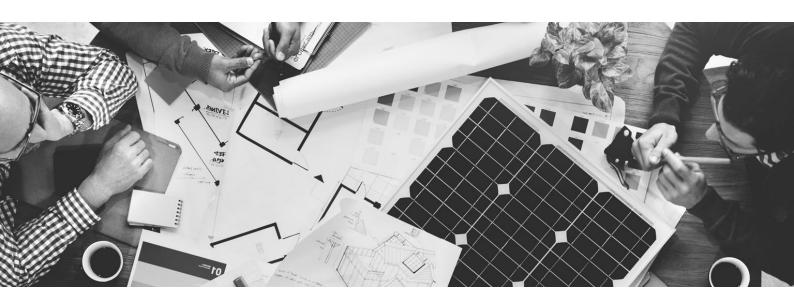


RE 100 THE CLIMATE GROUP





BUSINESS LEADERSHIP IN THE TRANSITION TO RENEWABLE ELECTRICITY

Abstract

This paper provides a framework for companies seeking to demonstrate leadership in the transition towards a clean energy economy powered by 100% renewable electricity.

It draws on best practice already being implemented by leading companies working to source 100% renewable electricity as part of RE100, an initiative led by The Climate Group in partnership with CDP.

There are multiple ways in which a company can demonstrate leadership on renewable electricity. For each of these dimensions, a case study is provided to illustrate how RE100 members are accelerating market shifts.

The paper provides specific recommendations, informed by the RE100 Technical Advisory Group, that guide corporate buyers on how to have as much impact and influence as possible.

The paper does not intend to inform eligibility criteria to join RE100. For more details about RE100 and criteria to join please visit RE100.org.



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1. Introduction

A revolution is underway in the power sector and governments, corporations, and other stakeholders all over the world are springing into action. The aftermath of the Paris Agreement and the Sustainable Development Goals have set a clear direction for the transition that the energy sector, and specifically the power sector, must undergo in the coming decades: electricity generation must be fully decarbonized by mid-century, at the latest.

The industrial and commercial sectors consume two-thirds of all electricity produced worldwide. This means businesses can play an essential part in enabling the structural shift to clean power. Today, businesses are spending billions on energy bills increasingly being directed towards renewable electricity. Companies are building the infrastructure, selling the services and inventing tomorrow's technologies to deliver the clean energy transition. As they recognize the need for their contribution to reducing greenhouse gas emissions for a climate-safe world – and the rapidly falling cost of renewable electricity – many companies want to source renewable power whilst also supporting the transition in a proactive, meaningful, and commercially advantageous way.

A group of companies, members of The Climate Group and CDP's RE100 initiative, are driving the clean energy transition through their corporate energy sourcing decisions. According to the Business Renewable Center's deal tracker, corporations have contracted over 12 gigawatts of renewable energy in the US alone in the last five years. In the last three years, 140¹ global and influential companies have signed up to RE100, committing to be powered by 100% renewable electricity.

The combined electricity consumption of these companies (more than 179TWh)² is larger than the annual consumption of Thailand – the world's 21st largest consumer of electricity. These commitments alone represent more than \$94 billion in investment opportunity for the companies to meet their renewable electricity needs and reflects the changing economics of renewable electricity resulting from sharply decreasing costs³. Bloomberg NEF forecasts that the need for RE100 members to source 100% renewables represents a potential of adding 100GW of new-build wind and solar power by 2030 – slightly larger than California's entire electricity grid today.

Renewable electricity sourcing varies significantly across countries and even within single markets. Whilst in some countries there may be a variety of renewable electricity sourcing options available to companies, in others it may be virtually impossible to purchase renewable electricity.

In this context, the definition of leadership has too often been reduced to the question of whether renewable electricity procurement methods directly enable the expansion of new renewable energy capacity.

This definition of leadership is too limited to comprehensively understand the various ways companies are seeking to transform the electricity system — and it does not provide sufficient guidance for companies looking for solutions to increase their impact. A growing number of companies are seeking direction on how to maximize their leadership in the transition towards an economy powered by renewable energy.

¹ As of August 2018

² Ibic

³ According to our RE100 Progress and Insights Report 2018, the economics of renewable energy are the third main driver for RE100 members to make the 100% commitment (following (i) GHG emissions management and (ii) Corporate social responsibility)



To broaden the discussion of leadership in the corporate renewables space, this paper proposes five leadership dimensions: **Ambition, Impactful Procurement, Sustainability, Influence and Transparency.**

In describing these dimensions, this report:

- illustrates how companies are implementing the dimensions with inspiring case studies from RE100 members;
- makes recommendations on how companies can implement impactful renewable electricity sourcing strategies (whilst recognizing the different circumstances that shape a company's experience in procuring renewables);
- highlights opportunities and best practice across each dimension; and
- provides guidance to companies on how to meet their full potential as agents of change.

The context of the paper was formulated with the RE100 Technical Advisory Group, which comprises a consortium of NGOs and market players.

The paper is not intended to present a unique or absolute truth and will continue to be revised as the definition of leadership evolves and new best practices emerge.

2. The RE100 Leadership Framework

Companies are showcasing leadership on renewable electricity in a variety of ways, depending on the nature of the company and on the context in which the company operates.

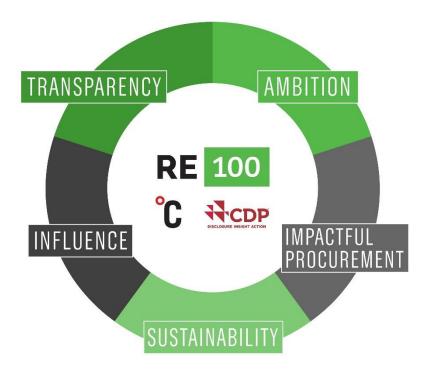


Figure 1: RE100 leadership framework



These different expressions of leadership have been categorized in this paper into five different dimensions. Each dimension is independently important and each can be a powerful lever to accelerate the clean energy transition as well as companies' own climate and sustainability goals.

