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Climate change policies and the UK business sector: Overview, impacts & suggestions for reform

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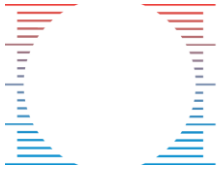
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Research questions

- ❖ **What are the key climate change policies affecting UK firms?**
 - How do they overlap?
 - What price do they place on carbon?
- ❖ **How do they impact firms' competitiveness?**
 - CCA/CCL
 - EU ETS
- ❖ **Can the current policy regime be improved?**
 - Rationale & Proposal
 - Illustrative example (2013 and 2020)
 - Recommendations



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Method

- Review of literature and current data on policies and coverage
- Estimate implicit carbon price using marginal carbon content
- Econometric analysis (matching) for competitiveness impacts (Antoine Dechezlepretre)



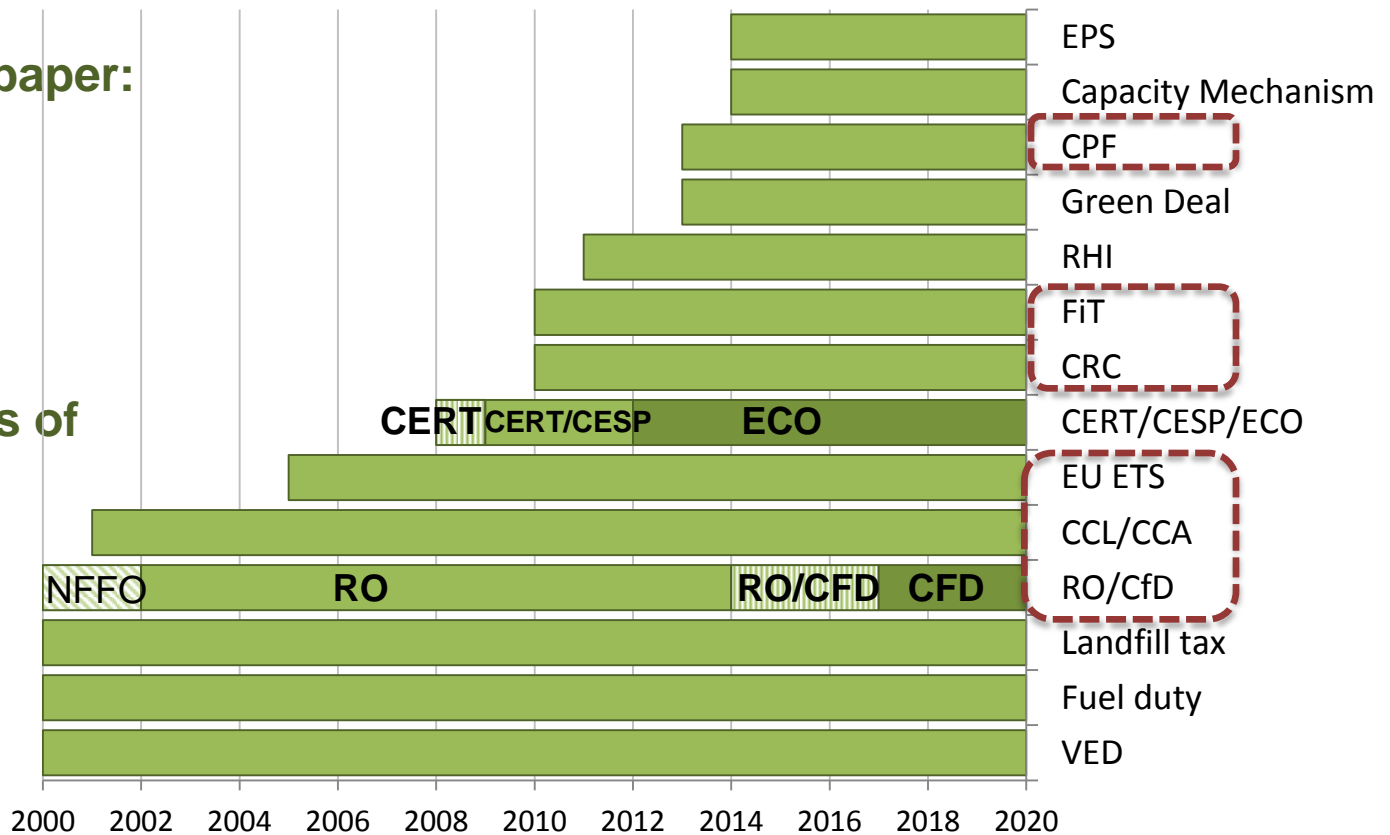
What climate related policies affect UK firms?

