

Ensuring Renewable Electricity Market Instruments Contribute to the Global Low-Carbon Transition and Sustainable Development Goals

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More and more businesses are setting ambitious renewable energy targets in an effort to spur the global transition to renewables, yet the real-world impact of certain renewable electricity market instruments is limited. Corporates concerned about effecting the transition to a low-carbon economy should optimise their procurement of renewable electricity to add renewable capacity and displace fossil fuels, leading to greenhouse gas emissions reductions and further sustainable development benefits.

THE STATE OF PLAY

The latest IPPC Synthesis report¹ is clear that “recent anthropogenic emissions of greenhouse gases are the highest in history,” and that changes seen in the climate system within the last century are “unprecedented.” In December 2015, the Paris Agreement set an ambitious goal to limit global temperature rises to a maximum of 2°C above pre-industrial levels – the tipping point that scientists say would see the world tumble in to a state of dangerous and irreversible climate change.

Chief among contributors of global greenhouse gas emissions² is the energy sector, with 25% of emissions generated by heat and electricity production, 21% by industry (primarily fossil fuels burned on site), and 10% from other energy producers. The International Energy Agency³ projects that in order to stay within the 2°C global warming threshold set by the Paris Agreement, 42% of electricity will need to be supplied by renewable sources by 2030 – meaning the world needs to double its current renewable power capacity.

In the absence of global requirements on renewable energy purchases, companies are taking action.

The industrial sector consumes about 54% of the world’s total delivered energy⁴ – more than any other end-use sector – which puts corporations in a unique position to be the drivers of global change. They can lead the way in the transition from fossil fuels to more sustainable energy by demanding more renewable power from suppliers or even producing their own.

Many have taken action already. In the United States, 59% of Fortune 100 companies⁵ have set goals to reduce greenhouse gas emissions, and 14% have set specific goals⁵ for renewable energy use. To date, more than 200 companies around the world have signed up to the Science Based Targets⁶ initiative, setting greenhouse gas emissions reductions targets in line with what science says is needed to keep global temperature increases below 2°C. Furthermore, 87 of the world’s leading companies⁷ – Including The IKEA Group,

Apple, Microsoft, General Motors, H&M, and Tata Motors Limited – have committed to a goal of operating on 100% renewable electricity by joining RE100.⁷ Demand for renewable electricity in India and China is expected to increase rapidly⁷ over the next few years.

There are a variety of benefits to be gained from a transition toward renewables.

By switching to renewables, companies not only reduce their carbon footprint, but can also demonstrate to consumers and employees that they are committed to being more environmentally friendly. They earn the right to advertise that “we are powered by renewable energy.”

Starting the transition to renewables also makes long-term economic sense, as the move away from fossil fuels is inevitable. It is anticipated that by 2030⁸ it will be cheaper to choose wind and solar than coal or gas in most countries, and by 2040⁸ it is expected that costs of wind and solar energy generation will fall by 47% and 32% respectively.

The first step for environmentally conscious businesses is to improve energy efficiency and reduce energy consumption where possible. The next step is to purchase renewable energy.

Some methods of going green are more realistic than others, depending on a company’s circumstances. Onsite production is an attractive and cost-effective option for those that operate within their own facilities and have access to sufficient renewable sources (wind, solar, geothermal, etc.). As part of its mission to produce more energy than it uses across its buildings by 2020, the IKEA Group⁸ has already installed more than 700,000 solar panels across its 336 stores and distribution centres, and already owns and operates 279 wind turbines globally. This means of production, however, takes time to implement and is not available to the majority of companies, such as those who do not own their place of operation, have limited land or have limited up-front investment capacity.

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“Climate change is a huge risk to the long-term supply of safe, high quality ingredients for Nestlé’s products as crop yields fall and production areas shift. We are determined to play our part in taking climate action by purchasing renewable electricity. It’s essential for the long-term survival of our business; not just a short-term payback.”