Leadership on renewable electricity looks different for every company; an organization may be able to optimize its performance across single or multiple dimensions, depending on its specific situation or context. Factors affecting a company's ability to optimize its performance within any one dimension can be external and/or internal, such as:

External factors

- Regulatory or policy frameworks that shape renewable electricity access opportunities
- Market infrastructure (i.e. tracking systems, third-party certification) to reduce consumer risk and ensure procurement credibility)
- Effectiveness of suppliers to offer renewable electricity products that meet consumer needs
- Physical constraints related to siting and access to renewable sources

Internal factors

- Size and scope of a company's electricity needs
- Geographical diversity of a company's operations
- Capital investment capacity of company
- Company's appetite to accept or take on risk
- Creditworthiness of company
- Capacity to understand markets and market opportunities
- Internal willingness to pursue or prioritize climate issues
- Ability to influence other important stakeholders (i.e. policymakers, utilities, suppliers and other businesses)

With these varying circumstances faced by companies, leadership takes different forms for different organizations. As such, the framework presented in this paper should be seen as an opportunity for companies to maximize their own individual impact and influence according to their particular circumstances.

2.1. The Starting Point: Active Choice

The first step in a company's journey to leadership in the renewables space is the active and deliberate choice a company makes to begin sourcing renewable electricity.

By taking an active approach to meeting their renewable energy needs, companies can accelerate the deployment of renewable energy capacity by using their purchasing power and/or investment capacity.



Active sourcing is a key step and is still not common practice across most companies. The <u>REmade index</u> shows that only 11% of the power consumed by companies reporting to CDP was actively sourced from renewable sources.

AEON, a large Japanese retailer and RE100 member recently began its journey in sourcing renewable electricity and held a press conference to publicize its commitment in Japan. To read more about AEON's case study, see the next page.

The various options that count as active sourcing of renewables under the RE100 initiative are outlined in the RE100 Technical Criteria, as well as how to properly claim each method. The RE100 Technical Advisory Group also developed a set of criteria to ensure the exclusive and credible usage and delivery claims for renewable electricity consumption, which is articulated in the Making Credible Claims document. The principles outlined in this agreed standard for credible corporate sourcing underpin the guidance given in this paper and should be considered the minimum accepted standard for corporate sourcing of renewable electricity.

The leadership dimensions presented in this paper are provided as options for companies that have begun actively sourcing renewables and now seek to maximize their leadership in driving forward the clean energy transition.

Active vs. passive sourcing of renewable electricity

Two broad approaches are followed by end-users to make renewable electricity consumption claims:

- 1. A passive approach, in which renewable electricity consumption claims are made based on the average renewable electricity content available in the grid or grids from which companies source their electricity and;
- 2. An active approach, in which renewable electricity consumption claims are made based on the actions that companies take to procure or produce the renewable electricity that they consume, beyond what is required by law or delivered through the standard grid.





The Starting Point - Active Choice: AEON Case Study

AEON is one of Japan's largest retailers with over 21,000 stores including more than 600 general merchandise stores and 300 shopping malls nationally and overseas. It is also one of Japan's largest corporate consumers of electricity, accounting for 1% of the country's entire electricity consumption, so switching to renewables is an ambitious task.

Japan's renewable electricity market needs significant capacity development and presents Japanese businesses with a challenging task. However, the growing list of Japanese companies joining RE100 and committing to source large volumes of renewable electricity is sending an important signal to energy suppliers to meet this increasing demand, and to policymakers to support the market shift.

"We held a press conference announcing our intention to source 100% renewable electricity because we want our energy suppliers to know that we are serious about this commitment and that they will have to help us. We also want to inspire other companies because if we – one of the highest electricity consumers in Japan – are ready to make this commitment, others can as well, and we must significantly grow the market demand." – Kahori Miyake, Director of CSR & Communication

The company's commitment to the environment began with one of its founders, Honorary Chairman Okada, who grew up in the city of Yokkaichi during the industrial boom of the 1960s. It became his mission early on to do something about the air pollution, health and wellness of the people who lived there.

"It is a part of our organization's DNA to take environmental issues very seriously. It is a pillar of our corporate philosophy, and as influential corporate citizens, we have an important role to play."

Though AEON is a retailer, Japanese customers have come to know AEON as an organization committed to the environment. This corporate image focuses less on climate change, which is of less importance to the average Japanese consumer, and more on corporate actions that customers can relate to.

Publicly announcing its commitment to be powered entirely by renewables is just one way that AEON is demonstrating its commitment to environmental issues. For example, AEON is well known for planting trees in open spaces around each new store in a ceremonial event where customers are invited to participate with their families. In the last ten years, AEON has planted over 11 million trees.

"The purpose of these actions is to increase the awareness and importance of environmental issues and climate change among Japanese consumers and in Japanese society."



3. Leadership Dimensions

3.1. Ambition

Ambition describes how far and how fast an organization aims to progress in sourcing renewable power. Ambition on renewable electricity is focused around two parameters: the overall scope of the target and the timescale for action

The case for RE100 targets

To join RE100, there is a strict requirement for companies to commit to source 100% of electricity from renewable sources by a specified date, before 2050. The rationale for the 100% ambition goes beyond simply striving for the highest possible number.

100% goals are powerful. They galvanize the entire organization and eliminates doubt - there is no part of the company that is driving in a different direction, no department that can opt out because they are given permission by the ambiguity of a 50% target. Everyone is on board.

100% targets require driving change in all company operations, in all geographies, which is crucial for impacting energy markets across the globe. A company setting a 100% target also sends a clear signal that it wants all markets to support renewables sourcing – rather than setting a lower target, enabling simply buying renewables where they are already available.

The 140 companies committed to 100% through the RE100 initiative demonstrate that this is an achievable objective –and sets the gold standard for ambition.

Level of ambition

The level of ambition describes the scope of a company's target. Here, climate science determines the 'minimum requirements' for corporate sourcing, however companies are encouraged to set their targets for as early as possible. To meet Paris Agreement targets, all companies must source 100% of their electricity from renewable sources by 2050; this is reflected in RE100's joining criteria for new members.

Different climate scenarios provide different pathways to meet the goals under the Paris Agreement, and they should be used by companies to inform the absolute minimum level of ambition they must consider to meet their energy needs. The following table provides a summary of various publicly available scenarios.

Timescale of action

Timescales of action are important elements of ambition, and companies are encouraged to transition towards 100% renewable electricity in the shortest possible timeframe. It is crucial to understand the rate at which companies will shift from conventional towards renewable sources of electricity. Without a clear timeframe, it is not possible to understand ambition.

The timescale of action also makes clear that the speed at which a company transitions matters. A commitment to transition to 100% renewable electricity within a short timeframe provides a stronger market signal and demonstrates greater leadership.