Key focus of the paper:

- CCL
- CCA
- CRC

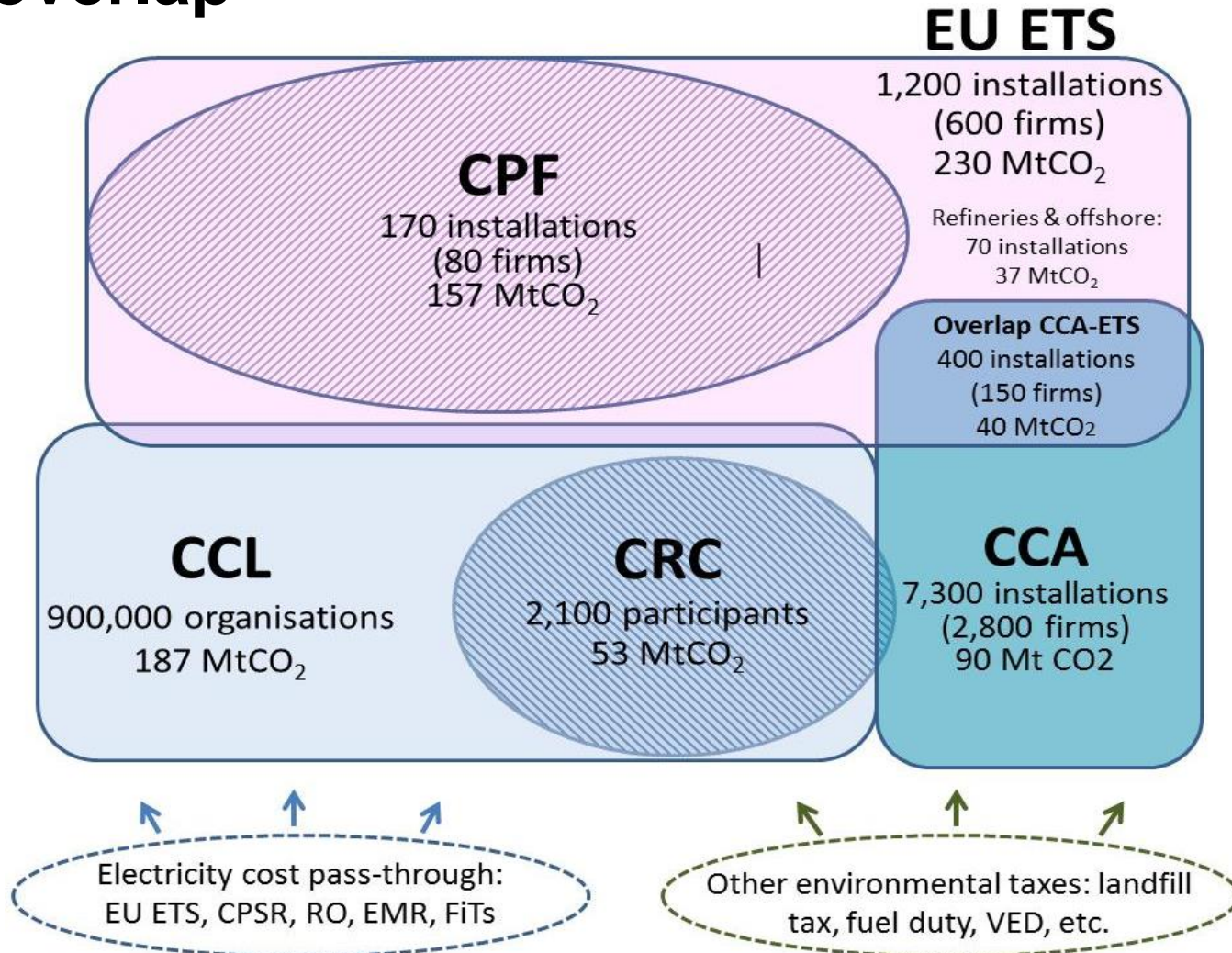
And indirect costs of

- ETS
- CPF
- RO and FITs

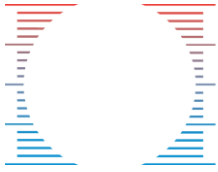




Policy overlap

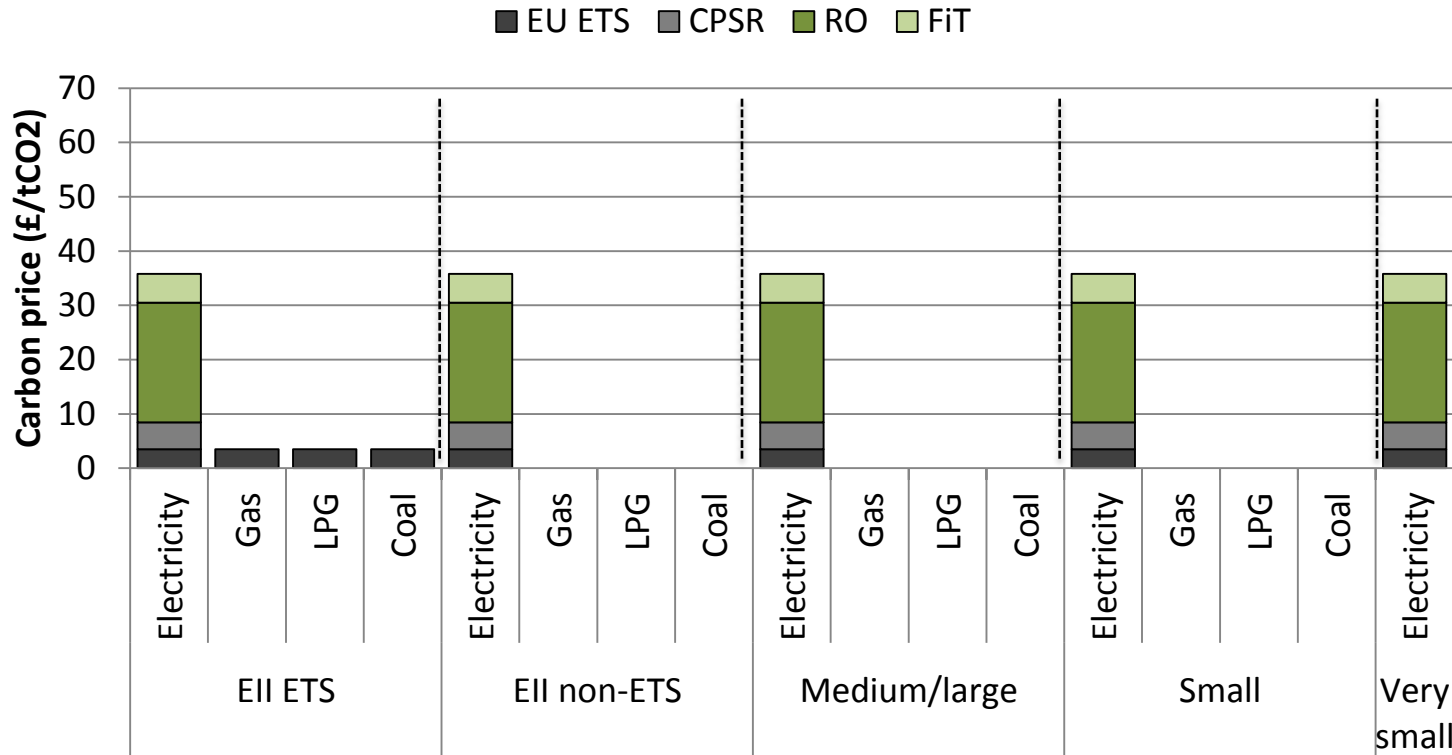


Source: See Bassi et al (2013) and sources therein



What (implicit) carbon price do firms pay?