Pascal Gréverath, Head of Environmental Sustainability, Nestlé, quoted in the 2017 RE100 Annual Report⁷



“The consumer goods sector is vulnerable to climate change; the increasing likelihood of extreme weather events such as floods and droughts poses a threat to our supply chains and operations. Going 100% renewable will deliver on our consumer promise to deliver brands that are responsibly produced in a world of finite resources.”

Marc Engel, Chief Supply Chain Officer, Unilever, quoted in the 2017 RE100 Annual Report⁷

Some companies which don't have the space available to install their own green energy generators have the option to support renewable electricity production through a Power Purchase Agreement (PPA), in which a contract is drawn up between a generator and prospective consumer of renewable energy. The electricity supplied under a PPA can either come from existing renewable energy supply or a new project, providing corporate sponsors with the opportunity to support new energy generation capacity. Many large companies, including Google, Facebook, Apple, Amazon and Coca Cola⁹ have negotiated PPAs. Smaller companies with less purchasing power can sometimes club together to collectively negotiate such an agreement. Nevertheless, the complexity of contracts and the legislative barriers that exist in some countries mean there are few cases of PPAs to date.

In cases when procurement of green power through PPAs or on-site generators is not a realistic or cost-effective option, companies can purchase the rights to claim use of renewable electricity.

RENEWABLE ENERGY
ATTRIBUTE CERTIFICATES

The production and consumption of renewable electricity is documented and tracked via Guarantees of Origin (GO) in Europe, renewable energy certificates (RECs) in North America and International RECs (I-RECs) in a number of countries in Asia, Latin America and Africa. Collectively, we will refer to these as renewable energy attribute certificates moving forward.

These market-based instruments represent the property rights to the environmental, social,

and other non-power attributes of renewable electricity generation. RECs, GOs and I-RECs are issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable source. They can be bought and sold on various markets, and are "retired" when a purchaser makes a green energy claim.

Renewable energy attribute certificates can be purchased locally (from an issuer operating on the same grid as the buyer) or from non-local or national sources (the issuer operates on a grid located elsewhere in the country). They are most often unbundled (sold on their own without the energy they represent), but can also be bundled (sold together with the renewably-produced energy in a single transaction). In the latter case, the electricity purchased is often sold under green electricity tariffs, whereby the electricity supplier purchases the energy and certificate together and retires the certificate on behalf of its customer.

While companies that purchase RECs, GOs and I-RECs may have the best of intentions, their actual impact on new renewable electricity generation is limited.

How renewable energy is sourced by corporates varies from country to country (See Figure 1), yet unbundled renewable energy attribute certificates in the voluntary market represented 60% of renewable electricity consumed globally among members of RE100 in 2015.⁷ The popularity of unbundled certificates is due in part to the fact that they can instantly reduce a company's carbon footprint, are easier and often cheaper to buy than other options, and are more accessible due to a lack of legislative barriers.

	United States	Europe	China	India
Unbundled energy attribute certificates	85%	48%	87%	0%
Green tariffs	14%	47%	0%	0%
Owned on-site facilities	1%	0.3%	<1%	31%
PPAs	<1%	3%	3%	69%
Other	<1%	1.7%	9%	0%
Total renewable energy sourced (MWh)	6,783,791 MWh	14,356,447 MWh	362,511 MWh	106,629 MWh

Figure 1: Sources of renewable energy consumed by REC100 members in 2015 (data represents 55 of 87 members who responded to survey)⁷

Whether bundled or unbundled, renewable energy attribute certificates are a necessary mechanism to ensure that any renewable energy produced is not double-counted, as energy is indistinguishable by source on a power grid. Yet, the real-world impact of these instruments is questionable as current markets are not financing or driving enough demand for new sources of renewable electricity. The key challenges are outlined below.

Oversupply of certificates is keeping prices too low to drive new energy production

In theory, the wide purchase of renewable energy attribute certificates should increase demand for renewable energy and subsidise new-build renewable energy projects. The real impact of this upon the market, however, is not sufficient. This is because the price of RECs, GOs and I-RECs in the voluntary market is too low to drive material changes in decision making about energy procurement.

