

## BRIEFING: WHAT EFFECT DOES THE USE OF RENEWABLE AND LOW-CARBON ELECTRICITY CONTRACTUAL INSTRUMENTS HAVE ON FIRMS' OTHER GHG MITIGATING ACTIVITIES?

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### Summary of findings

- A financial opportunity cost to the use of renewable electricity contractual instruments (RECI) was found, but it cannot be taken as a given that there is any cost to RECI use. A re-allocation of funds to internal mitigating activities e.g. energy efficiency would not have led to significant emission reductions. A re-allocation to offset purchase would have resulted in widely-varying degrees of emission reductions from the negligible to the highly-significant when expressed as a percentage of operational emissions.
- The use of contractual emission factors based on RECI/LCECI (low-carbon electricity contractual instrument) purchase did lead to a change in focus or a potential change in focus on other GHG mitigation activities in limited circumstances. The circumstances in which RECI use led to a change in focus on energy efficiency/saving activities was characterised.

### Background

A significant number of firms are entering into contracts for renewable electricity. The International Renewable Energy Agency (2018) found renewable electricity - comparable to the total electricity consumption of France - was deliberately procured or produced for own consumption by firms in 2017, based on survey responses by 2,400 firms globally. Firms have used contractual instruments based on renewable and low-carbon electricity added to electricity grids to claim a reduced organisational GHG emissions footprint. However, the use of contractual instruments has been controversial (Schendler 2007, Aasen et al. 2010). In the Netherlands the use of foreign contractual instruments in electricity products for the residential and small business market has been labelled "*cheat electricity*" (Hufen 2016).

Firms may attach emission factors to the renewable electricity contractual instruments (RECI) that they use and reflect these in their reported emissions using the market-based method for accounting for grid electricity emissions set out in *GHG Protocol Scope 2 Guidance - An Amendment to the GHG Protocol Corporate Standard* (Sotos 2015). Brander, Gillenwater, and Ascui (2018) criticise the use of contractual emission factors and the market-based method using two arguments: the use of contractual instruments is very unlikely to increase renewable electricity capacity in Europe and the USA and the use of contractual

instruments and the market-based method will undermine the accuracy and relevance of GHG emission inventories. Brander et al. (2013) and Brander et al. (2015) suggest managers of firms that reflect RECI in their emissions figures may have less incentive to allocate resources to energy efficiency due to the emission reductions reported through RECI use. Part of my Ph.D. research looked at the effect of the reflection of RECI and LCECI in firms' GHG inventories on other GHG mitigating activities.

### Methodology

I used a case study method to take a detailed look at the GHG mitigation histories of 11 well-known firms (five German and six from the UK) using their CDP responses, corporate publications and interviews with staff. The firms were in these sectors: banks, B2B financial institutions, telecoms, supermarkets.

### Findings

Among these cases, instances were found that justified Brander, Gillenwater, and Ascui's (2018) concern that there was a financial opportunity cost to RECI use, but it cannot be taken as a given that there is any cost to RECI use. The low- or no-premium attached to RECI<sup>1</sup> use by the case study firms for which I have this data would mean that a re-allocation of funds to internal mitigating activities e.g. energy efficiency would not have led to significant emission reductions. Furthermore, this rests on the assumption that there were other projects that had not been implemented for want of funds. This is a key assumption as some RECI-using firms spoke about running out of internal mitigating actions.

If the funds spent on RECI had been re-allocated to offset/carbon credit purchase, they would have resulted in widely-varying degrees of emission reductions from the negligible to the highly-significant when expressed as a percentage of scope 1+location-based scope 2 emissions<sup>2</sup> tCO<sub>2</sub>e due to the amount spent, the size of the firm's scope 1+location-based scope 2 emissions, and offset prices.

Turning to the effect of RECI/LCECI use on the focus of attention on other GHG mitigating activities (except for offsets), instances of a displacement of focus or the potential for this were limited. However, given the

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<sup>1</sup> No LCECI cost data was reported in the period covered by this part of the research.

<sup>2</sup> The location-based method is described as "A method to quantify scope 2 GHG emissions based on average energy generation emission factors for defined geographic locations, including local, subnational, or national boundaries" (Sotos 2015, 102). Typically, international or national authorities calculate a grid average emission factor for the electricity network in their area. Use of the grid average has been the "traditional" approach to calculating scope 2 emissions (CDP 2013, 14).

size of the firms' emissions (two of the firms where these instances occurred used almost 1% of the UK's annual electricity consumption), both firms and policy-makers need to be aware of the phenomenon.

Displacement or potential displacement of focus on energy efficiency/saving specifically depended on the intersection of circumstances (all three were necessary conditions):

- where firms said reputation/moral motivation was driving RECI/LCECI use;
- where energy efficiency/saving was not being driven solely or strongly by cost-saving;
- where staff did not act to prevent a change in focus on energy efficiency/saving activities.

This upholds the argument of Brander et al. (2013) and Brander et al. (2015) that use of contractual emission factors based on RECI/LCECI purchase may lead to displacement of focus on other GHG mitigation activities, but the circumstances in which this occurred were limited. A further point is that these factors are not expected to be static. Displacement or potential displacement may therefore come or go.

Finally, these findings should not be taken as criticism of firms where instances of displacement of focus on other GHG mitigating activities or potential displacement has been identified. Displacement/potential displacement of focus on energy efficiency/saving specifically was found where reputational/moral concerns mattered to firms to the extent that these concerns could lead to mitigating projects being implemented that would not go ahead on cost-saving grounds alone. This is useful from the perspective of climate change action as it may lead to more GHG mitigating actions being undertaken than would be implemented due to the cost-saving driver alone. The problem lies with the market-based scope 2 approach rendering actions widely-regarded as beneficial invisible if the market-based method is not balanced by the perspective offered by the location-based method.

#### Policy recommendations

I would argue that to maximise pressure for GHG mitigating activities such as energy efficiency/saving, all totals, intensity metrics and targets that use the market-based method should be accompanied by the equivalent metrics calculated using the location-based method which will mean that changes to electricity consumption are visible. Furthermore, it should be stipulated that this data is reported adjacently.

Secondly, there is a role for governments to commission research and publications specifically aimed at helping firms and other organisations operating within their jurisdictions to procure RECI/LCECI in a way that balances the need for effectiveness in stimulating extra renewable generation capacity with potential take-up by firms. This would sit between the methodological rigor of offset methodologies and the existing

guidance written with global applicability in mind e.g. section 11.4 in the GHG Protocol's Scope 2 Guidance and Irena (2018 pp.59-61).

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1 February 2019