Table 1 below presents the minimum level of ambition of renewable electricity sourcing that all companies must achieve for the global business community to be in line with different climate scenarios.

It is critical that companies see the scenarios below as a minimum requirement and understand that early and ambitious action will pave the way for their peers whilst encouraging policymakers to ratchet up national goals.

The table also presents the minimum target requirements for companies to join RE100, and the recommended timeframe for companies to demonstrate leadership through ambitious targets. This does not consider the limiting internal or external factors discussed in the introduction.

Scenarios	Renewable electricity level by:	
	2030	2050
<u>International Energy Agency – ETP B2DS</u>	47%	74%
Scenario 2017		
IRENA REmap	44%	<u>85%</u>
Greenpeace Energy [R]evolution	58%	92%
Recommendations		
RE100 minimum eligibility criteria	60%	100%
RE100 recommended level of ambition	100%	100%

Table 1. Renewable energy ambition according to different climate scenarios

RE100 members distinguish themselves as leaders by setting ambitious targets. Nearly two-thirds of RE100 members have committed to source 100% renewable electricity by 2025 and more than three-quarters of members have committed to achieve this target by 2030.

This includes companies within energy intensive sectors like automobile manufacturing, such as **Tata Motors**, which has set a target to reach 100% renewable electricity in 2030. Read more about Tata Motors' ambition in the following case study.

Corporates are also demonstrating ambition through other initiatives such as science-based targets. This helps companies set goals for reducing greenhouse gas emission in line with climate science. However, CDP data reveals that renewable energy target setting is not yet a common practice; only 17% of companies across the world set such goals.

See the next page for recommendations on how companies can maximize their leadership on setting ambitious targets.



Leadership recommendations

- 1. Set a public and measurable renewable electricity goal with an ambition of sourcing 100% of electricity from renewable sources by 2030, or earlier;
- 2. Support from top-level management and governance structures (e.g. boards) should be explicit and clearly highlighted to give maximum weight to the commitment.
- 3. Continue to revise this target on a regular basis, reflecting the rate of change in rapidly evolving markets and technological innovation. This helps approach renewable electricity sourcing as a market opportunity.
- 4. Set ambitious interim targets to allow you to move further and faster for operations in countries where renewables markets are well established, for leading subsidiaries or parts of the business that do not depend on energy-intensive processes. For example, it may be possible to achieve a 100% target for all operations in the US and EU within a very short timescale, while in less mature markets there is much greater uncertainty.

If going 100% renewable by 2030 is not feasible, review your assessment annually, as policy and technological frameworks are changing rapidly. In the meantime:

- 1. Set ambitious interim targets where possible by starting your renewables journey, increasing ambition in the future will become more feasible.
- 2. Consider other ways of showing leadership and pursue the most impactful opportunities for your organization. For example, focus on high impact procurement methods or work with policymakers, regulators and utilities to remove barriers in markets where options to source renewable electricity or make exclusive claims are limited;
- 3. Be transparent. If internal or external constraints are preventing you from achieving a 2030 target, sharing this information can support new collaborations that develop solutions and overcome barriers.

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Ambition: Tata Motors Case Study

Tata Motors was one of the first few automobile manufacturers to commit to switching to 100% renewable power. The company operates within the energy intensive manufacturing industry and has all its plants based in India, a country with a challenging renewable energy market; yet still has a target year of 2030. Tata Motors demonstrates a high level of corporate ambition and is a leading example of the pioneering work companies can accomplish despite operating within challenging sectors or markets.

"We are taking several steps to address climate change, one of today's biggest challenges. Carbon emissions reduction and energy conservation are a top priority for us. We are delighted to have joined initiatives like RE100 and we are building a holistic roadmap for reducing our carbon footprint." – Arvind Bodhankar, Head (SHE & Sustainability)

Long hours of sunshine in India provide some of the best opportunities for solar energy in the world. But there are challenges to going 100% renewable in India as well, which Tata Motors lists as: high upfront costs, charges and levies imposed by utilities, high transmission costs and banking regulations, as well as different policies and regulations in each state of India.

Helping to overcome these barriers, RE100 members are sending a strong and clear signal to the market and to policymakers that businesses want to have easier access to renewable energy wherever they operate.

"Government has been very proactive and has charted a clear direction for the industry."

Since Tata Motors joined RE100, many companies have approached the auto-manufacturer for advice on understanding and overcoming the hurdles while switching to renewables. Tata Motors has shared its learnings on multiple RE100 webinars, spoken at events, and encouraged other companies to take urgent action.

"We are committed to contributing positively towards climate change mitigation and reducing our overall environmental footprint. In this context, we shall continue our efforts towards a sustainable transportation system, developing eco-friendly products and increasing energy contribution from renewable energy sources."



3.2. Impactful Procurement

A key focus in the debate of what constitutes a leading renewable energy procurement strategy has been on whether a particular procurement method enables additional capacity to the grid. Two arguments underpin this debate:

- There is undeniable urgency to significantly scale up clean power capacity at a rate that allows
 us to meet global climate goals. To the extent possible, organizations should engage in
 sourcing practices that directly contribute to new capacity being brought onto the grids in
 locations where they have operations.
- On the other hand, market efficiencies may be leveraged to increase access and scale renewable electricity development across a larger market. Aggregate demand can produce economies of scale that may achieve greater change than an individual project serving an individual company.

For purposes of simplicity, we assess different renewable electricity sourcing mechanisms according to the direct impact they have on the grid or market where the company is consuming renewable electricity. Two impact categories are proposed:

- **Direct impact** is the result of a sourcing strategy that directly enables or finances a new renewable electricity asset, or part of it, either through investment or through a financial commitment from the sourcing entity (e.g. long-term power purchase agreement).
- **Indirect impact** is the result of a sourcing strategy where the sourcing is not directly financing or enabling new renewable electricity capacity, but which could be indirectly incentivizing the development of new capacity through other mechanisms (e.g. sending important market signals).

Companies wishing to demonstrate leadership in their sourcing options can deploy a portfolio or mix of sourcing strategies to ensure their approach is as impactful as possible. Companies operate in different circumstances and have different opportunities available to them depending on the individual internal and external factors discussed in Section 2.

