

Politics and power in low-carbon electricity transitions:

**A multi-level analysis of green niche-innovations and
resilient regimes**

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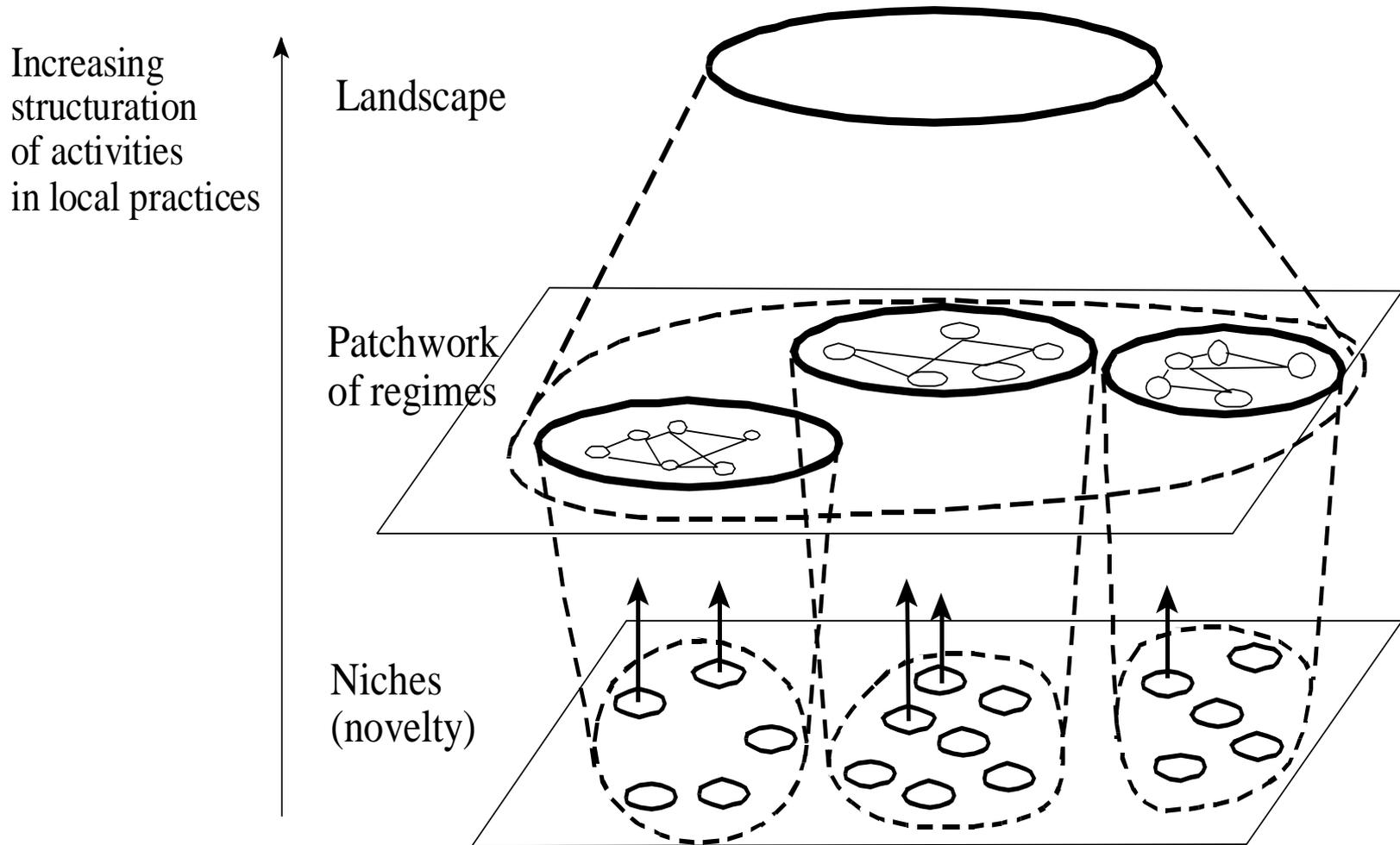
IGov workshop (London, 30 April, 2013)

1. Aims

1. Use MLP to assess progress and setbacks in the transition to renewable electricity
 - a) Drivers of renewable 'niches'
 - b) Stability of existing regimes (coal, gas, nuclear)

