



Smart Grids

A big Illusion or an i-Evolution

- Its a fashion today
- A lot of talk and no reality behind it
- Everything has to be smart
- The only thing to be smart: The Smartphone

An Example

Energy: A Smart Design?



Natural Gas – The Clever Solution.?..



For electricity production !

Smart...Smarter....Supergrid



Directives and Players

- European CO₂-Legislation
- Ecodesign directive
- Efficiency measure plans
- Energy service companies
- Energy utilities

Different Approaches, Same Objectives

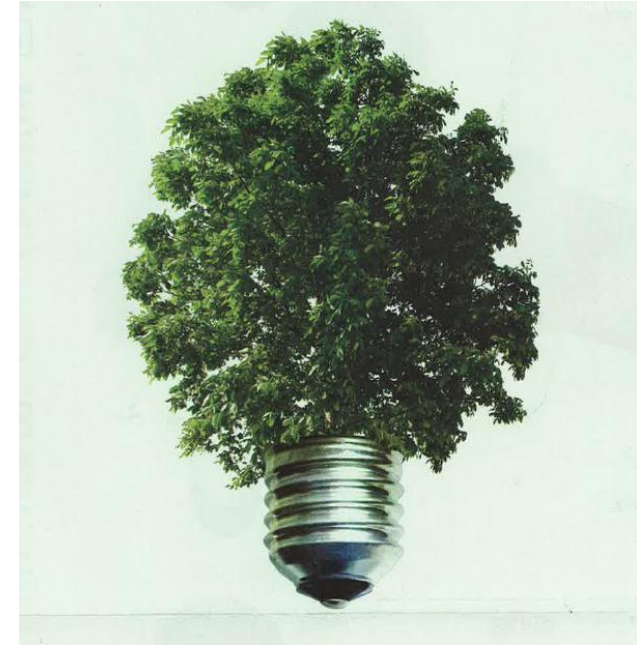
- *Convergence of Grids*
- *Interdependent Controls*
- *Decentralized Systems*
- *Intelligent Appliance Monitoring*
- *Usability*

Smart Grids..It is about production and storage

- Who has the problem?????

