

Utilities of the future

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RWE - Utility of the Future

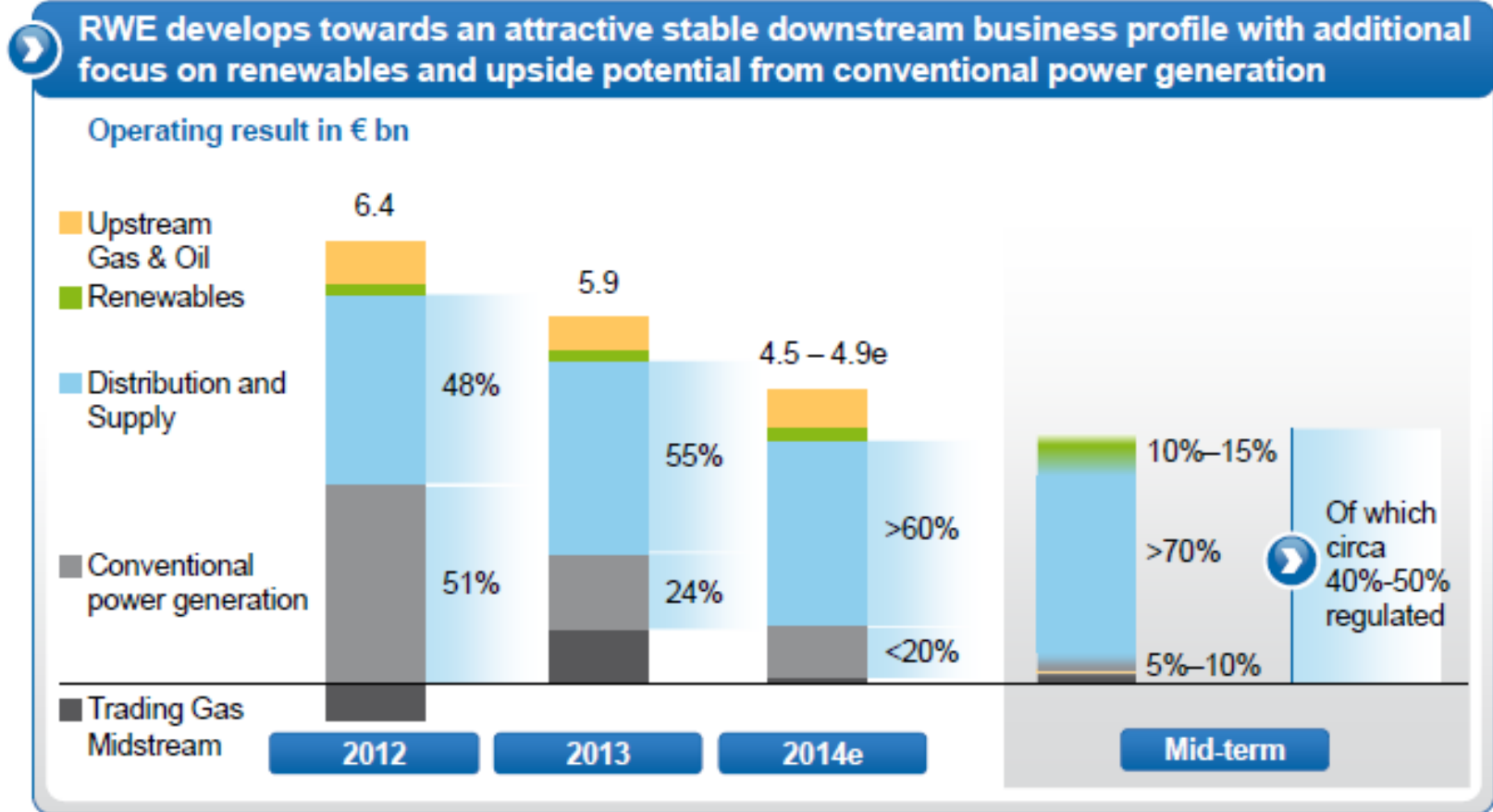
IEA Electricity Security Advisory Project, 08.10.14