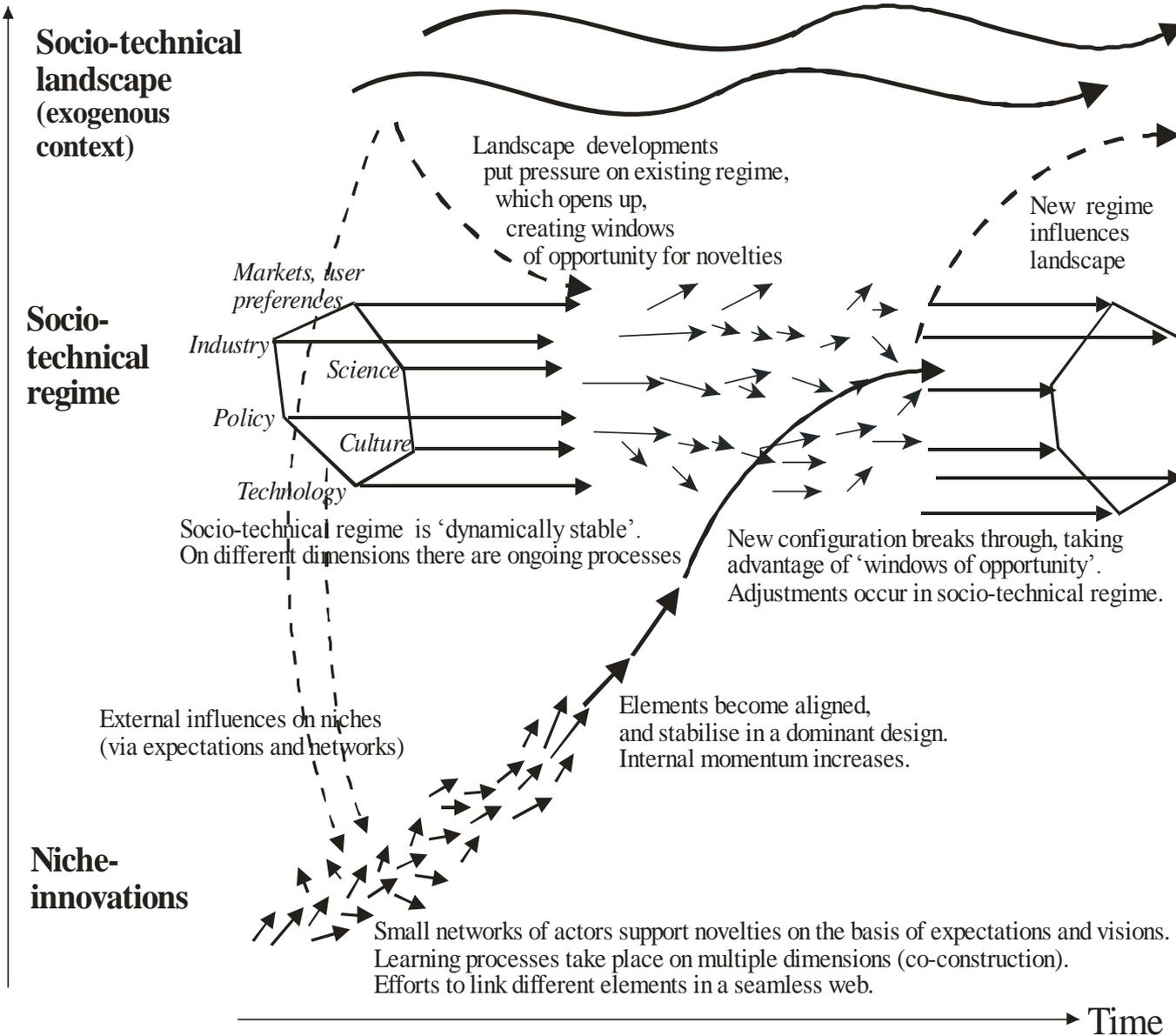
2. Analyse 'power and politics' in transition
 - a) Enrich MLP
 - b) Distinguish three uses of power (loosely on Lukes)

