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European Energy

Convergence and Divergence

Antony Froggatt

afroggatt@chathamhouse.org.uk

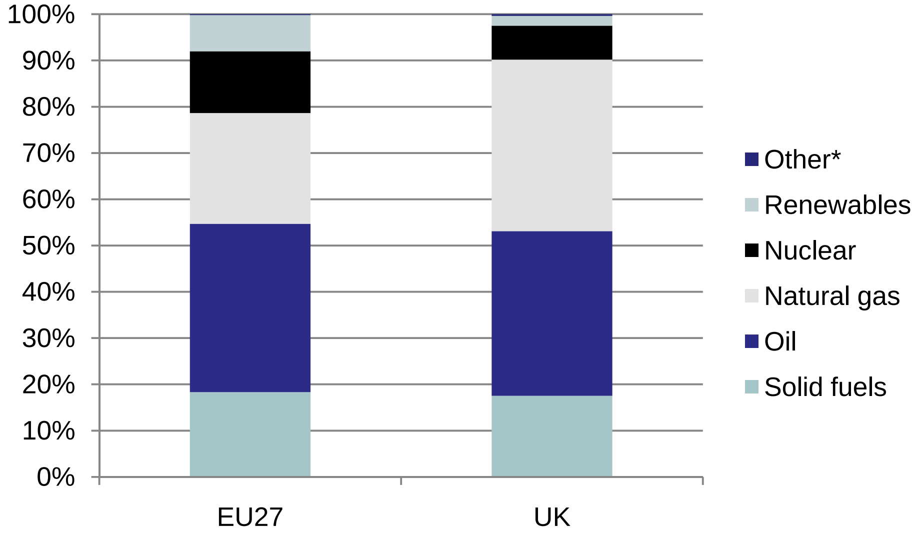
Frameworks for a low carbon future: Key building blocks for success
Falmouth, 23 - 24 May 2011

Summary

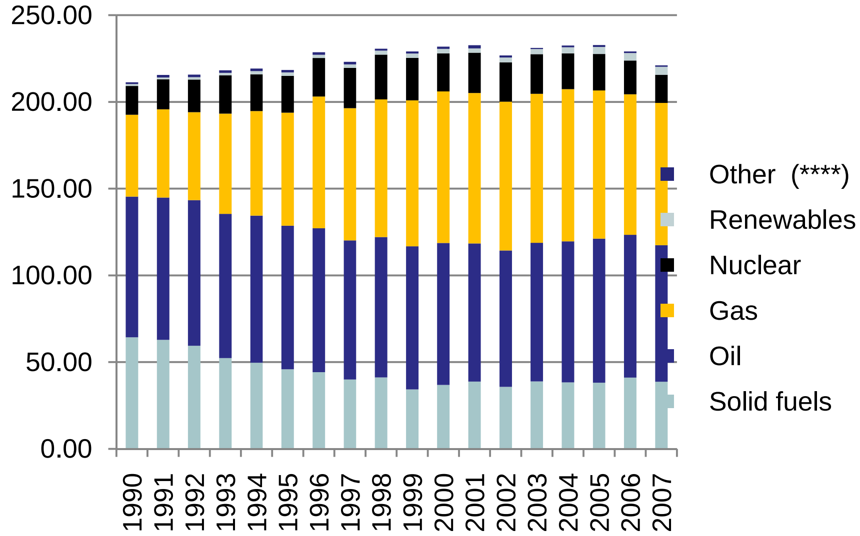
- Comparison of EU and UK
- Main EU legislation
- Up and coming Legislation
- Different reaction to Fukushima

Energy Sources

EU and UK Energy Sources (2007)

