



What is driving the business models in the future energy market

Click to edit Master subtitle style

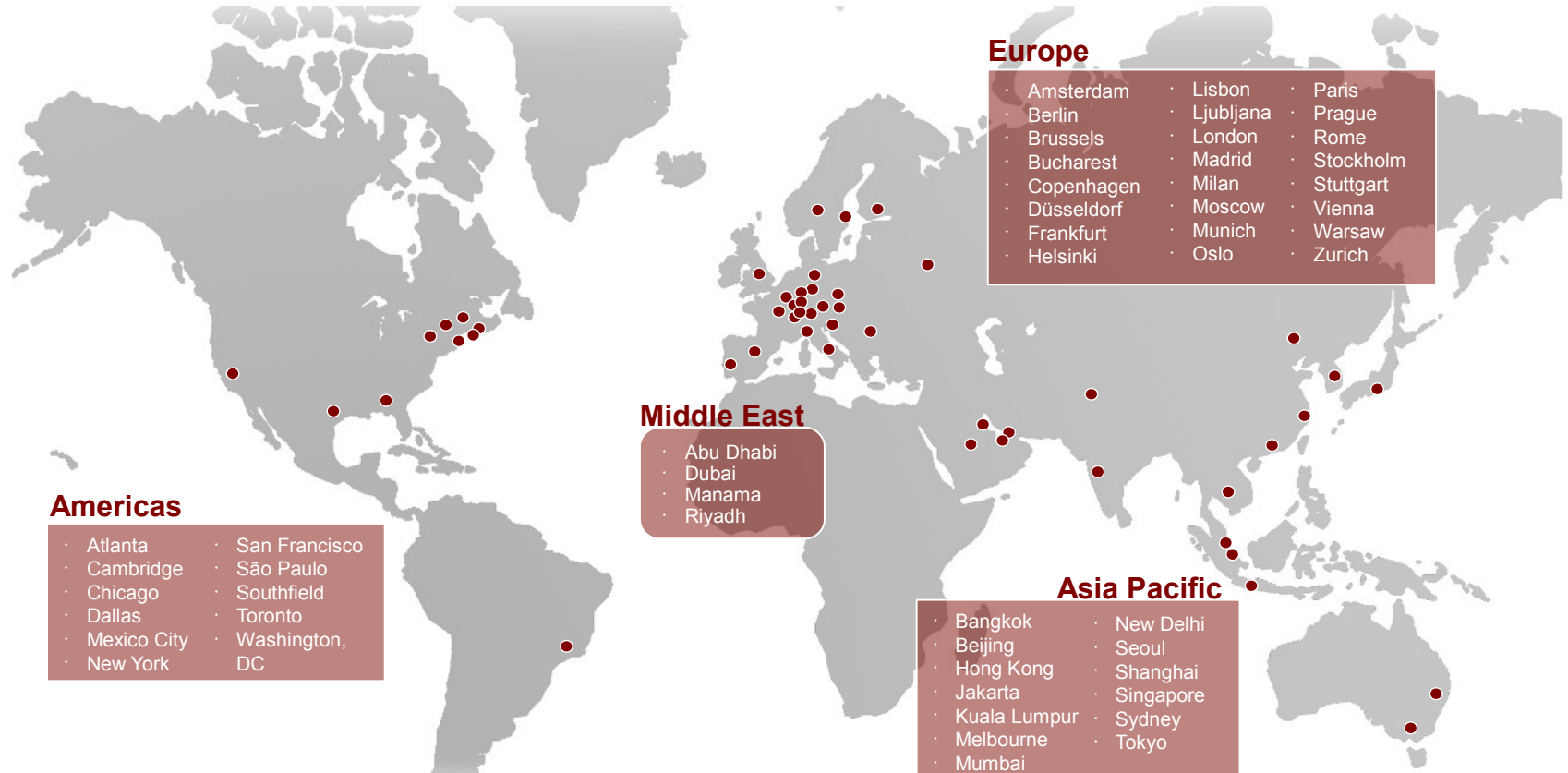
Central & South eastern Europe Energy Forum 2010
JW Marriott Grand Hotel 13-14 May,2010

Michael Weiss

A short introduction to A.T. Kearney

Where we are

**We combine global insights
with local expertise,
wherever our clients operate:**













- **52 offices in 35 countries**
- **More than 2,700 colleagues**
- **Growing 1 billion USD revenues company**