Agenda

- 1. The starting point - utilities of today**
- 2. Six drivers of change to utilities of the future**
- 3. Asset ownership / skill sets for utilities of the future**
- 4. Conclusions – no “one size fits all”**

1. Utilities of today – challenged by declining conventional generation revenue. Example: RWE



2. Six drivers of change to utilities of the future



1. Incumbents' position and strategy



6. New entrants



2. Environmental & regulatory policy



3. Technology

Utilities of future

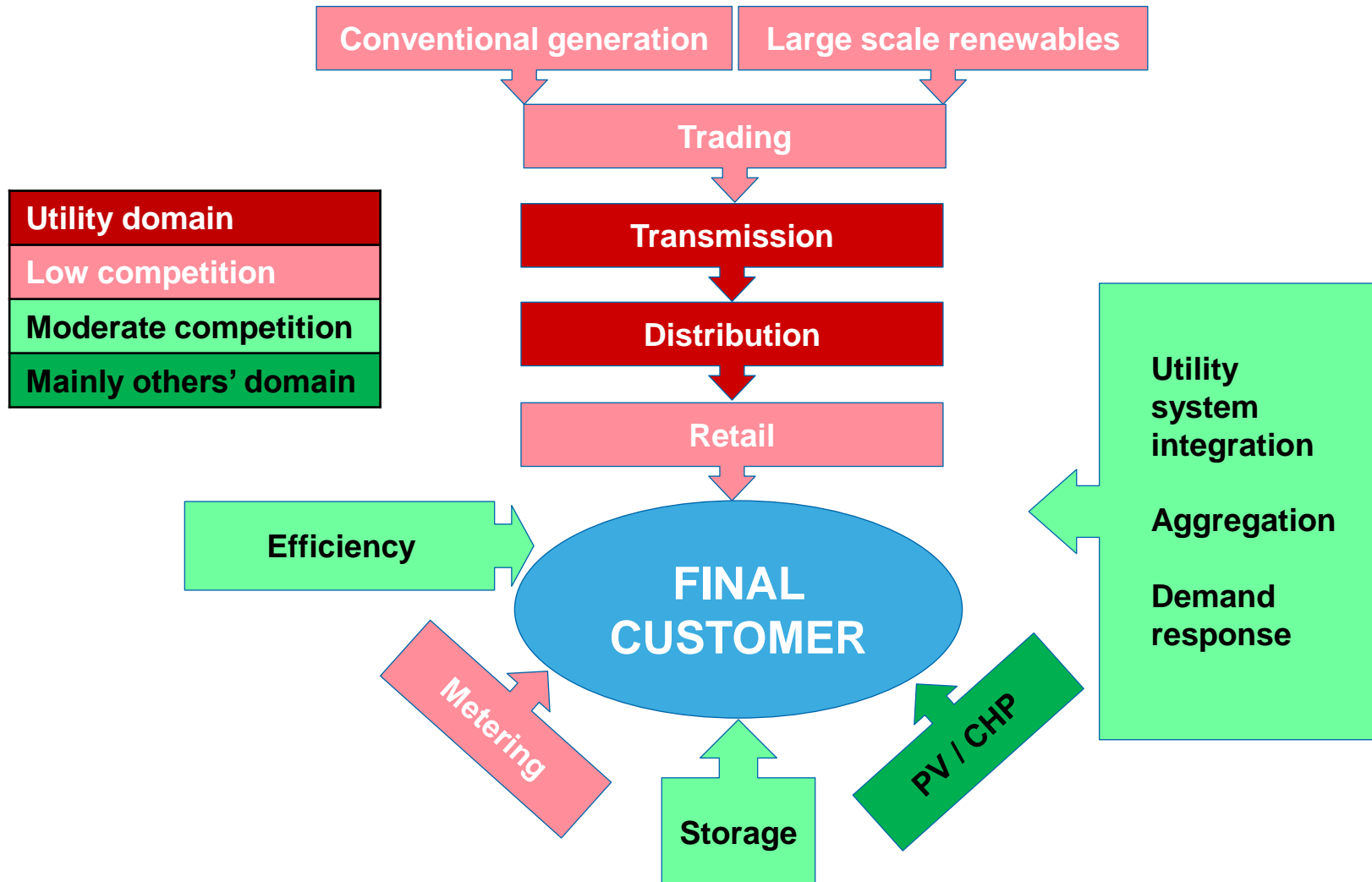


4. Societal wishes



5. Customer requirements

