

DIGITALISATION

& THE IMPACTS ON ENERGY MARKETS

2018 PIDX EUROPEAN CONFERENCE

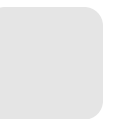
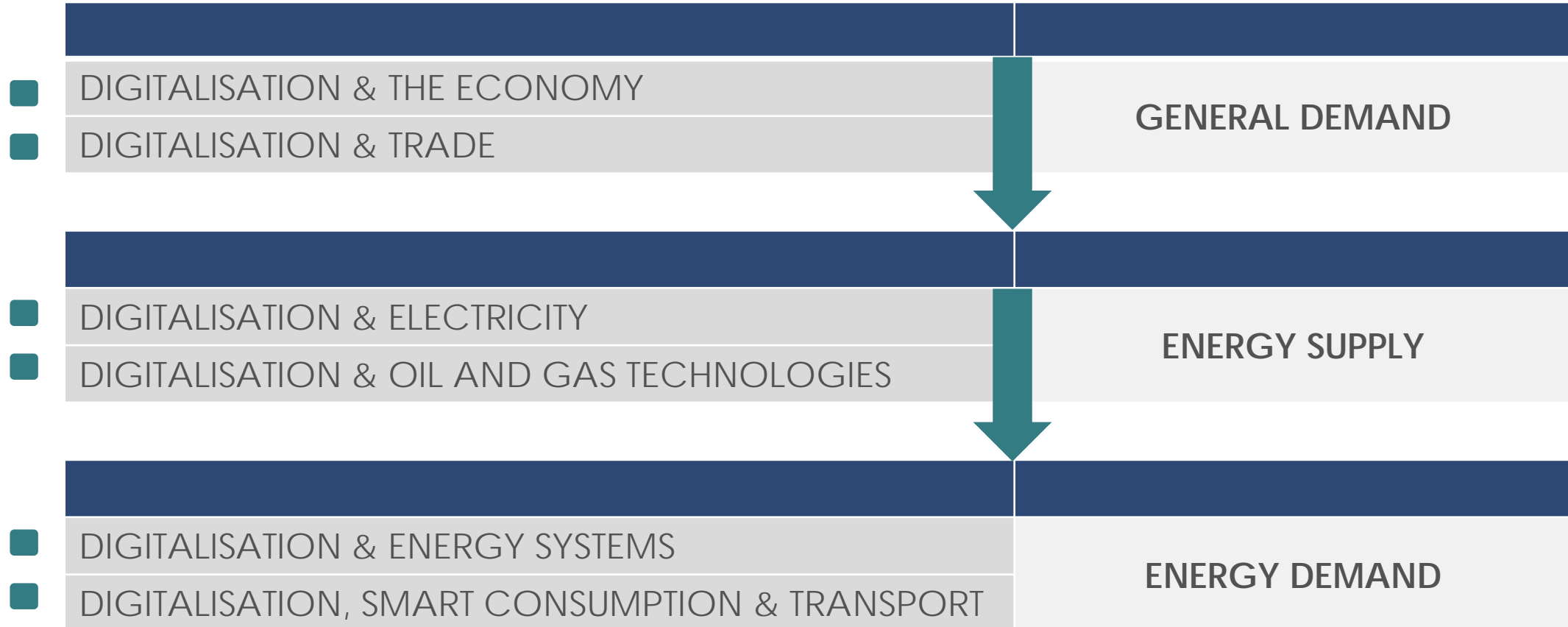
EMERGING DIGITAL TRANSFORMATION STRATEGIES IN OIL & GAS

