

INVESTING IN ELECTRICITY: THE INVESTOR VIEW

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BUILDING TEAM SPIRIT TOGETHER



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WHAT IS THE ELECTRICITY MARKET....?

■ **Traditional landscape:**

- Large pan-European utilities
- Vertical integration
- Regulated wires and “market-driven” generation
- Stability

■ **Now:**

- Structural Change
- Weakened fundamentals
- Intervention
- Uncertainty



Very complex landscape – reappraisal of strategy

FUNDAMENTAL CHANGE UNDER WAY

■ Market drivers have changed:

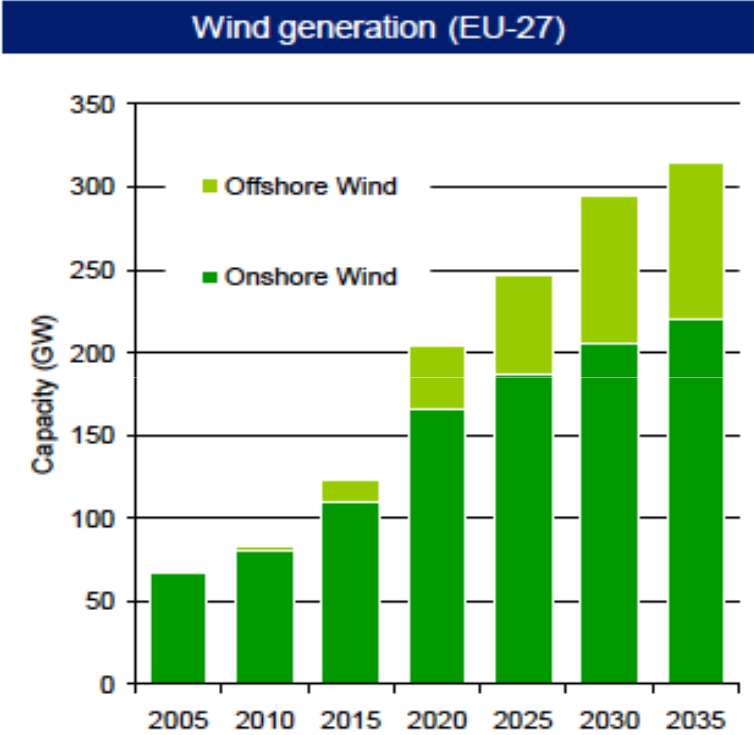
- Decarbonisation targets at EU level – emissions standards
- Increasing focus on energy costs
- Energy security concerns
- Demand side pressure – energy efficiency directive