Our expertise spans a wide range of industries and services



Status Quo

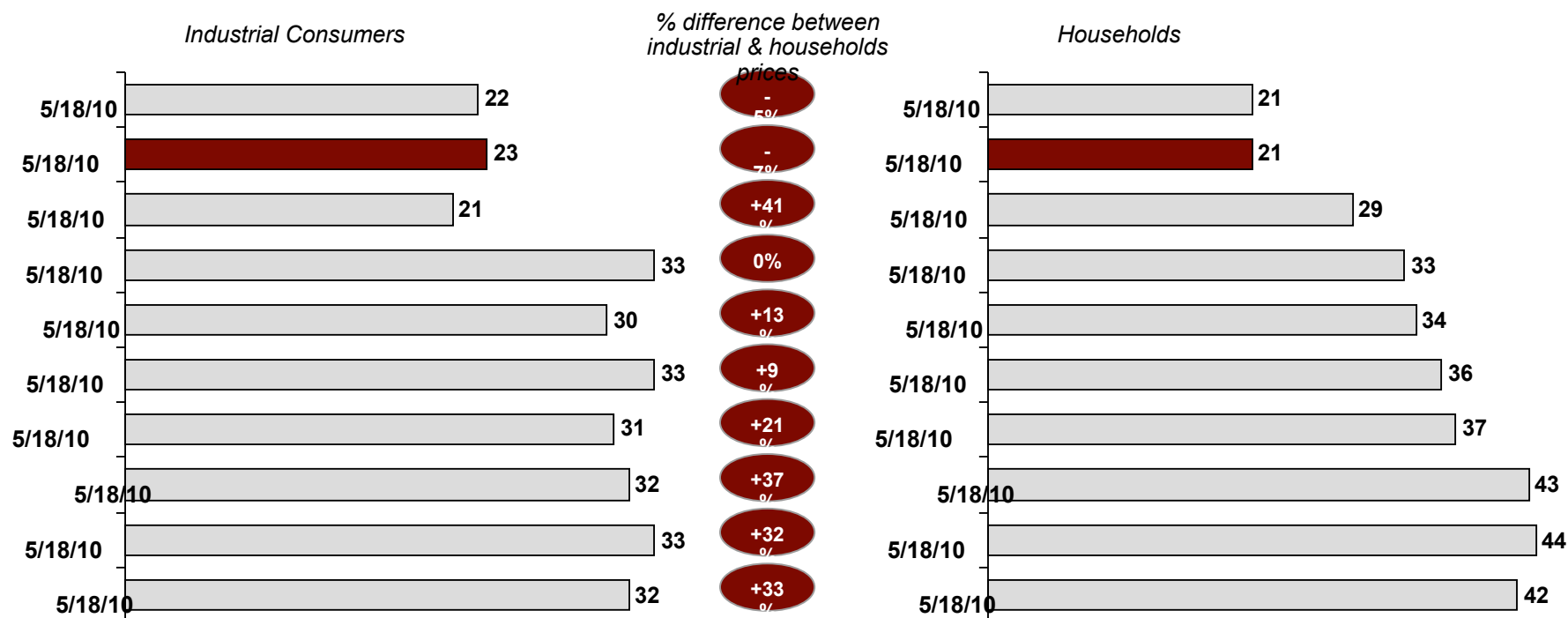
In 2009, all major players in CEE registered strong declines in terms of revenues and EBITA

Company	Total revenues 2008 (bln. EUR)	Total revenues	Variation	EBITA 2008	EBITA 2009	Variation
 OMV	25.42	17.19	-28%	3.63	2.77	-24%
 PETROM Member OMV Group	4.72	3.12	-34%	0.96	0.69	-28%
 ORLEN	22.74	15.75	-31%	0.25	0.84	+238%
 Unipetrol	3.92	2.49	-36%	0.17	0.1	-41%
 MOL	14.22	11.8	-17%	1.4	1.59	+14%
 INA INDUSTRIJA NAFTE, d.d.	3.92	2.97	-24%	0.49	0.54	+11%
 PETROL	2.96	2.34	-21%	0.1	0.08	-17%
 GAZPROM	96.6	74.73	-23%	39.95	20.76	-48%
 LUKOIL OIL COMPANY	73.54	58.23	-21%	11.38	9.86	-13%
 ROSNEFT	47.08	11.38	-76%	9.86	6.56	-34%

5/18/10

When compared with EU 27, domestic prices are significantly lower both for households and industrial customers

Natural Gas Price in Selected European countries
2008, EUR/MWh



At European level, household gas prices are 33% higher than the ones for industrial households.

European Long Term Trends in Utilities Markets

Six longterm – trends will play a critical role to shape the energy landscape in Europe

Parameter

1 Convergence and Consolidation

Long term trends 2020/30 in Europe

- **Market concentration** will increase –while M&A volume will flatten
- Long term: **Financial investors** will play a more active role in the M&A market for Utilities
- **Internalization of key players** is driving convergence of international electricity gas markets

2 Vertical and Horizontal integration

- **Vertical integration of gas industry will increase:** upstream companies will focus on downstream and vice versa
- Synergies across the sales related parts of the value chain will **increase the convergence across electricity and gas** and will drive the horizontal consolidation to gain scale effects

3 Supply-Demand Balance and Commodity Prices

- The demand of **imported gas of EU 27 will increase by more than 70%** - LNG based imports are expected to increase by factor 3 (decreasing own exploration/ increasing gas consumption)
- **Till 2030 400-580GW generation capacity needs to be replaced** – the relevance of renewable and gas to close the gap will increase significantly
- **Till 2020 the electricity prices are expected to increase by 40-70%** (scenario based)

4 Sustainability – Renewable Energy

- The installed capacity for renewable energy will **increase till 2030 to the level of 18-33%**
- The competitiveness of renewable energy will increase till 2020 significantly

5 New Technologies and Energy Efficiency

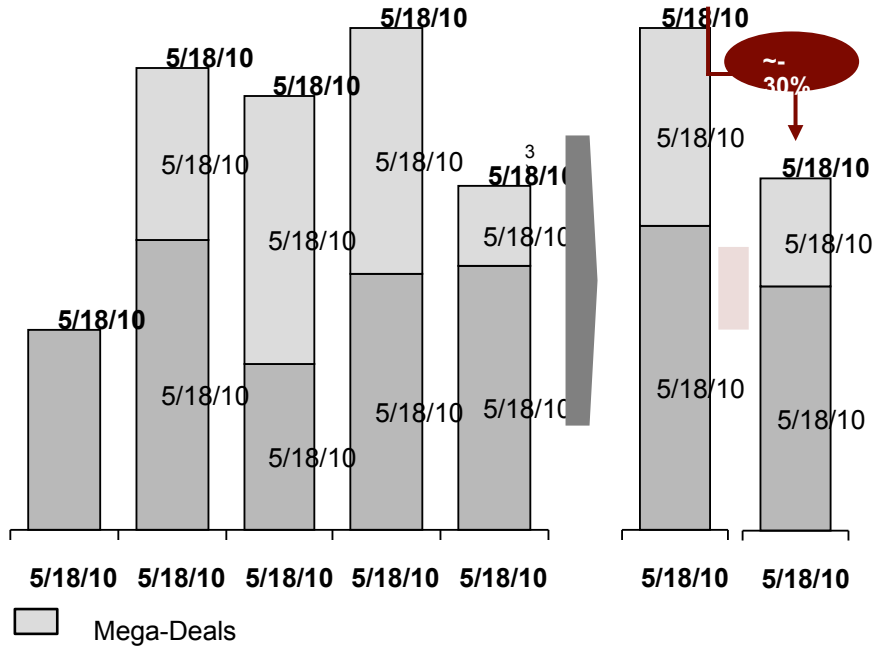
- Local Generation based on **micro turbines and fuel cells will gain increased relevance till 2020/30**
- **eMobility will reach in 2020/2025 the level of „business attractive sizes“**
- **Enhancement of grids** („Smart Metering“/„Smart Grids“) will drive substantial efficiency gains and integration of new technologies (local generation, eMobility, renewable)

