# From boiler room to boardroom: optimizing the corporate energy mix

## Renewables can transform energy risk into value creation

EY
Building a better working world

# Contents

# Executive summary

## Large corporates are now a driving force for renewable energy globally

Underpinning this development are strong converging trends: energy security concerns; a recent history in most countries of rising and volatile energy prices, coupled with a consensus that such trends will continue over the medium to long term; and the shift to a resource-efficient and low-carbon economy. These factors are creating new risks and new opportunities that few businesses can afford to ignore.

Energy and resource optimization has risen high on corporate management agendas as executives and directors seek to:

- Increase energy efficiency, improve energy-price predictability and switch to low-carbon energy sources
- Enhance reputation and brand by meeting the sustainability expectations of customers, investors and other stakeholders
- Gain a competitive edge through innovative, energy-efficient, low-carbon and smaller resource-footprint products and processes
- Avoid long-term carbon and environmental penalties by complying with current and future regulatory requirements

As a result, the role that renewable energy could play as part of a broader energy strategy is being elevated from an operational and technical exercise to a strategic and commercial priority.

## Conventional renewable energy procurement instruments are rarely fit for purpose

Historically, green energy tariffs, renewable energy certificates and carbon offsets have been the preferred instruments for corporates looking to procure renewable energy, typically as part of a wider carbon reduction strategy. In most cases today, these conventional instruments are no longer suited to the purpose. Corporates are now challenged with moving beyond conventional thinking when considering how to include renewable energy as part of a more diversified energy strategy. To achieve this step change, corporates must consider significant shifts within their organizations. Specifically, the financial appraisal techniques used to assess renewable energy projects must evolve. Corporates must also evaluate longer-term power-price movements and re-examine the wider definition of investment return and shareholder value.

## The complexities of delivering innovative renewable energy procurement strategies in an efficient and effective manner should not be understated

This type of activity is "non-core", for most corporates and covers a broad spectrum of challenges, from project origination to build through to operations. Strategy and delivery require careful internal stakeholder and change management. Close consideration must also be given to the various options available to a corporate looking to manage energy more strategically as the risk profiles and returns on capital can vary substantially with the chosen technologies, geographies and other company-specific factors. Adding to the complexity are the recent shale gas boom in the US and the improving economics of fuel cells, which are offering a low-carbon (but not zero-carbon) option in countries that depend heavily on coal for power generation. Low-carbon options may be a viable short-term choice in select markets, but as the carbon intensity of power grids diminishes, this path will become more difficult to defend.

Nonetheless, all low- and zero-carbon options should be considered as part of a robust strategic feasibility assessment.

The construction and acquisition of renewable energy-generating assets, both on- and off-site, and the direct contracting for renewable energy through power purchase agreements (PPAs) are at the heart of recent innovations in corporate renewable energy strategies. The implementation of innovative strategies centers around three main approaches:

- Purchasing power directly from an off-site project[1]
- Investing equity in an off-site project (with or without a PPA)
- Purchasing energy from an on-site or adjacent project

All over the globe, these three approaches have been adopted by market leaders such as IKEA and Google.

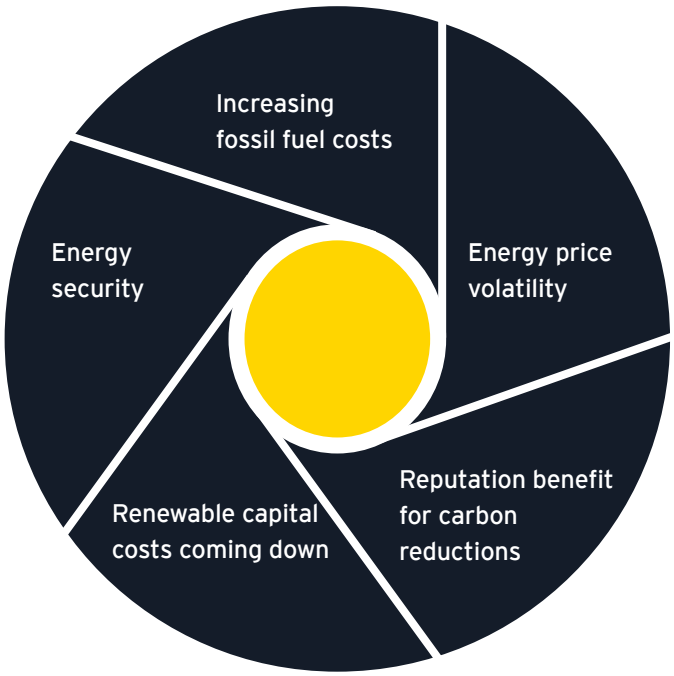
Ultimately, the choice of an energy mix optimization strategy depends on the corporate's risk/reward appetite, as well as the degree to which it is comfortable investing in a long-term payback asset that is not part of its core business/contracting power over a much longer period than it is used to. Regardless, corporates should act now and take advantage of the different options to integrate renewables in a way that improves energy security, reduces exposure to volatile and rising energy prices and boosts brand equity while demonstrating corporate responsibility.

1. Includes both "sleeved" (back-to-back) PPAs and "virtual" (contract-for-difference) PPAs

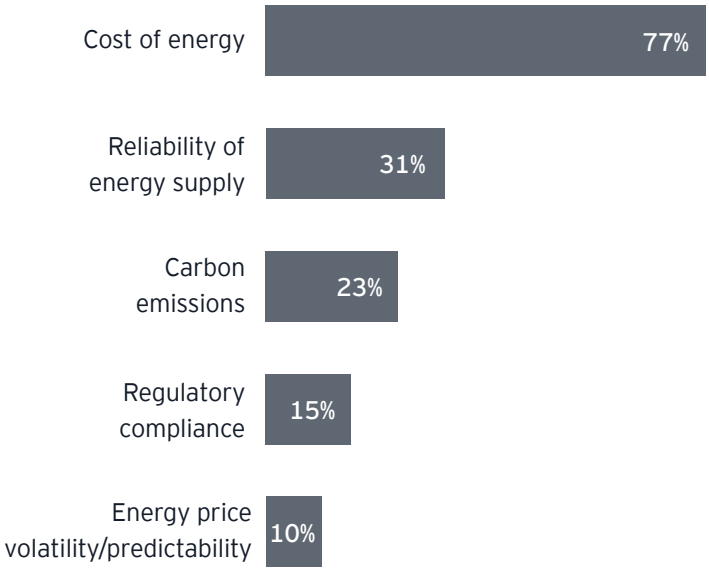
# Addressing risk and realizing financial, environmental and reputational value through renewable energy