2. Multi-level perspective (MLP)



Transition dynamics

Increasing structuration
of activities in local practices



3. Empirical assessment

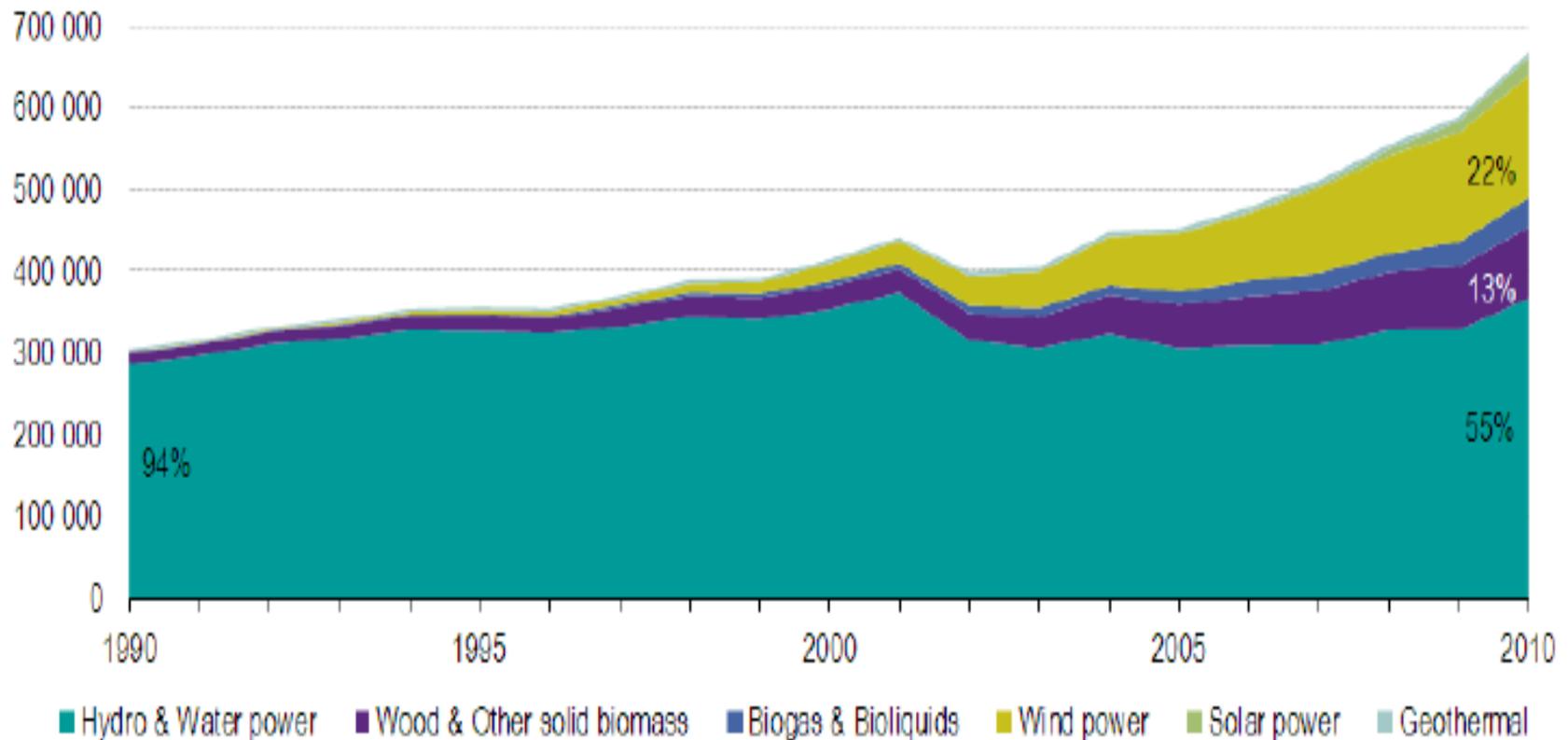
3.1 Renewable electricity in Europe

3.2 Incumbent regimes in UK (gas, coal, nuclear)

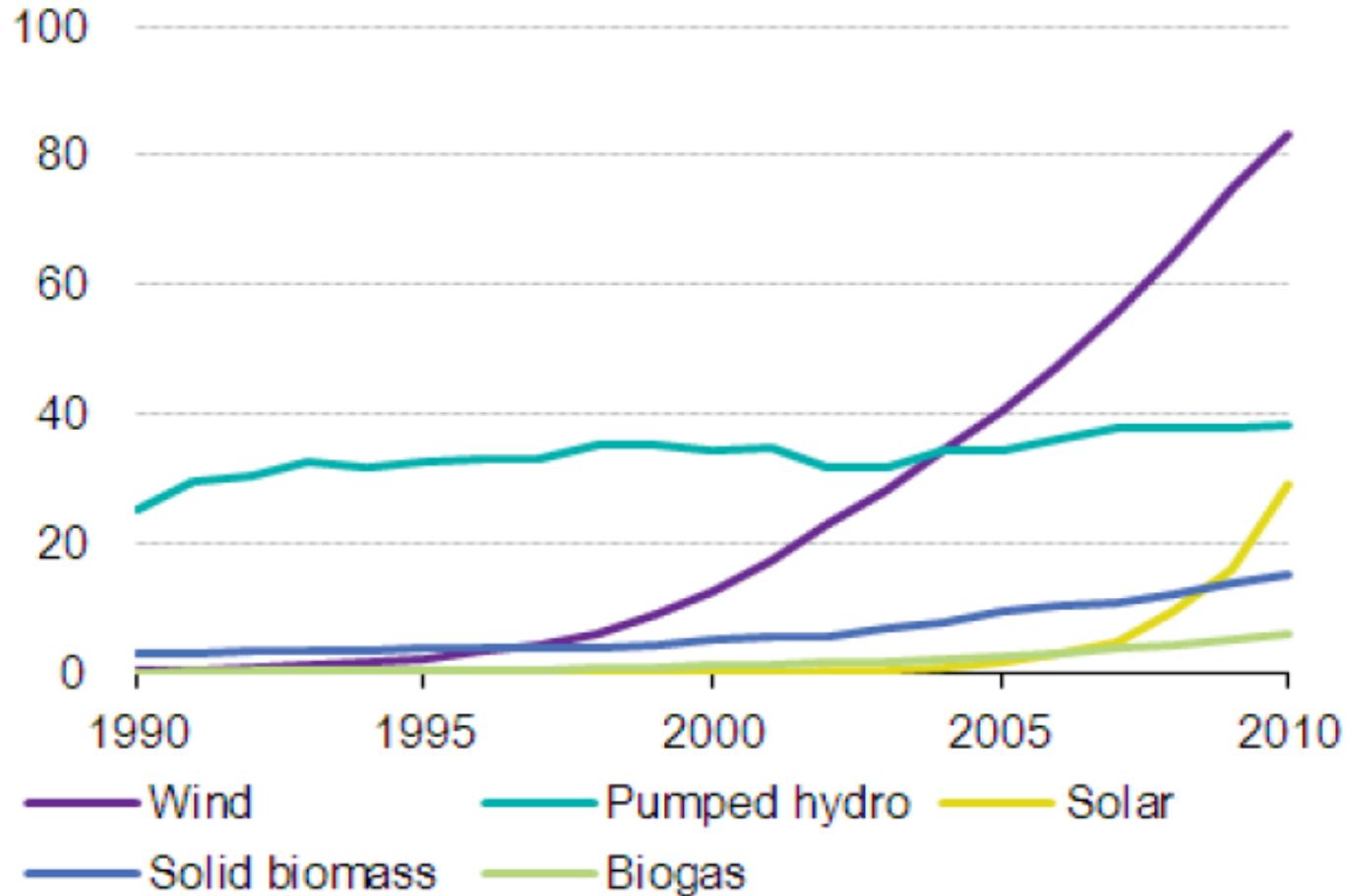
3.1. Renewable electricity in Europe

From 12.2% in 1990 to 19.6% in 2010:

- Old renewables (hydro, biomass/wood)
- New renewables (wind, solar, biogas)



Expansion in EU capacity in wind and solar-PV (in gigawatts)