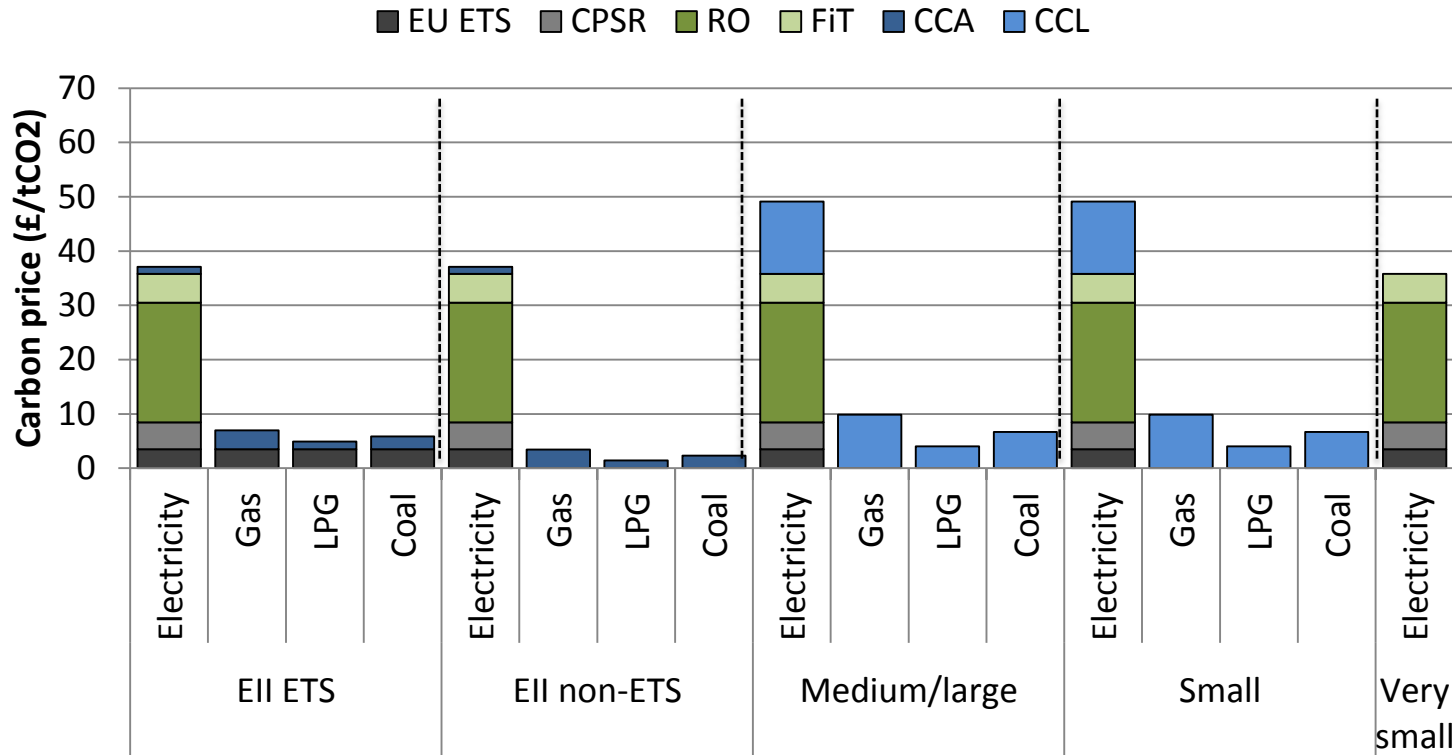
- EU ETS and pass-through costs





Uneven carbon prices across firms and fuels

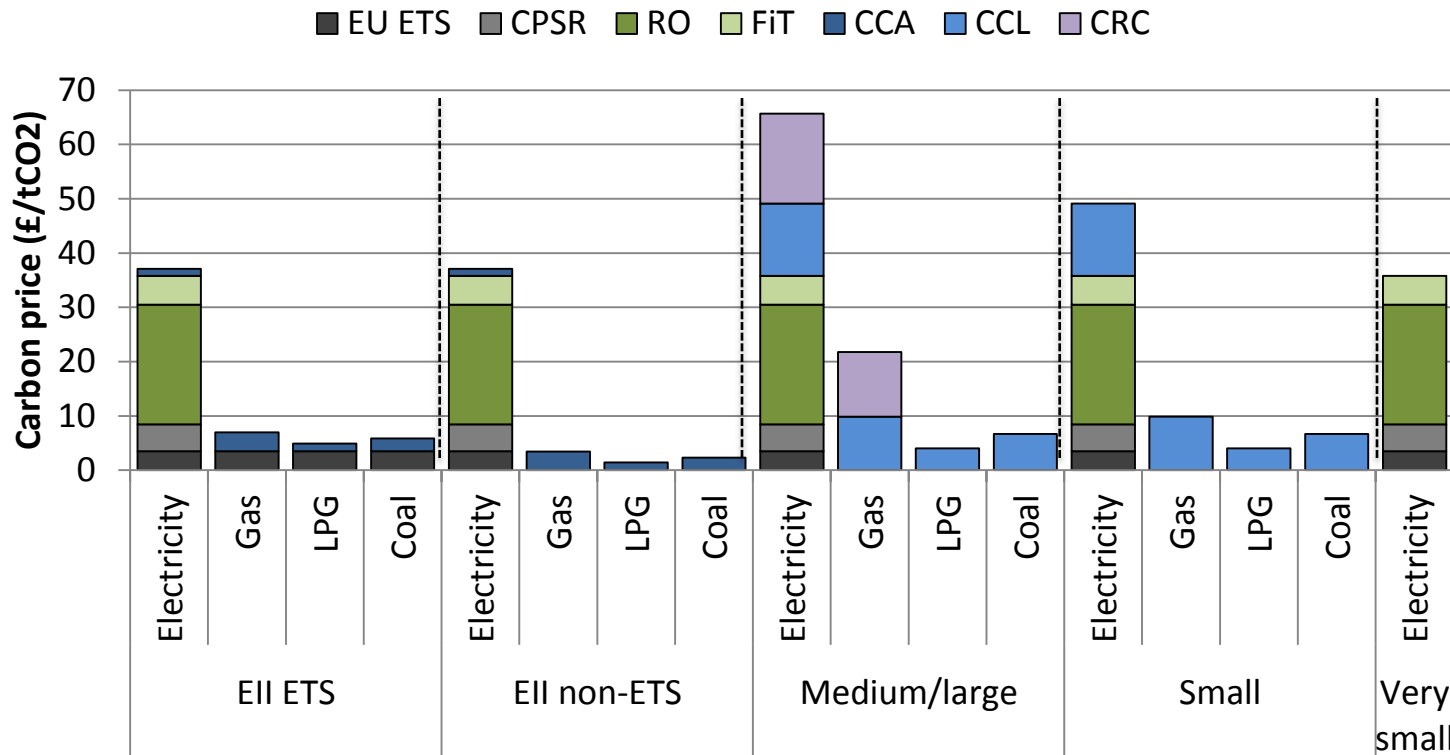
- CCL/CCA





Uneven carbon prices across firms and fuels

- EII/ETS sectors bear the lowest C price, non-CCAs sectors the highest
- Electricity has the highest implicit carbon price