An increasing number of large corporates are taking steps to minimize their exposure to energy and carbon price rises and volatility. For many, this has already begun through a focus on energy efficiency – rolling out programs across their sites to minimize wasted energy in power, gas and other fossil fuels. For some companies, a 20% cut in energy costs has the same bottom-line effect as a 5% increase in sales[2] – hence the importance of energy-efficiency programs.

To achieve further significant carbon reductions, leading corporates are now turning to renewable sources of power, thereby broadening their energy and carbon efforts. Renewable energy strategies are appearing out of the shadow of carbon reduction targets. This is partially because of renewable energy's direct link to financial (and, therefore, shareholder) value in a world where carbon pricing has yet to achieve widespread traction. Renewable energy can be a more impactful way of demonstrating commitment to decarbonization.




**Most important drivers for composition of energy mix**




*Source: EY*

2. Source: EY analysis

One thousand corporates have Science-Based-Target (SBT) climate change commitments and a further 280 are members of RE100 (100% Renewable Electricity target). Examples include:

- **BMW** – 100% renewable energy by 2050
- **Carlsberg** – 100% renewable electricity supply to breweries by 2022 with the aim of being carbon neutral in 2030
- **Dell** – 100% renewable energy by 2040
- **General Motors** – 100% renewable electricity supply to its global facilities by 2040
- **H&M** – 100% renewable power by 2030
- **HSBC** – 100% renewable energy by 2030
- **Nike** – 100% renewable energy by 2025
- **Tesco** – goal of 100% renewable energy by 2030 – to include over 50% from PPAs and on-site generation

*Source: RE100*

## Corporate strategies are evolving in favor of a renewable energy supply

Historically, green tariffs, renewable energy certificates and carbon offsets have been the corporates' instruments of choice for procuring renewable power and curbing carbon emissions, often as a "silent" part of a publicly stated green energy procurement strategy. However, uncertain carbon benefits and difficulties in demonstrating project "additionality" (the notion that the additional renewable energy capacity would otherwise not exist under the prevailing market conditions and current legal framework) are casting a shadow over the use of such instruments and their brand value. Moreover, an increasing number of corporates are recognizing that these traditional approaches fail to deliver the long-term cost savings benefits that can be available through innovative energy mix optimization strategies.

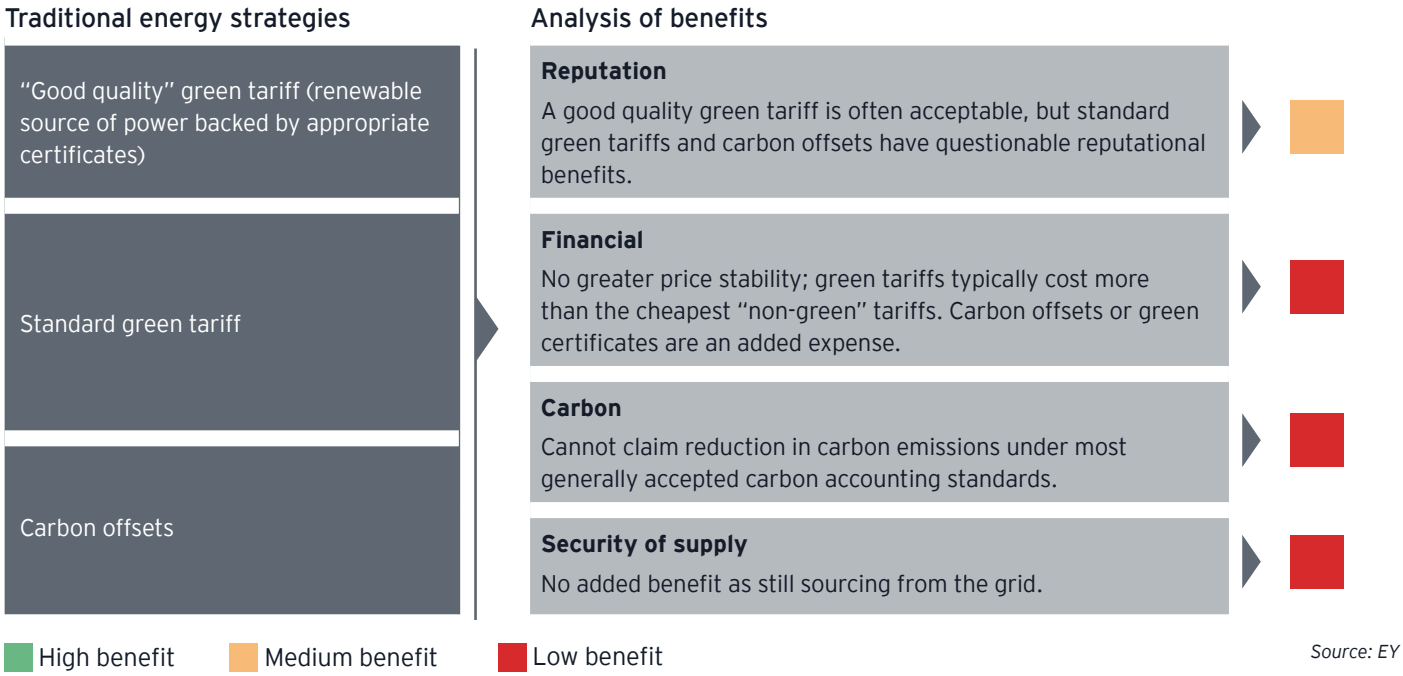
## The limitations of green tariffs

The majority of renewable energy today is purchased by customers through their utility suppliers, using green energy tariffs and other traditional instruments. The supplier then procures enough renewable power to supply its customers, mixing a portfolio of assets to ensure the power supplied to a customer always balances the energy demand for that customer. One of the main drawbacks, however, is that this portfolio of assets potentially includes fossil-fueled power plants. Coupled with the difficulty in tracing market-traded carbon offsets and green certificates, this has driven some large corporates to buy green power directly from third-party renewable generation plants, in part to boost their sustainable credentials and brand reputation.