The European consumer organisation, BEUC, argues that **issuing and buying GOs does not support new energy production**¹⁰ as the prices of GOs are kept low in the European single market by a huge oversupply of electricity from Norwegian hydropower stations – many of which were built in the early 20th century. The revenue from sales of GOs is not enough to finance new renewable energy projects or devices.

In the United States, unbundled national or non-local RECs are described as being **“effectively a waste product”**¹¹ in the areas from which they are most often purchased. In 2012, roughly the entire voluntary REC market could have been supplied by the **overflow from the compliance market**¹¹ from Texas, Oklahoma and Iowa alone. In this case, revenue from the sale of RECs is not needed to spur development in these markets beyond what would’ve been generated in its absence.

Renewable energy attribute certificates do not always result in a net reduction in greenhouse gas emissions

Purchasing RECs, GOs or I-RECs allows a company to report lower greenhouse gas emissions

associated with its use of power. Yet, when one company buys a renewable energy attribute certificate, another must report higher emissions to compensate for the renewable energy they can no longer claim is being supplied by their local grid. Unless the renewable energy has been sourced from, or is supporting expansion of, new renewable energy capacity there is no real change in the ratio of renewable to non-renewable energy generated and no perceptible change in emissions beyond business as usual. **Renewable energy attribute certificates therefore do not always represent a net reduction in greenhouse gas emissions.**

Lack of consistent monitoring and quality control

Once a company makes a green claim in relation to its purchase of a renewable energy attribute certificate, the certificate must be retired. However, the lack of enforced regulation and broadly defined claims associated with the retirement of these instruments put them at risk of being **double sold or double counted**,¹² with ownership being claimed by more than one company. To reduce this risk and guarantee origin and credibility, companies should purchase renewable energy attribute certificates that are certified by an independent third party, and contracts should be unequivocal about the ownership of the certificates and the environmental claims associated with them.

Regulation can help provide assurance around the origin of renewable electricity attribute certificates, and reduce the risk of double counting. However, a responsible consumer should also consider the project type, its design and its impact on the community and environment.

MAKING RENEWABLE ENERGY ATTRIBUTE CERTIFICATES COUNT: IMPORTANT LESSONS FROM CARBON MARKETS

The voluntary carbon market is an excellent case study to inform the best way to ensure that renewable energy attribute certificates indeed drive a transformation to renewable energy.





Projects must support new renewable electricity capacity; not business as usual

Unlike renewable energy attribute certificates, certified carbon credits must represent a net reduction in carbon, meaning that the tonne of CO₂ each credit represents would not have been avoided if the carbon credit had not been issued. This is called 'additionality' in the carbon markets. As part of this, projects generating carbon credits must also address potential issues such as leakage, to ensure that emissions reductions in one area do not result in an increase in emissions elsewhere. For example, a project developer might need to demonstrate that they are preventing the need to chop down trees, rather than protecting one area from deforestation, only for another area to be destroyed instead.

In the case of renewable electricity, leading corporates should acquire renewable energy attribute certificates that are generated by new devices and which support the generation of new renewable electricity capacity from new sources rather than simply buying the right to claim ownership of green electricity that would be generated regardless of additional financing. Only by supporting new build renewable electricity projects and new renewable energy generation devices can we foster the rapid displacement of fossil fuels.

Quality standards have helped carbon credits deliver impact beyond reducing emissions

Climate protection projects awarding carbon credits must undergo independent third party monitoring, reporting and verification procedures by an approved auditor to ensure that claims made in relation to the project itself are accurate.

To ensure renewable energy attribute certificates support a sustainable transition to renewable energy, it is important that safeguards are in place to ensure projects not only prevent greenhouse gas emissions, but respect the environment and support local communities. Many renewable energy attribute certification approaches exist, yet the quality and rigour is highly variable across different standards.

Widely known as the most rigorous certification standard available for climate protection projects, Gold Standard provides strict requirements to certify that projects are developed in collaboration with local communities, safeguard against risks and deliver long-term, sustainable reductions in emissions.