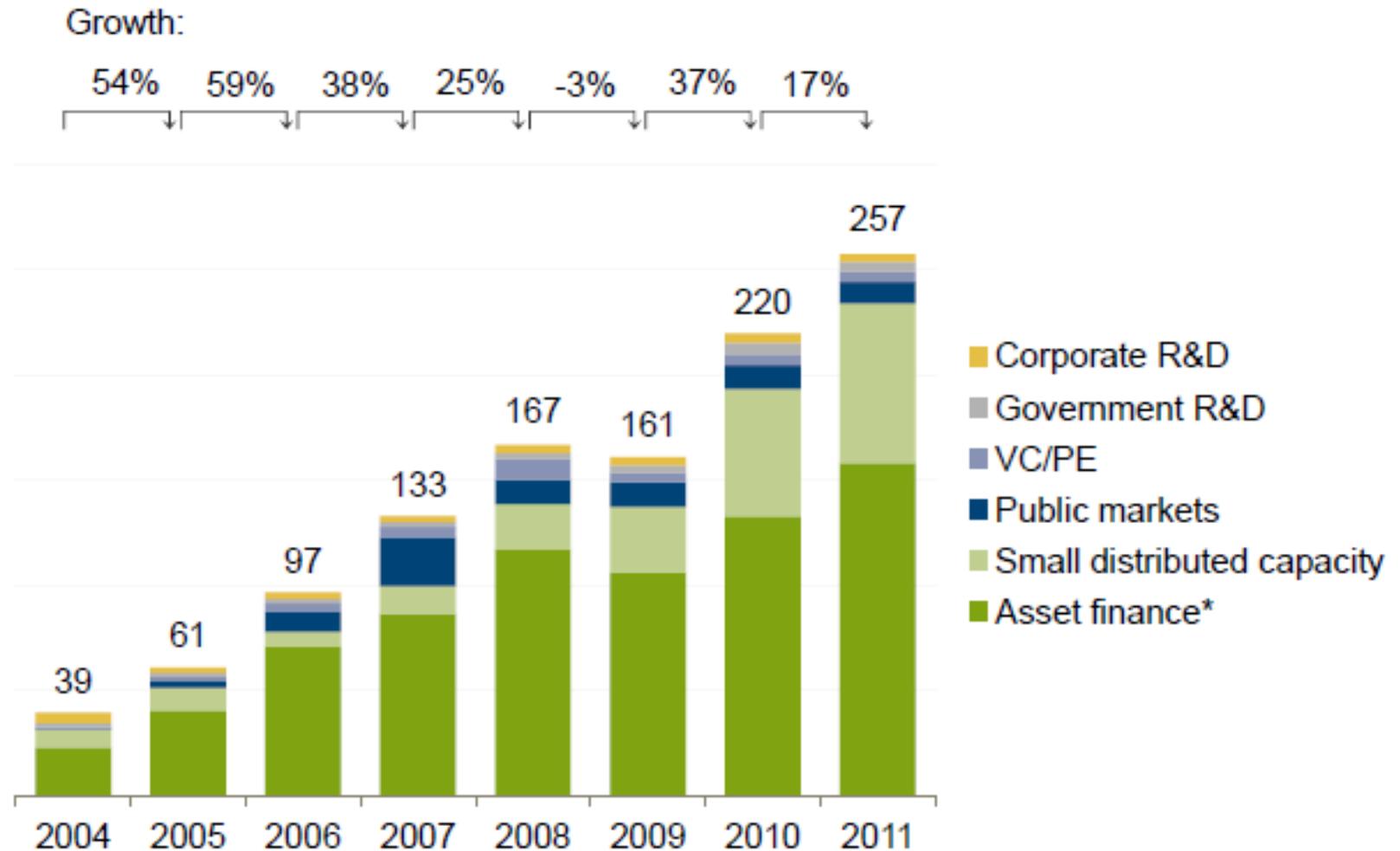


Driving factors

- 1) Rising public concerns climate change after 2005
- 2) Favourable policies, e.g. generous feed-in tariffs
- 3) Price/performance improvements in wind turbines and PV-modules (China)
- 4) Green stimulus packages + Rising (global) financial investments

Global investment in renewable energy by asset class (in \$billion)

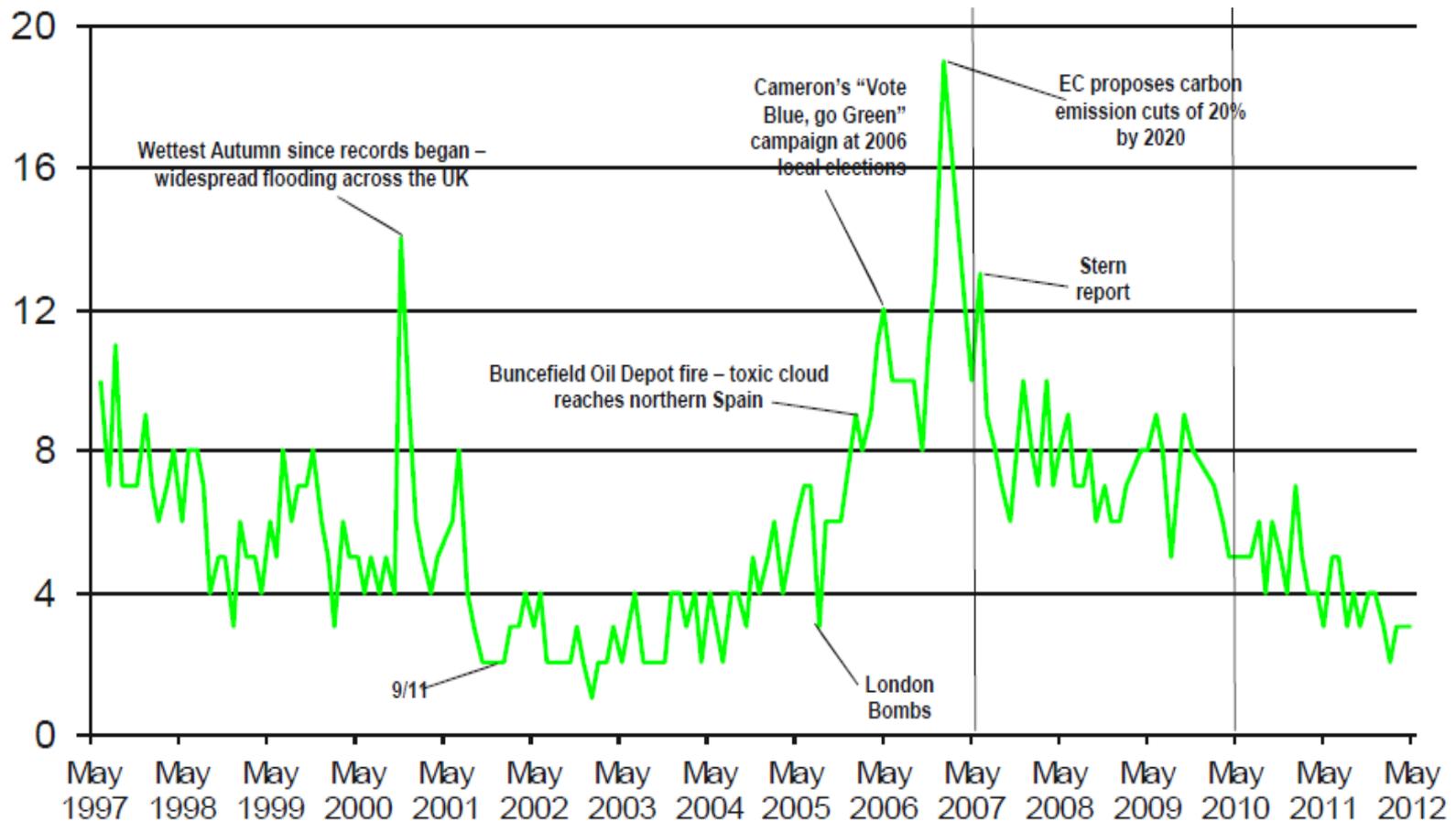
(Frankfurt School and Bloomberg Finance, 2012)