> "Our main strategy involves entering into long-term contracts, called Power Purchase Agreements (PPAs), to buy electricity from wind or solar farms built near our facilities. PPAs have more impact than other purchasing methods, such as buying unbundled Renewable Energy Credits, because PPAs spur the construction of new renewable energy projects.[3]
>
> **Neha Palmer,**
> **Director of Operations and Energy Strategy, Google**

3. 100 percent renewable energy, for the second year in a row," *Google website, https://www.blog.google/outreach-initiatives/sustainability/100-percent-renewable-energy-second-year-row/*, accessed 15 January 2021.

## The limitations of traditional renewable energy procurement strategies pose a risk that corporates must evaluate




*Source: EY*

## More effective alternatives: PPAs and direct investment

Innovative strategies include the procurement of renewable power through PPAs or direct investment in renewable energy assets to secure increased energy security and scale. These procurement-and investment-led approaches can provide price security and long-term cost savings, together with reputational benefits through association with specific renewable assets.

Some corporates prefer to adopt a PPA-led strategy to secure renewable power without tying up capital in non-core assets. Google, Marks & Spencer, Sainsbury's and Tarmac are but a few of the companies diversifying their energy mix through renewable PPAs. Corporates serve as attractive counterparties for renewable energy project developers, particularly when they have strong credit ratings (which may exceed those of most power utilities that provide the traditional power off-take solution to renewable projects) and an appetite to provide long-term PPAs for wholesale power.

Corporates could play a vital role in helping to address the current lack of liquidity in some traditional PPA markets, but only a few corporates have become active in this space so far.

Direct corporate investment in renewable assets is also on the rise, due in part to considerably reduced renewable energy capital costs.

Providing equity for a renewable energy project can lead to various benefits for corporates, namely:

- A more rapid development or construction process
- Reputational advantages through demonstrable links with specific projects and clear additionality arguments
- A natural power-price hedge through the dividend stream
- Potential to earn a relatively low-risk return on corporate capital

Two of the highest-profile examples of direct investment, discussed in more detail later on, include:

- Google, which in 2019 committed to invest approximately $150m into renewable energy projects as part of its aim to spur $1.5bn of capital for renewable projects. Since 2010, Google has purchased over 3.75 GW of renewable energy
- IKEA, which has invested close to €2.5 billion in onsite and offsite wind and solar power to date. The retailer currently owns 920,000 solar modules on its sites and over 500 wind turbines in 14 countries

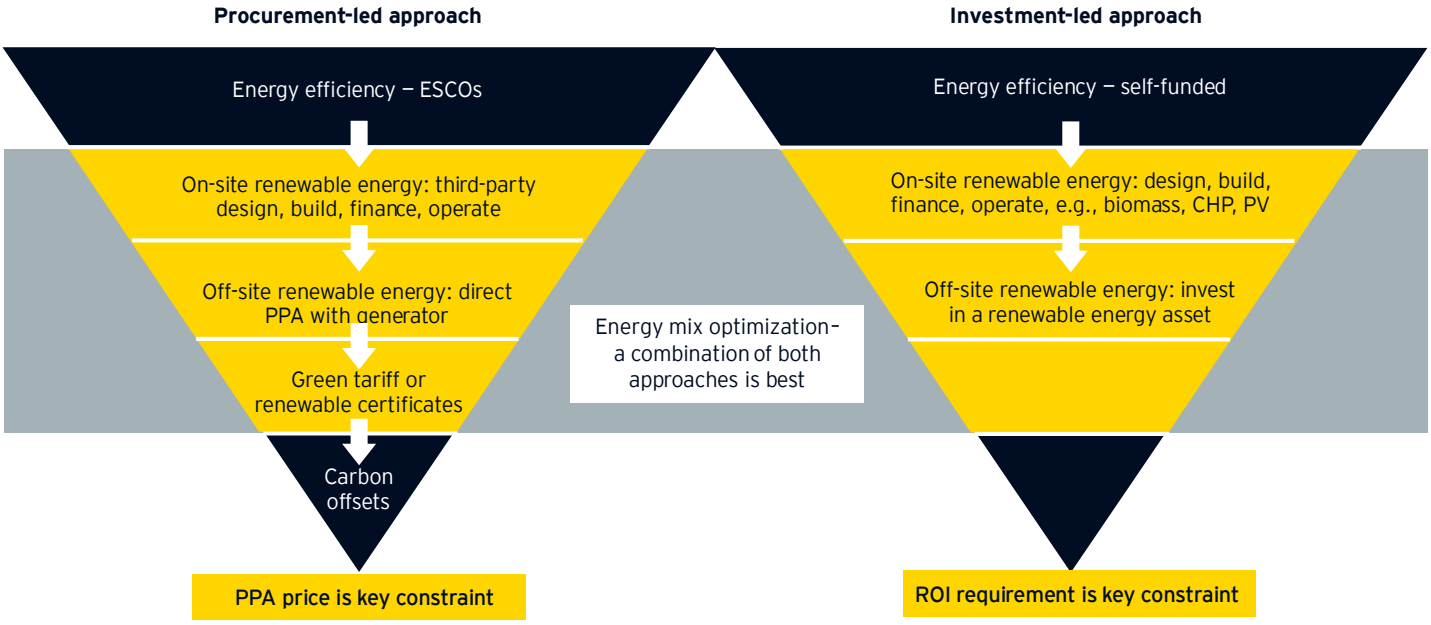
## The challenges of implementing an energy mix optimization strategy

The complexities inherent in delivering energy mix optimization strategies in an efficient and effective manner should not be understated. Originating, evaluating, prioritizing and structuring opportunities in a way that achieves core strategic objectives without exposing the business to unquantifiable or unmitigable risk is not a simple task.