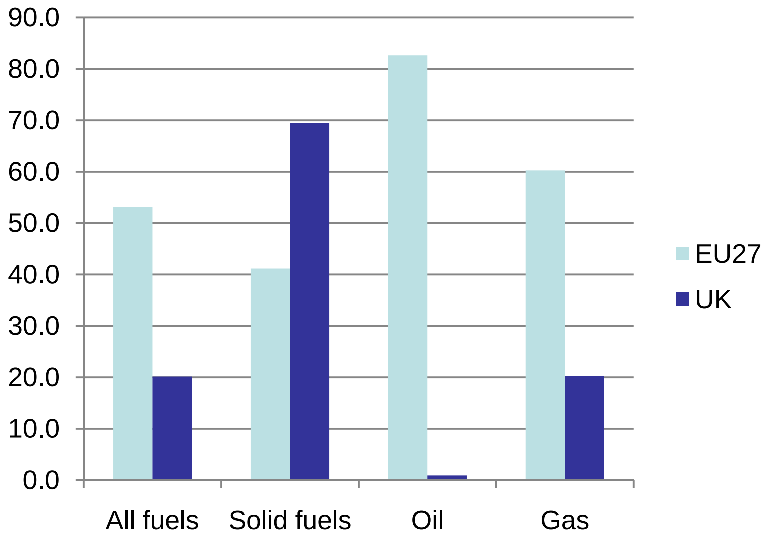


UK Energy Consumption by Source 1990-2007

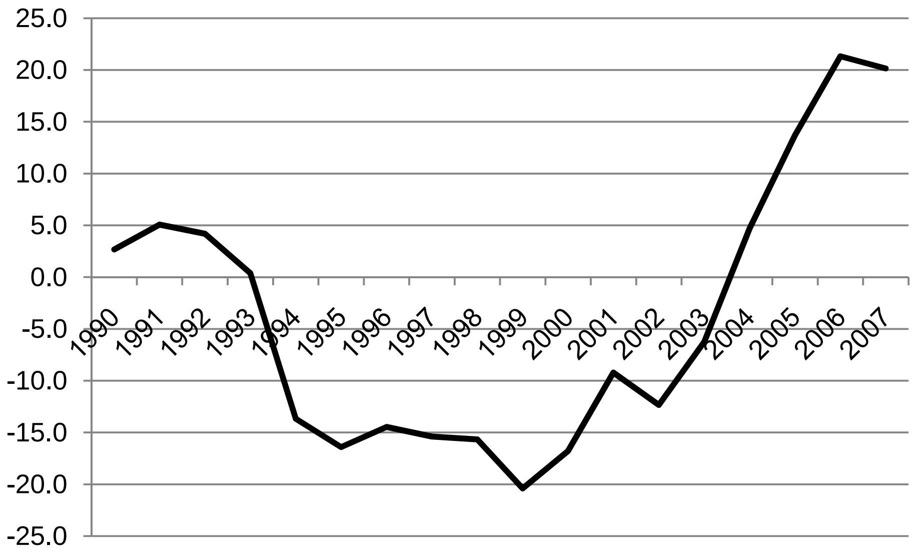


Import Dependency

EU: UK Import Dependency 2007



UK Import Dependency



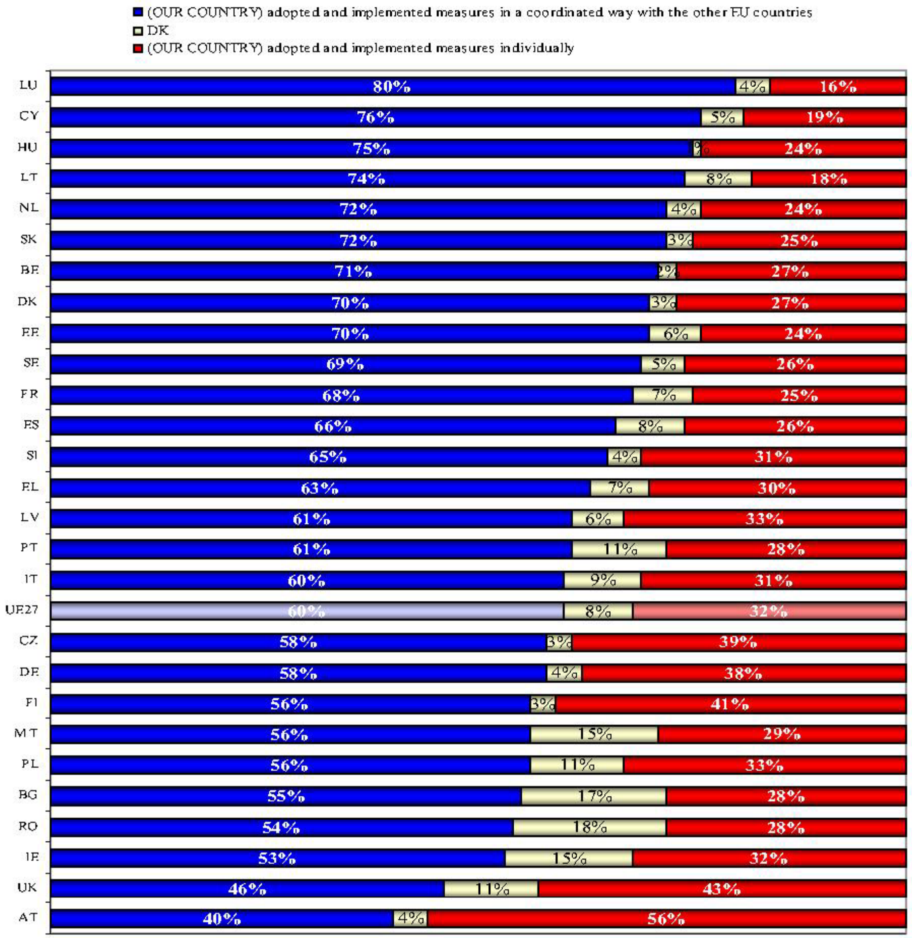
Wholesale Electricity Market Structure

ELECTRICITY	Number of companies with more than 5 % share of generation capacity (%)			Share of 3 biggest companies (by capacity) (%)			HHI (by capacity)		
	2007	2008	Δ	2007	2008	Δ	2007	2008	Δ
Austria	5	6	1	51,2	50	-1,2	NA	NA	
Belgium	2	2	0	99,9	97,5	-2,4	8390	7206	-1184
Bulgaria	6	6	0	56,4	56,4	0	NA	NA	
Cyprus	1	1	0	100	100	0	1	1	0
Czech Republic	1	1	0	76,85	75,31	-1,54	NA	NA	
Denmark	2	2	0	75	75	0	NA	NA	
Estonia	1	1	0	99	99	0	NA	NA	
Finland	4	4	0	68	68	0	NA	NA	
France	1	1	0	93	93	0	6960	NA	