Under Gold Standard for the Global Goals, a new standard launching later this year, all certified climate initiatives must contribute to sustainable development through demonstrating verified impacts towards the United Nations Sustainable Development Goals (SDGs). This helps to ensure the projects we certify are designed to benefit local communities and biodiversity as well as the environment.

THE HIERARCHY OF BEST PRACTICE FOR COMPANIES COMMITTED TO RENEWABLE ENERGY

While the voluntary renewable electricity market is still not the perfect vehicle for reducing emissions and increasing global capacity for renewable energy generation, progress is being made. Companies themselves are driving demand for a wider variety of options that enable them to support new renewable electricity generation projects. **The Corporate Renewable Energy Buyers' Principles**,¹³ developed by a group of large corporate energy consumers in collaboration with WWF and the World Resources Institute, call for greater choice, easier access to PPAs and a guarantee that investments result in new renewable energy capacity.

Based on the current options available, **Closed Loop Advisors**¹¹ offers a hierarchy of best practice for companies wanting to ensure the greatest positive impact through efforts to reduce their emissions. We have adapted this to create our own recommendations (see page 12):

BEST PRACTICE RECOMMENDATIONS FOR COMPANIES SEEKING TO ENSURE THE GREATEST POSITIVE IMPACT IN REDUCING EMISSIONS



Reduce energy use
wherever possible



Deploy on-site renewables:

through self-financing or leasing space to a developer, and purchase the renewable energy attribute certificates generated from these on-site power sources



Help develop new local renewables

by negotiating PPAs or collective PPAs, and purchasing renewable energy attribute certificates generated via the associated PPAs



Invest in high-quality renewable energy attribute certificates:

those supporting new energy generation capacity and sustainable development; those with safeguards in place to verify claims made; those from projects which are at harmony with nature and communities

ENSURING RENEWABLE ENERGY ATTRIBUTE CERTIFICATES DELIVER REAL-WORLD BENEFITS

With more and more companies committing to reduce their dependence on fossil fuels – many through the purchase of GOs, RECs and I-RECs – it is time to make renewable energy attribute certification more meaningful. To ensure a sustainable transition to a low carbon economy, it is vital that renewable electricity market instruments support new renewable energy generation, respect the natural environment and foster sustainable development. And it is vital that corporate buyers can trust the credibility of the certificates they purchase.

Gold Standard was established by WWF and other international NGOs in 2003 to ensure that carbon projects deliver genuine emissions reductions and long-term sustainable development. Now endorsed by more than 80 NGOs, the Gold Standard is established as the global benchmark for climate and development initiatives. Moving forward, we want to apply our expertise and learnings from carbon markets to ensure that renewable energy attribute certificates are being used to drive new renewable electricity generation capacity and support long-term sustainable development.

In August 2017 Gold Standard will be launching a new Renewable Energy Product Label scheme alongside its new standard, Gold Standard for the Global Goals. In line with our existing practices and principles, projects generating renewable energy under our new Label must:

- » Add new renewable electricity to the grid: the electricity generated must come from power plants or devices that adhere to a strict age limit, and the finance generated through the sale of renewable energy attribute certificates should go towards maintaining or expanding the power plant
- » Respect the natural environment and contribute to the achievement of three or more of the 17 UN SDGs
- » Involve all affected and interested stakeholders, including local people, at different stages of project development and implementation
- » Be regularly and rigorously monitored and assured by an accredited third party auditor and approved by Gold Standard, to ensure the ongoing quality of the project
- » Adhere to strict safeguarding principles, to mitigate risk, maximise impact and ensure projects deliver what they set out to from the start

Historically, the real-world impact of purchasing renewable energy attribute certificates has been questionable, despite the best intentions of corporates seeking to increase demand for new sources of renewable electricity generation and reduce their carbon footprint. We hope our new Renewable Energy Product Label, assured by third party monitoring, reporting and verification, will give companies confidence that they are supporting the development of new, high quality renewable electricity generation projects and achievement of the UN SDGs through their efforts to support a greener economy.



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