As such, they should pursue the strategies making most sense in their given situation. **Table 2** on the next page proposes strategies that companies can deploy to maximize impact through various sourcing methods.



Procurement method	Recommendations for maximizing impact
Self-generation (onsite or offsite)	 Maximize the size of the project. Locate project as close to the point of consumption as practical or where its visibility influences others. Incorporate energy storage. Retain the associated EACs from the project. Support the re-powerment of existing projects.
Physical PPA (onsite or offsite) Virtual PPA (offsite)	 Maximize the size of the project. Aggregate demand from other purchasers to increase project capacity. Engage with new projects. Engage with large-scale modern renewable technology projects that are not necessarily new. Engage with innovative/emerging technologies.
Green tariff Unbundled EACs	 Buy via long-term agreements. Buy locally—from the same region in which the company has operations. Buy from new projects. Buy in under-developed markets when available. Buy from specific renewable technologies. Work with utilities to create green tariff options that bundle energy with the associated EACs.
Claiming grid mix	Begin actively sourcing renewable electricity and deploy one or more of the strategies listed above based on the selected sourcing method.

Table 2. Renewable energy ambition according to different climate scenarios

Self-generation

Self-generation is the direct purchase and investment of a company in electricity for its own consumption, which may result in the addition of new capacity when the company installs it.

Self-generation requires the company to finance and produce the physical electricity, and it assumes the risk in developing the asset. However, savings on conventional electricity costs, increased energy independence and less exposure to fluctuating electricity costs are primary incentives for an organization to self-generate electricity. RE100 members listed the economic benefits of renewable electricity as one of the top reasons behind <u>sourcing renewables in 2017</u>.

Companies can deploy a variety of strategies to maximize the impact of self-generation. For example, companies should **maximize the size of the project** to generate as much renewable electricity as possible and **locate the project close to the source of its consumption** to ensure that it is directly serving the area in which it is needed.

Energy storage can also help maximize the output of the project, as can **supporting the re-powerment of capacity** to ensure that the project continues delivering renewable electricity to its maximum operating lifetime. Furthermore, companies should guarantee that this electricity is properly accounted for via the **generation and retirement of Energy Attribute Certificates (EACs).**



RE100 member **IKEA Group** is pursuing a unique sourcing strategy that places emphasis on self-generation and adding new capacity to the grids where the company has operations. To read more about IKEA Group's production strategy, read the case study following this section.

Physical and virtual PPAs

Physical and virtual PPAs both have direct impact, and when signed for new projects, they increase the renewable capacity on the grid. They are agreements between the energy producer and the corporate off-taker for a set period-of-time, thus providing long-term security to the project investors.

A virtual PPA is a contract under which the developer sells the project's electricity to the wholesale spot market. The developer and the corporate off-taker then settle the difference between the variable wholesale market price and the strike price, and the off-taker may receive the unbundled EACs that are generated from the same project.

Under a physical PPA the energy producer delivers the project's electricity to an agreed upon localized interconnection point on the grid, where the off-taker takes ownership of the electricity. Physical PPAs can offer significant economic benefit via reduced costs and reduced exposure to fluctuating prices during the term of the procurement commitment.

Purchasers can pursue various strategies to maximize the impact that PPAs can have. For example, engaging with **new projects** and **maximizing the size** of these will ensure that more renewable electricity capacity is being added to the grid.

However, investing in **projects that are not necessarily 'new'** is <u>also important to extend the lifetime of assets</u> that do not need to come offline if they are still productively contributing to renewable capacity in the market. Collaborating with other companies and **aggregating demand** is an effective way to increase the size of the project and distribute its risk as well, and also allows companies to join in on a deal they may not have enough demand for to pursue individually.

Finally, engaging with promising **innovative** or **emerging technologies** can achieve economies of scale and drive down prices, making them more accessible to the wider market.

In 2018, four RE100 members—AkzoNobel, Google, Philips and DSM—joined forces to aggregate their demand and signed joint PPAs to procure renewable electricity. To read more about this deal and other efforts of one member, **AkzoNobel**, read the case study on page 17.

Green tariffs

Green tariffs involve the customer engaging with their utility to receive the green power product. These purchases do not typically represent the purchase of an entire asset's capacity. The impact of green power products and green tariffs depends on the approach followed by the utility sourcing the renewable electricity on behalf of the consumer.

Green tariff programs that allow customers to buy both the energy and the EACs from a renewable energy project provide a more direct financial connection to projects, similarly to a PPA. As such, it is recommended working with utilities to create green tariff options that bundle energy with the associated EACs. Companies procuring via green tariffs can also buy via long-term agreements to provide security to the supplier.

Where possible, customers should pursue green tariff strategies such as only purchasing from **new projects** or **specific technologies**, to ensure that their purchases are contributing to the aggregation of demand through impactful procurement options available in the market.



Unbundled EACs

The procurement of unbundled EACs usually represents an indirect purchasing method; there are higher and lower levels of purchasing impact in the unbundled EAC market.

Small-scale or spot purchasing, and short-term purchases of unbundled EACs, likely represent a very small fraction of the income stream for a specific renewable electricity facility. The purchase of EACs from old hydropower plants often provide little incentive for developing additional renewable electricity technologies, for example. These strategies provide low, indirect impact and do little to stimulate the significant capacity growth needed for the clean energy transition.

However, companies can and should deploy a combination of purchasing strategies to ensure that their purchases impact the market demand for renewables. For example, entering into **long-term** agreements to buy the unbundled EACs, or the purchase of EACs in **under-developed markets**, contribute to the aggregation of demand and demonstrates the need for an increased supply of renewable electricity in that market.

A strategy that focuses on the **local purchase** of unbundled EACs in the same region as consumption ensures that renewable capacity is being developed in the regions where there is demand instead of coming from elsewhere in the market.

Finally, having a strategy that focuses on the purchase of unbundled EACs from **new projects** or **specific technologies** demonstrates the demand for newer projects with modern renewable technologies to penetrate the market rather than relying, for example, on the saturation of older hydropower EACs which do little to encourage further capacity building.

As they represent additional cost to normal sourcing of energy, unbundled EACs do not offer companies economic cost savings for their electricity use through the term of the procurement commitment.

Leading companies seeking to maximize their impact through their sourcing methods can deploy one or more of these recommendations and should actively procure the highest impact renewable electricity feasible in the market where they have operations.