Competitiveness and carbon pricing

- Can different carbon prices be justified if there are competitiveness concerns?
- Analysis of CCL/CCA and ETS competitiveness impacts

CCL/CCA analysis:

- Update research by Martin et al. (2011)
- Data: ~3000 CCA and ~4,000 CCL companies from 2001 to 2010:
- Matching:
 - **similar characteristics** (turnover, employees, energy intensity,...);
 - Operate in same sectors (**same international competition**);

Rates 2013/14

Fuel	CCL	CCA	unit
Electricity	0.524	0.052	p/kWh
Natural gas	0.182	0.064	p/kWh
LPG	1.172	0.410	p/kg
Coal	1.429	0.500	p/kg

- Discount on CCL: 65% fossil fuels & 90% electricity (80% until April 2011)
- targets agreed with Government



Findings

- **CCL firms abate more:** 20% reduction in energy intensity compared to CCA
- **No evidence of competitiveness impacts:** no difference between CCL and CCA in terms of employment, gross output, probability of exiting the market

Applying the CCL to all plants would have increased energy efficiency without jeopardizing profits or employment

Similar results were found for **EU ETS:**

- No competitiveness impacts in comparison to non-ETS
- EU ETS firms tend to be more innovative (R&D, patents)

CAVEATS

- ❖ Some sectors difficult to match – e.g. power, cement
- ❖ Relatively low carbon prices: e.g. CCL~ £4-13 t/CO₂

Higher carbon prices may have competitiveness impacts for some sectors



Can policy be improved?

Rationale for reform

- **Apply a uniform carbon price:** Each tonne of CO₂ does approx. the same damage no matter who emits → apply same carbon price to all sectors and fuels
- **Carbon price rebates are not justified on competitiveness ground:** CCL more effective at reducing emissions; no empirical evidence that CCL harms competitiveness more than CCA;
- **Minimise administrative burdens and overlaps** as they reduce efficiency – e.g. companies report high admin cost for CRC.