6 Business Models

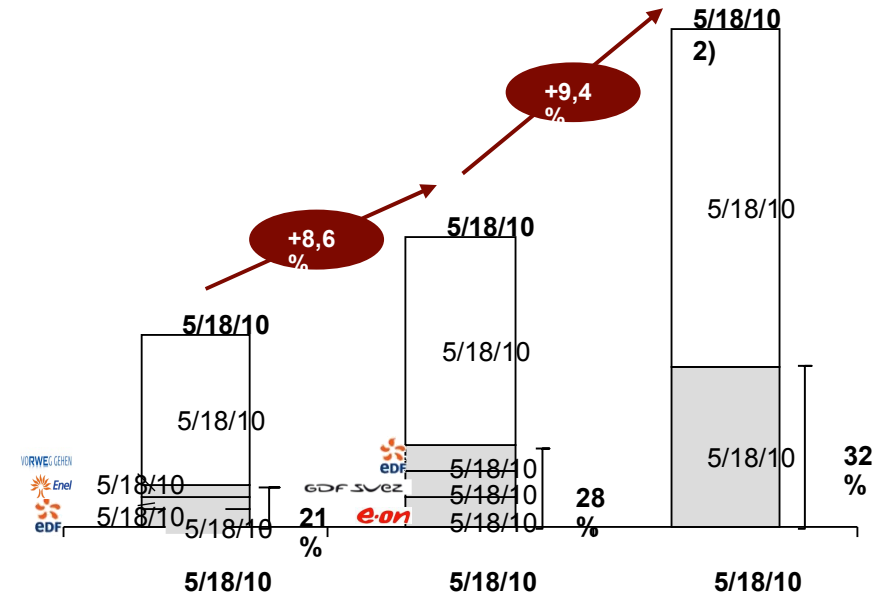
- **The relevance of focused business models will increase**
- Relevant trigger: Ownership Unbundling across all levels
- **Local generation will lead to new business models**

1 The market consolidation in Europe is expected to continue on high speed

M&A-Europe (in bn. €)



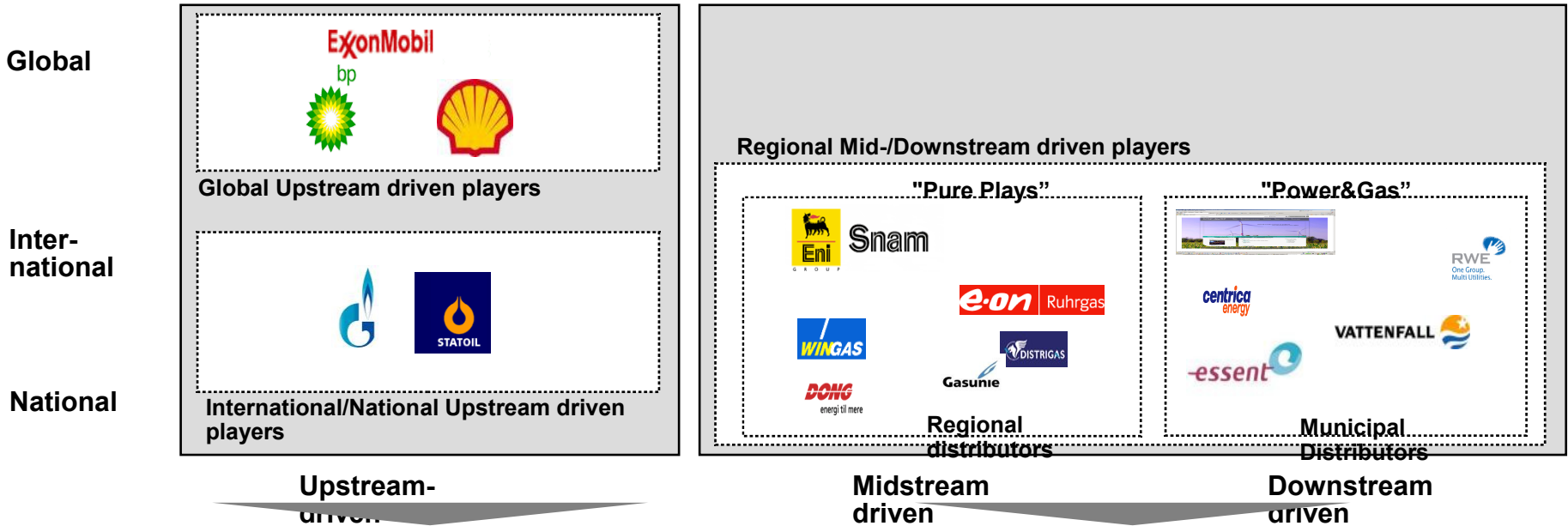
Market Concentration in Europe – CR31)(electricity/gas revenues in bn. €)



1) Market share of top 3 players 2) Key assumptions: Increase of electricity demand of 1,3% p.a.; electricity price increase of 6,7% p.a.; Gas demand increase of 2% p.a.; gas price increase of 3.8% p.a. based on A.T. Kearney market models 3) Estimation based on announced deals Sources: Dealogic database, Datamonitor, Business reports, A.T. Kearney-Merit-Order-Model, A.T. Kearney-Analysis