In cases where these recommendations are not possible, companies can pursue other dimensions of leadership discussed in this paper. Here, companies should be transparent about the barriers they face when procuring renewable electricity in a particular market.

Claiming the grid mix

The mere fact that an entity procures electricity from a grid will not stimulate additional renewable electricity capacity, which is why this is considered a procurement method that has neither direct nor indirect impact on renewable energy development.

To showcase leadership, companies should **begin actively sourcing renewables** and pursue the recommended direct and indirect purchasing strategies.



The next frontier

Several RE100 members who have reached their 100% target are still looking to push forward and pursue the even more impactful sourcing methods. Google, an RE100 member that has already reached its 100% target, now has <u>a strategy</u> to pursue technologies that will enable it to power its operations and data centers with renewable energy on a 24-7 basis.

Leadership recommendations

- 1. Pursue the highest impact strategies for purchasing renewable electricity, given your company's unique internal and external factors.
- 2. Diversify your procurement profile to source not just through indirect methods but also direct methods such as on-site generation or long-term agreements.
- 3. Explore collaborative opportunities with other companies in the same market to jointly meet your renewable electricity needs.
- 4. In markets with limited renewable electricity sourcing options, engage with utilities and policymakers to encourage greater access to renewable electricity supply options and support future development of renewable capacity.
- 5. Be transparent about challenging markets where your organization faces barriers.





Impact #1: IKEA Group Case Study

IKEA Group (INGKA Holding B.V.) is a global home furnishing retailer with over 350 stores in 29 countries. As a founding member of RE100, IKEA Group is also a significant producer of renewable energy. Unlike most RE100 members, it has a production target rather than a consumption target, and in 2017 already generated the equivalent of 73% of its energy use from renewable sources.

"We believe in a transition to an economy built on clean, renewable energy. So, we set out to produce as much renewable energy in our operations as we consume by 2020." – Karol Gobczyński, Climate and Energy Manager, IKEA Group

IKEA Group is demonstrating the impact that corporates can play in decarbonizing the power sector and accelerating the transition to a low-carbon economy. Significant consumers of electricity that add capacity to the grid can rapidly increase the wider availability of renewable electricity for other businesses.

"By investing in our own production, we ensure that more renewable energy is added to the electricity market."

Today, IKEA Group has 750,000 solar panels on its stores worldwide and has committed to owning and operating almost 450 wind turbines. Wind makes up most of the company's electricity generation, and in 2017 it generated nearly 2.4 TWh of renewable electricity, which is either being consumed directly or added to the grids in which it operates. Since 2009, IKEA Group has invested US\$ 1.9 (€1.7 billion) in renewable energy, and the company will continue investing until it reaches its 2020 target.

Pursuing direct and high impact renewable projects is at the heart of IKEA Group's production strategy. Most recently, the company has acquired the Pisco Wind Farm in Northern Portugal. It has a capacity of 50 MW, with 25 turbines. These will generate approximately 156 GWh of wind power annually and is the equivalent of the consumption of over 30 IKEA Group stores.

"We are doing all this because we want to have a positive impact on people and the planet, but also because it makes good business sense. It reduces our exposure to increasing energy prices and supports our business idea to provide customers with quality products at affordable prices."





Impact #2: AkzoNobel Case Study

Dutch specialty chemicals and paints company AkzoNobel plans to reach its 100% renewable electricity target by 2050 – a significant challenge for a company in an energy-intensive sector.

Already 45% of the way there, AkzoNobel primarily uses biomass and wind power purchase agreements (PPAs). Through this strategy, AkzoNobel seeks to directly contribute vast amounts of new and high impact renewable energy capacity to the grids where it operates.

The three-phase process began in 2003, when the company first recognized the environmental responsibility to reduce its emissions, even if it came at a financial cost. The second stage saw a growing business case for action. AkzoNobel started to procure renewables, which were becoming cost competitive through public-private partnerships and PPAs.

The third and current stage focuses on AkzoNobel driving the sustainable business transition by collaborating with government, suppliers, other businesses and even other industries.

"You can't make this transition in isolation and cooperation allows everyone to accomplish more."

- Andre Veneman, Director of Corporate Sustainability

Notably, AkzoNobel initiated the Dutch Wind Consortium, a group of RE100 companies including Google, Royal DSM and Royal Phillips, that signed two long-term PPAs to jointly procure renewable electricity in the Netherlands. This resulted in 140MW of wind power capacity coming online, delivering renewable power to the companies from March 2018.

"These projects only work when you have partners who want to convene, when everyone is open and transparent, and when everyone can accomplish their needs."

The company is working with the Dutch government, the steel industry, refineries and the agricultural industry to deliver renewable electricity and transform key processes for energy intensive sectors to further lower greenhouse gas emissions.

Specifically, AkzoNobel seeks to procure large volumes of offshore wind to produce green hydrogen. This can be used by AkzoNobel to replace the hydrogen currently produced by natural gas, or it could be sold to third parties for use in fuel cells. These are transformative and disruptive processes that can decarbonize some of the most energy-intensive processes across multiple industries.

"The energy transition presents the exciting chance to innovate and take a holistic approach to transforming key energy-intensive processes. We want to move fast because this is the new business model and it is a huge business opportunity."



3.3. Sustainability

Adopting a more holistic approach to procurement strategy can help a company reach broader sustainability objectives encapsulated in the Sustainable Development Goals.

The growth of the renewable industry has various socioeconomic benefits, including the creation of jobs. In 2017, the renewable energy industry represented 10.3 million jobs worldwide, with a high percentage of these based in China, Brazil, the United States, India, Germany and Japan. Other social and economic benefits include providing additional resources for small-holders, increasing electricity access and reducing local air or water pollution.

However, in some cases, communities can also be affected negatively by renewables through the loss of jobs in the fossil fuel economy, loss of arable land or the expansion of renewable energy projects in critical ecosystems.

Companies wishing to demonstrate leadership through sustainability efforts should pursue procurement strategies that maximize the numerous co-benefits associated with renewables while minimizing the negative impacts. This will help companies reach their corporate sustainability goals, often a key driver for their decision to procure renewable electricity. Succeeding in bringing communities on board also enables the broader clean energy transition.

There are steps that organizations can take to ensure that concerns about the social and environmental impact of the clean energy transition are mitigated. Companies should ensure that their projects meet national and international labor standards, as well as engage with the local communities where projects are located. They should also only work projects that do not lead to the destruction of local habitats.