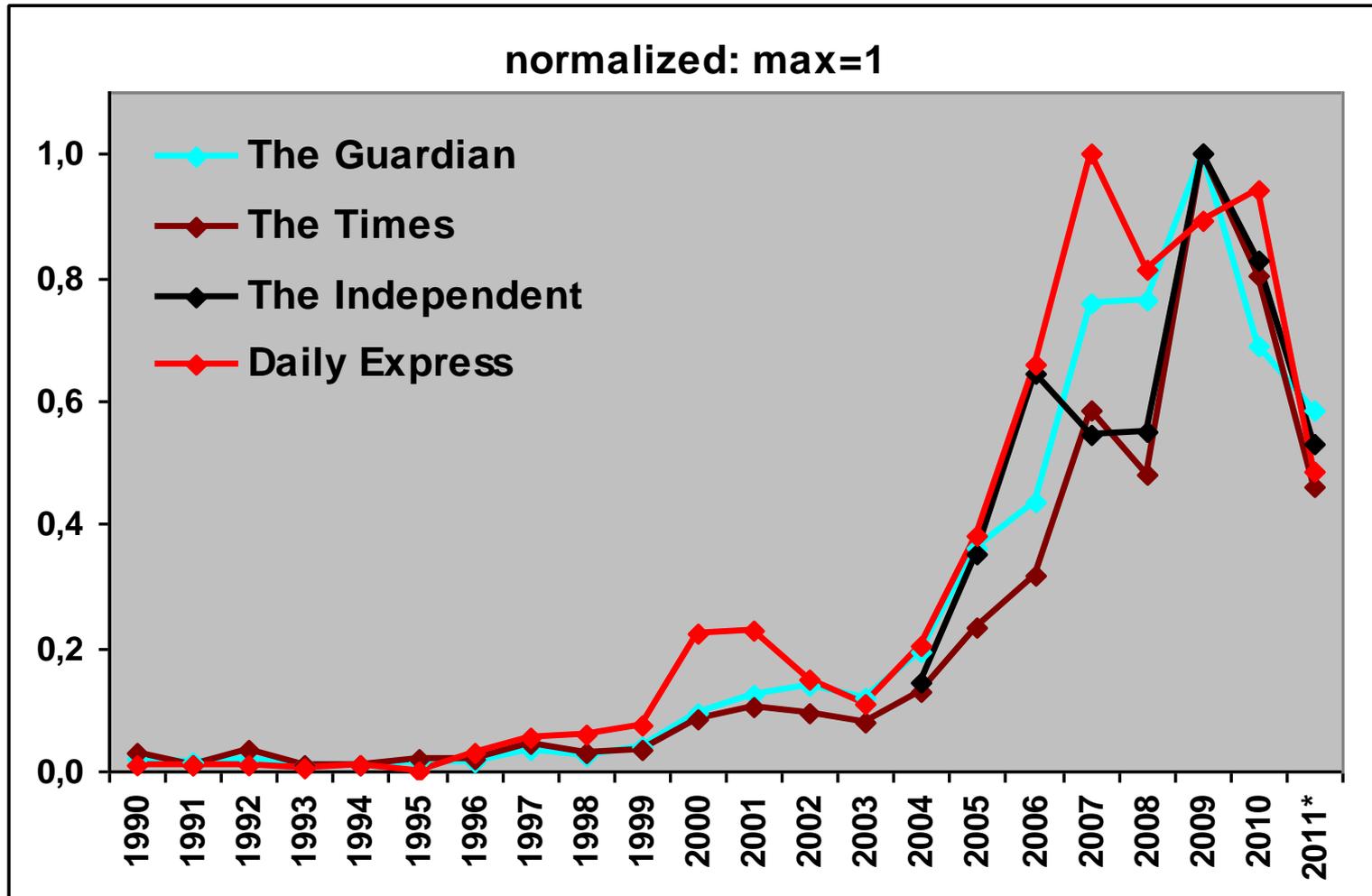
Possible setbacks (weakening drivers)

1) Declining public attention

Percentage ranking 'environment/pollution' as one of the most important issues facing Britain (Ipsos Mori, May, 2012)



