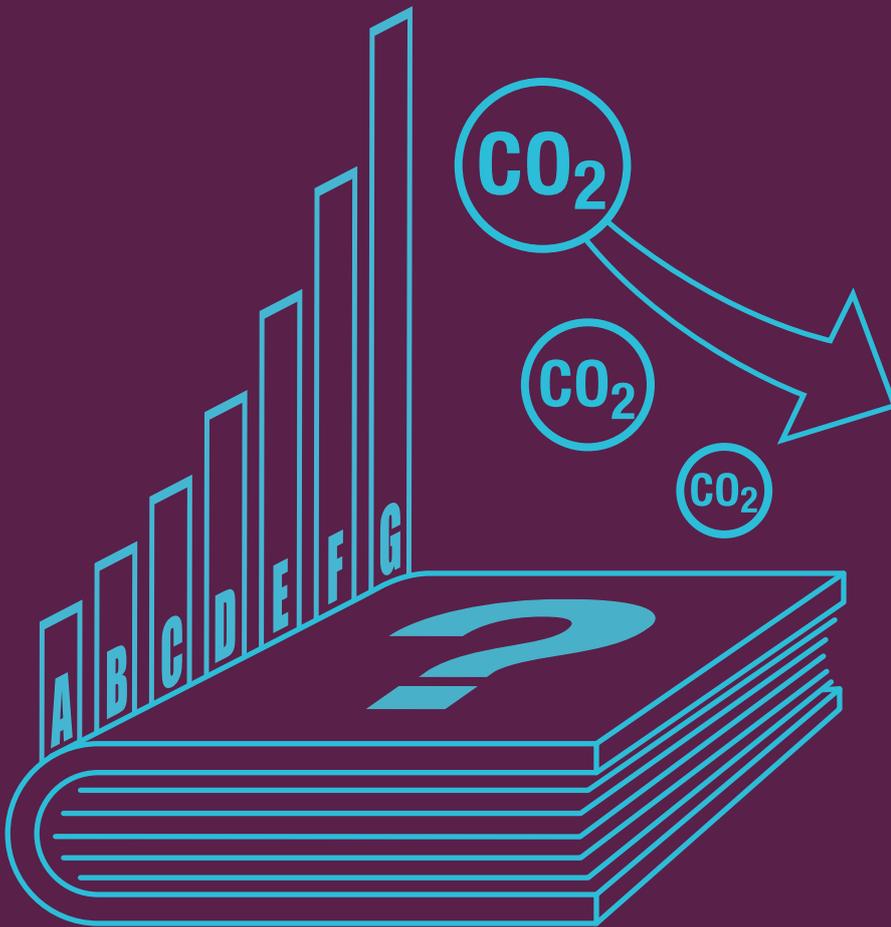


Enable the Label

The case for electricity labelling in the UK

Summary report for business





If enough customers express preference for renewable energy this could potentially drive a change in the grid fuel mix in the future.

Ofgem¹

Why do we need an electricity label?

Energy bills are now front page news. Rising energy prices are a core concern for cash strapped householders and businesses across the country. They are feeding a turbulent political debate, which will run at least until the next election.

The media spotlight has highlighted just how complex and perplexing energy bills have become. Many charges and schemes are barely comprehensible. Consumers simply do not understand what they are paying for and the cost implications of various generation technologies or energy efficiency strategies.

There is yet greater consumer confusion about 'green tariffs' due to suppliers offering a variety of products with wide ranging environmental benefits.

This is most pronounced in the non-domestic sector. Many progressive businesses are leading the way in tackling climate change and are investing in low carbon energy to reduce their carbon footprint. To do so, they frequently pay a premium for 'green tariffs' or on-site renewables.

In a recent consultation, the Government advises these businesses to report this low carbon electricity to their stakeholders in two ways; "location based" which reflects the grid average and "market based" which reflects the purchase of renewables. Despite some positive steps forward, there is a lack of a comprehensive and transparent approach that can be clearly communicated to stakeholders.

Confusion remains. While green electricity is recognised as zero carbon for some regulations (such as the Climate Change Levy), it is not recognised as zero carbon for others (such as the CRC Energy Efficiency Scheme).

These inconsistencies provide relatively weak and complex signals and lead some Boards to retreat from investments in renewable technologies. It also calls into question the validity of green tariffs in terms of providing genuine additionality – representing a growing reputational risk for companies that often rely on their green purchasing power to meet their environmental targets.

This lack of transparency in reporting creates administrative burdens and makes it difficult to have a baseline against which performance can be benchmarked and compared.

A report commissioned by the Aldersgate Group, overseen by the Steering Group, who are:



THE Retail Energy Forum

This report draws on research which was conducted by Utilyx. To read the full report, download it from: www.aldersgategroup.org.uk/reports

¹ » Ofgem (December 2013) "Improving Consumer Protection in the Green and Renewable Energy Offers Market". Consultation document.