Moreover, these activities often sit across the corporate's functional lines, as well as geographies. Yet the overall energy mix optimization strategy has to be coordinated globally, with clear ownership, as well as being tailored to local markets. Careful consideration must therefore be given to the various options available to the corporate as they offer very different risk profiles and returns on capital.

To successfully overcome these complexities, the company must adopt a structured approach – one in which it first addresses key commercial considerations that subsequently inform a set of strategic choices.

**Energy mix optimization – which path to follow?**




**Energy mix optimization life cycle**


*Source: EY*

## Commercial considerations

The questions to consider typically include:

- What are our business objectives? How can renewable energy help achieve these?
- What are our renewable energy and carbon ambitions and targets?
- How can renewables support our future energy profile?
- What is our risk appetite?
- What are our financial constraints?
- When should we act?
- For how long can we commit?
- What price would we be prepared to pay?
- If we invest capital, what level of return would we expect?
- What other challenges do we face?

## Strategic choices

A successful energy mix optimization strategy then hinges on selecting the most suitable renewable energy technology type, in an appropriate location, and structuring the transaction in a way that best fits the corporate. The corporate should therefore frame its strategy around four choices: technology, geography, implementation approach and procurement process.

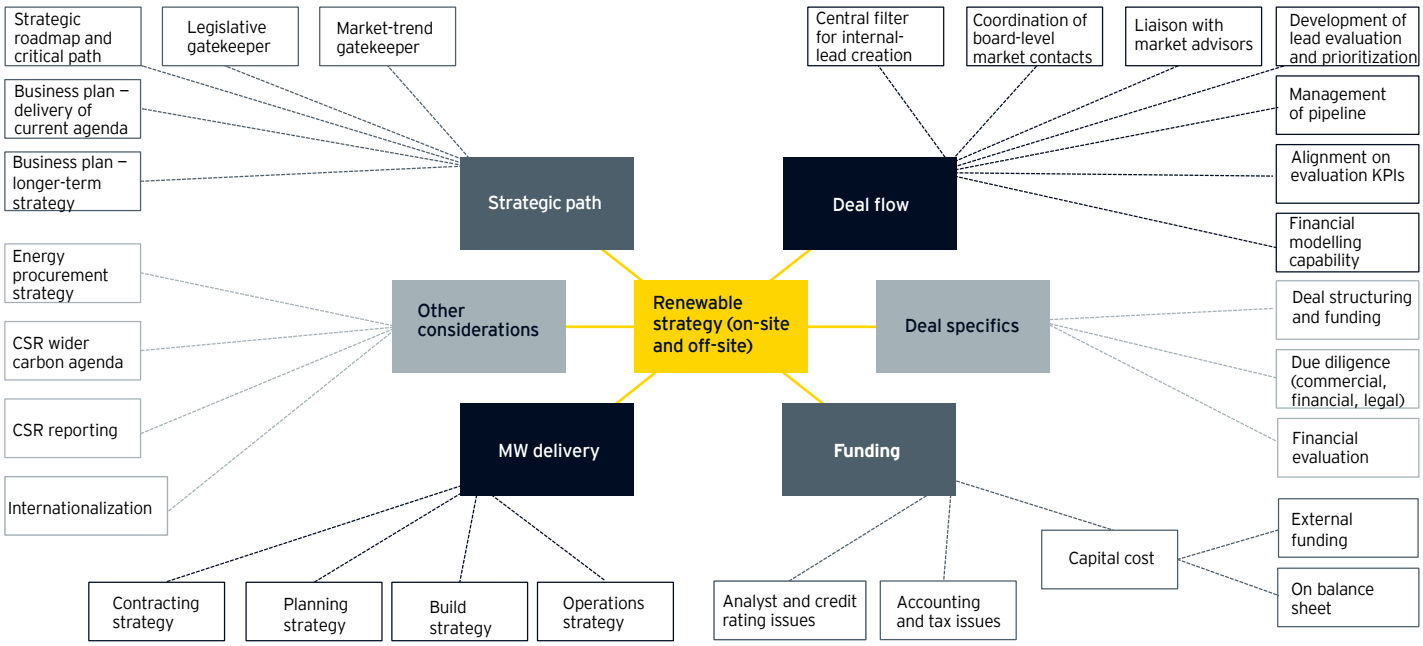
**Technology:**
- How much heat/electricity?
- Which technology type?

**Geography:**
- Which country, region or state?

**Implementation approach:**
- Off-site or on-site?
- Investing capital (investment-led approach) or not (procurement-led-approach)? Which financing structure?
- Purchase power from the developer or sell it to the market?