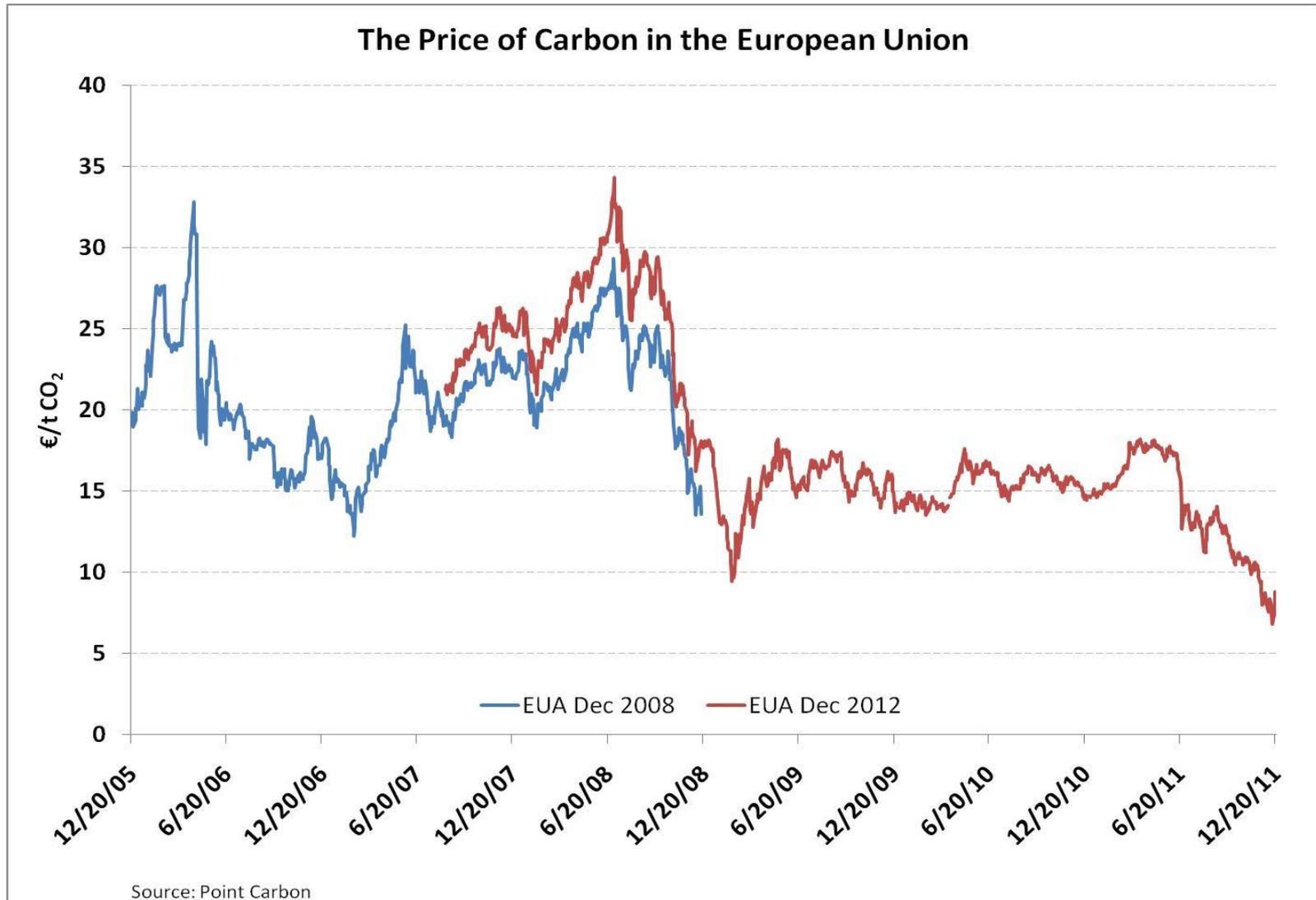
Weakening public attention for climate change (UK newspaper counts of 'climate change' as rough proxy)