Preface

There is a need for urgent reform. To date, policy has generally focused on only one side of the equation: energy supply. There is strong cross-sector support for more focus on the other side of the market: stimulating demand for low carbon electricity.

The ultimate goal should be a transparent regulatory framework that provides clarity over energy bills and incentivises companies to use their extensive and influential purchasing power to increase demand for lower carbon electricity and reduce demand for higher carbon electricity.

This report explores one potential solution: the introduction of an electricity label that would clearly display the quantity and carbon content of electricity sold on each customer's bill. This would provide accurate information about the carbon emissions for which each customer is responsible, standardise reporting of electricity use and increase transparency. Disclosure of different sources of zero carbon electricity could help to demonstrate where consumers have played a more active role in bringing new capacity to the market.

It would build on the huge success of energy labelling schemes for a large number of appliances and equipment elsewhere. Such labels allow consumers to compare the energy performance of various goods and services. By informing purchasing decisions, they have been instrumental in driving demand for the best performing products and ensuring healthy competition by manufacturers on energy efficiency metrics.

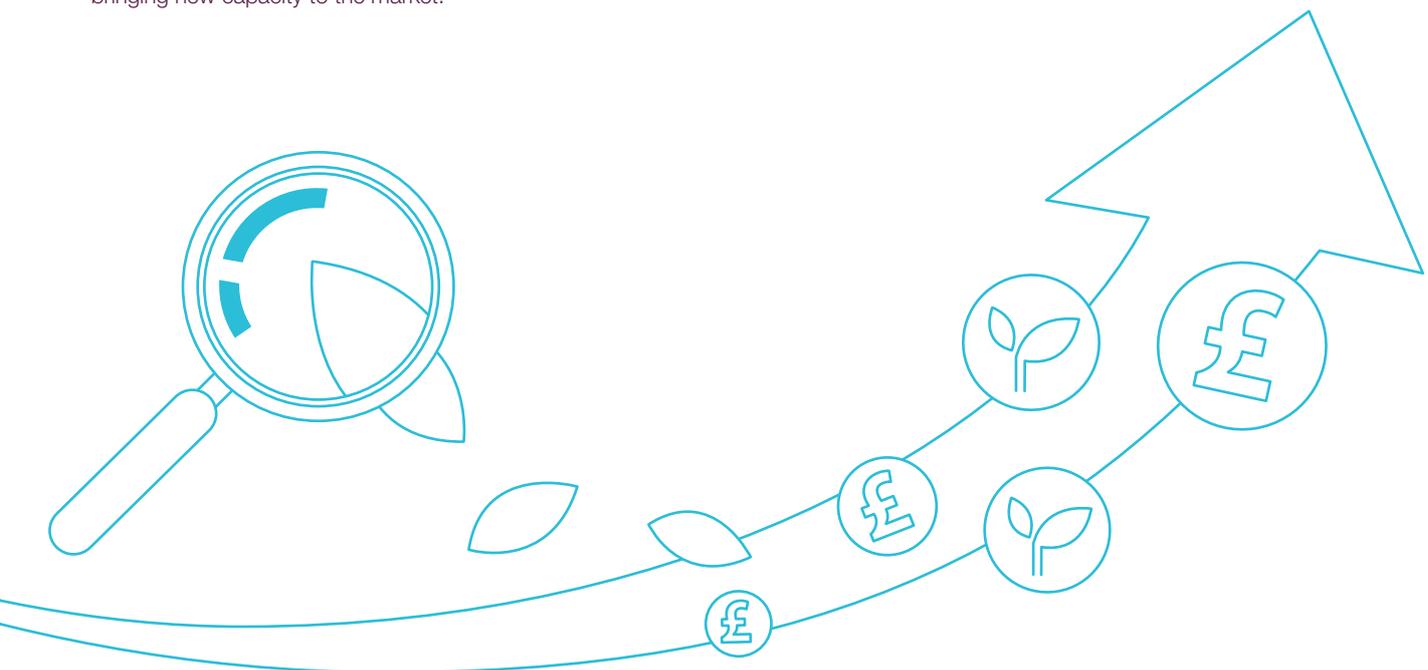
Perhaps the most compelling case study is the European car industry where transparency on energy performance has created a level playing field that promotes strong competition and innovation. What started as regulations mandating energy labelling transformed the sector by spurring legislation, fiscal incentives and consumer awareness.

The question we need to ask is, why should we not use this model for the product with the greatest carbon impact: the electricity we use to power our homes, workplaces and factories?

Andrew Raingold



Executive Director, Aldersgate Group
July 2014



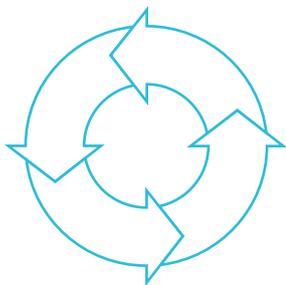
What is the evidence?