The vertical integration within the gas industry will increase

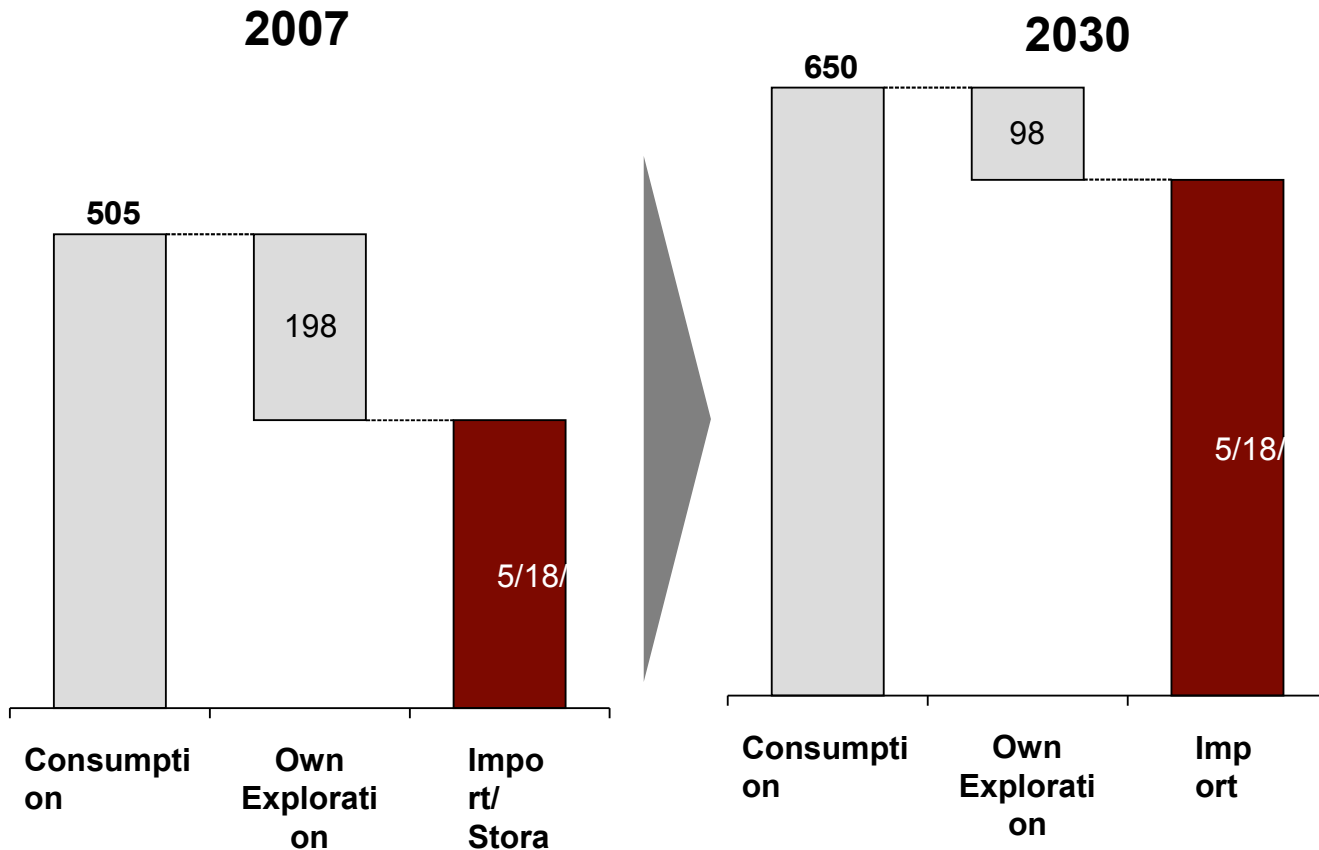
Competitive positioning and key dynamics



<p>Drivers</p>	<p>Upstream Player:</p> <ul style="list-style-type: none"> Development of new growth potentials for upstream players Realisation of downstream margins by „skipping“ parts along the value chain Realisation of „generation margins“ in electricity through tolling models / gas to electricity approach 	<p>Downstream Player:</p> <ul style="list-style-type: none"> Increase of indenpedency of „limited“ suppliers Realisation of import margins Participation in developed trading markets Safeguarding of the own market position
-----------------------	---	--