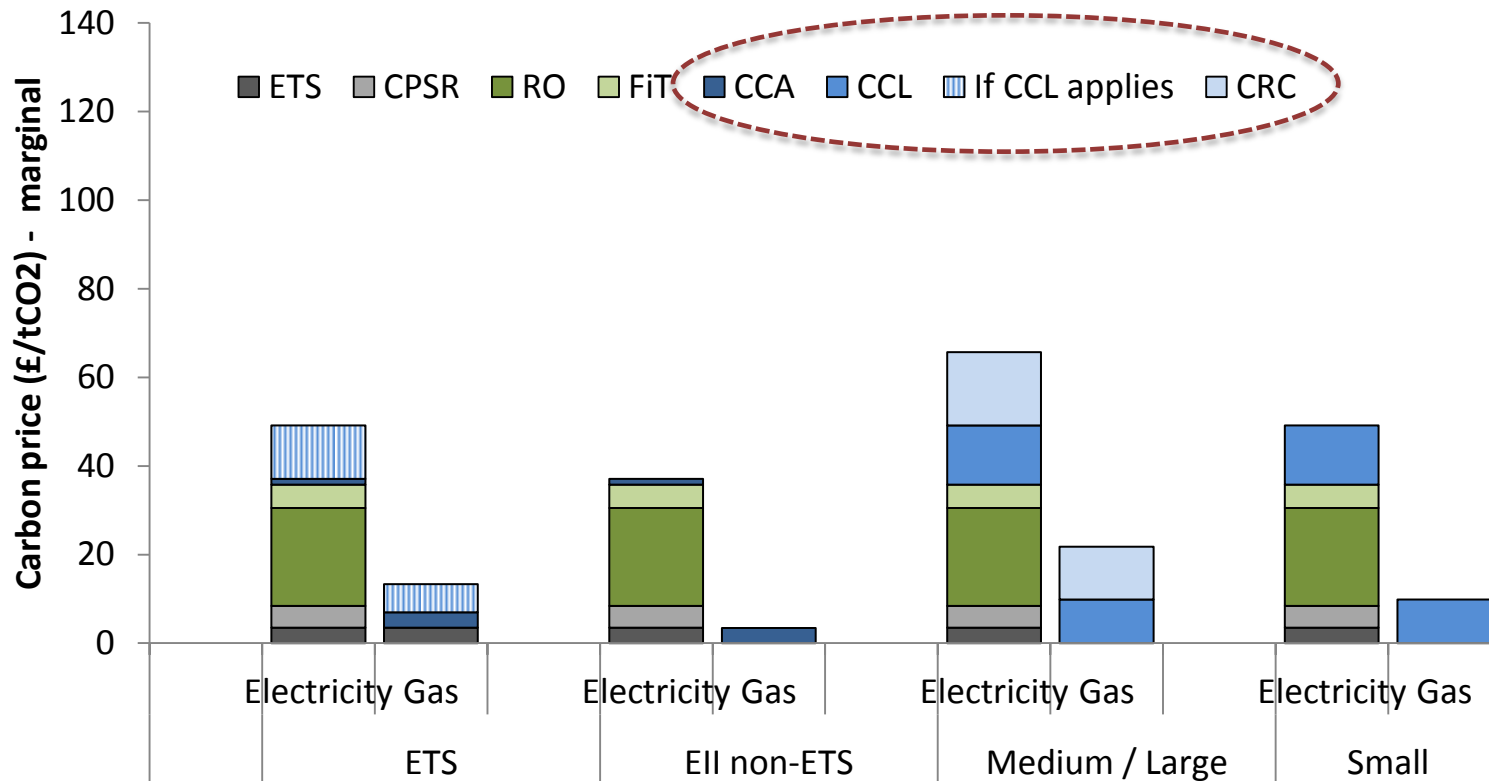


Merge CCL, CCA and CRC into a single instrument (retaining CCL design), applied to all sectors;