DIETER HELM

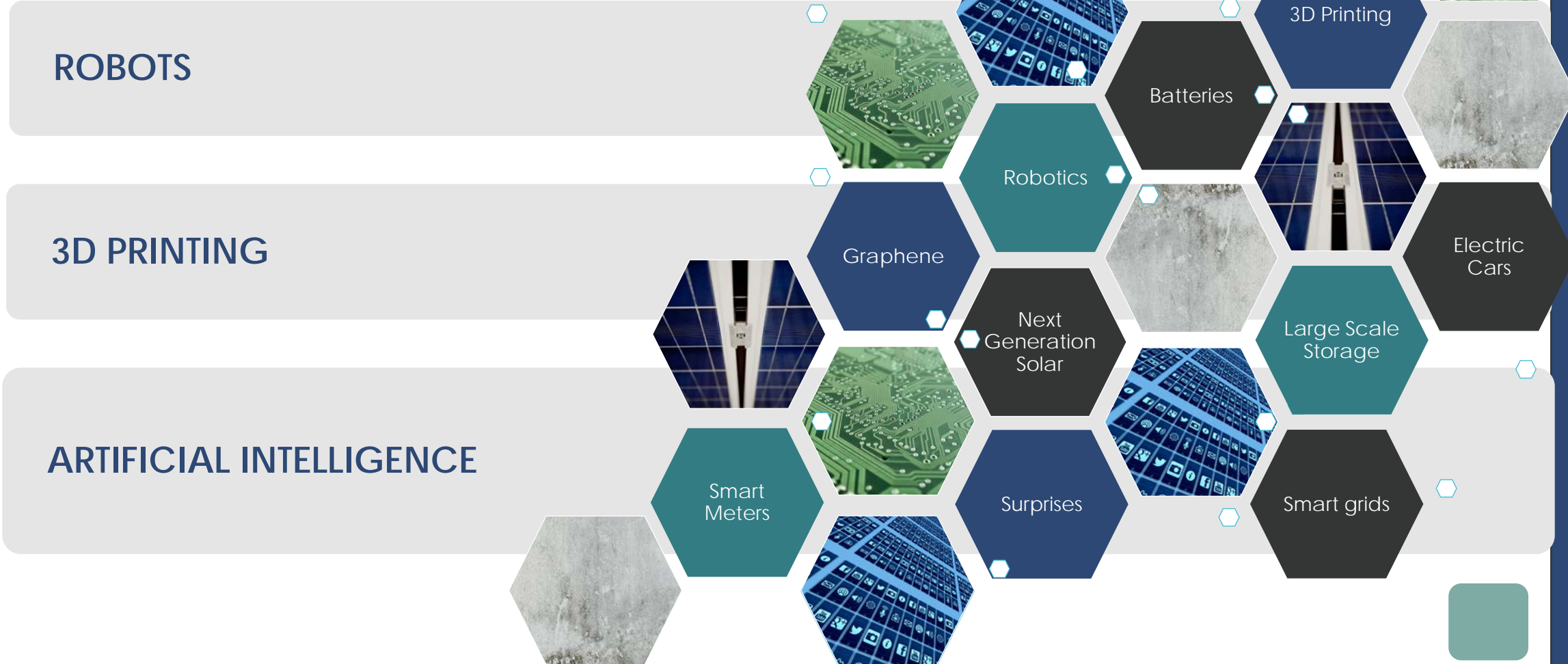
5TH JUNE 2018



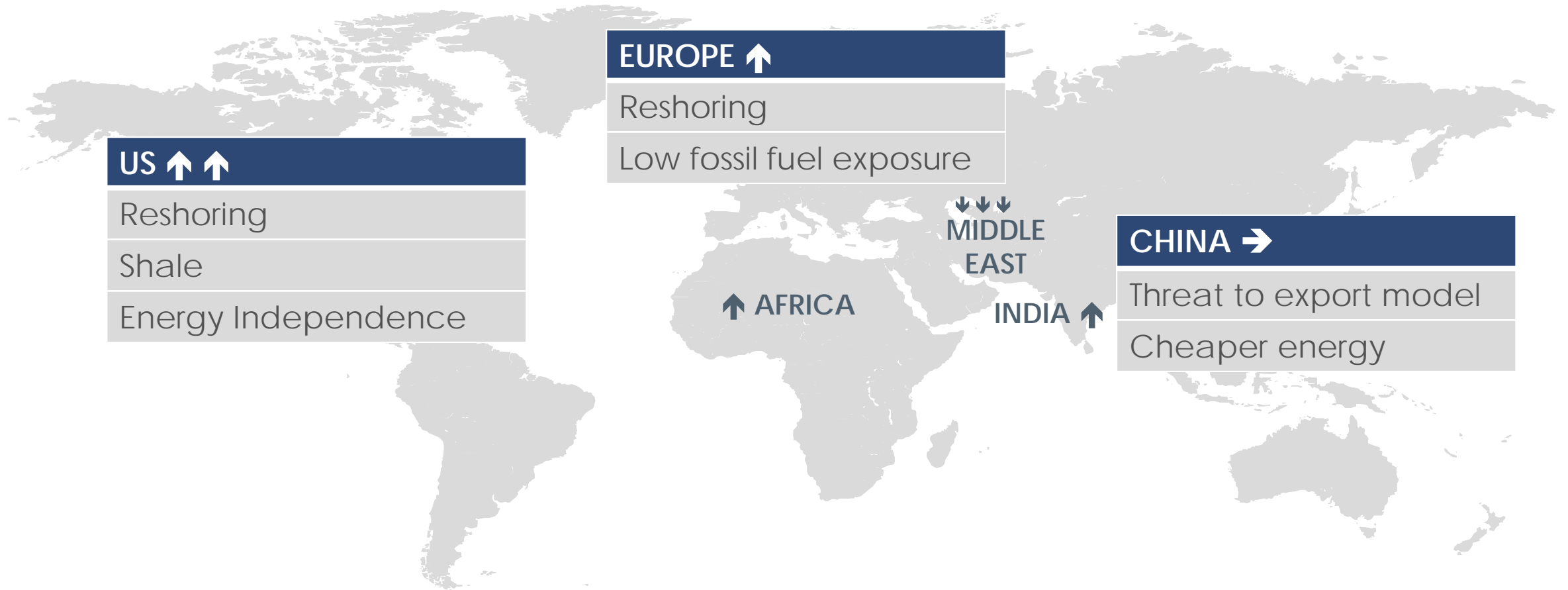
AGENDA



DIGITALISATION, THE ECONOMY & TRADE



DIGITALISATION & TRADE



US ↑ ↑

Reshoring

Shale

Energy Independence

EUROPE ↑

Reshoring

Low fossil fuel exposure

↑ **AFRICA**

↓↓↓
MIDDLE EAST

↑ **INDIA**

CHINA →

Threat to export model

Cheaper energy





“Everything digital is electric”

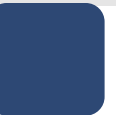


ALL
CHANGE

“Transport goes electric”

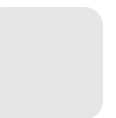


“Petrochemicals:
From oil to gas to new materials”

