Social policies to reconcile lower emissions with social equity

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CASE seminar, LSE
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Scope of this lecture

• Climate change and mitigation policies a field of great complexity
• Approach from social policy perspective
• Therefore multi-disciplinary. My main sources:
  – Political economy
  – Social policy analysis
  – Theories of human need and social justice
• A synthesis paper
• Focused on household energy use and resulting emissions
The climate challenge in one slide

• IPCC Report 2014 reiterated:
  – the extent and best predictions of global GHGs
  – the impact on human habitats and welfare
  – Scale of necessary mitigation responses

• To be consistent with a 2°C path global emissions must fall from around 50 billion tonnes of CO₂ today to well below 20 billion tonnes in 2050; in other words, by a factor of around 2.5.

• If world output grows by a factor of 3 over this period (implying an average world growth rate of around 2.8% pa), then emissions per unit of output would need to fall by a factor of c9

• UK Climate Change Act 2008: target (still) to reduce total GHG emissions by 80% 2050, and 34% by 2020 (compared to 1990)
This raises distributive and justice issues

- Agreement that tackling CC not just a technical or economic issue
  - IPCC, 2014, Working Group III on Mitigation, chapter 3

- At global level distinguish
  - Fair distribution of future emissions
  - Fair distribution of funding emissions reduction, and adaptation

- Both questions can be applied within nations
Social policy and justice

• Similar concerns in social policies in rich countries
• Provision of minimum level of welfare
  – An income floor, or access to employment to guarantee income floor
• Plus guaranteed access to provision of certain services on citizenship basis: health, education etc
  • Consequentialist arguments for such ‘social investment’, but ethical arguments too: health is a basic human need
• Funding via progressive allocation of burdens
Needs and just emissions

• This discourse reflected in some discussions of climate change policy
  – Henry Shue’s distinction between ‘necessary’ and ‘luxury’ emissions
    • ‘If all 40 million drivers of SUVs in the US switched to fuel-efficient cars, the savings alone would offset the emissions generated in providing electricity to all 1.6 billion people in the global South at present without it’ (World Bank)
  – Greenhouse Development Rights campaign
• Caney critiques ‘just emissions’ as a separate concern of global and intergenerational justice
  – Must focus on the ultimate ‘welfare’ goals of economic activity, energy use and consequent emissions
  – Yet he concludes this entails ‘meeting the basic needs’ of all people now and in the future
Justice, wellbeing and human needs

• I have argued that human need is a central core of both domestic, global and inter-generational conceptions of wellbeing
  • CASEpaper 182, July

• Sen’s capability approach is a close alternative, but I argue
  – Need theory permits cross-cultural and inter-generational comparisons
  – Need theory less ‘informationally demanding’

• As the available ‘carbon space’ contracts, I believe the idea of human need will become more central to both environmental justice and social justice

• Focus here on fair distribution of a) emissions and b) the burdens of reducing them
This presentation

• Michael Grubb’s 3 Pillars of ‘planetary economics’:
  • Pillar II: Carbon pricing, distributional dilemmas and countervailing social policies
  • Pillar I: Changing behaviour: standards and engagement in housing policy
  • Pillar III: Transformation and public-led investment: green new deal
• Conclusions and recommendations
Carbon mitigation policies: Grubb’s three domains

• Energy efficiency -> Standards and Engagement
  – decision-making theory: satisficing
• Markets and pricing -> Price Carbon
  – decision-making theory: optimising
• Innovation and infrastructure -> Strategic public-led Investment
  – decision-making theory: transforming

Key: no magic bullet; must use all three and exploit synergies
Avoid ‘ideal search’ for second domain
Realm of Opportunity

- Smarter choices (e.g., energy efficiency)
- Cleaner products and processes
- Innovation and infrastructure investment

Field of theory

- ‘Behavioural economics’ (e.g., barrier, transaction, psychology & satisficing)
- Rational expectations economics
- Evolutionary & complexity economics

Core solutions

- PILLAR I: Standards & engagement
  - Smarter choices
  - Cleaner products and processes
  - Innovation and infrastructure investment

- PILLAR II: Markets & Prices
  - Markets & Prices

- PILLAR III: Public-led investment
  - Public-led investment

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My central argument

• Priority still accorded to pillar II - markets and pricing – despite problems
  – In particular integrating emissions reduction with welfare/equity policies
• Therefore argue for more recourse to:
  – Pillar I: both public regulation and community engagement
  – Pillar III: strategic investment
• In combination they can generate a new form of eco-social policy
Pillar II: carbon pricing