Illustrative reform: Electricity & gas

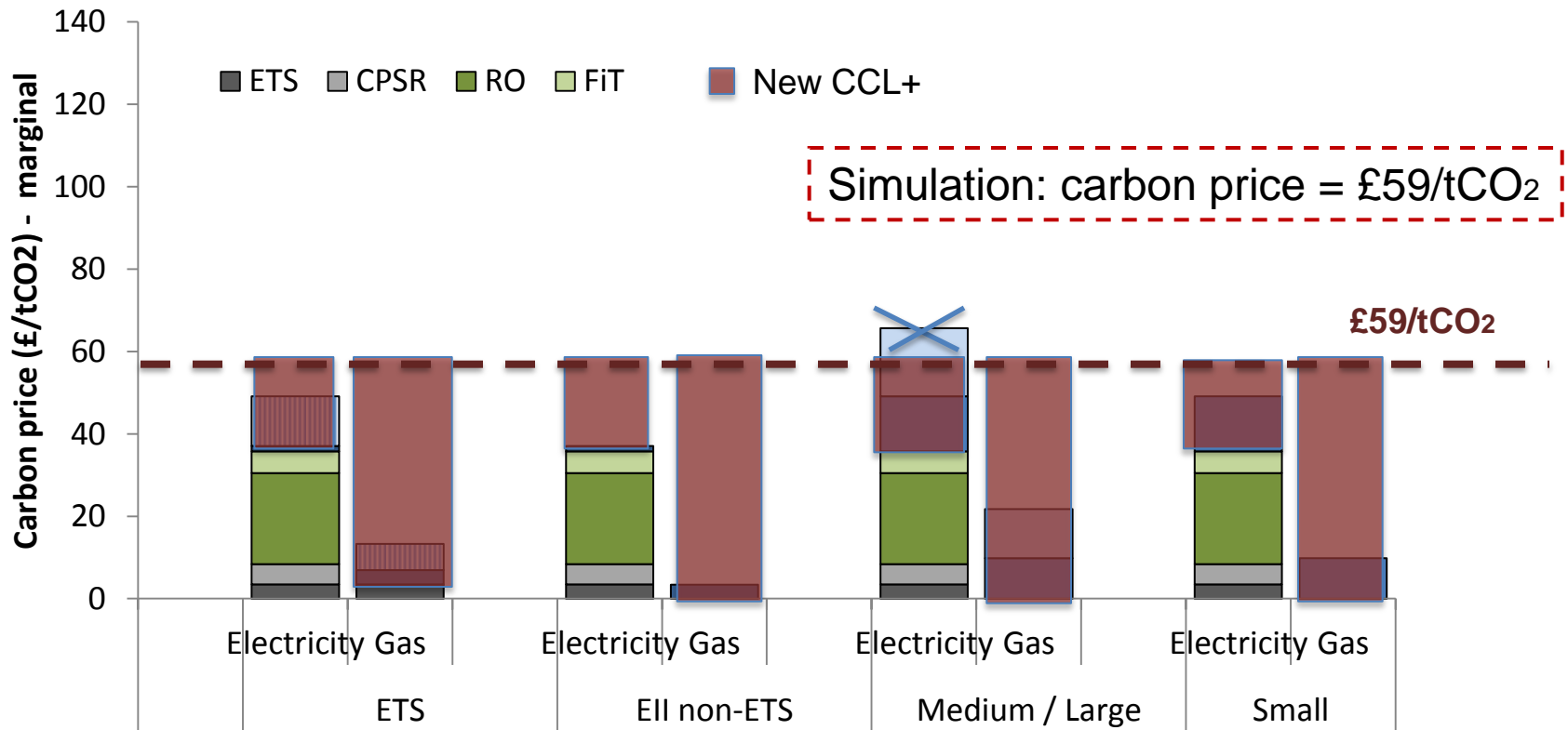
2013





Illustrative reform: Electricity & gas