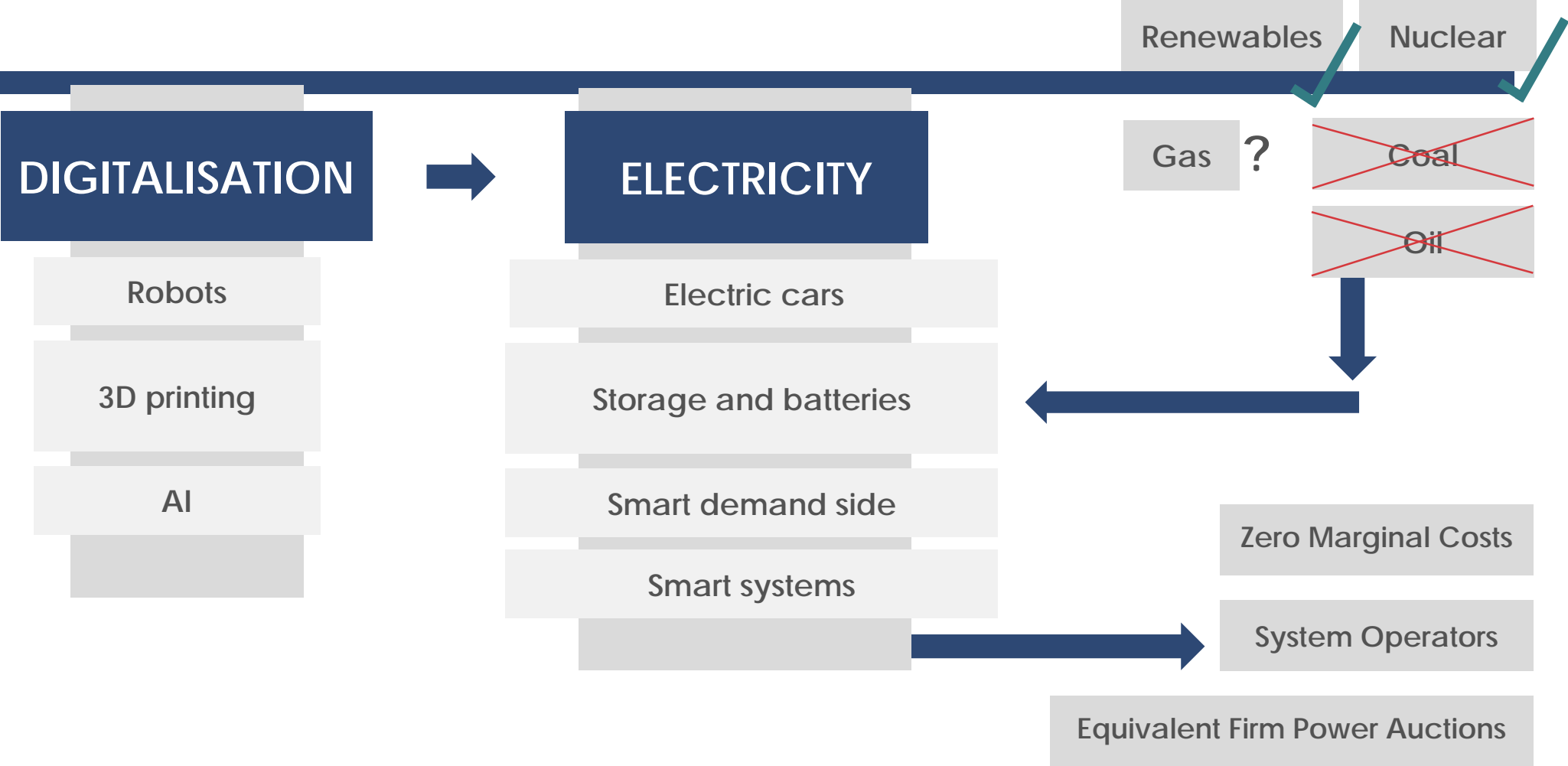


DIGITALISATION & OIL & GAS

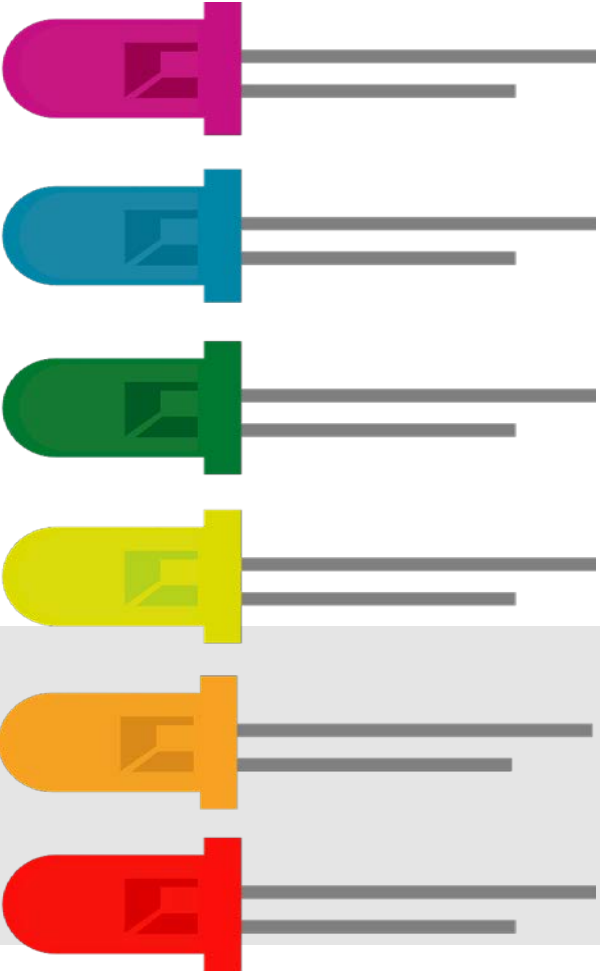
- Shale revolution
 - 10 years old
 - x3 mbd already
- Changes to full supply chain and co-systems
- Oil to gas