→ • The electricity guys

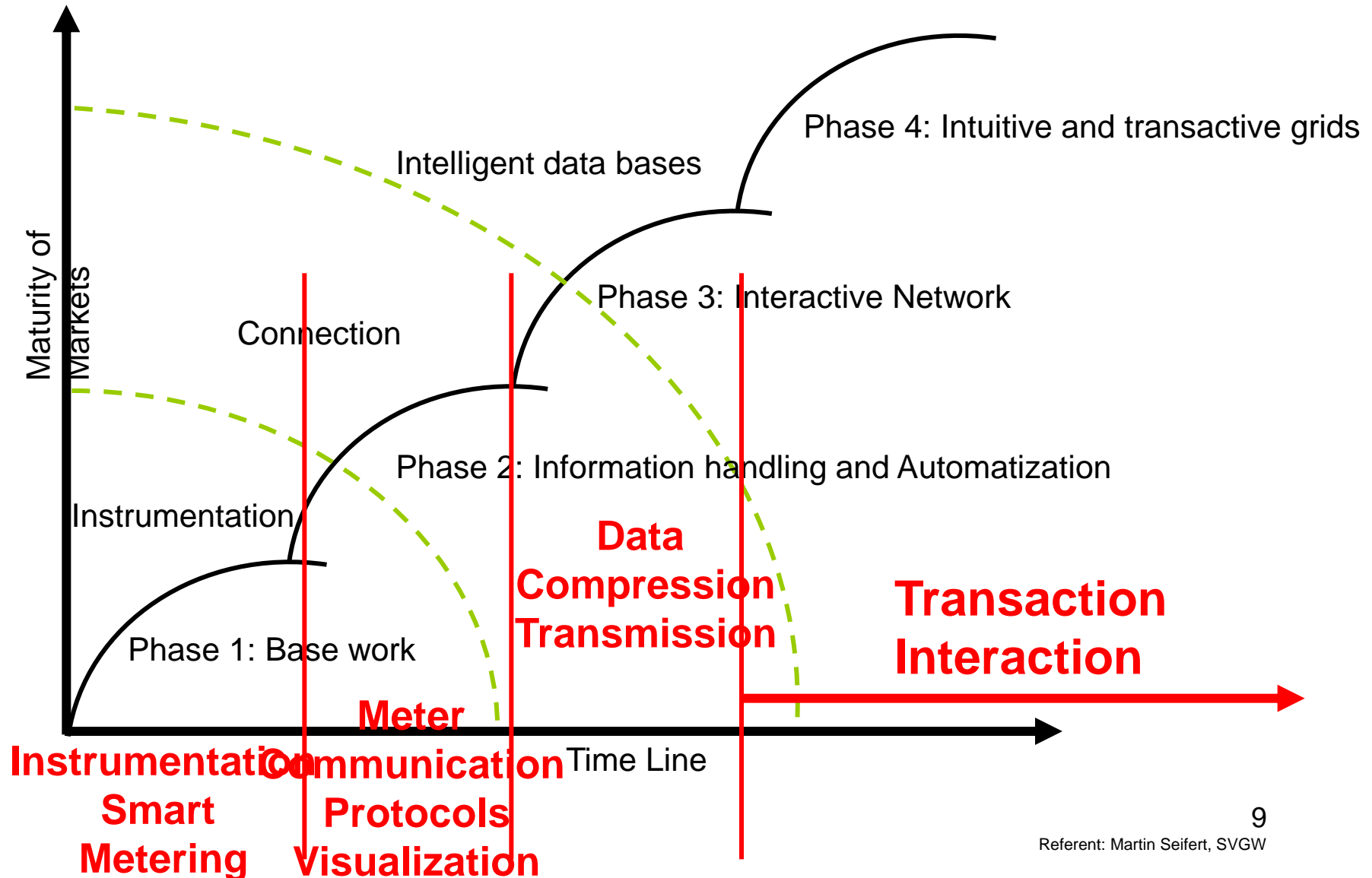
→ • The local electric utilities



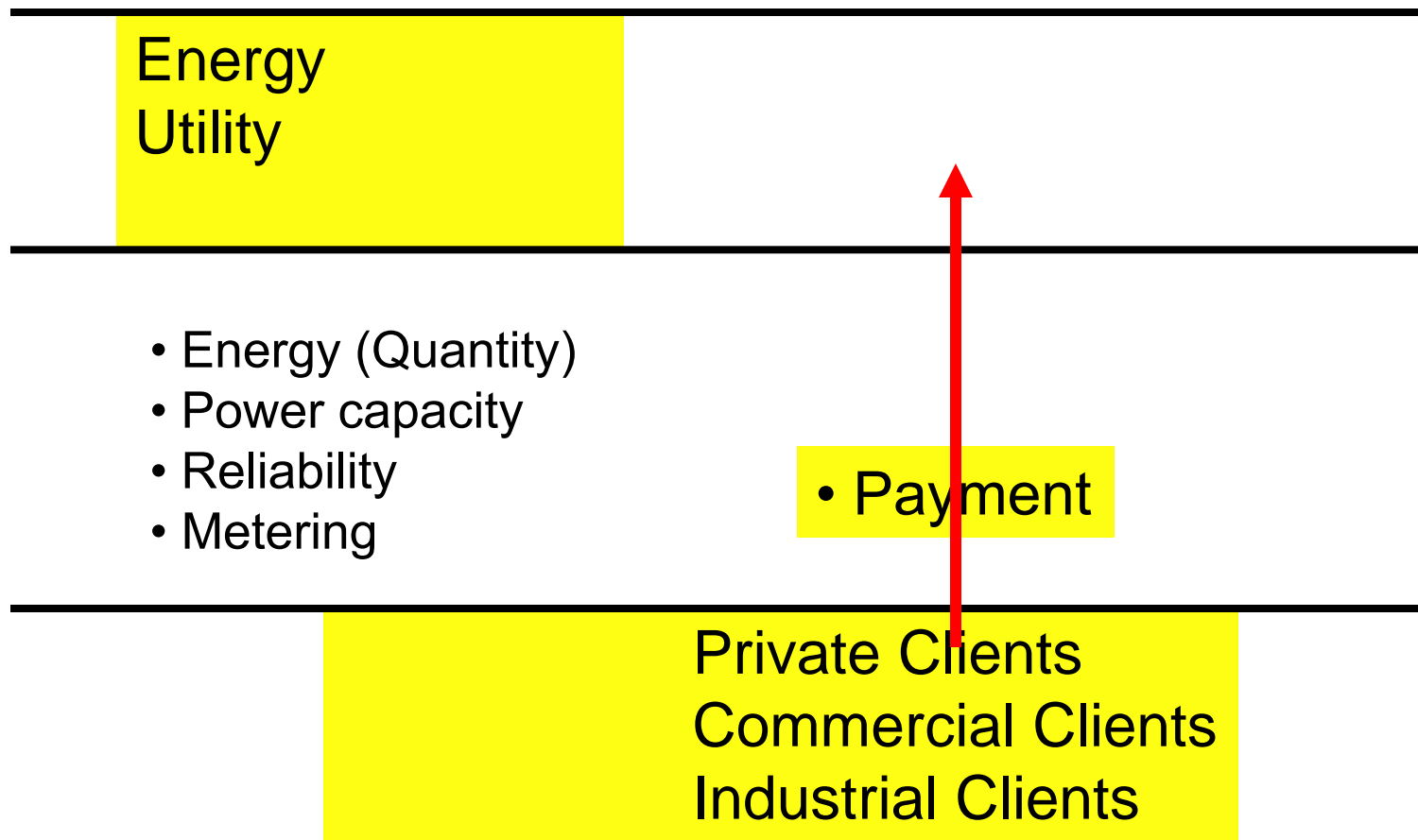
There is no need of a smart gas grid

We sell gas and not IT

The Smart Grid Evolution



The early days: Energy as a simple necessary commodity



Contact to the client demand driven

Energy Utility (Multiutility)

- Power (Capacity)
- Energy (Quality)
- Reliable/Security of supply
- Services (safety check, maintenance)
- metering
- Energy saving contracting
- Reduction of Carbon footprint