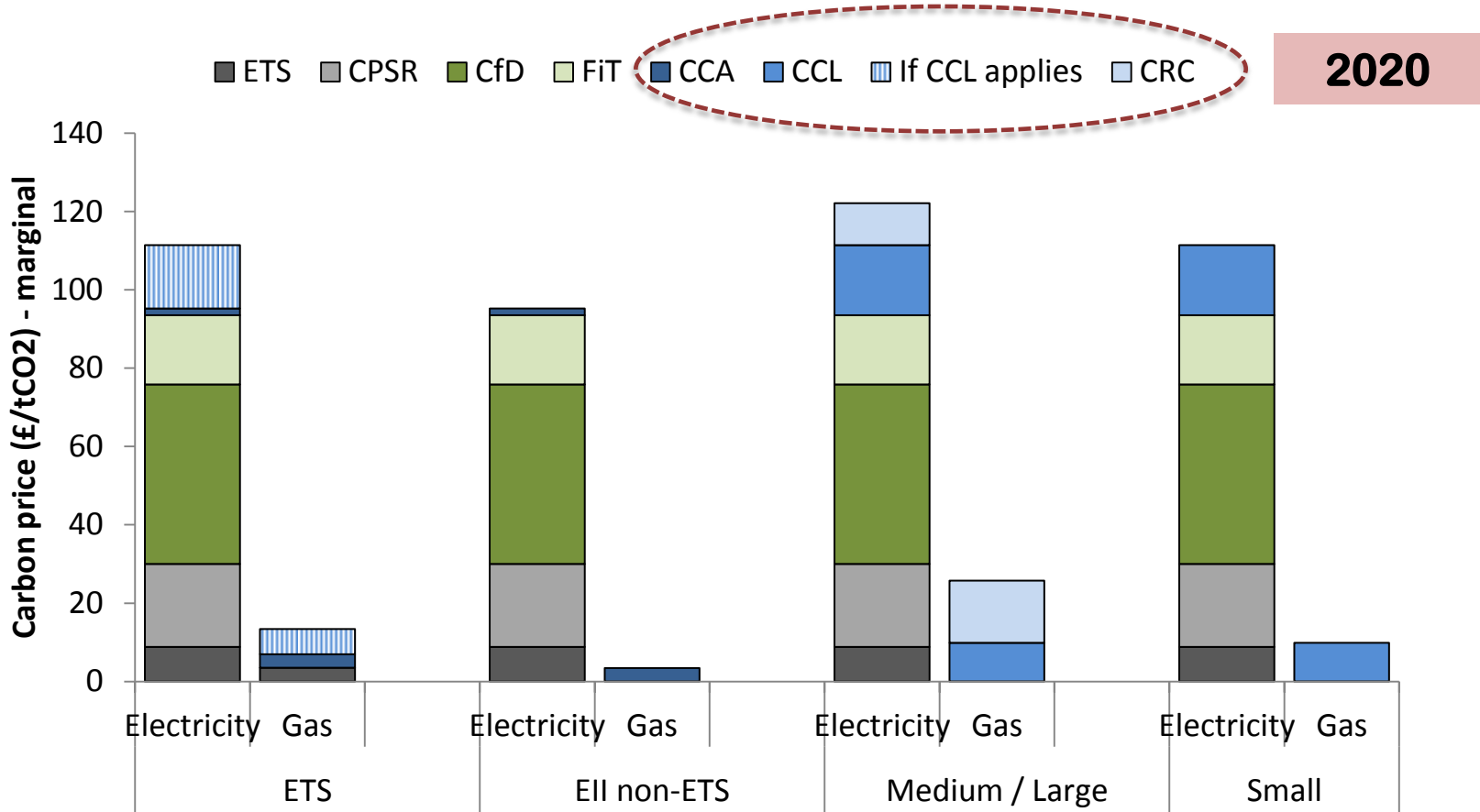
2013



Source: Authors calculations based on Advani, Bassi, et al. (2013)