It is possible that a very significant increase in longterm contracts for the purchase of renewable energy could incentivise new investments in renewables which would not have happened otherwise. The pull of significant extra demand through voluntary support for renewables could make the difference for some schemes, which were not economically viable through government measures alone.²

Defra

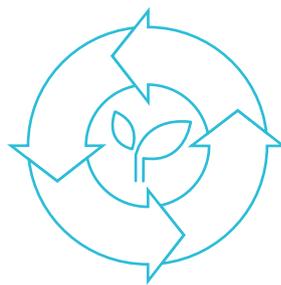
This report seeks to explore the costs and benefits of an electricity label. An industry survey shows that existing demand for, and benefits from, a green purchasing policy, is severely hampered by the opacity maintained by current suppliers and the confused reporting systems available to purchasers.



The prudent modelling undertaken as part of this analysis suggests a potential four-fold increase³ in the demand for low carbon generation of electricity by 2020; but such additionality is a long-term goal, requiring a planned roll out of the label.

Many businesses are asking where does their electricity come from? There are very few answers. That is why purchased electricity must pass what the Steering Group termed, “the horsemeat test⁴”: by buying a product, consumers earn the right to understand the ingredients.

Above all, an electricity label is engaging and easy for all stakeholders to understand, not just professional energy managers. It will allow better informed procurement decisions and better communication of those decisions to stakeholders.



It would not take long for the media and civil society to make comparisons between organisations, raising consumer awareness. It is this reputational driver that has the potential to lead to the most transformative change, by both increasing demand for new investments in renewables (as the quote from Defra testifies) and reducing demand for the dirtiest electricity.

This report does not provide a plain, black and white case for the introduction of an electricity label. There are a large number of difficult issues that must be overcome and the report seeks to outline ways to tackle some of the most significant, such as evidence of supply, additionality, “double counting” and accreditation.

However, we are confident these can be surmounted and that implementation would be relatively straightforward, a core prioritisation of the Steering Group in selecting the best approach.



3 » To view the analysis, download the full report from: www.aldersgategroup.org.uk/reports

4 » In January 2013 leading supermarkets were found to be selling food products that contained horsemeat in place of beef. The scandal raised questions around the transparency of how food is produced and what confidence consumers can place on the ingredients label. The Steering Group applied this metaphor to the energy market: if you are buying energy, you want to know what is in it.

2 » Defra (March 2014) “GHG Reporting Guidelines – 2014 update”. Consultation.

What is the evidence?

This would ensure that the UK was on the road to incentivise companies to use their extensive and influential purchasing power to demand low carbon electricity. It happens elsewhere. For example, the Green Power Partnership in the United States helps to spur on the biggest green energy purchasers.

This is in stark contrast to the UK which is being held back by confusing reporting and regulatory requirements. The best place to start to unpack this is better information provision.

Ofgem, the energy regulator, aims for “a future in which consumers will be better able to make informed choices about the green and other renewable energy offers they are buying.”⁵ What better way to do this than an electricity label that would shine a light on all energy sources, not just renewables, but also nuclear, gas, unabated coal and everything in between.

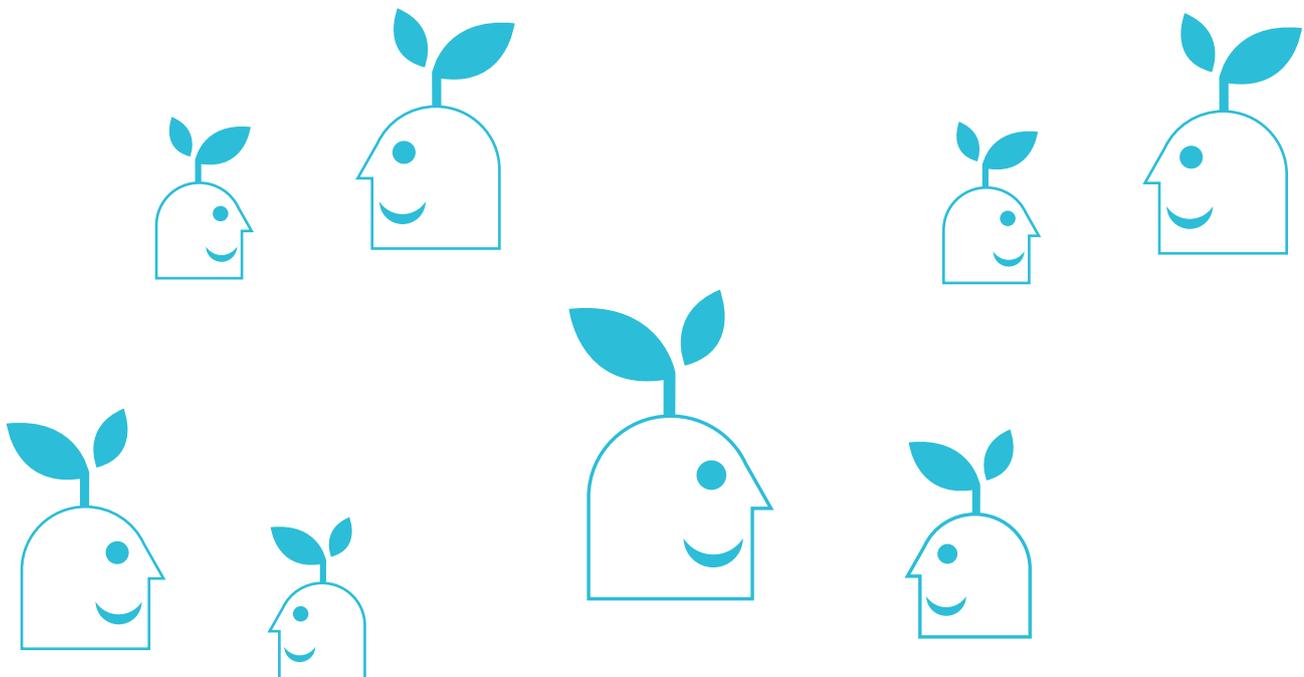
It would also contribute much needed stability to the energy landscape, independent of the changing policy or political environment. This will drive confidence among businesses and investors, which is vital over the next ten years when the UK needs to attract £110 billion of investment to upgrade its electricity infrastructure.