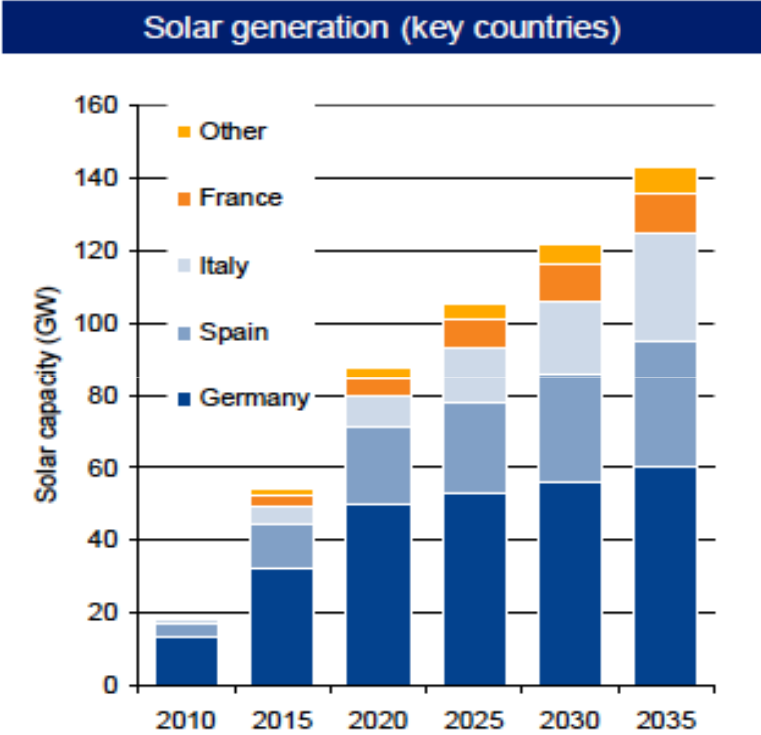
Market forces vs market intervention

FUNDAMENTAL CHANGE UNDER WAY – GROWTH OF RENEWABLES

■ Significant growth in renewables and forecast to continue:



Based on Pöry North-West European Intermittency Study



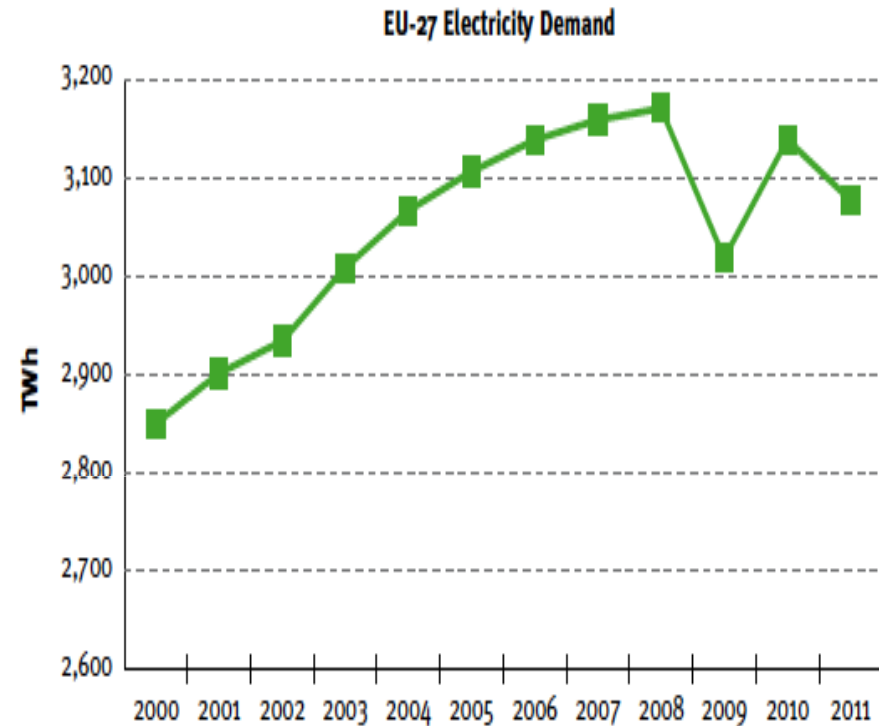
Based on Pöry North-West European Intermittency Study



Transformative effect on the electricity industry

FUNDAMENTAL CHANGE UNDER WAY – DEMAND REDUCTION

- Recession in Europe
- EU – Energy Efficiency Directive
- Rising energy prices
- Electrification of transport could provide growth – but when ?



Uncertainty in demand side projections

FUNDAMENTAL CHANGE UNDER WAY – INCREASED INTERCONNECTION

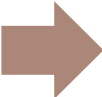
■ Significant planned capacity:

- Potential of 28GW in EU by 2040?
- Further integration of markets
- Offshore wind grids
- Dedicated REN import projects



Adds to complexity of supply side forecasting

FUNDAMENTAL CHANGE UNDER WAY – WEAK CARBON MARKET SIGNALS



Reform needed: unlikely but still a source of uncertainty

FUNDAMENTAL CHANGE UNDER WAY – REGULATORY CHANGE

■ Market reform:

- UK completing a fundamental market reform
- Others following

■ Renewable regulation uncertainty:

- Spain led the way – opened “Pandora's box”
- Many FiT and certificate schemes under review