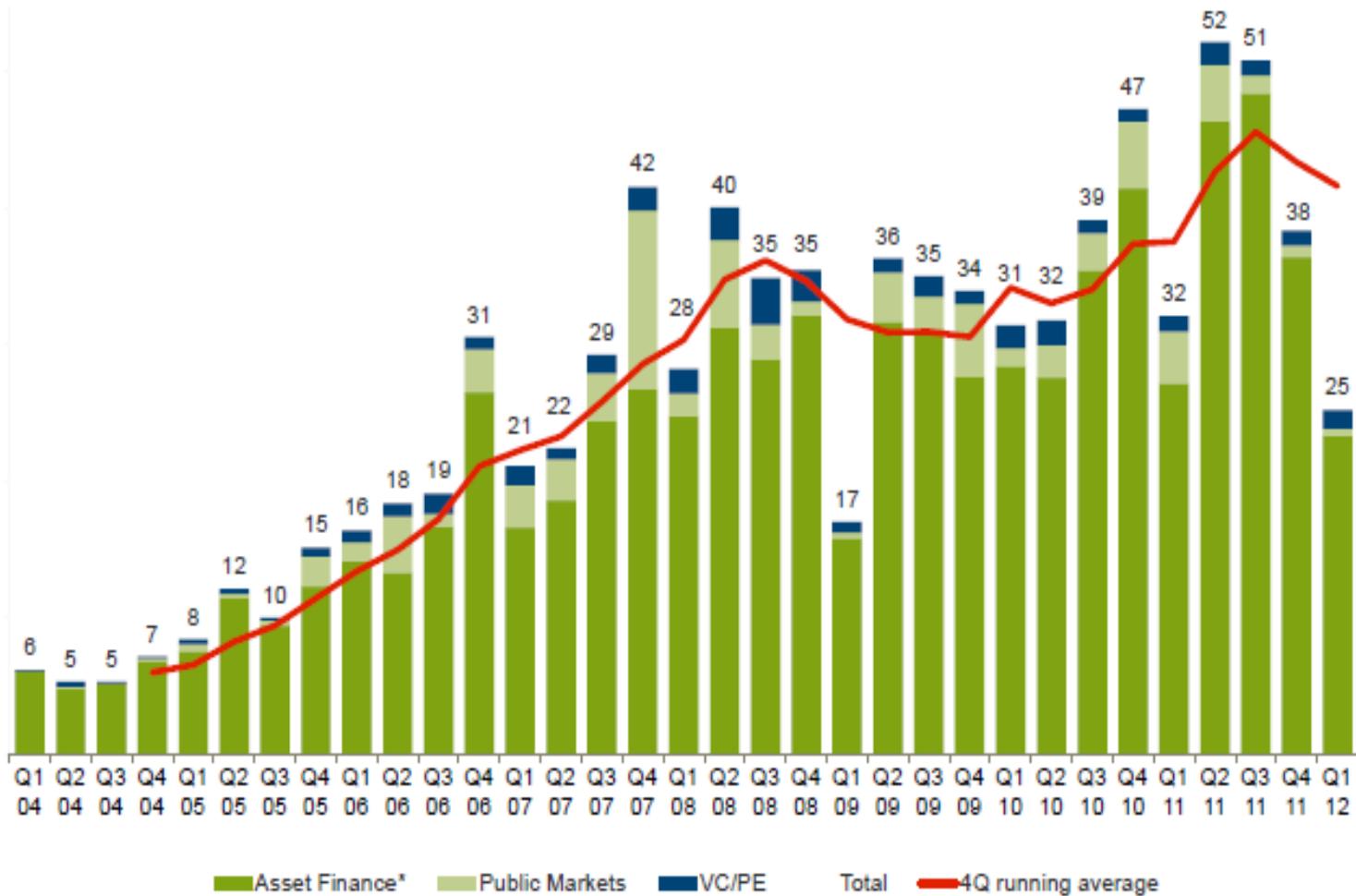
2) Weakening policies

- a) Reductions in feed-in tariffs (UK, Germany, Spain, Italy)
- b) No successor of Kyoto; no international action until 2020
- c) On-going government subsidies for fossil fuels (\$500-1000 billion per year)
- d) Green stimulus packages winding down (2011-2012)
(Korea downscaled government R&D on green options by 80% in 2012)

e) EU ETS is not delivering (= flagship EU policy tool)
Carbon price: low, decreasing, fluctuating



3) Decreasing world-wide renewable energy investment in 2012 (\$billion)



Intermediate conclusion

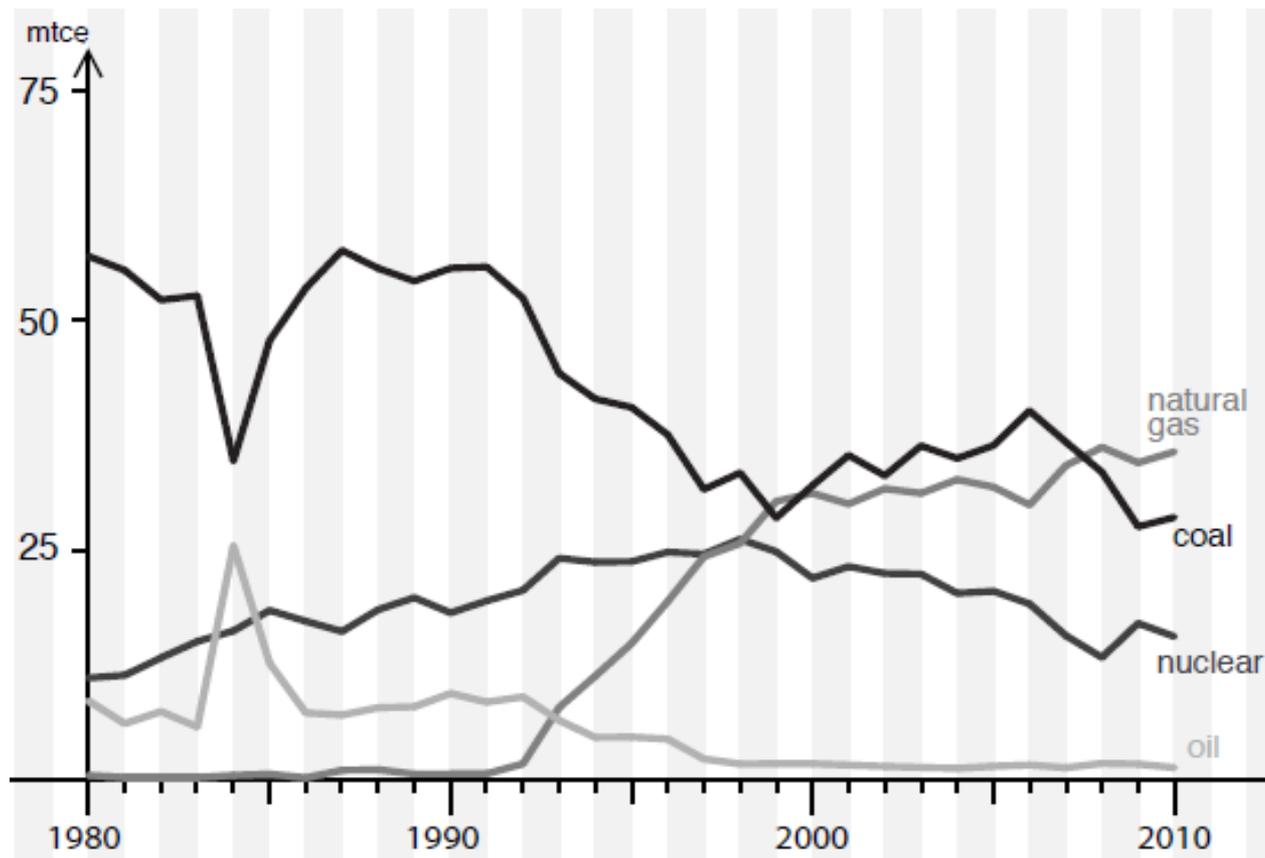
- Substantial progress in 'new' renewables.
- But momentum may be weakening

3.2. Existing UK regimes (gas, coal, nuclear)

- regimes are resilient ('adjust')