So join the debate and explore what might be possible. We see the next stage as voluntary pilot projects to prove the concept. This is an invitation for everyone to take part in a process towards possible national adoption, for ultimately only a mandatory scheme will reap the full benefits.

Peter Young



Chairman, Aldersgate Group
July 2014



⁵ » Ofgem (February 2014) “Consultation on Improving Consumer Protection in the Green and Renewable Energy Offers Market.”

Executive summary

Electricity labelling in the UK

This report seeks to outline how the introduction of an electricity label could bring much needed transparency, simplicity, trust and customer awareness to the current debate about energy bills and green tariffs.

Today industrial and commercial (I&C) electricity demand is around 176.6TWh per annum (56.2% of total UK demand). We estimate that 33.1% of I&C customers currently purchase low carbon electricity, but that there is widespread confusion about any associated benefits and how to communicate this to stakeholders.

Policy context

Mixed messages, poor definitions and multiple reporting rules erode clarity and weaken demand for 'green' energy.

Green tariffs currently require an electricity supplier to make an additional carbon saving (beyond the purchase of renewable technologies), such as through carbon offsets. Defra recognises that many organisations see this approach as excessively onerous; it deters companies from purchasing renewable electricity and thus reduces potential investment in renewables.

In a recent consultation, Defra has proposed to address this by requiring companies to report both⁶ the grid average figure (location based), and a reduced emissions figure from any purchased renewable electricity (market based). This is a positive step forward but further reform is required to deliver a more balanced, transparent and comprehensive framework.

Survey: Green tariffs are "empty"

To understand how and why electricity labelling could incentivise corporate energy users to buy low carbon energy, a survey of purchasers and energy developers was carried out, supported by in-depth interviews.

The research found that corporates are uncertain how to judge the quality of a "green" tariff, citing a lack of clarity in what they are buying. Purchasing such tariffs is most often done for reputational reasons but the impact is diluted and not felt strongly by developers.

Analysis: Significant potential ramp up of low carbon energy purchases

The report sets out a structure for an electricity labelling scheme for the UK, including a qualitative assessment of how it would work, and identifies challenges that may remain.

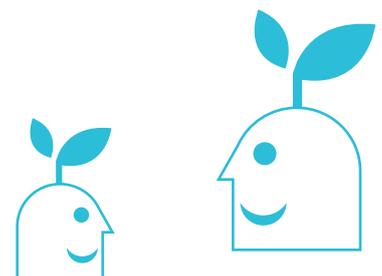
Scenarios of the impact of such a label were developed to 2020 and sense checked against the impact of the Green Power Partnership in the US. Findings suggested that an electricity label could increase purchase of low carbon electricity in the I&C sector from the current rate of 14.4% to 48.3% by 2020, four times the rate without labelling. This would encourage development of new sources of low carbon power, as well as delivering transparency in corporate reporting and clarity in purchasing decisions. Defra, in its consultation to update the GHG reporting guidelines⁶, suggests that a very significant increase in long-term contracts to purchase renewable energy could incentivise new investment in renewables, which would not have happened otherwise.

Benefits: win-win-win

The label has the potential to deliver a range of benefits to different organisations in the UK, whether businesses, developers or UK plc (including suppliers and policy makers).