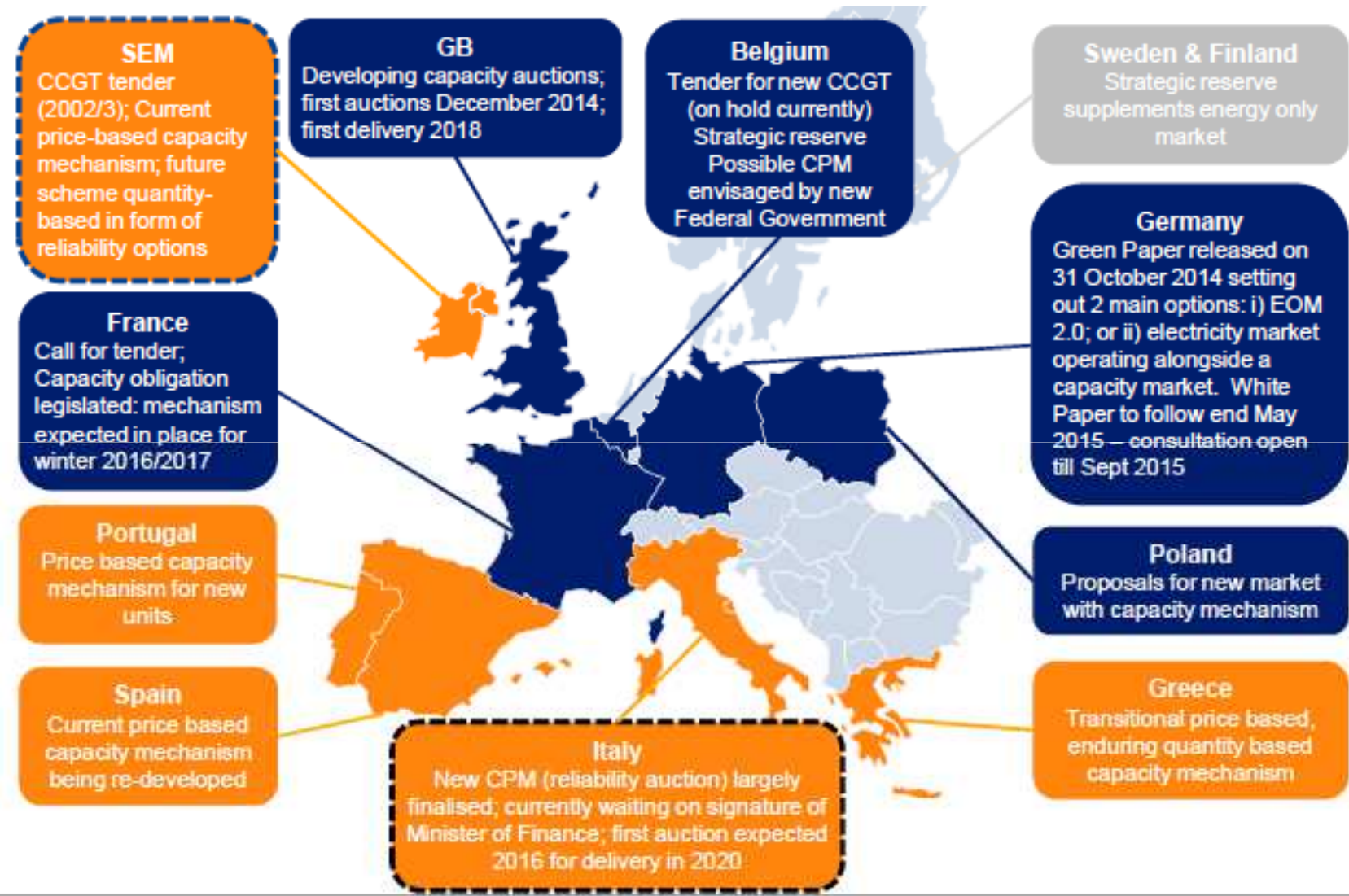
■ Energy Trilemma:

- Need to supply **CLEAN SECURE** and **AFFORDABLE** energy

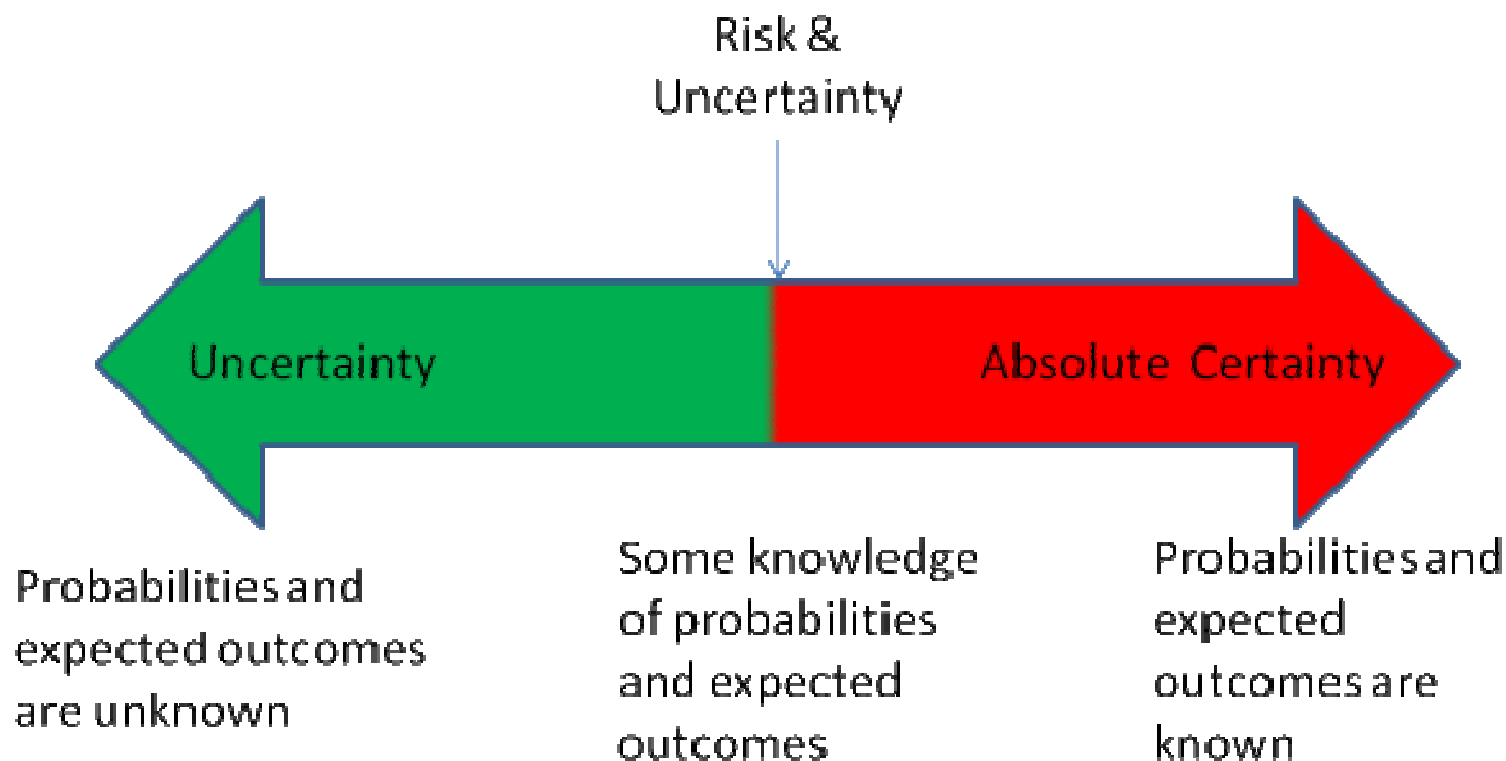


Significant ongoing regulatory risk in Europe

FUNDAMENTAL CHANGE UNDER WAY – CAPACITY MARKETS



FUNDAMENTAL CHANGE UNDER WAY – UNCERTAINTY AND RISK



- Investment is about taking calculated risk
- Difficult when the fundamentals are changing

HOW ARE THE TRADITIONAL UTILITIES ADAPTING....?

