

RENEWABLES & YOUR ENERGY MANAGEMENT STRATEGY





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What follows in this eBook is the result of ENGIE Impact's many years of working with our clients on energy procurement and energy cost optimization in both deregulated and regulated markets and the *lessons learned as we guide clients through the barriers and complexities of the new frontier of energy procurement: renewable energy.*

Whether the motivation is financial, driven by regulation, or in response to stakeholder expectations, renewables are emerging as a viable alternative to fossil fuel-based energy for organizations. Companies should be seizing the opportunities in front of them, now.

What Informs Our Expertise

1.4M

energy accounts for which we provide energy supply contracts, energy sourcing or rates analysis

2.5B

points of current and historical energy data is analyzed, processed and stored on the ENGIE Impact Platform

10+

average years of experience of our procurement managers and transaction and rate analysts

1,100

monthly evaluations of energy supply offers providing insight into market prices, supporting negotiations

120+

energy price indices we continuously monitor, plus critical economic trends and weather impacts

500

clients who we support in every deregulated market in North America and Europe

FORCES OF CHANGE IN ENERGY MANAGEMENT

DEMAND-SIDE MANAGEMENT



Ben Taylor

Senior Manager, Energy & Water Advising
13-year energy expert

Over the last ten years, we've seen demand-side energy management evolve from a 'nice to have' for reducing operating costs to a 'must have' for market competitiveness and business resilience. Historically, organizations typically tasked a person (or very small team) when dealing with energy costs. A kickoff call that began with the phrase, "Help me, I drew the short straw!" was not uncommon. Today, organizations are realizing the value of energy management, and are leveraging a combination of dedicated internal resources and a network of partners to generate significant results. Although the pressures behind this evolution are complex, we see several reoccurring themes enabling this transition to low carbon operations.

Today we see the typical LED retail price *more than 80% lower than 2011 prices.*

When considering a renewables strategy, consider energy efficiency as the foundation for a holistic energy management program. Even when working through traditional brown power procurement, a short payback project such as a lighting retrofit can reduce the purchase volumes and further decrease costs. Buildings also have a natural tendency to become more efficient as older, inefficient equipment reaches the end of its useful life and is replaced by newer, higher efficiency equipment.

If energy efficiency and future energy consumption are not considered before a procurement contract is signed, a facility might not meet its expected purchasing volume and the agreement would need to be renegotiated, or a penalty may be incurred from the supplier. This consideration becomes more important as a portfolio makes the transition from brown to green power purchasing. Although the market is evolving quickly, many renewables purchasing agreements still include a premium as compared to alternative brown power options, so the benefit of applying energy efficiency as the first layer to reduce total energy needs is amplified.

In addition to establishing and aligning internal strategy, the following market advancements can be leveraged to accelerate implementation:

- **Disparate data analytics** approaches are merging to provide holistic benchmarking and performance monitoring across large, geographically dispersed portfolios. Synthesizing monthly bill data, granular energy data, BMS data and operational characteristics of each facility, organizations are quickly analyzing thousands of locations, prioritizing those with savings opportunity and maximizing returns.
- **Improvements in technology** are reducing prices and enabling adoption at a rapid pace. Today we see the typical LED retail price more than 80 percent lower than 2011 prices. Real-time **energy monitoring solutions** are now available at a fraction of the price and can be economically favorable even for small locations. These types of advancements are dramatically increasing access to energy efficiency and continuous commissioning services that were previously limited to major players or large facilities with large capital pools.
- This combination of data-enabled program design and accessibility to technology is also creating a new generation of **outcome-focused 'as-a-service' business models**. These approaches help spread financial risk and asset management responsibility, further enabling transformative programs that did not previously meet financial requirements. Infrastructure-as-a-service often involves a commitment to achieving a reduction target. Redaptive's innovative utilities-as-a-service program enables capital projects to be cash flow positive, treating the investment as an operating expense while transferring risk away from the owner.

We live in an exciting time where data is readily available, advanced technology is readily accessible, and innovative business models are simplifying the implementation process.