Benefits to business

- Transparent voluntary reporting, by providing the information that businesses need to understand such as where their energy comes from, the carbon content associated with that energy and the type of electricity they have bought.
- Clearer communication of electricity sourcing to stakeholders allowing business to demonstrate its commitment to low carbon generation.
- Reputational benefits from buying low carbon and proving it with the label, including an opportunity to demonstrate competitive advantage, call suppliers to account on accurate disclosure and prove credibility to stakeholders that a business's carbon footprint is correct. It may also reduce demand for G-rated power as this could be exposed as a reputational risk.
- Lower administrative costs by saving time to collate evidence and create an audit trail, as well as compare electricity tenders in a like-for-like way.



6 > Defra (March 2014) "GHG Reporting Guidelines – 2014 update". Consultation.

Executive summary

What an electricity label could look like

Electricity Label	kgCO ₂ e/MWh	MWh Supplied	CO ₂ Emissions (tonnes)	Example Technology
A	0–20	950,000	0	Hydro, Nuclear, Solar, Wind (on/offshore)
B	20–100	–	–	Biomass, CCGT with CCS
C	101–250	450,000	90,000	ASC with CCS, Gas CHP
D	251–450	1,275,000	510,000	IGCC, CCGT
E	451–600	–	–	Gas OCGT
F	601–800	–	–	ASC
G	801+	–	–	Existing coal
Total Electricity CO₂	225	2,675,000	600,000	

Notes: CCGT (Combined Cycle Gas Turbine); CCS (Carbon Capture and Storage); ASC (Advanced Supercritical Coal); CHP (Combined Heat and Power); IGCC (Integrated Gasification Cycle Turbine); OCGT (Open Cycle Gas Turbine). Source: compiled by UtiLyx⁷

Benefits to developers

- Stable, transparent definition of low carbon electricity that also gives investors confidence in the demand for low carbon generation.
- Greater demand pull for low carbon electricity, which will help fund the projects.
- Simplified communication of a project's benefits and carbon impact to energy buyers.



7 » Using information from: DECC (2012); IPCC (2011), World Nuclear Association (July 2011)

Benefits to the UK

- Provide the mechanism for transparency, comparability and levelling the playing field, leading to a much stronger reputational driver for organisations to demand lower carbon electricity.
- Increase in long-term contracts to purchase renewable energy, incentivising new investment in zero carbon electricity generation.
- Build on Defra and WRI's recommendations for location based and market based reporting of renewable energy to deliver a more balanced, transparent and comprehensive framework.
- Provide a foundation for simplification and harmonisation of UK carbon reporting and carbon pricing.

- Provide an opportunity to test the impact of clear labelling on business decisions and stakeholder engagement.
- Mark the start of the journey to demystify the language around low carbon electricity and what constitutes 'green'.

Challenges and next steps

The label cannot solve all the complexities in the current UK energy market and in reporting of carbon and energy, but it could provide the foundation for these to be addressed progressively. Neither can it solve the tension between simplicity and accuracy, nor directly solve the issues of additionality.

An electricity label would be a new tool amongst the myriad of policies and guidelines already in the public domain; however, if it complements the existing mechanisms, it could pave the way for future harmonisation of the reporting landscape. Only radical reforms will ensure the energy market is simplified and streamlined.

Recommended next steps are for voluntary adoption with a supplier champion to pilot with a number of corporate purchasers and then monitor over a year to refine its effectiveness, and measure changes in purchasing behaviour and demand. This would be a precursor to national adoption if feedback continues to be encouraging.



The Aldersgate Group proposal



The Aldersgate Group has put forward a proposal for an electricity label.

Aims for the label and how it will be used

Transparent disclosure

The label's primary aim is to enable the transparent disclosure of the source of a business's electricity. The label will allow businesses to make more informed procurement decisions, communicate this to their stakeholders and develop reputational benefits associated with buying low carbon

electricity. This could mean that the label stimulates competition within the sector and generates a reputational driver such that competing businesses change their buying behaviour to avoid buying the carbon intensive electricity sources.

Of survey respondents that buy 'green', reputation is the main driver

By providing a single, simple statement of carbon content specific to a customer⁸, the label will help decision makers compare different sources of electricity available to them. As a result, transparent disclosure will facilitate business decisions on:

- » the best source of electricity
- » how much low carbon electricity to buy
- » developing the reputational advantage to their business of buying 'green'

Simplified carbon reporting

The label will provide a simple statement of the carbon intensity of the electricity businesses have bought. The label should be retrospective in its early years, reflecting the carbon content of the previous year's electricity. This will enable robust communication with stakeholders.