The
Economist



European utilities

How to lose half a trillion euros

Europe's electricity providers face an existential threat

Oct 12th 2013 | From the print edition

HOW ARE THE TRADITIONAL UTILITIES ADAPTING....?



HOW ARE THE TRADITIONAL UTILITIES ADAPTING....?

■ **Redefinition of strategy:**

- Greater focus on home / core markets
- Reacting to changed market imperatives
- Strengthening balance sheets



Asset divestment creating opportunities for others

■ **Questioning and redefining the business models**

WHAT DOES THE FUTURE HOLD....?

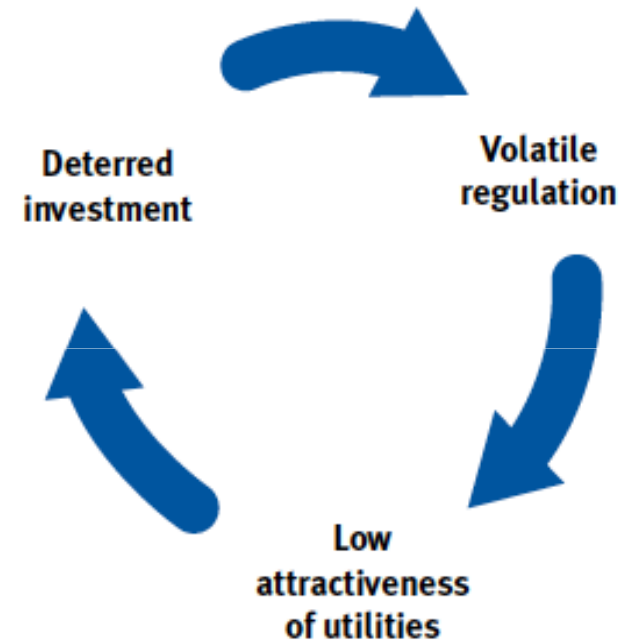
- Is it necessary to be a vertically integrated utility?
- Invest in new areas – Offshore wind, CCS, distributed generation?
- Will returns compensate for the increased sector risk?
- Do European utilities need to be high investment grade?

Business risk profile		Business Risk/Financial Risk Matrix					
		Financial risk profile					
		Minimal (AAA/AA)	Modest (A)	Intermediate (BBB)	Significant (BB+/BB)	Aggressive (BB-/B+)	Highly leveraged (B/B-)
Excellent (AAA/AA)	AAA/AA+	AA	A	A	A-	BBB	N.A.
Strong (A)	AA	A	A	A-	BBB	BB	BB-
Satisfactory (BBB)	A-	BBB+	BBB	BBB	BB+	BB-	B+
Fair (BB+/BB)	N.A.	BBB-	BB+	BB+	BB	BB-	B
Weak (BB-/B+)	N.A.	N.A.	BB	BB	BB-	B+	B-
Vulnerable (B/B-)	N.A.	N.A.	N.A.	N.A.	B+	B	B- or below

WHAT DOES THE FUTURE HOLD: HUGE INVESTMENT REQUIREMENT

Substantial investment required in a difficult environment:

- Replacement of coal capacity under LCPD: 12GW in the UK
- Replacement of ageing Nuclear fleet:
 - ▶ UK: Approx 7GW closing in medium term
 - ▶ France: Replacement (or further extension)
 - ▶ Germany: Complete closure
- Transmission grid upgrading including an offshore grid for wind



Will investment be available and on what terms

CONCLUSIONS

■ **We live in interesting times**

- Subsidising renewables – coal plant running - gas plant idle
- Over capacity N Europe – 4% projected winter reserve in the UK
- Significant regulatory intervention – some very negative
- Substantial plant closure on the horizon

■ **Some pan-European utilities have been slow to adapt**

■ **Significant investment vs significant market uncertainty**

■ **Entry of new players as non-core assets change hands**



Lack of clarity makes investment difficult for debt & equity

FINAL THOUGHT