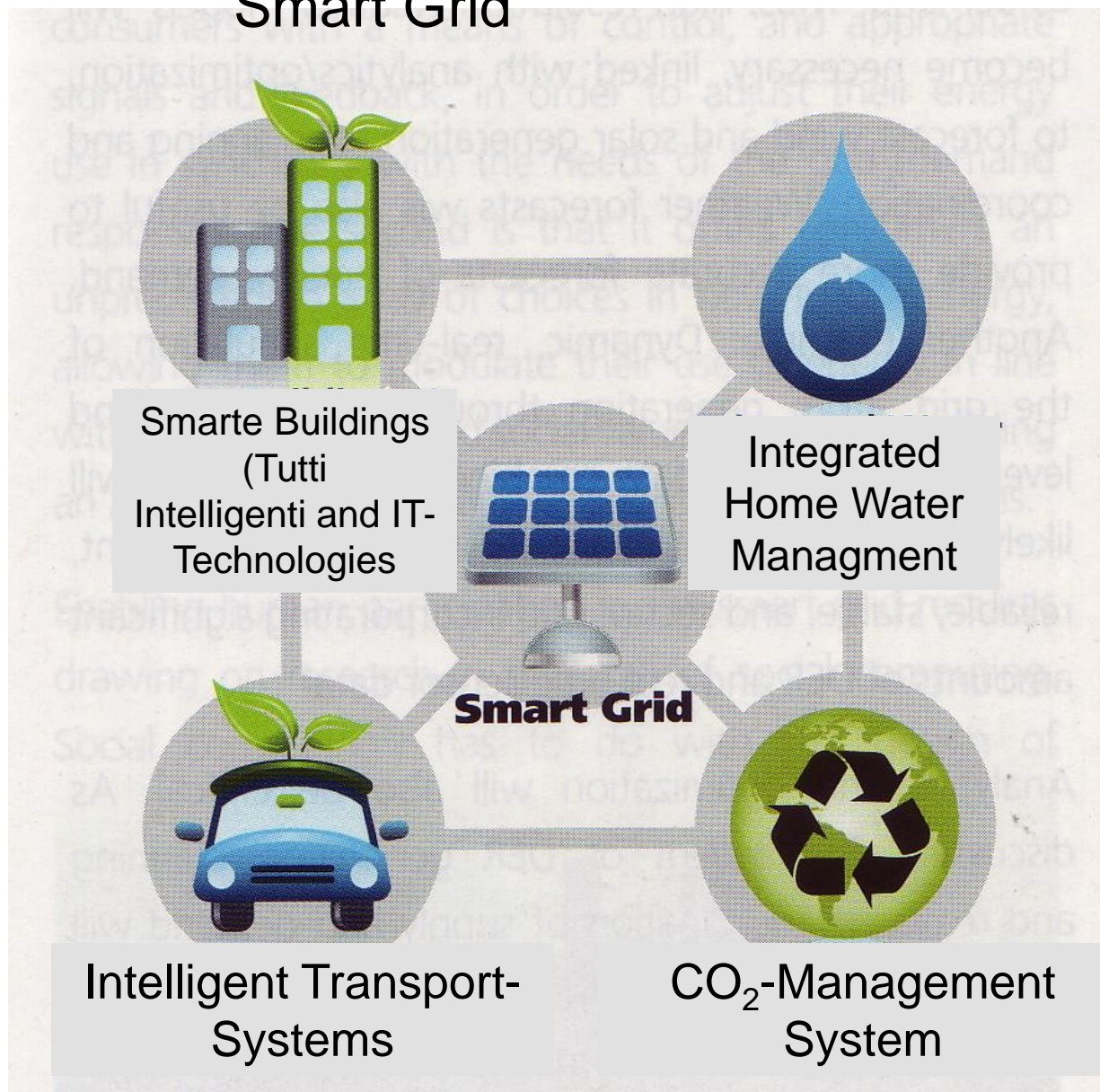
- Communication Services
- Client Guidance

• Payment

Private Clients
Commercial Clients
Industrial Clients

Contact to the client demand driven

Everything can be brought under the umbrella of Smart Grid



- Smart Grid is after all a local in house control of energy using appliances, home security systems and fire/water protection
- Its the smart home grid with bidirectional communication to light, space comfort and all other controllable items
- It is a customer tool with additional information from the energy utility