- Energy policy serves several objectives
  - Reduction of carbon emissions is just one
- To achieve this a single consistent carbon price helpful
  - Say £60/tCO2e today
  - But layering of policies results in complex variations in UK
  - And in some domains very low or negative
- IFS/CCCEP Report
Figure ES.1: Implicit carbon prices (€/tCO₂e) by end-user and fuel type, 2013 and 2020

Source: Authors’ calculations (see Appendix B for full sources and methodology). Figures in 2013 prices.
CMPs in the UK: Pillar II
Upstream policies

A simplified summary:

a) Upstream
   – ETS: EU Emissions Trading System
   – CFP: Carbon Floor Price
   – CCL: Climate Change Levy
   – CRC: Carbon Reduction Commitment
   – RO: Renewables Obligation
Downstream policies targeting certain households/dwellings

• Pre-2013:
  – CERT (Carbon Emissions Reduction Target)
  – CESP (Community Energy Saving Programme)
  – Decent Homes
  – Warm Homes

• Post 2013:
  – Green Deal
  – ECO (Energy Company Obligation)

• And one ongoing ‘counter-policy’:
  – 5% reduced rate VAT on household energy (£5.2b)
  – Unusual in EU where full VAT levied
Distributional impacts

• Most downstream programmes mandate or impose obligations on energy companies

• Result – and intention – is that company obligations will be paid for by final consumers via rise in tariffs

• But this inherently regressive:
  • CASEpaper 152
Fig. 7. Average and marginal GHG intensity of expenditure by quintile (2009).

Fig. 8. Equivalised direct and embodied emissions by quintile.
Domestic energy is a necessity

- Necessities with income elasticity <1, notably energy and food
  - All necessities: Q1 spends 57%, Q5 27%
  - Energy and food: Q1 spends 36%, Q5 13%

- A fact of life? necessities have high GHG intensity than non-necessities
  - A major issue for carbon pricing
  - But especially for programmes paid for via energy prices

- Moreover prices rising faster:
Cumulative inflation by income decile
January 2006-July 2014
Fuel poverty impacts

• Turn to basic need arguments: fuel poverty
  • Hills Report definition: ‘where a household has required fuel costs above the median and, were it to spend that amount, would be left with a residual income below the official poverty line’

  – Results from:
    • Dwelling characteristics, household characterises, and energy prices
  – 2.7m households fuel poor in 2009
  – ‘Fuel poverty gap’ £1.1b
    • Excess costs faced by fuel poor
Countervailing ‘social’ policies:

1. Compensation

• The standard argument: compensate the losers

• Current policies:
  – Warm Home Discount (£0.3b)
    • Strictly speaking a reduced energy payment
  – Winter Fuel Payment and Cold Weather Payment (£2.2b)

• Winter Fuel Payments very poorly targeted
Can compensation be made to work?

• JRF report says adjustments can be compensated,
  – Even if Domestic fuel taxed at 20%

• Models:
  – CPF on gas, non-metered fuels and transport, and VAT rate increase on household energy
  – + changes to Universal Credit, in particular, increasing the basic amounts of Universal Credit and reducing withdrawal rate
Figure 1: Distributional impact on income of CPF on gas, non-metered fuels and transport and increased VAT on household energy (large carbon tax with transport) and associated compensation package.
Figure 2: Winners and losers by income decile from large carbon tax with transport and associated compensation package
Compensation: conclusion

• Costly
  – Increasingly so as more ambitious carbon reductions set
  – Little left over for energy efficiency measures
• A further extension of means-testing
  – Further lock-in of people facing high marginal withdrawal rates
• Low-income losers remain
• Politically very difficult
Countervailing ‘social’ policies:
2. Targeted energy efficiency policies

• Before 2013:
  – Mix of energy supplier obligations (listed earlier), plus
  – Subsidised public programmes
    • Warm Front: targeted grants to households receiving benefits or tax credits
    • Decent Homes: upgrading of social housing

• Now, ending of direct public spending in favour of:
  – Green Deal: provision of loans repaid through energy bills
  – ECO: obligations to improve low income housing, deprived areas and hard-to-heat housing
Distributional critiques

• Many criticisms of Green Deal
  – Committee on Climate Change
  – IFS/CCCEP Report
  – Hills Report

• And ECO continues regressive consumer funding approach
  – Hills: a combination of Green Deal and ECO would probably *increase* fuel poverty
Comparing countervailing social programmes