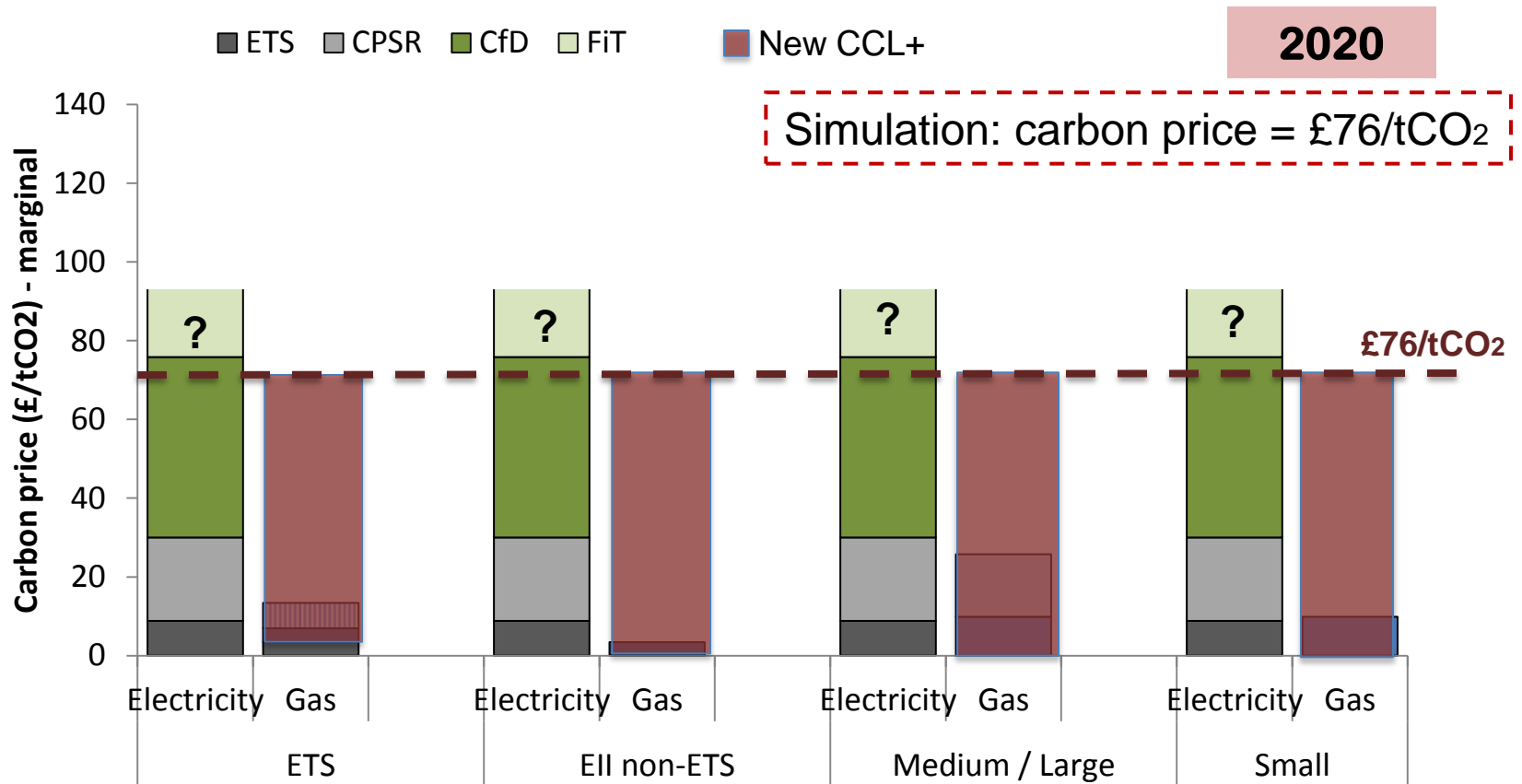
Illustrative reform: Electricity & gas



Source: Authors calculations based on Advani, Bassi, et al. (2013)



Illustrative reform: Electricity & gas





Key conclusions & recommendations

- We recommend a policy reform where **CCA, CRC and CCL are replaced by a single new CCL rate** applying to all firms, of all size and sectors;
- This will **reduce admin burden and ensure a uniform carbon price** across the economy;
- The reform will result in **higher carbon prices for some of the sectors**, especially the EII. It can also generate significantly higher revenues to the Government;
- **Strong case for** recycling at least some of the extra revenues to address competitiveness, e.g. reduce other taxes, promote innovation

Way ahead:

- identify suitable (politically viable?) carbon price
- Identify and support vulnerable sectors, without watering down carbon price signal



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Thank you.

The full paper is available at:

<http://www.lse.ac.uk/GranthamInstitute/publications/Policy/docs/Climate-change-policies-and-the-UK-business-sector.pdf>

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