Germany	4	4	0	85,4	84,7	-0,7	NA	2008	
Great Britain	8	8	0	41	42	1	986	901	-85
Greece	1	1	0	NA	NA		10000	10000	0
Hungary	5	5	0	67	67,9	0,9	2119	1911	-208
Ireland	5	4	-1	71	86	15	NA	NA	
Italy	5	5	0	61,2	57,6	-3,6	2126	1351	-775
Latvia	1	1	0	93	94	1	8110	8110	0
Lithuania	3	3	0	84	85	1	3160	3095	-65
Luxembourg	3	3	0	80	79	-1	5843	5682	-161
Malta	1	1	0	NA	NA	0	NA	NA	
Northern Ireland	NA	4		NA	86		NA	4096	
Norway	6	6	0	40	43	3	NA	1826	
Poland	5	5	0	50,9	52,5	1,6	1312,7	1363,3	50,6
Portugal	2	2	0	72,5	72,2	-0,3	4472	4521	49
Romania	5	5	0	63,7	70,98	7,28	1813	2116	303
Slovak Republic	1	1	0	85,2	83,9	-1,3	6930	5019,922	-1910,08
Slovenia	3	3	0	92,7	92,5	-0,2	7208	4369	-2839
Spain	5	5	0	76	72,9	-3,1	1827	1716	-111
Sweden	3	3	0	78	74,7	-3,3	NA	NA	
The Netherlands	6	4	-2	61	69,9	8,9	1592	1551	-41