**Procurement process:**
- Which developer?
- Which asset, specifically?

**Adopting the most suitable approach is a complex undertaking**




*Source: EY*

## Sharing a successful and innovative energy mix optimization strategy

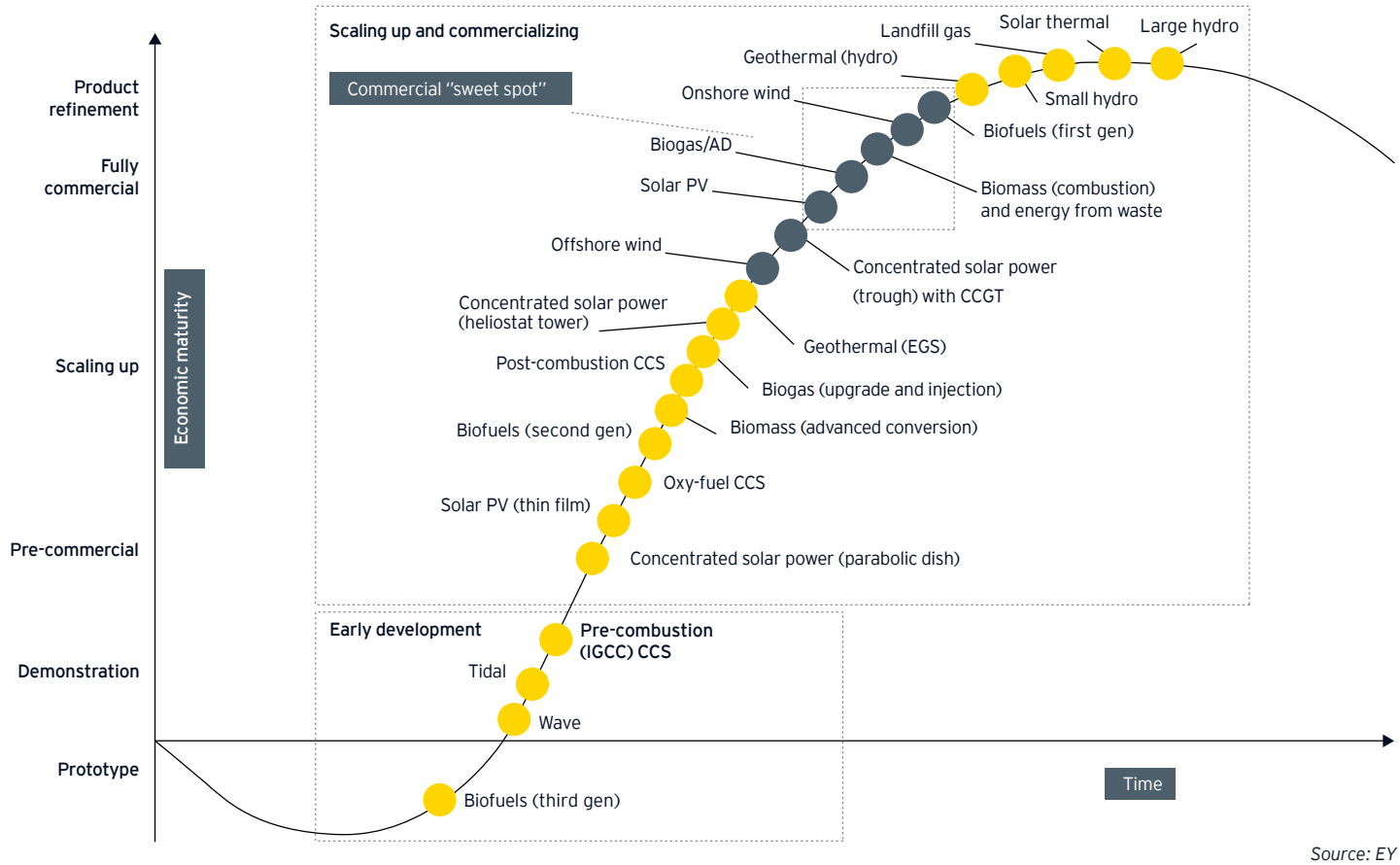
The remainder of this report provides more detail on the corporate strategy assessment and the four choices, supported by case studies. These considerations are relevant to the design and implementation phases of the energy mix optimization life cycle.

## Technology

The chosen renewable energy technology must be appropriate for the scale of the corporate's requirements. The degree of technology maturity must also be aligned with the desired risk appetite and value expectations (return on equity or PPA price). Where proven, "bankable" technology is required, off-site onshore wind and on-site PV are among the most commonly short-listed. However, some corporates may choose to invest in less proven technology in order to achieve higher levels of return. In both cases, a wide range of factors must be taken into consideration when selecting a renewable energy technology. These are likely to include:

- The expected life cycle cost of the asset (i.e., affordability)
- Operating risk (maintenance, technology performance, renewable resources)
- Deliverability risk (planning risk, counterparty risk, speed of installation, risk of failure)
- Feedstock supply (availability, quality, price)
- Stakeholder acceptability (customers, investors, general public)
- Power-balancing issues (continuous vs. intermittent, match for demand profile)

**Only a handful of renewable technologies typically lend themselves to corporate energy procurement strategies**
**Maturity of different low-carbon power generation technologies**




*Source: EY*

Large-scale, higher-risk technologies include offshore wind power, concentrated solar power and geothermal power. Wave, tidal and marine technologies have not yet reached commercial maturity and entail greater technology risk. Hydropower projects yield low financial returns and include the added drawback of site scarcity.

As for biomass/energy from waste, biofuels and anaerobic digestion, the reputational benefits are sometimes questionable because the general public does not always understand the environmental advantages. The carbon benefits are also often less clear, with sustainability issues and "embedded carbon" in processing and transportation. On-site biomass combined heat and power (CHP) plants may well address energy security concerns through controllable baseload power and provide a valuable heat supply, but there are feedstock supply risks — namely uncertain availability, price and specification.

Because all renewable technologies have detractors, in addition to selecting the most appropriate technology, the corporate must also ensure that communication with key internal and external stakeholders is adequately managed as part of the pre-implementation work.

## Geography

There are also complexities inherent in short-listing countries and locations that lend themselves to a specific energy mix optimization strategy. Typically, a number of quantitative and qualitative criteria must be considered in order to ensure a successful implementation. These then feed into the wider environmental, financial, reputational and risk due diligence process.