Community engagement, and ensuring that environmental assessments are carried out, are primary ways of ensuring that social and environmental concerns are avoided. To read about **Organic Valley's** sustainability journey, which included community engagement and environmental safeguards, please see the following case study.

Various available market tools allow companies to introduce social and environmental considerations in their renewable electricity procurement strategies. Examples of these include the Gold Standard Renewable Energy Label, which ensures that projects do not harm local communities or ecological systems; the international EKOenergy label, which tackles energy poverty through its Climate Fund and provides additional environmental guarantees to protect nature and habitats; or the Green-e® label, which requires separate certification of U.S. and Canadian hydropower projects by the Low Impact Hydropower Institute (LIHI) to protect ecological systems.

Leadership recommendations

- 1. Ensure that new project developments, of which you have direct control, are met with quality assurances that guarantee the development does not lead to the destruction of local habitats or harm local communities.
- 2. Only purchase from installations that have been subject to environmental and social impact assessments.
- 3. Look for 3rd party verification schemes that ensure the sustainability of renewable electricity purchases.





Sustainability: Organic Valley Case Study

In 2019, US farm cooperative Organic Valley is set to become the largest food company in the world to be powered entirely by renewables. As most of the company's operations are in rural communities near small towns, Organic Valley works to ensure that its renewable energy projects are well-received by local residents.

"Our cooperative is committed to achieving 100 percent renewable power and doing it in partnership with the rural communities where we live and work." – George Siemon, CEO

In 2017, Organic Valley set up a unique community solar partnership in a state with a more challenging regulated market – Wisconsin. Instead of going through the Public Utility Commission, Organic Valley approached their local municipal utilities with the offer of partnering up with renewable energy developer OneEnergy Renewables on a large community solar project.

"It's something that's kind of rare in the business for large users of power that are active in the community to also work closely with their utility to make new projects happen." – *Bill Eddie, OneEnergy CEO*

The Upper Midwest Municipal Energy Group (UMEG), representing 15 municipal utilities in the region, supported the partnership since their business interest is to provide low-cost and reliable electricity to their respective towns.

Organic Valley will take about half of the aggregated demand of 30MW over 25 years, with the rest of the project's capacity used to supply green electricity to local residents at a lower cost than the current rate of retail electricity. When fully developed, the project will increase Wisconsin's renewable electricity capacity by more than a third.

"As leaders in food and farming, it is our responsibility to pioneer change for good. Our hope is that this partnership to install community-scale solar will be replicated by municipal utilities around the country and propel more rural communities toward economic stability and energy independence." – Jonathan Reinbold, Head of Sustainability

Further demonstrating its commitment to sustainability, Organic Valley will plant pollinator-friendly meadows with native flowering plants and grasses near the solar farm to support a healthy bee and butterfly population.

"The pollinator habitat allows us to not only do solar but provide habitat and potentially a resource in the production of honey on the projects, as well as provide benefit to surrounding farms who depend who depend on pollinators for their crops." – Eddie



3.4. Influence

Companies are not only playing a critical role in the clean energy transition through their commitments, investments and sourcing strategies to go 100% renewable, but also through the influence they can exert in other parts of the system to catalyze action.

There are two primary ways in which organizations can influence the clean energy transition outside of their individual company boundary. Companies can engage with policymakers, regulators and utilities for progressive renewable energy policies, regulation and programs that support the scaling up of renewable energy, and they can encourage and help their suppliers set ambitious targets to begin actively sourcing renewable electricity.

Policy and utility engagement

According to the <u>RE100 Insight and Progress Report (2018</u>, policy barriers were amongst the barriers to corporate sourcing most commonly cited by RE100 members. An unfavorable policy framework not only affects the availability of renewable electricity, but also its cost competitiveness against conventional energy sources.

In many markets, the generation or consumption of renewable electricity remains unattractive due to the enormous number of subsidies still supporting the production and consumption of fossil fuels. In other geographies, companies face significant barriers to signing power purchase agreements with renewable electricity generators. Almost everywhere, the ambition of national and sub-national renewable energy targets is below the ambition displayed by companies. And without progressive policies and national targets in place, companies not taking action have little incentive to start.

The good news is that many companies are not remaining passive to unfavorable market conditions; instead, they are using their influence to collaborate with local utilities to design and develop innovative programs. These will meet their renewable energy needs and promote the adoption of stronger climate policies, which will in turn encourage scaling up renewable energy technologies.

RE100 and its members are also actively driving forward policy engagement in key locations, starting with the <u>European Union</u> and most recently in <u>Japan</u> and South Korea. RE100 presents an aggregated picture of the corporate demand for renewables and builds a stronger common voice in defense of progressive frameworks to enable clean energy uptake. In Europe, RE100 works with partners through the <u>RE-Source Platform</u> (RE100, Wind Europe, Solar Power Europe, RECS International, World Business Council for Sustainable Development) to build a broader coalition for advancing corporate renewables sourcing in the EU.

In 2017, many RE100 members, including H&M, AkzoNobel, BT, Corbion, Google, IKEA Group, ING, Marks & Spencer, The LEGO Group, Microsoft, NovoNordisk, Philips Lighting, Royal DSM, Royal Philips, Unilever and Vestas, participated in policy advocacy activities in Europe to advocate for the adoption of an ambitious post-2020 Clean Energy Package, with a particular focus on the Renewable Energy Directive.

To read more about these efforts in Europe please refer to the following **H&M** case study.

Similar leadership is emerging in Japan with several Japanese companies joining RE100, whilst the Japanese government is updating its energy plan and finding ways of allowing easier access to renewable energy. In South Korea, policymakers are proposing an <u>'RE100 Amendment'</u> that, if adopted, will enable companies to begin easily sourcing renewable electricity.



In the USA, more than 70 companies are using their collective voice to influence and shape the future of renewable electricity markets at the national and sub-national level as part of the <u>Renewable Energy Buyers Alliance</u> (REBA). Through the combined efforts of committed companies, NGOs and trade associations, we are rapidly making a difference worldwide.

Supply chain engagement

Beyond policy engagement, leading businesses are also catalyzing the clean energy transition through influencing their supply chains.

In 2017, RE100 member Walmart launched its Gigaton Challenge, seeking to reduce 1 Gigaton of GHG emissions from its supply chain through the scale-up of energy efficiency, renewable energy and other measures.