3 The demand for gas imports will increase in EU 27 by more than 70%

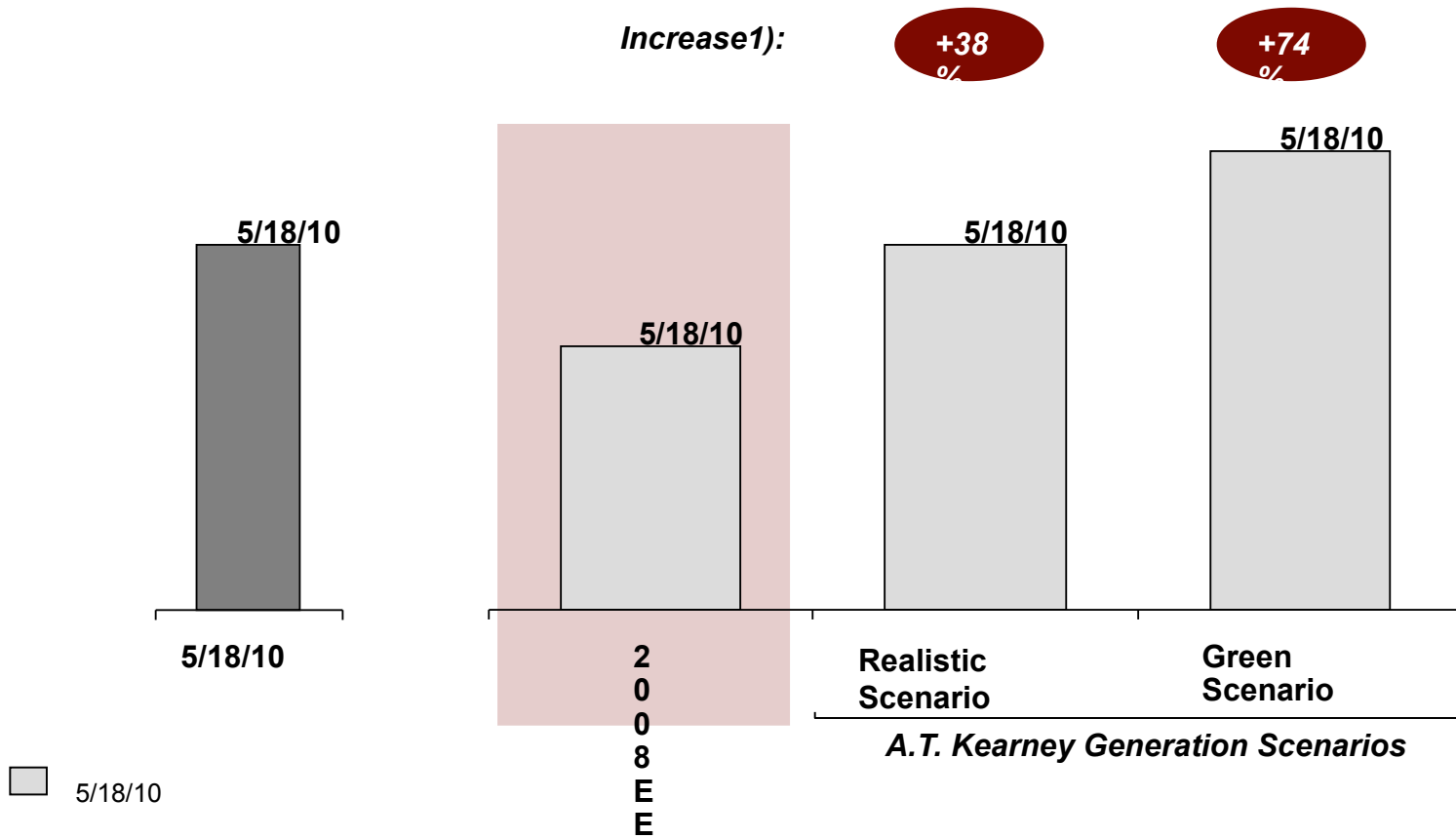
Demand for imported gas EU-27 für 2007 und 2020
(in bn. m3)



- EU-27: Own exploration will decrease till 2030 by ca. 50%
- At the same time significant increase of gas consumption will result in a demand for imported gas of additional 245 bn. M3
- Significant demand of substantial infrastructure investments (mainly transport and storage)

3 Supply –Gap and increasing commodity prices are driving the price of electricity prices by 40-70% till 2020

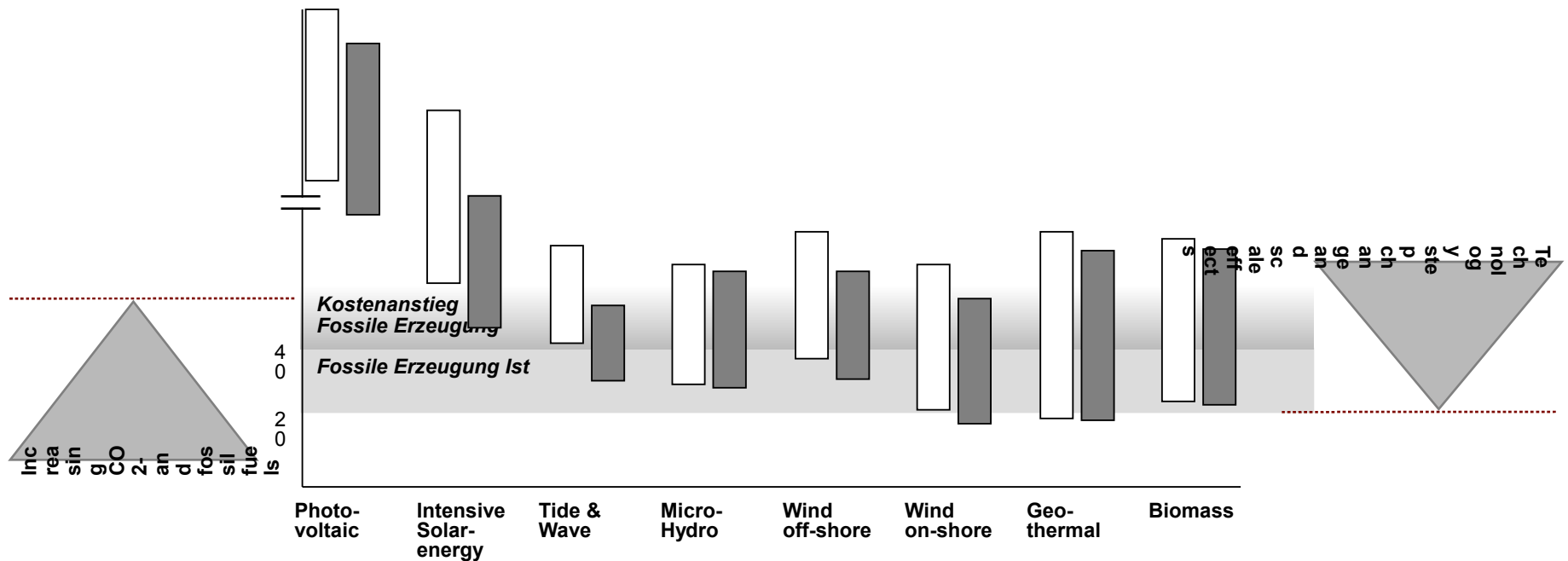
Potential trend wholesale prices (baseload) till 2020
(in €/MWh)