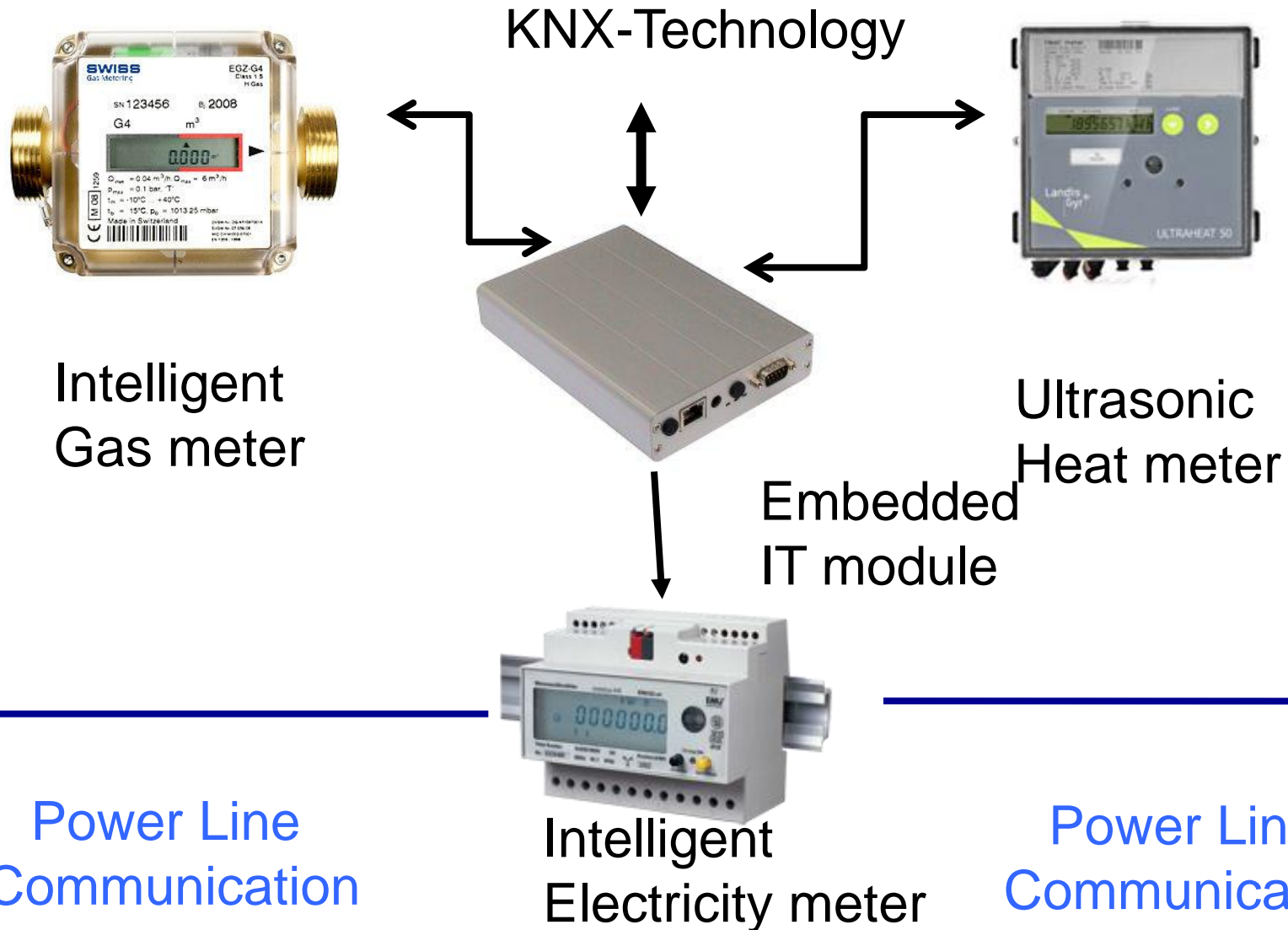
- Because of privacy considerations dont let big brother watching you
- My home is my castle
- Limited communication with the grid operators

What means smart gas grid really

- Control of the heating or cogenerating appliances in the clients home
- Control of the buffer and hot water storage