### Geography: country-specific factors

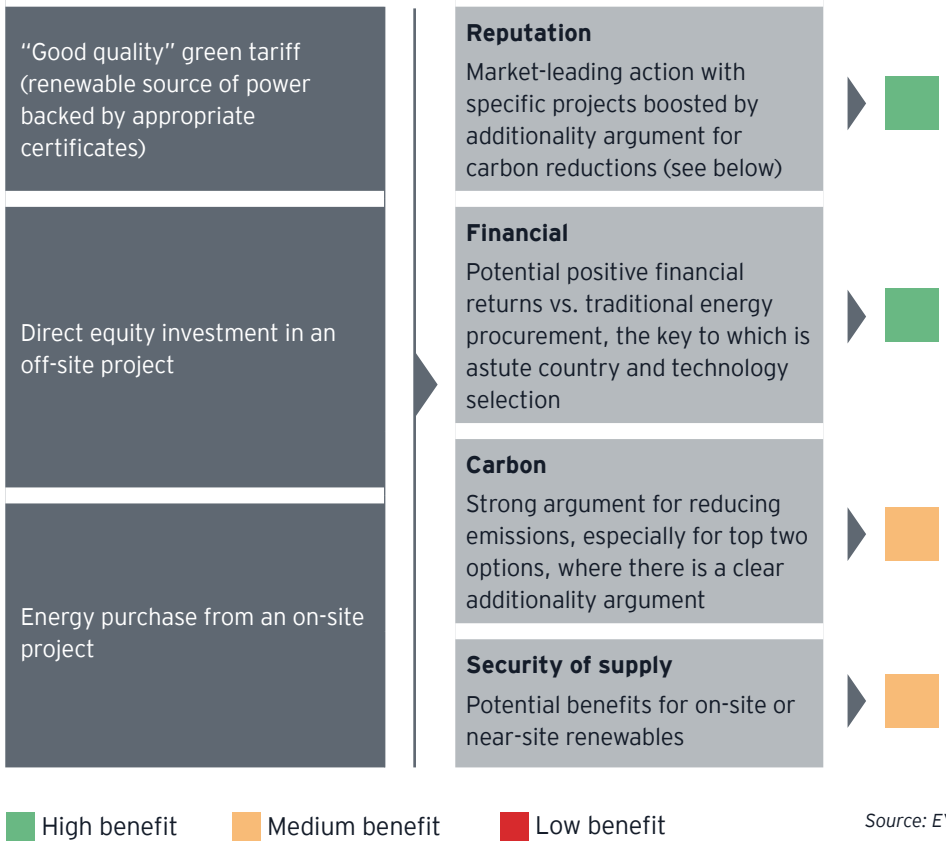
- Macroeconomic factors:
  - Ease of doing business
  - Political stability
  - Sovereign credit rating
  - GDP growth forecast
  - Grid reliability
- Targets, incentives and legislation:
  - National renewable energy targets
  - National incentives for renewables
- Infrastructure factors:
  - Power market regulatory risk
  - Planning issues
  - Grid connection availability
  - Access to finance
- Natural resource availability
- Availability of major developers, suppliers and quality projects
- Availability of various procurement options

# Implementation approaches

An innovative renewable energy mix strategy centers around three main implementation approaches:

- Purchasing power directly from an off-site project[4]
- Investing equity in an off-site project (with or without a PPA)
- Purchasing energy from an on-site or adjacent project

**Innovative renewable energy procurement strategies can provide security and long-term cost savings, together with environmental and reputational benefits**




*Source: EY*

4. Includes both "sleeved" (back-to-back) PPAs and "virtual" (contract-for-difference) PPAs

## 1. Direct power purchase from an off-site project

Direct PPAs are a recent development in the market. They have evolved as a way for corporates to contract directly with power generators for the power produced from one or more specific facilities. The renewable power (i.e., electrons) produced by the generation site is not delivered directly to the corporate's demand or consumption location. Instead, it is channeled through a third party (typically a utility company) through the existing power grid, as we explain below.

### "Sleeved" power purchase agreement

One of the challenges of purchasing green power directly from off-site generators is how to handle the physical power produced. For renewable generators, especially wind and solar, the challenge is that they cannot guarantee output as it fluctuates with weather conditions. Therefore, unless the business customers wish to purchase balancing power themselves, they require a "sleeving" arrangement with an energy utility company whereby the supply from the renewable generator is topped up with other energy to provide a stable energy supply to the consumer.

The least risky option for corporates to manage the physical energy exposure of the PPA is to have an energy utility company provide the balancing services around the PPA, known as a direct "sleeved" PPA. This component is wrapped within an existing standard tariff supply agreement. The supplier is obliged to provide continuous (balanced) power — even when the generator is not producing. In this scenario, the corporate controls the power-pricing relationship with the renewable generation asset rather than paying a retail-grid tariff for all the electricity consumed from the licensed supplier.

### "Virtual" power purchase agreement

An increasingly popular PPA structure that is valid in some power markets is essentially a financial fixed-for-floating swap contract that simulates a power purchase but does not involve delivery of power. This contract-for-difference (or price guarantee agreement) provides a fixed "strike" price enabling certain revenues for the generator (which is selling onto the open market) and a hedge against exposure to volatile power prices for the customer. That is, if market prices are higher than the agreed fixed price, then there is a delta payment to the customer (which offsets higher retail rates), and if market prices are lower than the fixed price, then there is a delta payment to the generator (paid from the customer's lower retail rates). This "virtual" structure is still seen as "additional" in terms of bringing new capacity on-line as it can enable a new project to raise third-party finance for construction. Also if Renewable Energy Certificates are transferred to the customer as part of the transaction, then zero-carbon power can be reported by the customer. The virtual PPA structure has less direct association with the asset, which still needs to sell power elsewhere, but it is generally less complex to set up and more flexible in terms of regional coverage.

### Purchase from generator (via PPA) and sell onto the market

The other, less common option is one in which no sleeving arrangement exists, and the corporate therefore contracts directly with the generator with no arrangement for alternative/balancing supply. The corporate is thus responsible for managing the balancing, transmission and other risks of the physical power.

This will typically require the corporate to have a large and sophisticated energy trading function — in effect, operating as a mini-utility company. This option is more commonly adopted by major energy-intensive consumers, such as aluminum smelters, whose effective management of energy costs is critical to their operations and profitability.

**Overview of benefits and drawbacks of direct power purchase from an off-site project**

**Benefits**

Because the generation and balancing are outsourced, reliability of supply is ensured. This option has no upfront capex requirement and confers some positive reputational benefits to the corporate.