1) Increase Base Price 2020 Comparison Base Price XEEX 2008
 2) Price Scenario 2020; Commodity price prognosis till 2030 are not considered as sufficient relevant
 Source: EEX, A.T. Kearney Merit Order Model

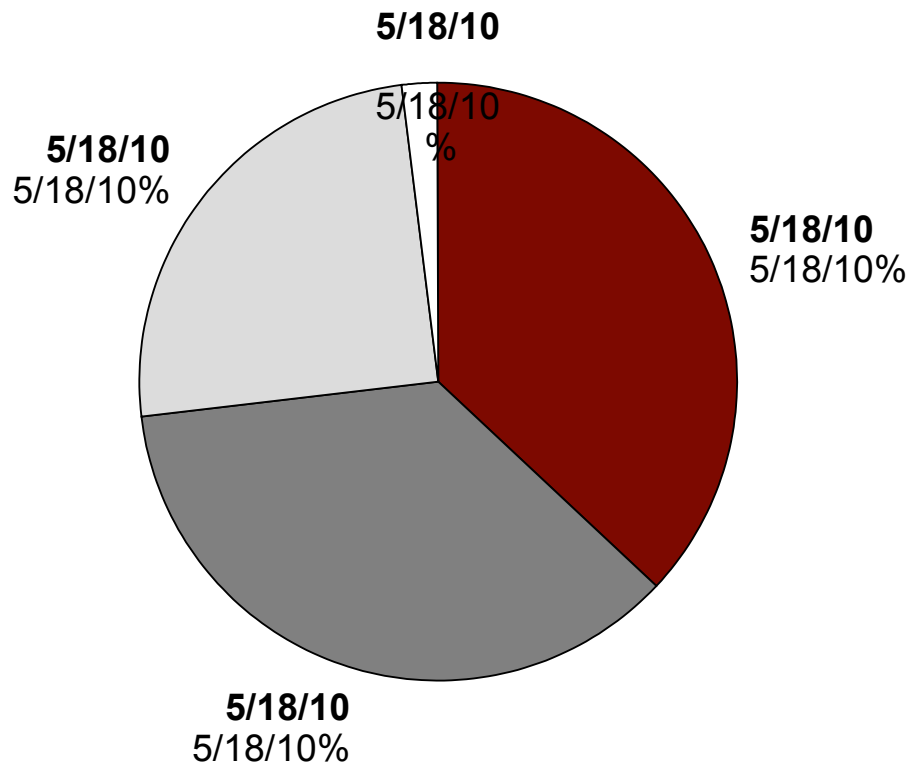
4 2020: While costs of primary energy and CO2 are increasing – the competitiveness of renewables will improve significantly.

Cost dynamics for renewables till 2020 (€/ MWh)



