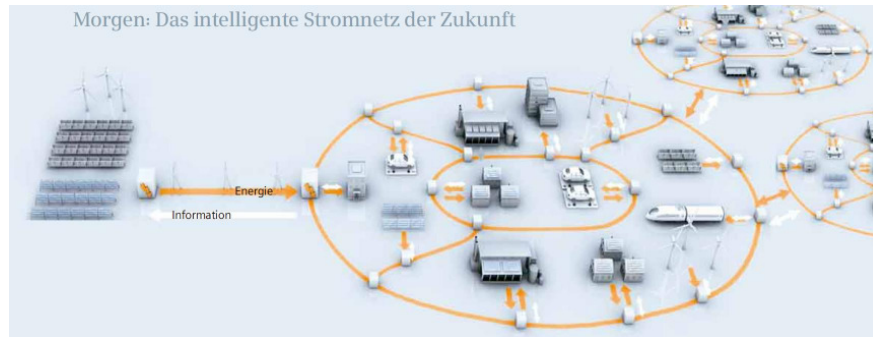
## Energy System – Today

Heute: Die klassische Stromversorgung



Source: "Sustainable Urban Infrastructure - Intelligente Energieversorgung für Berlin 2037", Berlin 2011

## Energy System – Tomorrow



Source: "Sustainable Urban Infrastructure - Intelligente Energieversorgung für Berlin 2037", Berlin 2011

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## Progressive Tariff Control – Barriers Today

- **Regulatory frame work (EnWG – Freedom of tariff choice)**
- **Private consumers - Lack of knowledge and interest**
- **User behavior – most unknown factor**
- **Energy cost – minor share of monthly household cost**
- **CO<sub>2</sub> reduction – direct link for private consumers?**
- **Energy suppliers – economic incentive?**
- **Financial benefit – one-side for consumers**

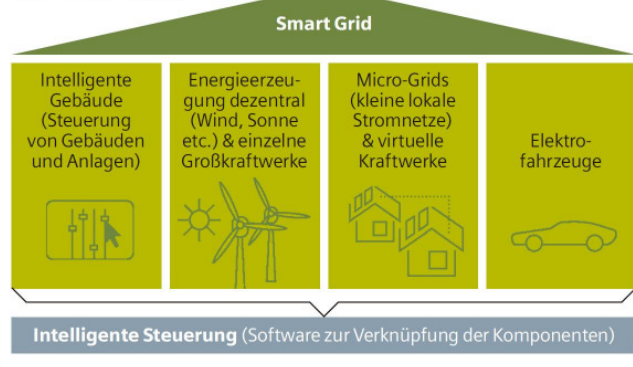
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## Smart Grids – Option for CO<sub>2</sub> Reduction

### Micro-Grids und virtuelle Kraftwerke in Verbindung mit Smart Grids

Eine Zukunftsoption



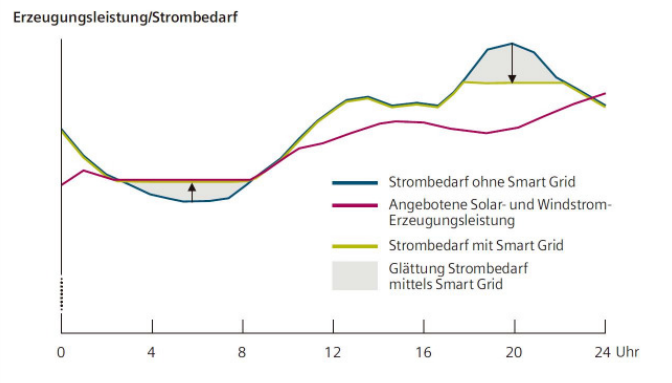
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## Smart Grids – Benefit

Das Smart Grid steuert den Strombedarf nach dem Angebot an regenerativ erzeugtem Strom.



Source: "Sustainable Urban Infrastructure - Intelligente Energieversorgung für Berlin 2037", Berlin 2011

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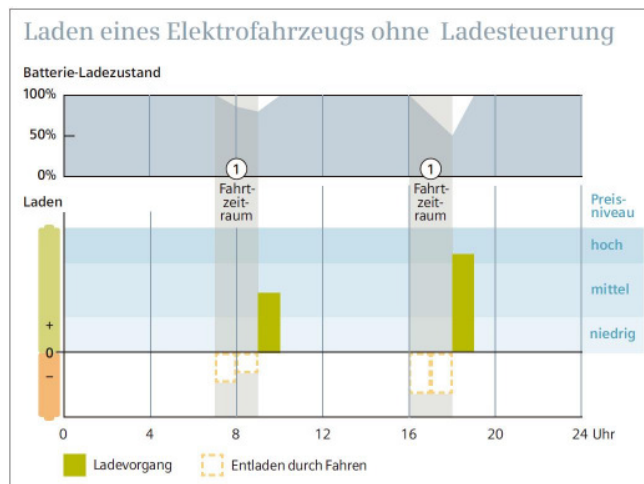
## Smart Grids – Vattenfall's Approach

- Major projects regarding the development of Smart Grids
  - Märkisches Viertel
    - more than 10.000 intelligent meter
    - Visualization via Online portal, TV, iPod etc.
    - Knowledge about technological issues, user behavior
  - Virtual Power Plant
    - Integration of maximum of electricity form wind power
    - Combination of decentr. electricity and heat production
- CO<sub>2</sub> reduction – direct link for private consumers!
- Energy supplier – New business model
- Financial benefit – two-side for consumers and energy suppliers

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## E-Mobility – Unintelligent Charging

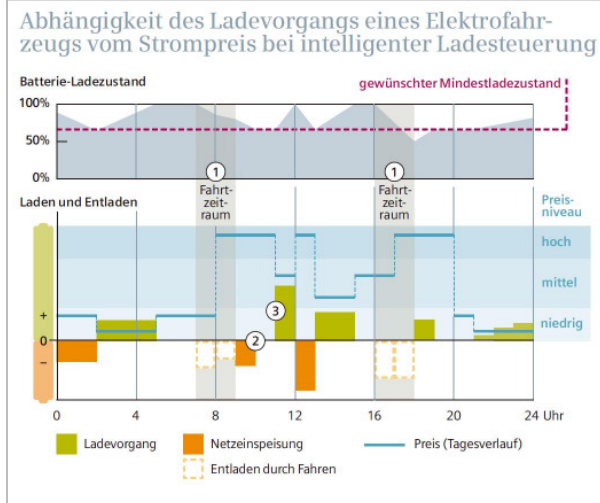


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## E-Mobility – Intelligent Charging

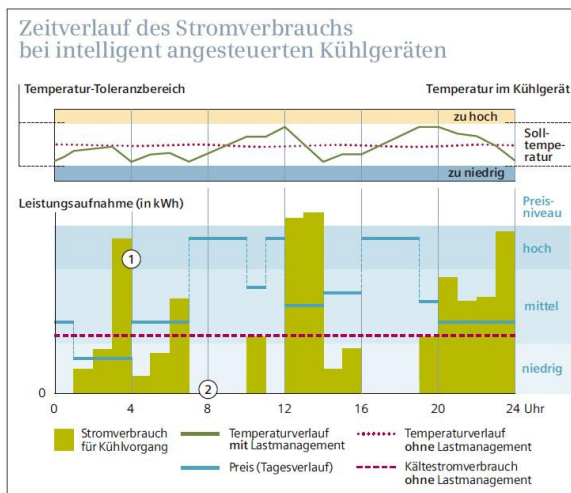


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## Cooling Units – Intelligent Control



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**Thank you for Your attention!**