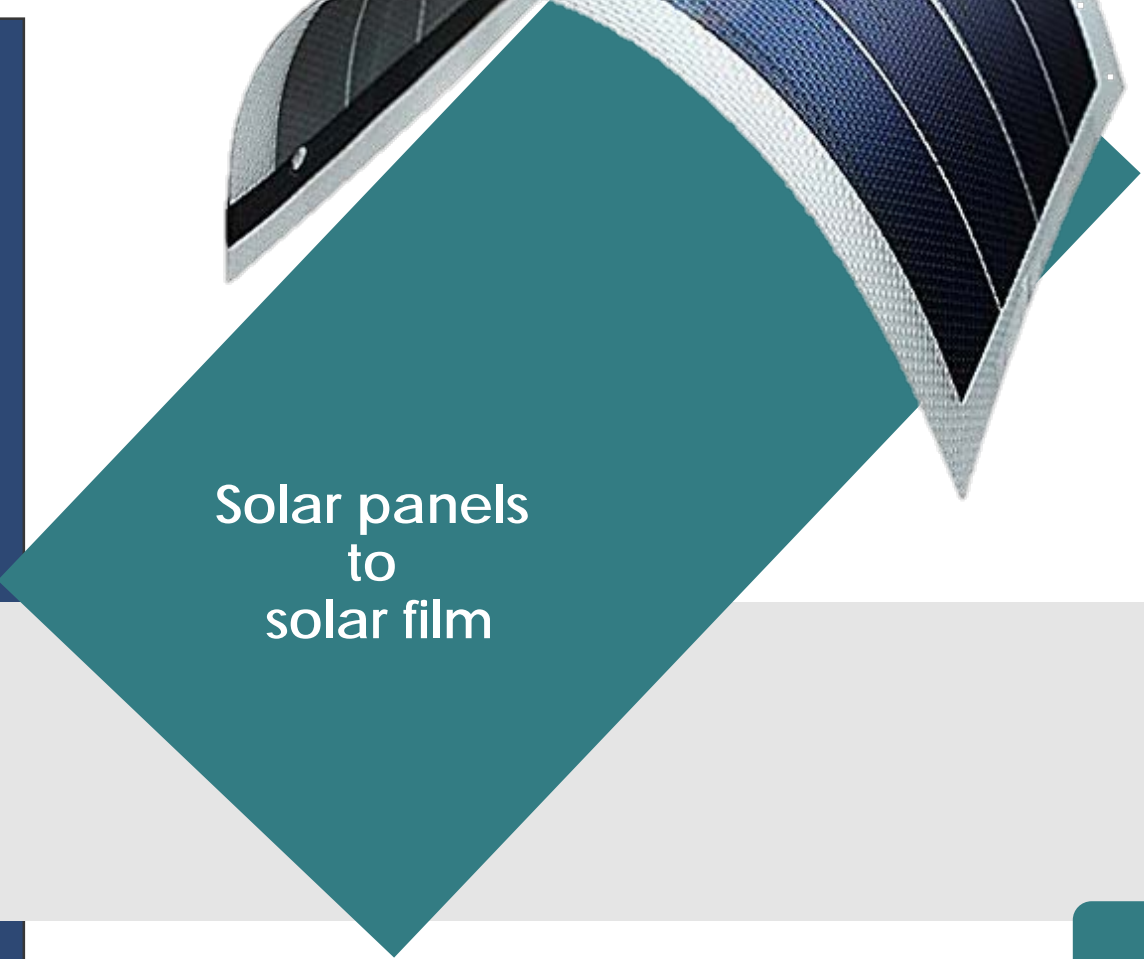
DIGITALISATION OF ENERGY SYSTEMS



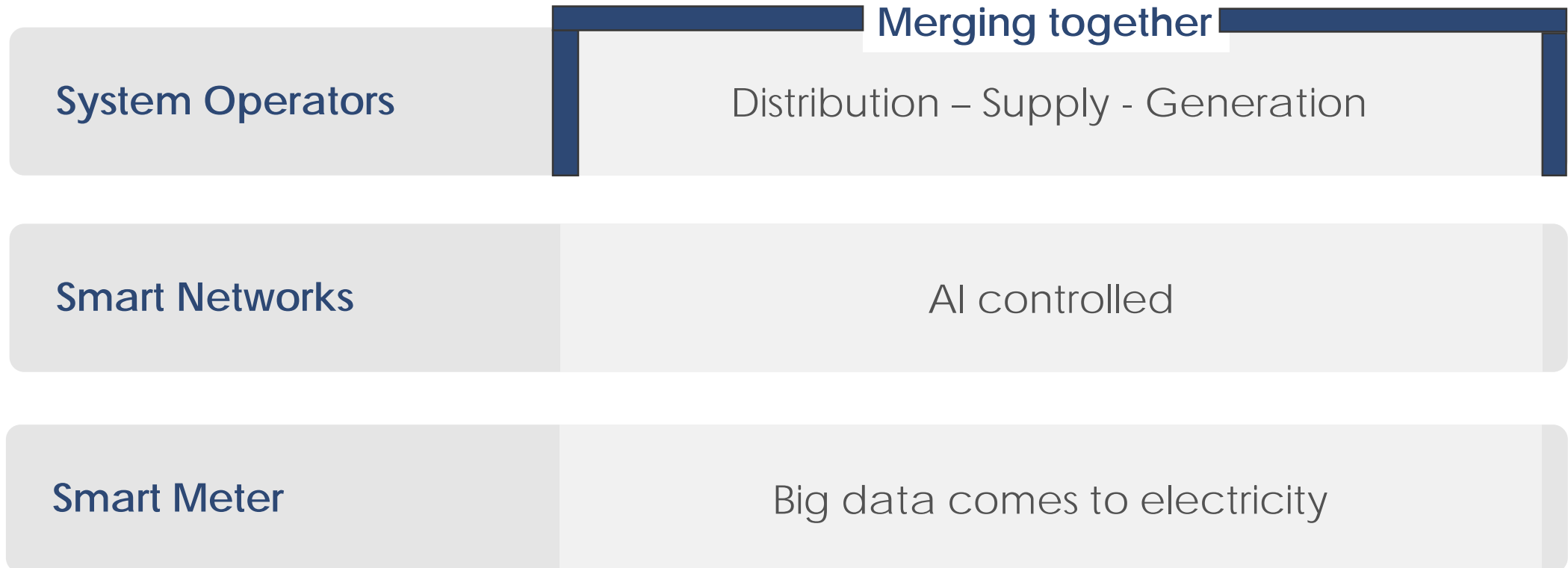
BREAKTHROUGHS



Light spectrum opened up

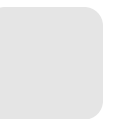


DIGITAL ENERGY SYSTEMS



WHAT DOES THIS MEAN FOR OIL & GAS?