Figure 1. Overview of the electricity label

Feature	Proposal
Primary aim	Enable the transparent disclosure of where a business's electricity was generated and of the carbon emissions associated with that generation
How the label will be used	Communicating where a business's electricity has come from Declaring the carbon content of the electricity a business has bought i.e. customer specific label Explaining the carbon content of the electricity a supplier has provided to a business
Fuel coverage	All types of generation, including: <ul style="list-style-type: none"> – Low carbon: renewable, nuclear and fossil fuel with carbon capture and storage (CCS) – Fossil fuels: including oil, coal, gas
Label format	An A to G rating presented like an appliance energy performance label with the relevant kgCO ₂ e/MWh band
Basis for grading	The operational carbon content of electricity in carbon dioxide equivalent per unit of electricity purchased (kgCO ₂ e/MWh)
Calculation methodology	Calculation and methodology: <ul style="list-style-type: none"> – must be clear and transparent – must be simple, even when this is at the expense of accuracy – should be based on data already collected
Delivery organisation	Label should be maintained by an independent and trusted organisation That organisation should ensure there is no double counting Third party auditing is essential to ensure the label is considered robust and is trusted

Source: Input from Aldersgate Group Steering Group collated by Utilyx

⁸ » Tariff average could provide an adequate second best for smaller customers, without the need to quantify the de minimis.

The Aldersgate Group proposal

As visual recognition and use of the label increases businesses may start to ask for, and suppliers may choose to provide, a label that is also forward looking, ie based on the carbon intensity of forthcoming electricity.

"I think it would definitely be a clearer way of reporting." Survey respondent

In the short term, the label will only be used for voluntary reporting. In the longer term, it has the potential to become the recognised way for reporting electricity in the UK. In principle, a standardised electricity label could simplify an organisation's reporting and ensure that the same assumptions are used everywhere. This would require harmonisation of carbon reporting rules across government policies but a proven electricity labelling scheme would provide the foundation on which to build a simplified reporting landscape.

Demand for renewable electricity

The label will recognise the role of buying low carbon electricity. It will allow organisations to communicate their buying choices with confidence.

Defra recognises that:

*"It is possible that a very significant increase in longterm contracts for the purchase of renewable energy could incentivise new investments in renewables which would not have happened otherwise. The pull of significant extra demand through voluntary support for renewables could make the difference for some schemes, which were not economically viable through government measures alone."*⁹

⁹ » Defra (March 2014) "GHG reporting guidelines – 2014 update". Consultation.

By recognising the role of low carbon electricity outside policy-specific carbon reporting rules, the label will provide a stable statement of demand for low carbon electricity. This will help provide more certain demand signals to developers of low carbon generation, including renewables.

A mandatory scheme for electricity labelling would significantly increase the transparency of electricity purchasing decisions. In a similar way to the initial stages of the CRC energy efficiency scheme before it was reformed, the result of increased transparency is likely to change behaviour in order to outperform competitors or avoid reputational damage. This would provide a much stronger reputational driver for organisations to increase demand for lower carbon (A rated) electricity and reduce demand for higher carbon (G rated) electricity.

Fuel coverage

The label will need to include and compare all the electricity that a company in the UK might buy from the grid. This means that it needs to compare:

- » renewables with other low carbon sources (e.g. nuclear and Carbon Capture and Storage (CCS)).
- » low carbon options with fossil fuelled electricity (e.g. from oil or coal).
- » all sources of electricity whether they are generated in the UK or imported e.g. from France.

The sources of electricity should be clearly and transparently defined to facilitate clear messaging that is not open to ambiguity. The definitions should be aligned with existing best practice guidance to ensure a consistent approach. Nuclear power may need to be differentiated from other low carbon power to ensure transparency and

trust in the label. A recent survey confirmed that nuclear is viewed as distinct from 'green' energy, which is commonly understood to refer to renewables.¹⁰

Label format and supporting information

The label should build on the recognised format for electricity labelling (see Figure 2 for an example of how this might be constructed). It should present the carbon impact of different sources of electricity in a clear and transparent way. This would show an A to G rating presented like an appliance energy performance label with the relevant kgCO₂e/MWh band. In the example (Figure 2) we have included a column for examples of technologies corresponding to the kgCO₂e/MWh A to G bandings. Each band is defined by the emissions intensity of the electricity (rather than by technology). The label is designed to reflect the full range of potential carbon intensities, so that it is stable over time.

In order to allow companies to explain how they have achieved a grade, supporting information on the composition of energy sources for each band should also be provided alongside the label. The label will require this information for band A, using the format set out in Figure 3 below. Companies should state the contribution of A rated electricity from each source in order to demonstrate the action they have taken, as well as its carbon content. This would allow stakeholders to distinguish clearly between different sources of A rated electricity (which are generally perceived to differ in "quality") and help to reflect the purchase of renewables that have played a more active role in bringing new capacity to the market.

¹⁰ » Insight Exchange, report for Ofgem (May 2013) Perceptions of Green Tariffs. Full Report.