5 Europe will become the leading market for HEV/EV vehicles

2020 HEV/EV vehicles by region

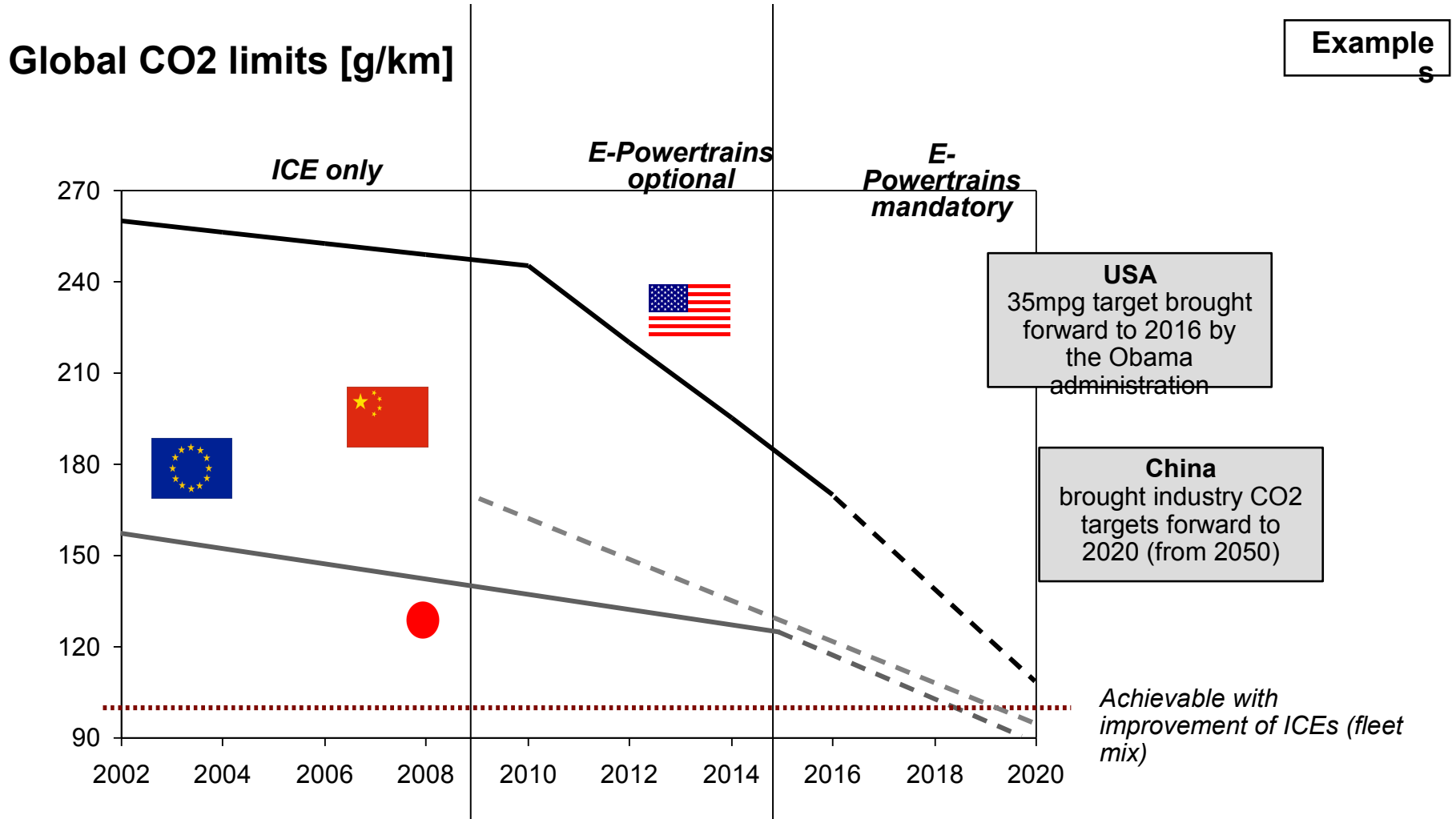


A.T. Kearney comments

- 31,7% would be the annual expected growth rate for sales of fuel cell vehicles by 2015
- FCVs markets by country in 2020:
 - USA – 134.049 vehicles
 - China – 129.241 vehicles
 - Germany – 126.783 vehicles
- FCVs research investment to grow from \$4 BN in 2010 to \$5.3 BN in 2016, with a CAGR of 3.3%

2020 estimates for FCV revenues to reach \$23.9 BN/annually

5 CO2 limits in key markets will make E-Powertrains a mandatory part of the fleet until 2020



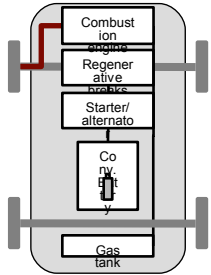
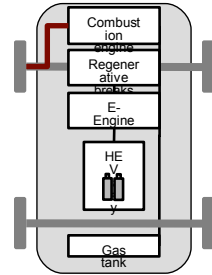
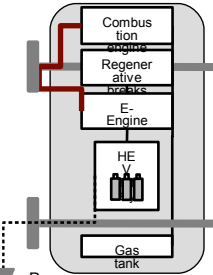
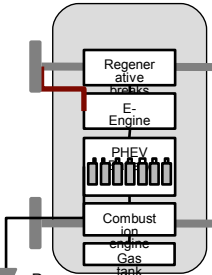
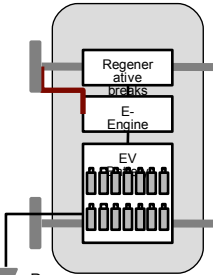
----- Forecast

Source: International Council on Clean Transportation

5 Two technologies are currently driving eMobility discussion

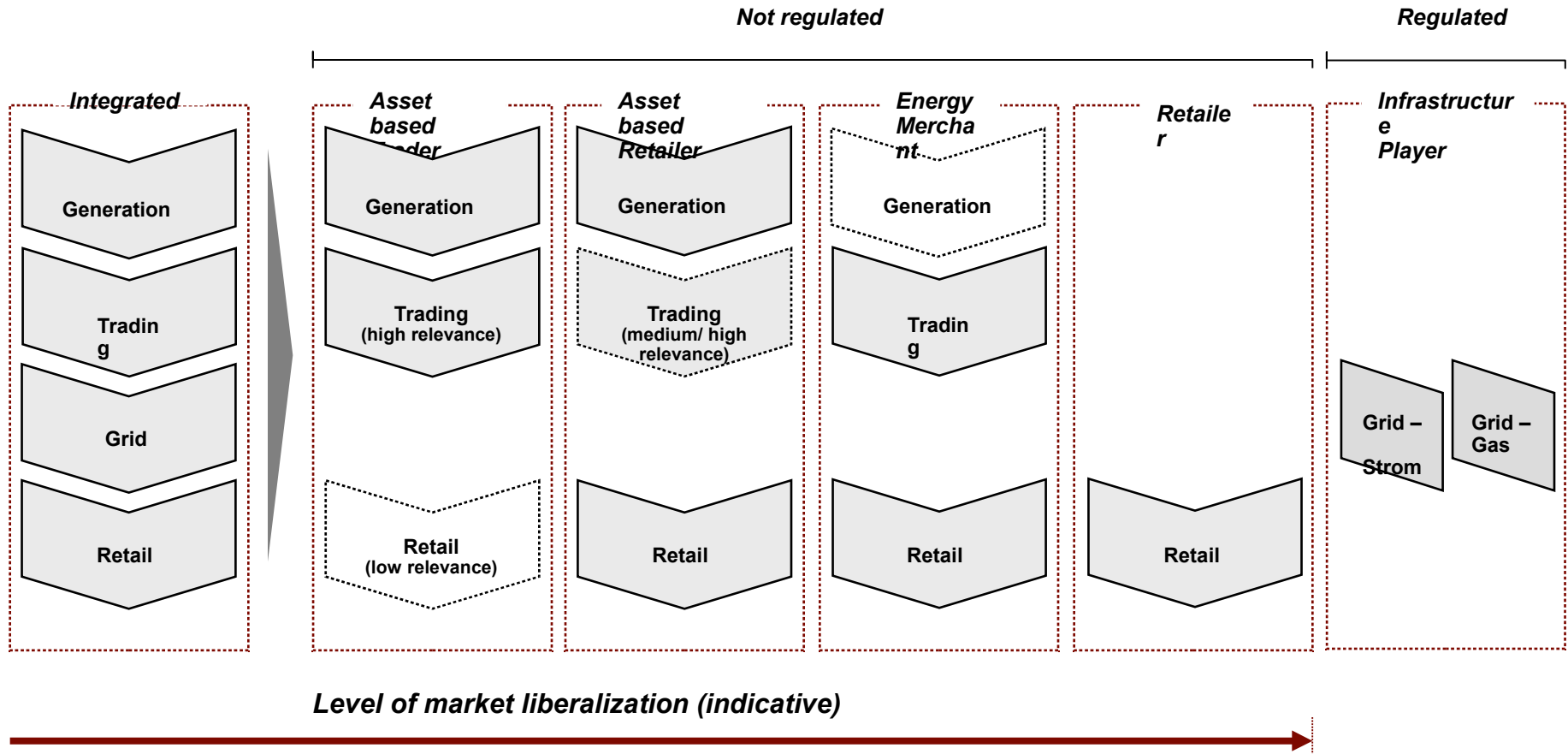
Overview vehicle electrification

Relevant for Utilities

	Micro-Hybrid	Mild-Hybrid (Serial-Hybrid)	Full-Hybrid (Parallel-Hybrid)	Range Extender (Plug-in Hybrid)	Electric-Vehicle
					