Public Opinion

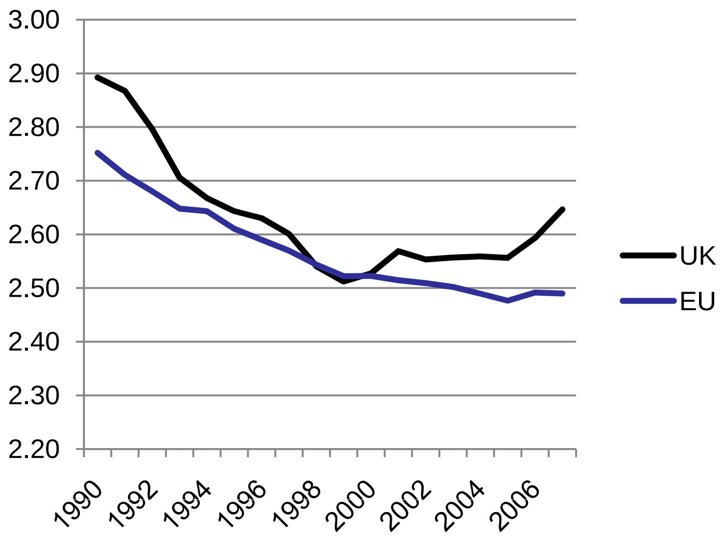
2. Variations and national trends

Coordination of energy policies

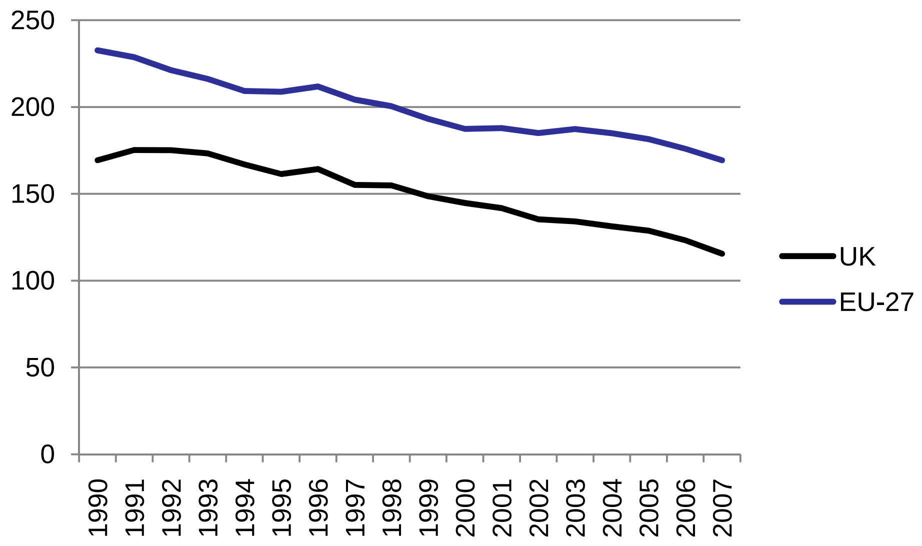


Intensity of Economy

CO2 (tCO2/toe)



Energy (toe/M€ '00)



Key Legislation

- 20:20:20 Package (2009)
  - 20% Renewable Energy – binding
  - 20-30, reduction in GHG emissions - binding
  - 20% improvement in energy efficiency – non-binding
- 3rd Package on Energy Market Reform
- EU Emissions Trading Scheme (phase III)
- Large Combustion Directive/IPPC

Legislation 2011

- *June 2011:* ***Directive on <u>energy efficiency and savings</u>***
  - A new legislative initiative on energy efficiency and savings could provide such a comprehensive framework by addressing all energy efficiency horizontal tools, such as target setting, financing tools, saving obligations and a market for energy efficiency, as well as specific measures for the main energy supply and using sectors. It could furthermore replace two existing energy efficiency directives (the Energy Services Directive and the Directive on Co-generation (CHP), allowing for the creation of new synergies and the mainstreaming of energy efficiency in all energy-related activities
  - NOT BINDING Targets.
- *June 2011:* ***<u>Energy Star</u>***
  - Energy Efficiency of office equipment
- *3rd trimester:* ***Follow-up to Communication <u>on offshore oil and gas safety</u>.***

- *December 2011**: Initiative to support the implementation of <u>smart grids</u>***
- Standards
- Privacy
- Regulatory incentives
- Innovation and rapid application
- *December 2011:* ***Proposal on <u>counting electricity used by electric vehicles towards the target for renewable energy</u>***
- *end 2011/early 2012:* ***<u>FP8 & Euratom FP</u>***
- *Date? :* ***<u> Energy Infrastructure:</u> Projects of European Interest and Financing***

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Non-Legislative Activities

- *January 2011: **Financing renewables***
- *April 2011: Communication on **smart grids***
- *20 April 2011**: Implementation of the Energy Recovery Plan***
- *April 2011: **open negotiations** **for an Agreement** between the Government of the United States of America and the European Union on the coordination of energy-efficient labelling programmes for office equipment **- Energy Star***
- *April 2011: **implementation of the ENERGY STAR** programme in the European Community in the period 2006 – 2010*

- *September 2011:* ***Communication on security of energy supply and international co-operation***
- *October 2011: Communication on* ***Sustainable Development / Climate Change and Energy as driver for Growth***
- *4th trimester 2011 :* ***Energy Roadmap 2050***
- *4th trimester 2011: Communication updating "****Nuclear Illustrative Programme (PINC)****"*
- *December 2011: Communication on the* ***progress in the implementation of the SET-Plan***

UBS and Deloitte's View of Impact

- UBS
  - We believe the Fukushima accident was the most serious ever for the credibility of nuclear power. Chernobyl affected one reactor in a totalitarian state with no safety culture.
  - We think investor-owned utilities are unlikely to consider nuclear a good risk-reward option. We believe it will mainly be an option only for public or semi-public entities and in particular in systems with regulated cost pass-through regimes.
- Deloitte
  - It is easy to see that nuclear power will be a major source of electricity for decades to come
  - Should the world turn its back on nuclear energy: ... The answer is an emphatic no

Impact on EU Member States

Country	No. of reactors	Safety checks on existing	Potential closures	Moratorium on new	Existing reactors at risk	New reactors at risk
EU+CH		x			17	5
France	58	x	x		2	1
Russia	31	x				
Germany	17	x	x	NR	7	0
UK	19	x		x		
Ukraine	15	x				
Sweden	10	x		NR	0	
Belgium	7	x	x	NR	3	
Spain	8	x		NR	2	
Czech Republic	6	x			0	
Switzerland	5	x	x	x	3	4
Finland	4	x		x	0	
Italy	NR			x		4

Source: UBS estimates

Questions

- Current:
  - How far is ERM aligned with EU legislation
- Future Legislation
  - How important are these to UK energy demand/supply
  - How instrumental will EU be in driving forward super-grids and/or smart technology
- Longer term
  - What can we expect for 2030 targets, GHG and RES
  - How far will the divergence of EU economies affect future energy and climate policies