The Hierarchy of Meters

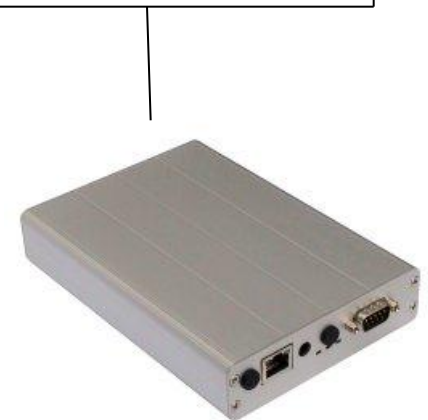
- The heat supply case



Meter local reporting and control

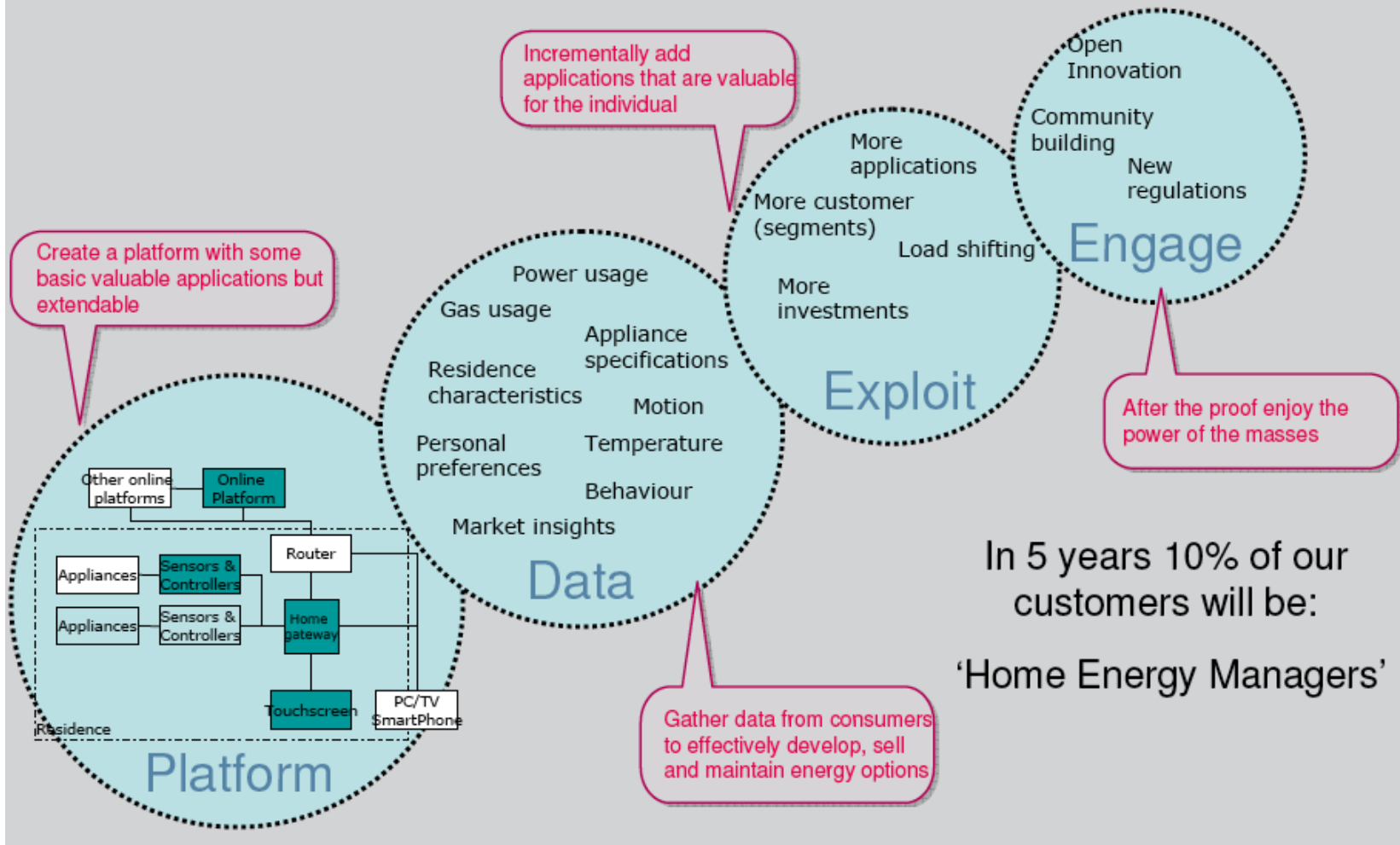


System Controls
Graphical Data
Status
Energy flows



Hierarchies, Controls, Inter-Grid-Management

The missing link is the energy management platform on which the business can be build