Apple, another RE100 member, launched its Supplier Clean Energy Program in October 2015, aiming to transition Apple's entire supply chain to 100 percent clean energy. To date, 23 Apple suppliers have committed to achieving 100% renewable power for Apple production. To learn more about how **Apple** is activating its supply chain, please refer to the case study on page 24.

Other RE100 members like BT and IKEA are also implementing programs to scale up the adoption of renewable electricity across their supply chains, with the aim of reducing their scope 3 emissions and implementing their science-based targets. <u>Going Beyond</u>, an RE100 report, provides a detailed overview of the actions taken by each of these companies to encourage renewable electricity procurement in their supply chains.

Leadership recommendations

- 1. Engage with policymakers to set ambitious national targets and to support progressive national policies that encourage the scaling of renewable electricity.
- 2. Join platforms such as RE100, RE-Source, and REBA, which are actively working with governments and energy utilities to open markets for corporate sourcing of renewable electricity.
- 3. Engage with suppliers and help them set renewable electricity targets.
- 4. Provide resources for your suppliers to understand the different options available and begin purchasing or producing renewable energy.
- 5. Communicate efforts and successes to encourage action from more companies.





Influence Through Policy: H&M Case Study

H&M group is one of the largest fashion retailers in the world today, with approximately 4,800 stores in 69 markets. In addition to sourcing 96% of its electricity from renewables, H&M group has a global strategy to become 'climate positive' across its value chain by 2040, meaning it will reduce more greenhouse gases than it will emit.

H&M group sees renewable energy and energy efficiency as central pillars in its strategy. The company is engaging its tier 1 and 2 suppliers to become climate neutral by 2030, meaning that by 2018, 20% of factories will be enrolled in an energy efficiency program; 100% of factories will be enrolled by 2025.

Going further, H&M group is actively engaging with policymakers in Europe and finding ways to support the highest ambition on renewable energy and climate policy. Alongside other RE100 members, H&M group has been actively calling for the adoption of a strong EU Clean Energy Package, including an ambitious and binding renewable energy target of at least 35% by 2030.

"It is an exciting moment in Europe where this process is happening now; it is more tangible, and companies have the opportunity to engage." – Pernilla Halldin, Public Affairs Manager

Towards the end of 2017, H&M group and IKEA Group joined forces and wrote to parliamentarians, met with MEPs and other businesses convened through RE100, hosted a seminar with WWF, then on several occasions met with multiple MEPs one-on-one to discuss the importance of pushing forward a progressive energy package that commits the EU to stricter targets.

"Being in Brussels at the European Parliament together with IKEA Group, WWF and RE100 felt like a great example of fruitful collaboration between companies, NGOs and public institutions to leverage on all stakeholders' efforts to make change happen. The implementation of ambitious energy targets is a crucial piece of that puzzle." – Vanessa Rothschild, Sustainable Business Controller

H&M group has helped to change the nature of policy making over the last decade and demonstrate the growing role that businesses are having in the process.

"It is important that corporates push politicians and countries to be bold, to be role models, and to pave the way for renewable energy."

"Today we have a fashion company like H&M group and retail companies talking about these things. When we first started this a few years back we were asked "what are you doing here – this is not your turf?" And now I see this is one of the biggest impacts that we can have – we have a strategy and we are leveraging influence and pushing for progressive climate strategy wherever we can." – Halldin





Influence Through Supply Chain: Apple Case Study

Apple is not only the largest tech company in the world, it is also the 9th largest company globally. In 2018, the tech giant announced it had achieved its 100% renewable electricity target, having committed US\$2.5 billion to clean energy and energy efficiency projects. Now, the company continues to influence its suppliers to follow its lead.

Apple is looking to transition its entire supply chain to renewables and through its supplier Clean Energy Program and 23 suppliers have already made 100% renewable electricity commitments. Over 4 GW of new renewable energy capacity will be added by Apple and its suppliers by 2020. As of 2017, Apple and its suppliers have already implemented 2.9 GW of this commitment.

"We're going to keep pushing the boundaries of what is possible with the materials in our products, the way we recycle them, our facilities and our work with suppliers to establish new creative and forward-looking sources of renewable energy because we know the future depends on it." – Tim Cook, CEO

Mobilizing the efforts of suppliers is a significant undertaking, especially since most of these organizations are based in China, a country with a challenging and under-developed renewables market. Apple recognizes these challenges and has also installed 485 MW of wind and solar projects in six provinces of China to address upstream emissions that are often beyond the control of Apple's direct suppliers.

To further assist its suppliers, Apple created the Clean Energy Portal, an online platform which allows its suppliers to register and identify commercially viable renewable energy solutions throughout the world. To date, over 85 suppliers have registered for this service.

These efforts contribute to Apple's larger vision of having a closed-loop supply chain. This means that products will be made using only recycled or renewable materials, and equivalent amounts must be returned to the market, all the while being fueled exclusively by renewable energy.



3.5. Transparency

Transparency is key when it comes to navigating renewable electricity procurement and this dimension of leadership underpins every other dimension discussed. Companies should transparently and accurately articulate their actions so that these are clear to stakeholders.

At a minimum, organizations should transparently and publicly disclose their energy and emissions data through the CDP climate change questionnaire on a yearly basis. This will allow both internal and external stakeholders to understand the status of the company and its efforts to reduce its emissions.

Companies should also make information available in their Annual Reports. Whilst <u>describing actions</u> <u>and impacts</u>, companies should communicate clearly what actions they have pursued, the result of those actions, and how the company has had an impact.

Businesses wishing to truly demonstrate leadership through transparency go beyond annual climate reporting to broaden and deepen publicly available information. RE100 members raise the bar in disclosing renewable electricity by providing a detailed account of the actions that they are taking to meet their RE100 goals, their specific procurement methods globally, as well as the barriers that they are facing. A summary of these disclosures is provided in the annual RE100 Progress and Insights report.

RE100 members actively share their experiences with peers through peer-to-peer webinars, case studies and workshops, and through communication and collaboration. This sharing of successful strategies – as well as challenges – is vital in building a broad body of practical experience and driving forward corporate sourcing as a professional practice, for the benefit of all.

A noteworthy example of transparency is that of RE100 member **Google**. In 2016, Google published a document detailing its rationale for procuring renewable electricity, its policies and strategies to source renewable electricity, as well as lessons learnt in its journey to become 100% renewable. To read more about Google's transparency efforts, please read the following case study.