New players are entering some areas of market



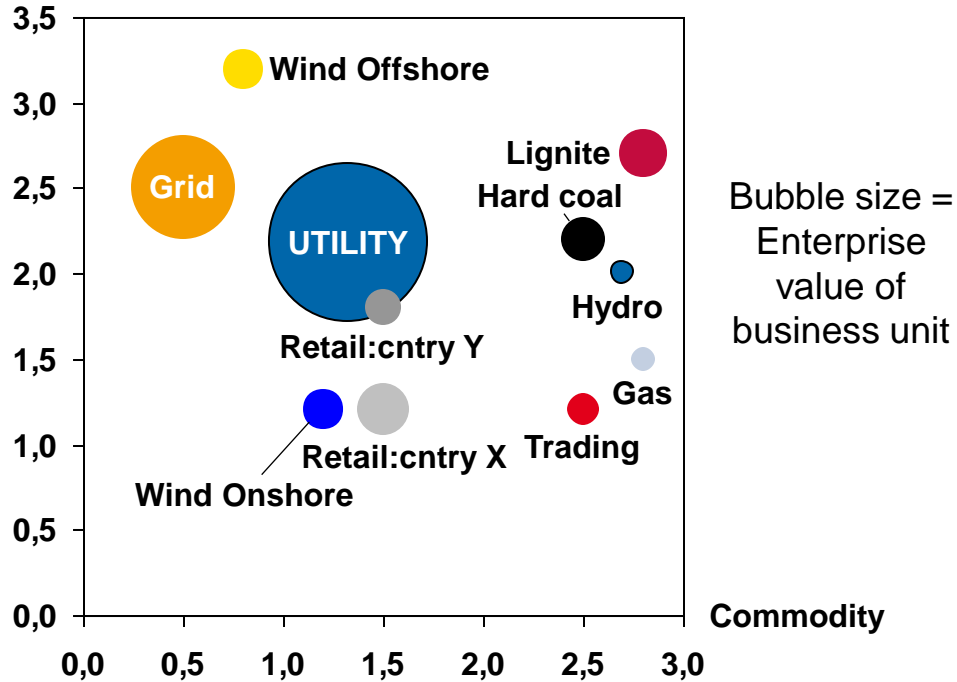
3. Asset ownership / skill sets for utilities of the future

	Asset / skill	Utility	IPP	Transco	New entrant	Customer
Asset ownership	Conventional generation	XXX	XXX			
	Utility scale CHP, RES, Storage	XX	XX	X		X
	Small scale CHP, RES, Storage	X			XX	XX
	Smart meters / appliance control	XX			X	X
	Transmission	XX		XXX		
	Distribution	XXX		X		

Achieving a given risk / return portfolio - regulation or commodity-price play?

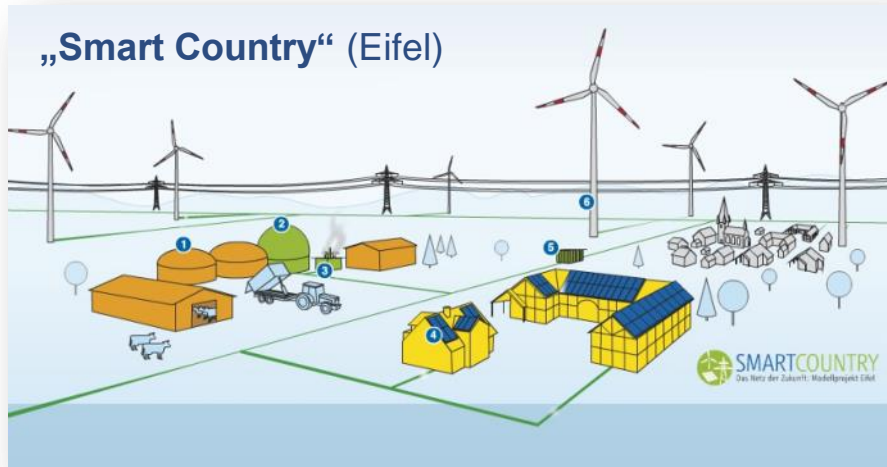
Dependency of business units to regulation / commodity prices