Us and the customer

From consuming gas to Power Producer

- He should be clever
 - Let him produce
 - and after all

Decarbonize Your Customer

Where Smart Gas-Smart Electric Grid is really

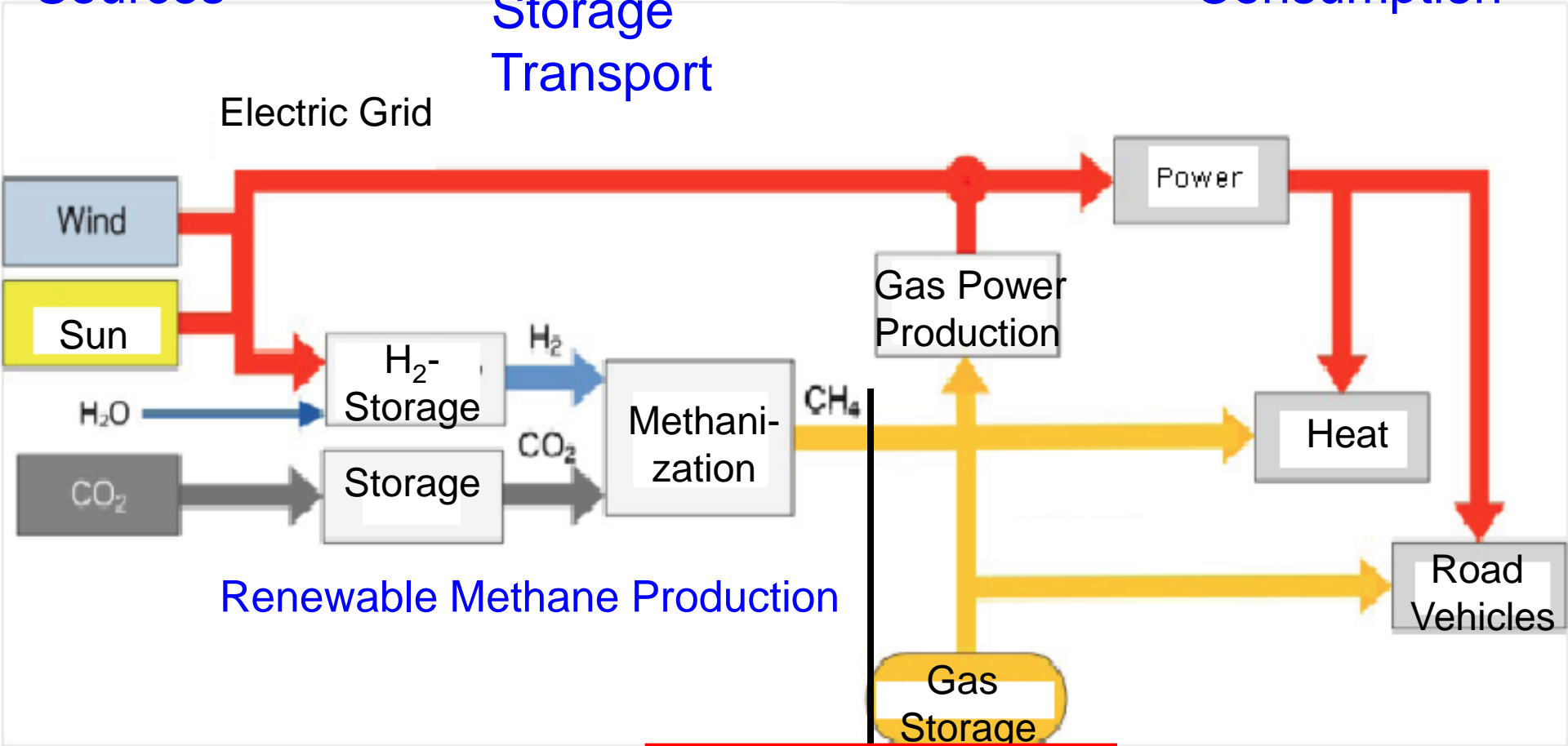


needed!!!!

Sources

Storage
Transport

Consumption



Renewable Methane Production

Smart Interfacing

**Grid
Injection**

Grid

The Smart Box is Upstream

Electric Grid

Gas Grid

Nuclear



Hydro



Wind/Solar



Natural Gas



Biogas



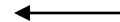
SNG



Hydrogen



CCGT-Power



Micro-CHP



Enduser(Power and Gas)

And that's why we are the gas guys



Dont let the electricity boys take over!!!!