**Drawbacks**

This option is likely to have lower financial benefits compared with the direct ownership option as less risk is taken. It involves a more complicated contracting structure (than simply buying green tariffs) and is thus likely to require legal and financial advice. Moreover, the requirement to contract long term (e.g., 10–15 years) is often well beyond many corporates' planning horizon.

## Direct power purchase from an off-site project

### Norsk Hydro
### Utility scale wind off-site physical PPA

| | |
|---|---|
| **Location** | Tonstad Vindpark, Sirdal and FlekkeFjord Municipalities, South of Norway |
| **Buyer** | Hydro Energi (Norsk Hydro) |
| **Seller** | ENGIE |
| **Capacity** | 208 MW |
| **Commissioned** | 2020 |
| **Contract duration** | 25 years |

#### Overview:

Hydro Energi, a subsidiary of the Norwegian aluminum producer Norsk Hydro, signed a PPA with ENGIE to off-take 100% of the wind farm's output for 25 years, demonstrating the growing appetite of industrial energy users to secure long-term delivery of sustainable and competitively priced electricity.

Securing the supply of an estimated 0.7TWh of annual electricity output of the wind farm from 2020 to 2045, the PPA will help Norsk Hydro to produce approximately 50,000t of aluminium a year at its Norwegian plants using clean renewable energy.

### Dutch wind consortium with Google, DSM, Philips and AkzoNobel — clubbed PPA

| | |
|---|---|
| **Location** | Zeeland, Netherlands |
| **Buyer** | Google, DSM, Philips and AkzoNobel |
| **Seller** | Windpark Krammer (Krammer); Windpark OSK B.V. (Bouwdokken) |
| **Capacity** | 136 MW |
| **Commissioned** | 2018 |
| **Contract duration** | 15 years |

#### Overview:

AkzoNobel (chemicals), DSM (health, nutrition and materials), Google (technology) and Philips (electronics) formed a unique partnership to jointly negotiate PPAs with wind projects in the Netherlands. This group of buyers executed its first PPA in October 2016, enabling the construction of the 102 MW Krammer Wind Park project.

The consortium signed a second PPA in December 2016, which led to the construction of the 34 MW Bouwdokken Wind Park project.

Through the consortium, each partner contracts 25% of the renewable generation project's output. By working together, the consortium partners enabled the development of a larger project than individual members had initial appetite for, thus benefiting all from the resulting economies of scale and consequent access to more favorable pricing.

The wind farms were developed by community energy cooperatives and benefit from the Stimulering Duurzame Energieproductie subsidy scheme, known as SDE+.

*Source: Company data, News*

## 2. Direct equity investment in an off-site project (with or without PPA)

As well as agreeing to take some or all of the power (and green certificates) from an off-site generator, there are cases in which companies invest directly in the generator before construction of the renewable energy asset. The corporate invests in an off-site renewable power asset and has the option to take some or all of the power produced via a PPA. The level of investment usually provides a degree of control over the terms of the PPA. Conversely, in an off-site equity investment without a PPA option, the corporate invests in a renewable asset, but the PPA contracting take place between the project and a third party. This option is typically adopted where PPA sleeving is not achievable through local or regional electricity transmission networks. In this scenario, price security is achieved via a "natural hedge" between market power-price changes and project-level equity dividends. If power prices rise, the corporate will pay more for the power it buys from the market. But this extra cost will be offset by higher dividends from the project, which is receiving greater revenues from selling power into the market. It is important, however, to consider the tax efficiency of the hedge as well as the commercial efficiency.

### Overview of benefits and drawbacks of equity investment in an off-site project

**Benefits**

This option has the potential for greater financial return than a PPA alone as the corporate takes on more risk. The option to influence PPA terms is also greater than in the previously discussed "PPA only" option, depending on the level of equity investment. Finally, this option attracts strong reputational benefits, provided a suitable, non-controversial site is located.

**Drawbacks**

This option involves high initial capital costs and a long payback period. The corporate also takes on some exposure to development, build and operational risk. Overall, it is a more complex and potentially challenging option, with the corporate moving toward being a power/energy producer and away from fully outsourced solutions.

## Direct equity investment in an off-site project (with or without PPA)

### Ingka Group (IKEA Group)

| | |
|---|---|
| **Location** | Multiple |
| **Buyer** | Ingka Group |
| **Seller** | Multiple |

### Overview:

Ingka Group opted for direct ownership of its own plants as long-term investments and since 2009 has invested close to €2.5 billion in onsite and offsite wind and solar power as part of their ambition to become climate positive by 2030.

The company's total ownership and commitments now include 920,000 solar modules on its sites and 534 wind turbines in 14 countries, in addition to over 700,000 solar panels currently in construction in the US. Ingka Group's total installed renewable power now equals more than 1.7 GW.

The exact business model of Ingka Group's off-site investments varies depending on local electricity market design. Often the electricity is sold to the wholesale or spot market and Guarantees of Origin (GOs) generated by the installation are kept and cancelled by Ingka Group over its consumption. In other markets, where Ingka Group does not receive GOs because the project is subsidized e.g. Germany, Portugal, and France, it buys unbundled GOs in addition to owning its renewable installation to cover its electricity consumption.

### Google

| | |
|---|---|
| **Location** | Multiple |
| **Buyer** | Google |
| **Seller** | Multiple |

### Overview:

Carbon neutral since 2007 and the largest corporate buyer of renewable electricity in the world on behalf of its data centres, Google is now pursuing a direct investment approach to help meet its manufacturing power requirement.

Investing directly in renewable projects sited in its key manufacturing regions, Google's 2019 $150m investment alongside partners will spur a total $1.5bn investment and deliver sufficient renewable power to meet its consumer hardware manufacturing footprint.