The Aldersgate Group proposal

Figure 2. Example electricity label for Company A

Electricity Label	kgCO ₂ e/MWh	MWh Supplied	CO ₂ Emissions (tonnes)	Example Technology
A	0–20	950,000	0	Hydro, Nuclear, Solar, Wind (on/offshore)
B	20–100	–	–	Biomass, CCGT with CCS
C	101–250	450,000	90,000	ASC with CCS, Gas CHP
D	251–450	1,275,000	510,000	IGCC, CCGT
E	451–600	–	–	Gas OCGT
F	601–800	–	–	ASC
G	801+	–	–	Existing coal
Total Electricity CO₂	225	2,675,000	600,000	

Notes: CCGT (Combined Cycle Gas Turbine); CCS (Carbon Capture and Storage); ASC (Advanced Supercritical Coal); CHP (Combined Heat and Power); IGCC (Integrated Gasification Cycle Turbine); OCGT (Open Cycle Gas Turbine). Source: compiled by Utiilyx¹¹

Basis for grading

To provide a direct link with the electricity a business has bought, the label should state the carbon content of the electricity that a company has purchased. It should not just show the average carbon content of a supplier's portfolio¹².

It should focus on operational (or point of source) carbon emissions for simplicity and feasibility of implementation (rather than location specific, lifecycle or time of use emissions). The label should be expressed

in carbon dioxide equivalent per unit of electricity purchased (kgCO₂e/MWh).

Calculation methodology

The calculation methodology must be published in order that it is trusted. It must be simple enough to explain to senior stakeholders so that it may inform electricity buying decisions.

It should align with best practice guidance in order to ensure consistency with existing carbon reporting rules to the extent possible. The calculation methodology will need to remain stable over time in order to provide a firm foundation to demonstrate trends in low carbon electricity demand.

To be cost effective, the label will need to build on existing data collection activity and information sources. This is important for both corporate end users and suppliers.

Delivery organisation

The label will need appropriate management, accreditation and enforcement. The body(s) responsible for this will need to be trusted and independent.

In order to avoid double counting, the label will need a robust tracking mechanism. The method of enforcement will be key to the credibility of the UK label.

To ensure the label is fit for purpose and effective, it will need to be reviewed on a regular basis. Review milestones should fit in with the UK energy policy framework review milestones.

Figure 3. Supporting information for A rated electricity

Source of A rated electricity:	Contribution of A rated electricity (% of total electricity consumption)
Nuclear	
Renewable: self generation	
Renewable: third party via power purchase agreement (PPA)	
Renewable: third party via green tariff	

The right hand column will only sum to 100% if all of an organisation's electricity is A rated; if not, the total will reflect the proportion of the total electricity volume that is A rated.

¹¹ » Using information from: DECC (2012); IPCC (2011), World Nuclear Association (July 2011)

¹² » Recognising that, today the label faces challenges associated with confirming and verifying the source of the electricity that is being labelled. While certificates (REGOs and LECs) can confirm the origin of band A and CHP electricity respectively, the source of other electricity is not tracked by certificates. For the label's pilot, where better data is not available, it may be necessary to use supplier averages for energy outside these two categories.

Practical Guide:

How to adopt an electricity label in 5 easy steps

It is free and relatively straightforward to become a corporate energy leader and adopt an electricity label in practice. Just follow these five easy steps:

1 Ask the question

If you are embarking on a new tender process, require suppliers to provide an electricity label with an A-G rating at no additional cost. If you already have an energy supplier, ask them to include an electricity label in your annual statement.

As a regulated industry your supplier has the basic information, but will not provide it unless you ask.

2 Make it legal

Ensure that the requirement for an electricity label is stipulated in the contract (such as an annex in the procurement requirements). This can be done by amending an existing contract with the agreement of both parties.

By including it in the contract, you are protected if you report wrong information from your supplier.

3 Demand transparency

Ensure your energy supplier can account for the carbon content of the electricity supplied. For example, for renewable energy, guidance by Defra requires suppliers to hold the requisite number of Renewable Energy Guarantees of Origin (REGOs) and take out of use any Levy Exemption Certificates (LECs) associated with the electricity in order to prevent resale and double counting.

By making this clear you will encourage market competition between suppliers who otherwise are difficult to compare.

4 Agree the structure

The "Enable the Label" report outlines our recommendations for the format, grading and supporting information of a standard electricity label. However, in these initial stages of the scheme, the label may have to be customised with your energy supplier to suit individual circumstances.

Whilst consistency is the ultimate goal, make sure the label works for you first.