• Hills report impact on fuel poverty of spending £500m pa on:
  – Compensation and reducing bills
  – Energy efficiency policies, distinguishing
    • Broad and narrow targeting
• Notwithstanding current inadequacies, targeted energy efficiency policies superior on all counts
  – And benefits of broad targeting (to all housing with SAP rating < 55) extends beyond fuel-poor
<table>
<thead>
<tr>
<th>Policy Category</th>
<th>Targeted</th>
<th>Funding</th>
<th>Numbers of fuel poor (%)</th>
<th>Lifetime change in fuel poverty gap (£m)</th>
<th>Estimated net present value impact, equity weighted (£m discounted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal efficiency policy</td>
<td>Narrowly targeted*</td>
<td>Tax funded</td>
<td>-55</td>
<td>-2,630</td>
<td>1,730</td>
</tr>
<tr>
<td></td>
<td>Narrowly targeted*</td>
<td>Supplier funded</td>
<td>-55</td>
<td>-2,930</td>
<td>1,900</td>
</tr>
<tr>
<td></td>
<td>Broadly targeted*</td>
<td>Tax funded</td>
<td>-18</td>
<td>-680</td>
<td>860</td>
</tr>
<tr>
<td></td>
<td>Broadly targeted*</td>
<td>Supplier funded</td>
<td>-13</td>
<td>-390</td>
<td>1,360</td>
</tr>
<tr>
<td>Reducing energy costs</td>
<td>Rebate policy</td>
<td>Tax funded</td>
<td>-28</td>
<td>-70</td>
<td>600</td>
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<tr>
<td></td>
<td>Rebate policy</td>
<td>Supplier funded</td>
<td>-13</td>
<td>-390</td>
<td>1,360</td>
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<tr>
<td>Improving incomes</td>
<td>Increase in means-tested benefits</td>
<td>Tax funded</td>
<td>-28</td>
<td>-70</td>
<td>600</td>
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<td></td>
<td>Increase in means-tested benefits</td>
<td>Supplier funded</td>
<td>-28</td>
<td>-40</td>
<td>490</td>
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<td>Increase in Winter Fuel Payments</td>
<td>Tax funded</td>
<td>-10</td>
<td>0</td>
<td>420</td>
</tr>
<tr>
<td></td>
<td>Increase in Winter Fuel Payments</td>
<td>Supplier funded</td>
<td>-10</td>
<td>0</td>
<td>420</td>
</tr>
</tbody>
</table>

*Broadly targeted: delivers fully subsidised insulation and heating measures to households living in dwellings with a SAP of 55 or less. Narrowly targeted’ restricts this to households receiving means-tested benefits.

Pillar II downstream CMPs: Evaluation

• Present incentive-based policies to improve domestic energy efficiency inequitable and inefficient

• Company obligation approach inequitable by design
  – Will probably increase fuel poverty

• Economy-wide carbon pricing would be more equitable
  – Would capture higher embodied emissions of higher income groups

• As would tax-financed retrofitting programmes
A carbon limit to redistribution?

• ‘Income redistribution may increase aggregate emissions’
  • (Chitnis et al 2014)
• Marginal GHG intensities of expenditure decline by quintile
  – c20% lower for Q5 than Q1
• Here a potential conflict between environment and equity if limited to pillar II policies
An alternative: variable pricing of energy

• ‘Rising block tariffs’ would deal directly with this trade-off
• I.e. Extend the range of necessary goods subject to some measure of non-price allocation
  – Household energy
  – Water
• Little research
• Can this be achieved with existing private ownership and regulatory structure of basic utilities?
Turn to PILLAR I

Use of homes and rebound

• Grubb labels this ‘Standards and engagement’
  – Rather different things
  – Says little about engagement
  – Confined to narrow range of theoretical approaches
• Affecting ‘things’ v affecting people’s behaviour
• Non-price policies cover a wide spectrum:
  – Information
  – ‘Nudge’
  – Participation
  – Standards and regulation
• Briefly survey, again concentrating on domestic energy
From information to nudge

• Provide households with information
  – Eg Energy Saving Trust, Carbon Trust
  – Weak effect on domestic energy saving outside emergencies for various reasons:
    • ‘Satisficing’ not ‘optimising’ the dominant household strategy (back to Simon)
• ‘Nudge’
  – Change ‘choice architecture’
    • Recognises bounded rationality
  – Eg labels
    • Great success eg in fridges and other appliances, therefore electricity consumption
    • More difficult re buildings where costs and complexity greater
    • Opposition of companies ubiquitous
  – Smart meters?
From nudge to participation

• From nudge to ‘think’ (Stoker et al)
  – Collective deliberation;
  – Recognise that institutions affect preferences
    • Bradshaw study of ‘decent life budget’
      – Consensual decision-making with experts and public
      – Resulted in radical recommendations, eg no cars
      – Would cut UK carbon emissions by 37%