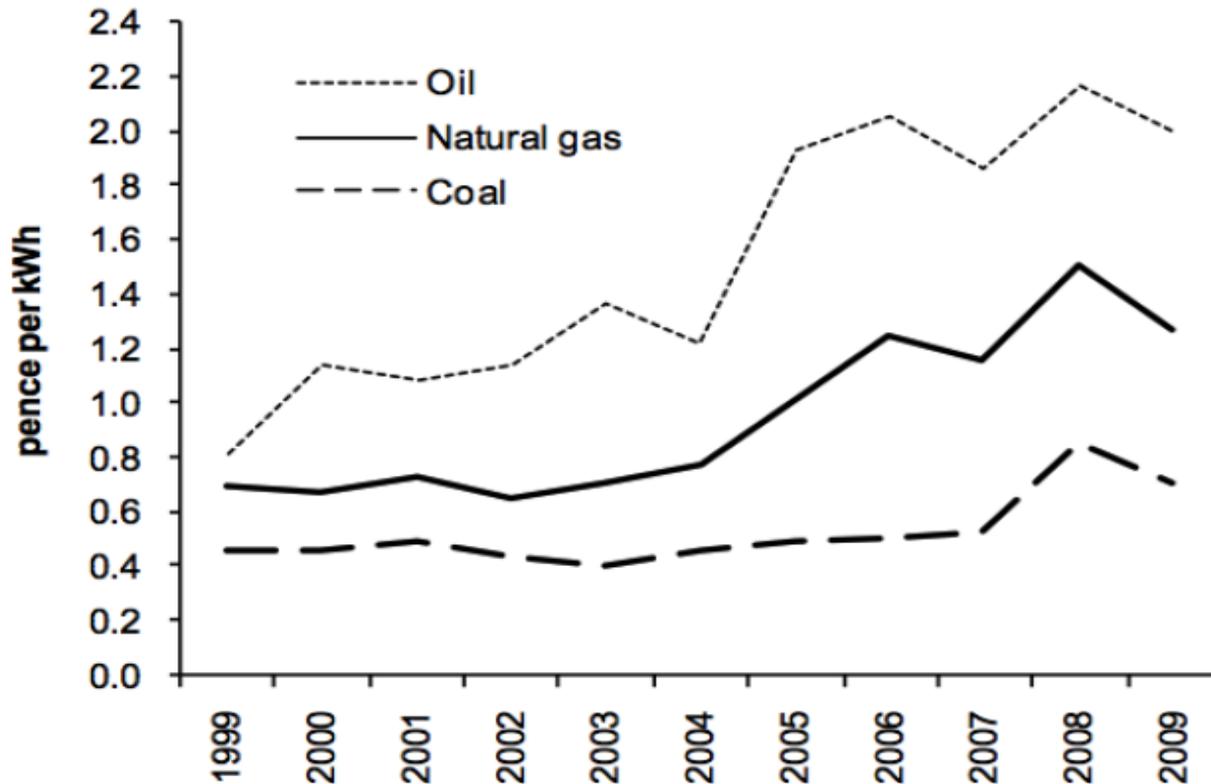
- **Incumbent actors** (utilities, government) **remain attached**

Fuel input to electricity generation



Natural gas

- Utilities 'dash for gas' in 1990s (replacing coal)
- Rising gas/oil from 2004



→ Utilities use more coal (1999-2006)

→ 2005: Government concerned about **energy security**, affordability + climate change

→ Shift in government priorities

2003 White Paper (*Our Energy Future*) embraced **renewables**

2007 White Paper (*Meeting The Energy Challenge*) proposes: **CCS (for gas and coal), nuclear and renewables**

- 2012: Shale gas revolution + plans for 40 gas-fired power stations

Nuclear power

- Disappeared from agenda after 1990 privatization (waste problem + high costs)
- 2003 White Paper confirms: 'no nuclear'
- Nuclear re-appears around 2005 (Blair):
 - a) Nuclear framed as 'low-carbon' option (climate change)
 - b) Nuclear enhances energy security
- Blair 'consults' (2006), but says he will not listen
- Government highly committed, but utilities and investors hesitant, because of uncertainties (cost, decommissioning cost, waste liabilities)
- Plans to 'subsidize' nuclear (EDF) despite earlier promises

Coal

- On its way out in 1990s: dash for gas, acid rain regulation, climate change
- But coal reappears by 2004/5
 - a) Utilities use more coal because of rising gas price. Applications for new power stations since 2008; delayed procedures
 - b) Concerns about energy security (gas prices, Russian gas) → government recommits to coal
 - c) promise of CCS legitimates 'clean' coal. Government announces £1 billion for demonstration project (2007).

But ... last consortium pulled out in 2011.

→ No commercial CCS activity

→ New promise of 'capture ready' (risk of lock-in)

4. Power and politics

1. 'normal' interest-based politics

- Blair side-lining public consultation over new nuclear power.
- Politicians breaking promises to not subsidize nuclear power
- Politicians (Osborne) trying to water down the Climate Change Act
- Thatcher obstructing European acid rain negotiations
- Claiming credit for outcomes (CO₂ reductions) unrelated to climate policies
- Using promises (CCS capture ready) to legitimate decisions

2. Shaping public agendas/debates

- Privileging certain transition paths: CCS, nuclear, wind (upstream technology: STI-mode of innovation)
- Downplaying other transition paths (Doing-Using-Interacting model of innovation)
 - a) Range of green urban initiatives in concrete local systems (transport, energy, housing/buildings)
 - b) Civil society initiatives: transition towns, community energy
Less resources, support, attention

3. Embedded power (structural power?)

- Macro-discourses: 'weak' ecological modernization rather than 'strong' version
- Post-political discourse (Swyngedouw): managerial, administrative, experts, 'there is no alternative', 'doing the right thing'

- UK policy style (Bailey, 2007)

- paternalistic and discretionary system of government. Ministers feel less accountability to courts, media or third-party institutions.
- informal consultation networks, particularly with industry and scientific experts.
- outsiders to close-knit consultation networks have less access to decision-making circles.

→ Policymakers prefer to deal with big firms rather than cities, civil society etc.

→ Emphasis on efficiency (role of Treasury) rather than innovation

5. Conclusions

- Substantial European progress in green electricity
- But ... renewables face uphill struggle against regimes
- Resilient regimes (coal, gas, nuclear) because of commitment from government and industry

- ‘Normal’ politics to support/protect regimes
- Privilege technical transition paths over broader socio-technical paths
- Deeper ‘structural power’ perhaps makes UK unlikely transition leader