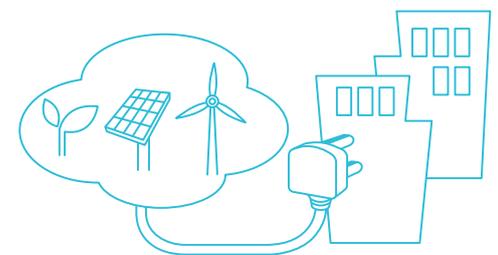
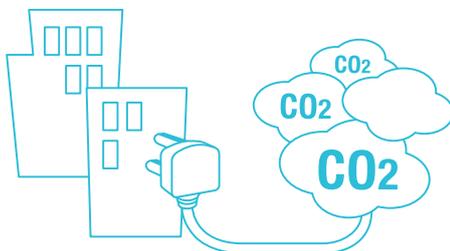
5 Report and communicate

Publish your annual electricity label in the public domain, widely communicate to stakeholders, provide feedback on usability and reference in your annual report.

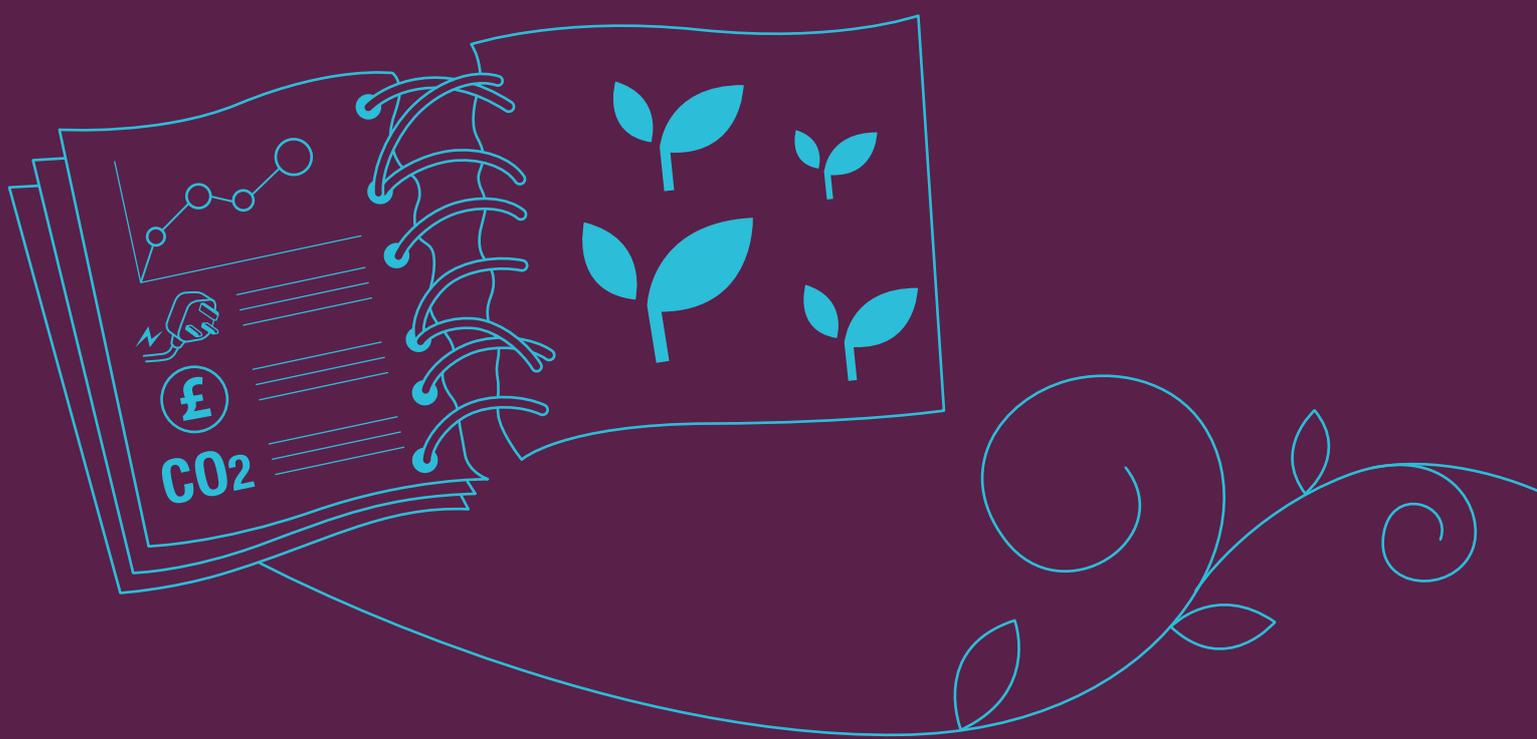
The more this information appears in the public domain, the more momentum is built to decarbonise UK electricity in a cost effective way.

The benefits for your business will be significant. The label provides:

- » Greater transparency about where your energy actually comes from and credibility that your carbon footprint is accurate;
- » Better communications by reporting in a visual way that is easier for all stakeholders to understand;
- » Greater reputational benefits when you buy low carbon power; and
- » Leadership recognition by being at the vanguard of an innovative new scheme, helping to influence its development.



To contact us, email info@aldersgategroup.org.uk
To read our full analysis, download the report from:
www.aldersgategroup.org.uk/reports



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