• Also need to recognise impact of private companies on choice architecture
  – Numerous examples of mis-selling: ½ of energy switches made by poor households following doorstep sales resulted in a worse deal
  – Implies public regulations over private providers
Collective engagement in carbon saving

• Move from individual to collective decision-making
• Numerous examples:
  – Steward on ‘transformative innovation’
    • Moving from singular technologies to networks of innovation
    • Local groups can join up the pieces
  – Power on retrofitting of estates and community participation
  – Jackson and Victor on meaningful participation
    • Encourages longer-term and joined-up thinking
• Helps address rebound (see below)
Standards and regulation

- Very effective
  - EU ban on incandescent lights
  - Directives on energy performance of buildings
    - Building SAPs (Standard Assessment Procedures) and tighter building regulations
  - DECC estimates of effect of ‘product policies’ on domestic energy bills
- Global spread of building standards and quantitative targets – and rarely reversed
- But shunned in much economic analysis
  - Fear of confronting consumer sovereignty
  - Fear of confronting business sovereignty
But.... rebound

• Perverse economic responses to energy saving
  – Direct: turn up thermostats
  – Indirect: increased consumption of other goods
    • Could even apply to behavioural ‘sufficiency’ measures, such as voluntarily reducing thermostat

• Studies of importance
  – Grubb: 10-30%
  – Chitnis et al: re 6 energy efficiency measures: 0-32%
  – Indirect and embodied rebound dominates
  – Rebound greater for lower income households
    • Spend savings on necessities with higher GHGs

• Conclusion: not an overwhelming problem
  – And can be reduced via local participative engagement
PILLAR III: Transformation and public-led investment

• Grubb: Strategic choices of large entities can influence development of complex systems over time and space
  – Governments and MNCs
  – Need big thinking to address threats to integrity of social systems and fundamental human needs
  – In terms of energy and emissions, key processes are innovation and infrastructure
  – To stay within 2°C requires $0.5-1.0 trillions pa of investment

• Stern: call for large scale low carbon industrial revolution

• State strategic role and resource mobilisation key?
Green growth and Green New Deals

• This takes us upstream and away from my more specific focus on domestic energy, but
  – Green New Deal proposals call for large scale refurbishment and retrofitting programmes
  – ‘Every building a power station’
    • FIT programme relevant here, but fitful
  – Green investment bank
  – Zhengalis on financial space for funding infrastructure investment following 2008 crisis
  – Mazzucato on lead role of public agencies
Conclusions 1

• Current UK downstream policies for household carbon reductions inadequate and inequitable
  – Even taking into account existing (feeble) targeted measures

• This reflects the over-reliance on pillar II
  – Hegemony of market mechanisms plus lobbying and game-playing of corporations and subsequent lock-in
    • (Gough 2011 BA Report)

• Must incorporate pillars I and III

• All three necessary to secure equity with fast carbon reduction
Conclusion 2

• This requires policy integration.
• Lafferty distinguishes here
  – Vertical integration within sectors
  – Horizontal integration across sectors
    • Low Carbon Transition Plan 2009?
• Upcoming research project to study PI:
  – Across three ministries: environment, social and finance
  – Across four countries
Conclusion 3

• Extend needs-based approach to domestic energy (and water?)
  – Reverse block tariffs
  – Switch from company obligations to tax-financed subsidies and low-interest loans
  – Upstream carbon pricing preferable to downstream
  – Investigate personal carbon allowances and trading applied to energy and fuels
Conclusion 4

• Strengthen pillar 1 programmes
  – Utilise the local knowledge of communities and local government to create joined-up policies
  – Decentralise and re-empower local governments
  – Develop community ownership of renewable electricity generation
    • 700,000 energy suppliers in Germany
  – Extend standards and regulation of new and sold dwellings
  – Control the supply of private misinformation and enhance public energy saving advice
Lessons from Germany

Combines all three pillars (Power and Zulauf)

1. National legal framework, tough standards, tight regulation; plus independent advice, pilot projects; close accreditation of energy installers; substantial role of municipalities, whole house approach

2. Subsidies: KfW investment federal and lander bank: low interest loans for refurbishment; nb. No reduced VAT for domestic energy

3. Ambitious federal goals for renewable energy
   - (UK policies) do not go far enough on any of the key dimensions: the regulatory framework, the level of financial incentive or the clarity of the message... (Shroeder et al 2011)
Conclusions

• But political economy means being aware of obstacles
• Both social and environmental policy affected by ‘3 Is’:
  – Ideas
  – Interest
  – Institutions
• Bad timing:
  – The urgent challenge of climate change emerged during era dominated by neo-liberalism (Meadowcroft)
• Environmental policies linked to varieties of capitalism and welfare regimes
• But that is another seminar!