Companies should also be transparent about other activities relating to renewable electricity, such as their advocacy efforts, how they collaborate with others, and the barriers and benefits they encounter. These learnings can guide other businesses on their renewable journeys and can shed light on challenging issues that other businesses are facing as well.

Leadership recommendations

- 1. Publicly disclose renewable energy targets and data on an annual basis through RE100 and/or CDP, and in your company's Annual Report.
- 2. Disclose policy influencing work related to renewables.
- 3. Openly communicate the challenges and barriers you experience in renewables sourcing and how you have overcome them.
- 4. Join platforms that enable peer-to-peer sharing, such as RE100 (Global), RE-Scale (PPAs), RE-Source (European sourcing), and REBA (USA sourcing).





Transparency: Google Case Study

Google met its global consumption of electricity with 100% renewable electricity in 2017 and is currently the world's largest corporate buyer of renewable power. With 14 data centers that consume large amounts of energy to power and to keep cool, achieving this target is an impressive feat.

In addition, the internet giant has published one of the most comprehensive and transparent documents detailing its renewable energy policy and strategy, as well as lessons learned in its journey to become 100% renewable.

"Scaling up opportunities to purchase renewable energy is really a team effort across our industry, and we think transparency is key in our mission." – *Michael Terrell, Head of Energy Market Development and Policy*

Google discusses the journey that began in 2010, when it was one of the first non-utility corporations to enter a long-term PPA, through to the present day where the company has 20 PPAs and is procuring over 2.6 GW of renewable energy worldwide.

The document also outlines Google's preference for purchasing from newly constructed projects, as well as lessons learned from doing so. Competitive energy markets have provided the fastest pathway to clean energy, with cost-competitiveness and access to renewables at the retail level being critical for a compelling business case.

"With the challenges we face, we are not just trying to solve them for Google, we are trying to solve them for the world. We want to share our experiences as openly as possible so that others may learn from what we have done and use those learnings to get involved in renewables purchasing."



4. Conclusion

Business leadership in the shift to renewable electricity is multi-dimensional. Markets vary significantly across the world and the sourcing options available to companies vary as well. Leadership in one market may look completely different than leadership in another, and the opportunities available to a company, depending on its individual internal or external circumstances, greatly shape the dimensions it can pursue most effectively.

Leadership is not solely defined by the number of dollars invested or amount of capacity added by a specific project. Instead, there are many strategies that companies can pursue to help shape renewable electricity markets.

Companies **actively making the choice** to source renewable electricity, whilst making their commitments known, send powerful messages to the market, to utilities and to policymakers. The first step to demonstrating leadership in the renewables sourcing space is the substantiated and active procurement of renewable electricity. **Ambitious targets** and actions indicate the fast trajectory that corporates are pursuing with their targets.

Companies demonstrating leadership through **impactful direct or indirect sourcing strategies** play an important role in adding capacity to the grid and in sending important market signals about the demand for renewable electricity.

Ensuring that projects fulfill **sustainability** requirements means that both the environment and local communities are safeguarded.

Influencing others is another key lever for companies to lead. **Policy and utility engagement** paves the way for markets to evolve and increases the number of options available for other companies to easily access renewable electricity in a growing number of markets. **Supply chain engagement** also activates markets that need significant development and gets companies to source renewable energy when they may not otherwise have done so.

Lastly, **transparency** underpins each of these parameters and substantiates claims, whilst encouraging the sharing of learnings with other companies to accelerate the clean energy transition.

Each of these dimensions serve powerful functions in the market and allow companies to pursue leadership through a range of options based on their individual circumstances. Companies can pursue one or many of the leadership recommendations listed under each of the dimensions. As such, they can ensure they are optimizing their own potential and having the greatest possible impact through their actions.

The aim of this report is not to say one leadership dimension is more important than another, but rather to celebrate the diverse range of actions that companies can deploy to go further and faster in impacting renewable electricity markets throughout the world – whilst inspiring their peers to follow suit.

Companies must take personal accountability for their actions truly representing their full potential to transform the electricity sector.



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This report is available for download from **there100.org/reports-briefings**. For further information or to provide feedback, please contact RE100 at shailesh.telang@cdp.net





About RE100

Led by <u>The Climate Group</u> in partnership with <u>CDP</u>, <u>RE100</u> is a collaborative initiative bringing together the world's most influential businesses committed to 100% renewable power. Renewables are a smart business decision, providing greater control over energy costs while helping companies to deliver on emission reduction goals. RE100 members, including Global Fortune 500 companies, have a total revenue of over US\$2.75 trillion and operate in a diverse range of sectors – from information technology to automobile manufacturing. Together, they send a powerful signal to policymakers and investors to accelerate the transition to a low carbon economy. Visit <u>RE100.org</u> and follow on Twitter @theRE100 #RE100.

THE CLIMATE GROUP

About The Climate Group

<u>The Climate Group</u>'s mission is to accelerate climate action. Our goal is a world of under 2C of global warming and greater prosperity for all, without delay. We do this by bringing together powerful networks of business and governments that shift global markets and policies. We act as a catalyst to take innovation and solutions to scale, using the power of communications to build ambition and pace. We focus on the greatest global opportunities for change. We are an international non-profit organization, founded in 2004, with offices in London, New Delhi and New York.

Our business campaigns are brought to you as part of the <u>We Mean Business coalition</u>. Visit <u>TheClimateGroup.org</u> and follow us on Twitter <u>@ClimateGroup</u> and Facebook <u>@TheClimateGroup</u>.



About CDP

<u>CDP</u> is an international non-profit that drives companies and governments to reduce their greenhouse gas emissions, safeguard water resources and protect forests. Voted number one climate research provider by investors and working with institutional investors with assets of US\$87 trillion, we leverage investor and buyer power to motivate companies to disclose and manage their environmental impacts. Over 6,300 companies with some 55% of global market capitalization disclosed environmental data through CDP in 2017. This is in addition to the over 500 cities and 100 states and regions who disclosed, making CDP's platform one of the richest sources of information globally on how companies and governments are driving environmental change. CDP, formerly Carbon Disclosure Project, is a founding member of the We Mean Business Coalition. Please visit <u>www.cdp.net</u> or follow us @CDP to find out more.