Electric driving features	<ul style="list-style-type: none"> Start-Stop 	<ul style="list-style-type: none"> Electric support of ICE Start-stop 	<ul style="list-style-type: none"> Electric driving Electric support of ICE Start-stop 	<ul style="list-style-type: none"> Electric driving Range extender mode (electricity generation by ICE) 	<ul style="list-style-type: none"> Electric driving
Technical changes	<ul style="list-style-type: none"> Larger starter/alternator Larger conventional battery 	<ul style="list-style-type: none"> HEV transmission HEV battery (1-2 kWh) E-engine (20-60 kW) 	<ul style="list-style-type: none"> HEV transmission HEV battery (2-4 kWh) E-engine (50-200 kW) 	<ul style="list-style-type: none"> PHEV battery (12-20 kWh) E-engine (50-200 kW) Smaller ICE 	<ul style="list-style-type: none"> EV battery (16-40 kWh) E-engine (50-200 kW)
Vehicle examples	<ul style="list-style-type: none"> BMW Efficient Dynamic models 	<ul style="list-style-type: none"> Honda Civic Hyb. MB S-Class Hyb. 	<ul style="list-style-type: none"> Toyota Prius BMW X6 Hybrid 	<ul style="list-style-type: none"> BYD F3DM GM Volt 	<ul style="list-style-type: none"> Tesla Roadster Mitsubishi MiEV

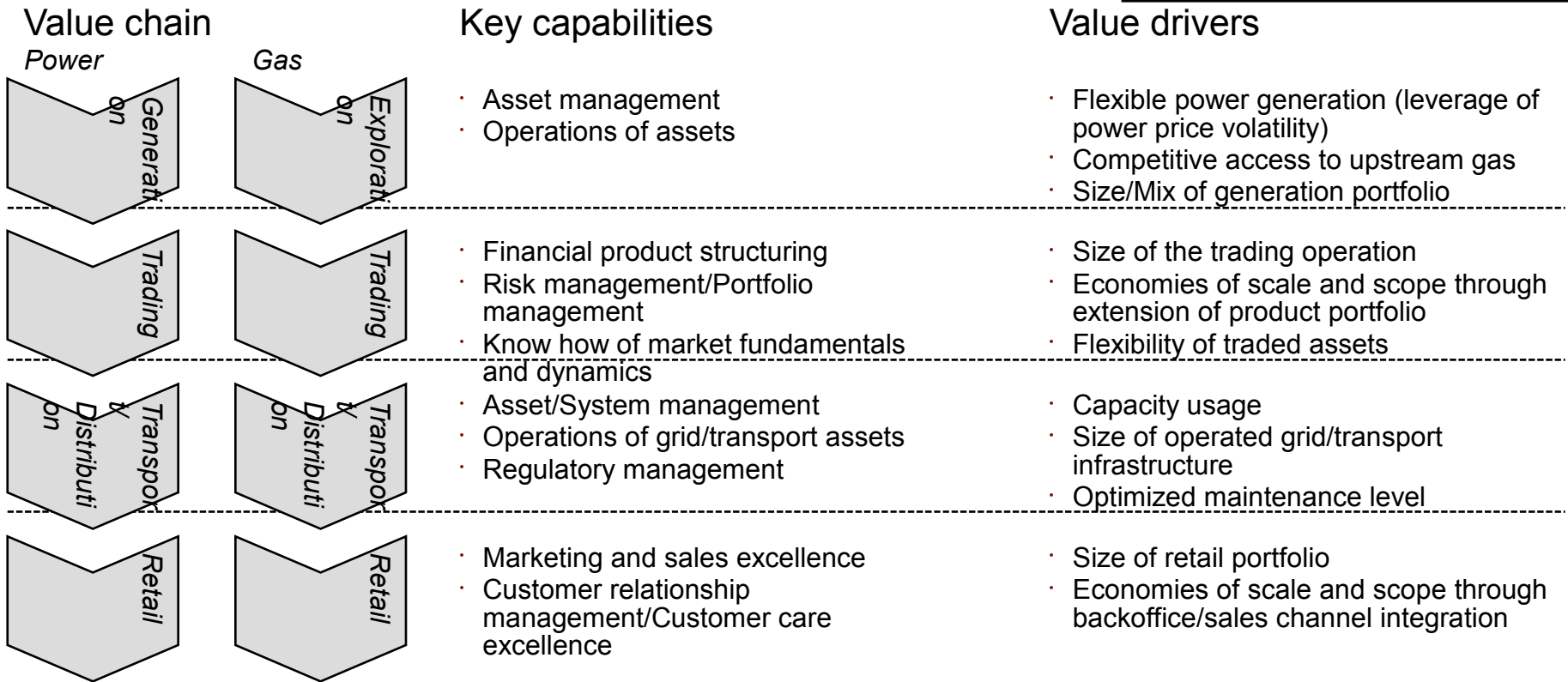
6 Focused business models will gain future relevance for Utilities

Key business models in the future Utility market (Selection)



Market scenarios form the base for derivation and assessment of capabilities and value drivers along the value chain

Assumption: Market take-off scenario



In a Market Take-off scenario capabilities and value drivers converge between power and gas at the level of each element of the value chain