Regulation



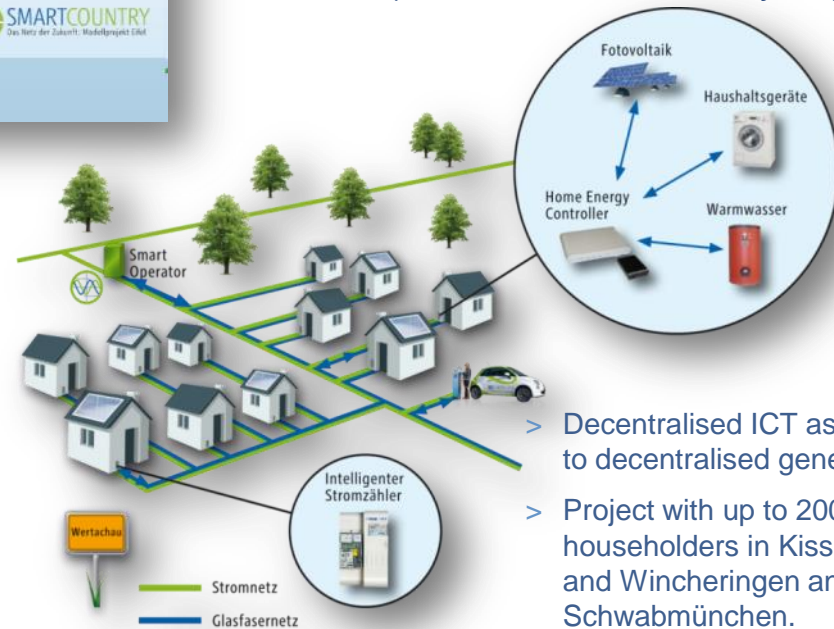
Note: all figures only illustrative

Smart Grids and Smart Operators



- 1 Biogas plant
- 2 Biogas and electric storage
- 3 Cogeneration
- 4 Photovoltaic plant
- 5 Modern voltage controller
- 6 Wind turbines

„Smart Operator“ (Rheinland-Pfalz u. Bayern)