- Share of electricity ↑↑
- Gas has transitioning role in generating electricity
- Oil loses out in transport
- Gas also loses out in transport
- Gas gains from 'oil' in petrochemicals



BURN OUT SCENARIOS



- Demand for oil gradually tails off



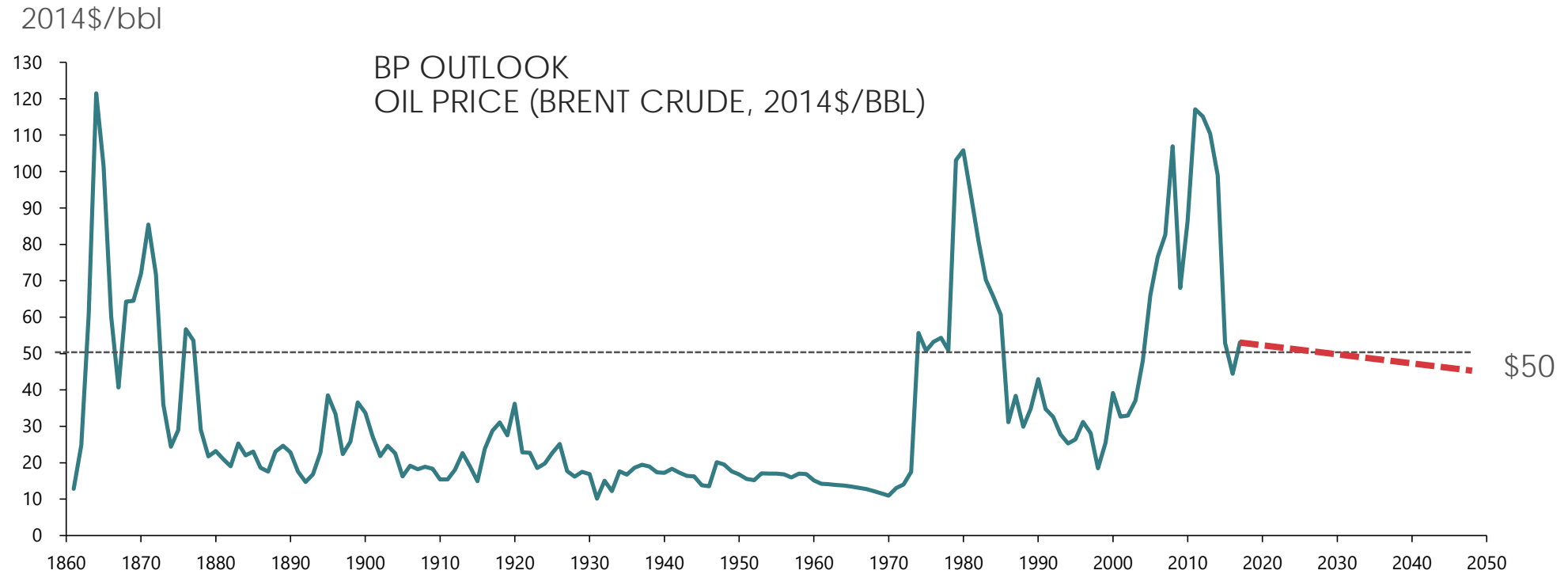
- Demand for gas increases and then tails off



- Price of oil (and then gas) goes down



THE LONG RUN PRICE OF OIL



Source: BP and Thomson Reuters



CONCLUSIONS

- It is a radical revolution
- It is about zero marginal costs
- It is about capacity not energy
- It is a very gradual **BURN OUT**



FOR INFORMATION



Energy Futures Network Paper 26.

BREXIT and its implications for
the British Energy Market

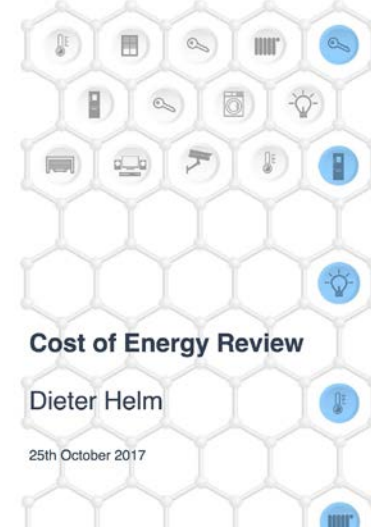
Dieter Helm
April 2018



Energy Futures Network Paper 25.