*Source: Company data, News*

## 3. Energy purchase from an on-site or adjacent project (third-party design, build, finance, operate)

A third option is for the corporate to commission the construction of a renewable energy generation plant (for power and possibly heat as well) on or near one or more of its sites. The recent trend of rising power prices and forward curves is boosting the economics of such schemes. Corporates with significant land areas at or adjacent to their facilities — when these lend themselves to being re-engineered to incorporate renewable generation — are entering into agreements with developers to build renewable energy plants. This option sees the corporate undertake the project facilitation work and procure a developer through a competitive process, bidding back the power/heat price. The developer remains responsible for the design, build, financing and operation of the facility. This option outsources key risks to parties with core competence, and a special project vehicle structure uses third-party debt to reduce the weighted average cost of capital and third-party equity to reduce the sponsor's financial burden.

However, the corporate may also choose not to outsource project ownership to a developer, deciding instead to carry out some or all of the project elements in-house (with third-party contracting) or in a joint venture.

### Overview of benefits and drawbacks of energy purchase from an on-site project

**Benefits**

In this option, there is little doubt as to the additionality or verification of the renewable energy sourced. Hence, this option tends to carry the highest reputational benefit, externally and internally. In countries where the grid is unreliable, it also provides greater security of supply for the corporate.

**Drawbacks**

Such projects often take a considerable length of time to develop. While the design, build and operation of the plant can be subcontracted to specialist firms with the necessary skills, the risk of cost overruns and sub-design performance ultimately remain with the corporate.

### Energy purchase from an on-site or adjacent project (third-party design, build, finance, operate)

#### L'Oréal

| | |
|---|---|
| **Location** | Torino, Italy |
| **Buyer** | L'Oréal |
| **Seller** | Enersol SPV |
| **Capacity** | 3 MWp |
| **Commissioned** | 2017 |

**Overview:**

L'Oréal, the multinational cosmetics company, signed an agreement with Enersol, allowing them to install and operate a 3MW solar PV system on the warehouse of their Settimo Torinese plant.

Enersol invested €3 million in the 3 MWp subsidy-free plant which is expected to generate 3,600 MWh/year.The power is sold to L'Oreal through a 20- year on-site direct wire PPA with a 'take or pay' provision.

Under the contract, L'Oréal benefit from a 8-12% discount on the retail electricity price. 100% of the solar electricity generated is consumed on-site, meeting 30% of the site's demand.

#### Volvo

| | |
|---|---|
| **Location** | Ghent, Flanders, Belgium |
| **Buyer** | Volvo |
| **Seller** | Eneco |
| **Capacity** | 15,000 solar panels (4.8–5.25 MW) |
| **Commissioned** | 2018 |

**Overview:**

This installation of 15,000 solar panels on the roof of Volvo's factory is part of the company's efforts towards climate-neutral global manufacturing operations by 2025.

The installation will supply 5% of the plant's power needs and save the company €200,000/year in energy costs. The plant already uses wind power for 11% of its demand, sourced from three on-site wind turbines (6MW).

To help finance the PV installation, Volvo offered its 6,000 employees the opportunity to invest in the scheme. Under this "crowd lending" structure, the employees could invest between €250 and €1,000 and 6 years later would receive their money back together with a 4% interest coupon.

*Source: Company data, News*

## Procurement process

An implementation option could be chosen through responding reactively to approaches from project developers or approaching selected developers to negotiate a series of bilateral deals. However, there is a risk that this would result in limited market choice and sub-optimal contractual terms. For those corporates that need scale and wish to foster competition between alternative opportunities in a controlled way, a structured competitive procurement process is often more appropriate. It enables the corporate to run a competitive process to procure multiple projects concurrently (possibly in several different countries). The company may set high-level commercial parameters, define a ceiling bid price or give freedom to the market to set the price. Developers then bid back the power price and are awarded the PPA based on this price, as well as on the financial, commercial and technical deliverability of the underlying project.

Under this option, developers also provide the site and remain responsible for the design, build, financing and operation of the facility. This approach is best suited to large-scale capacity procurement, and a multitude of regulatory environments would necessitate multiple procurements. Successful implementation of this option rests on a robust project feasibility study, quality documentation and a creditworthy counterparty.

Procurement processes are not used only by corporates to buy renewable power but can also serve as valuable tools for governments. A government may wish to procure renewable power for its own use or, alternatively, use a procurement process as a mechanism to deliver policy support to the renewables industry — such as in the example from South Africa. Here, procurement processes offer an alternative incentive mechanism to feed-in tariffs or renewable portfolio standards.

**Delivering a successful procurement process for renewable power**

South Africa Renewable Energy Procurement Program

> “A PPA competitive procurement framework can provide a large corporate with a global energy footprint the option to procure renewable power in a competitive and transparent manner at a local level across its different sites, provided the scale of the opportunity is big enough to attract market investors.

Robert Winchester, Partner, EY LLP, UK

Overview:

- The program’s aim is to procure 3.7GW of renewable Natural resource availability energy across a variety of technologies.
- To date, 2.4GW of capacity has reached financial close across wind, solar and mini-hydro projects.
- The contract award is for a 20-year fixed power price based on a competitive process.

# Risks, rewards and "telling the story"

Ultimately, the choice of energy mix optimization strategy depends on the corporate's risk/reward appetite and the degree to which it is comfortable investing in a long-term payback asset that is not part of its core business/ contracting power over a longer period than it is used to.

In many countries, there are permitted sites standing by to be built, with engineering, procurement and construction contracts ready. In these circumstances, capital investment/PPAs from corporates are often welcomed.

Today, corporates can play a material role in bringing additional new renewable energy capacity on-line, and in so doing, give rise to a compelling "story" of value creation and corporate responsibility through innovation in the corporate energy strategy.

## Next steps

- Consider whether your business's current renewable energy procurement practice is suited to your energy and sustainability agenda and overarching business strategy
- Move beyond conventional thinking:
  - Change investment time horizons and payback requirements
  - Take a position on longer-term power price movements
  - Re-examine the wider definition of investment return and shareholder value
- Understand what your competitors are doing and why
- Develop a strategy that is calibrated to your business
- Don't miss the opportunity to reduce exposure to volatile and rising energy prices
- Capitalize on falling renewable energy capital costs
- Boost brand equity and demonstrate corporate responsibility
- Act now!

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