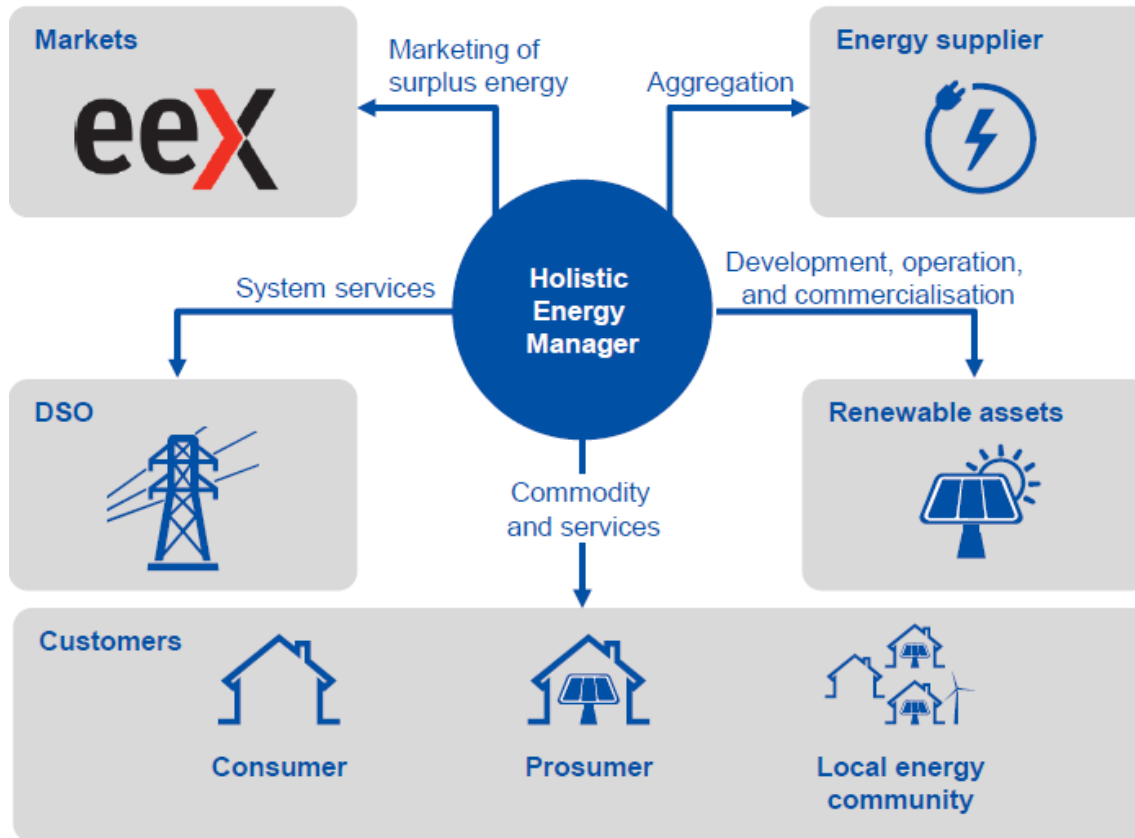


- > Decentralised ICT as answer to decentralised generation.
- > Project with up to 200 householders in Kisselbach and Wincheringen and also Schwabmünchen.



High temperature cable (Hunsrück)

Holistic Energy Management



- Supplying, operating and optimising a decentralised system
- Working with the customer on decentralised generation
- Supporting the energy transition comprehensively

4. Conclusions - not a “one-size” fits all

1. Starting point for utility is to **monetarise optimally all existing assets**
 - Accent on improving efficiency and optimising existing plants and practices
 - Then modify portfolio through investment / divestment within given constraints
2. **Wires business will be fundamental to utilities**
 - Issue is extent to which utility or regulator drives investment
 - Essential that all users of grid pay fairly for services
3. **Utilities have current advantage of owning customers and huge economies of scale**
 - How can they benefit from this within regulatory and societal constraints?
 - What will be the limits determined by societal wishes, customer desires and the role of new entrants?
4. **Great sensitivity and skill is required to adapt and satisfy all stakeholders!**

RWE's four pillars as Utility of the Future



GENERATION

- Selective growth in renewable energy
- Restructure conventional power generation (“no profit or cash burning”)
 - Emphasis on efficiency / flexibility
- Upside potential from market recovery in conventional power (e.g. new market design or recovery of commodities)

TRADING

- Ongoing focus on value extraction in commercial asset optimisation
- Develop growth opportunities in new trading markets
- Additional value contribution from principal investment projects

DISTRIBUTION

- DE: Stable regulatory environment for the next regulatory period
 - Potential for revenue growth from integration of renewables
 - Focus on performance
- E.EU: Aim to stabilise regulated earnings

RETAIL

- Focus on efficiency enhancements
- High margin pressure
- Margin upside via new products / cross selling
- Value-oriented customer service
- Smart markets:
 - Decentralised CHP/services
 - Energy efficiency
- Growth by leveraging sales know-how across mature & new markets

**High portion of earnings from stable regulated businesses
(German and CEE/SEE networks; renewables)**

Integrated utility along the value chain with focus on core markets within Europe

THANK YOU VERY MUCH FOR
YOUR ATTENTION.

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