Peak oil demand and oil prices
– a critique

Dieter Helm
Jan 18



Energy Futures Network Paper 24.

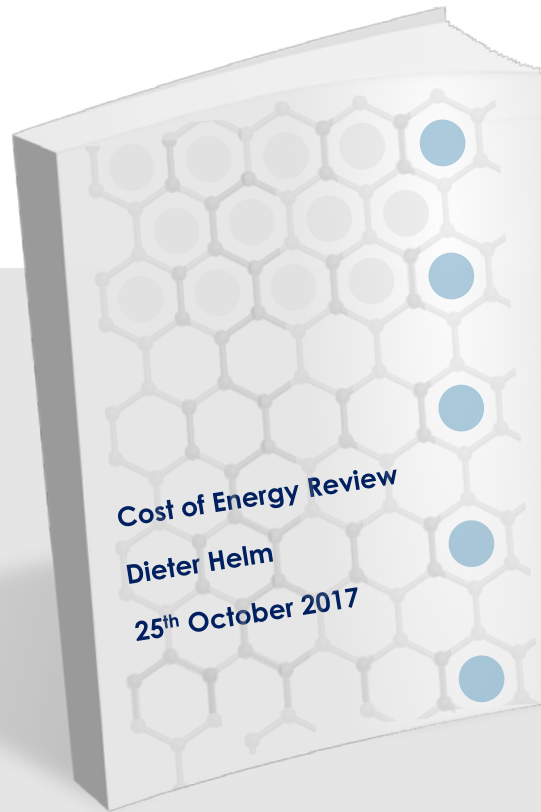
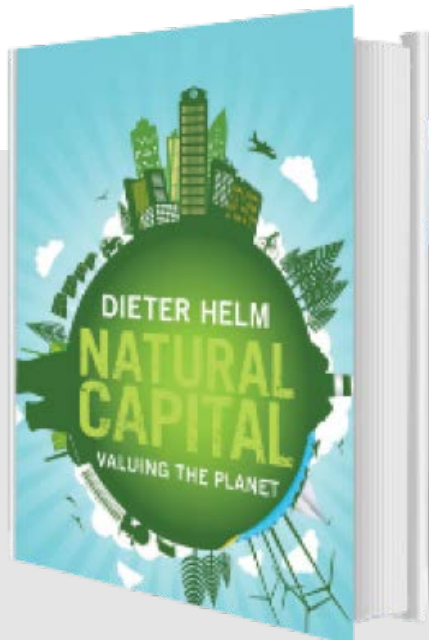
Why intervention on electricity
prices is needed and how to
do it without undermining
competition

Dieter Helm
April 2017

- Not so smart – what has gone wrong with the smart meter programme and how to fix it, Paper 23, Mar 2017
- Are the electricity price increases justified? Paper 22, Feb 16
- Energy and climate policy after BREXIT, Paper 21, Oct 16
- Greg Clark's energy agenda, Paper 20, Sep 16
- Flawed in almost all its parts – the final CMA report on electricity markets, Paper 19, Jul 16
- After Hinkley – how to contract for the rest of the nuclear programme, Paper 18, Apr 16
- The CMA Energy Market investigation: Companies 5-0 CMA? Paper 17, Mar 16
- The new normal – oil prices after the crash, Paper 16, Feb 16
- Stranded Assets – a deceptively simple and flawed idea, Paper 15, Oct 15
- Reforming the FiTs and capacity mechanisms, Paper 14, Sep 15
- The first 100 days of Conservative energy policy, Paper 13, Aug 15
- Penalty tariffs, open ended regulation and embedding overcharging. Paper 12, Jul 15
- British energy policy- what happens next? Paper 11, Jun 15
- Energy Policy and the Coalition, Paper 10, March 15
- What should oil companies do about climate change? Paper 9, Feb 15
- Competition in the British electricity sector: a set of practical measures, Paper 8, Feb 15



BOOKS



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