SUPPLY-SIDE MANAGEMENT



Jonathan Lee

Manager, Analytics Intelligence

13-year energy expert

Over the last several years, renewables have carved out increased market share, due in large part to declining costs but also to more environmentally conscious state and corporate policies. Furthermore, as technological advancements reduce development operational costs, the price of **renewable generation is reaching parity with traditional sources** in many regions, leading to even more investment in renewable capacity growth—although there have been some cost increases in 2021 largely due to supply chain constraints, material costs, labor costs and increased demand. But with the U.S. electric generation landscape continuing to shift toward cleaner sources, policies at the state, utility, and end-user level have followed suit.

Electric generation from all renewable sources nearly doubled from 382 MWh in 2008 to a new record of 742 MWh in 2018, around 17.6% of U.S. generation.

Source: U.S. Energy Information Administration

Federal policies can change from administration to administration, so decisions over renewable and sustainability efforts have increasingly trickled down to state and local levels. Many states currently have renewable portfolio standards and goals that direct how much electric generation must come from renewable sources.

But the latest trend to sweep across the nation is with states adopting a higher renewable portfolio percentage, with many reaching as high as 100 percent.

As the states set their targets, utilities operating within their borders must also realign to be compliant. Many utilities, though, have been proactive and taken over the mantle to not only produce cleaner electricity but also provide opportunities for their customers to take part. Several utilities across the country are experimenting with combining renewable technologies to provide improved dispatchability, such as installing solar and wind resources with battery storage. Additionally, many utilities in regulated and deregulated markets have created green tariffs to provide opportunities for customers to source their electricity directly from renewables.



RENEWABLES ARE A BIG WAY TO MAKE PROGRESS



Brian Dooley

Senior Director, Renewables Consulting

22-year energy expert

Adoption and consumption of renewable energy has grown tremendously over the last decade. Several factors are driving this increase, including customer and shareholder pressure on companies greening their portfolio, declining costs, increasing options and more.

We'll explore these drivers, in particular the key factors making the case for renewable energy adoption today. For multi-site businesses with dozens, if not hundreds or thousands, of sites across varying markets, crafting a renewables sourcing strategy portfolio-wide comes with considerable challenges. But with data-based goals, a systematic and consistent approach to evaluation, market and solution intelligence, and a well-defined roadmap, those challenges can be overcome.

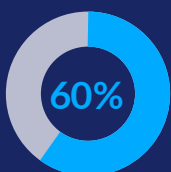
Stakeholder pressure will only continue to rise. Corporate stewardship is increasing, which is in some part understood to be driven by consumer purchasing patterns becoming more and more influenced by environmental concerns and climate actions taken by businesses. Whether onsite, offsite or through green tariffs, many businesses are looking to renewable energy sources as a strategy to increase climate solutions in their portfolio, lessen their impact on the environment, and show their customers that they're listening.

Do your brand a favor. Certainly related to the point above, consumers are making judgements on brands based on their environmental stewardship. Studies show that from Gen Z to Millennials to Baby Boomers, many generations prefer to purchase from companies who are known for being environmentally friendly.

As more organizations set sustainability goals, it's important to have a pointed action plan on how to achieve them. Whether specific renewable energy targets, greenhouse gas reduction targets or carbon emission targets are included, incorporating renewable energy into the supply mix is a great way to make a big impact on sustainability goals. And with more options that carry less risk and legal complication, organizations are finding it easier to move forward than ever before.

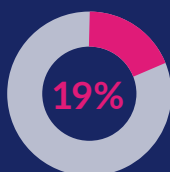
With 94 of the world's major stock exchanges making environment and climate disclosures a requirement for listing, environmental and climate factors are growing factors in assessing companies' credit rating and thus access to capital.

Did You Know



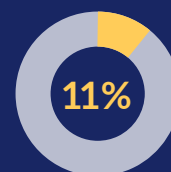
of Fortune 500 companies have
sustainability targets

Source: WWF



of Fortune 500 companies have
renewable energy targets

Source: WWF



of Fortune 500 companies have
committed to 100% renewable energy

Source: WWF

BARRIERS TO ENTRY WITH RENEWABLE ENERGY

This section will cover a variety of barriers that prevent companies from making rapid forward progress to acquiring renewable energy, whether they are early adopters or mature and seasoned veterans of renewable purchasing, as well as best practices to stay on track.

While all signs point to investment in renewables, that doesn't mean an organization's go-forward plan will come without challenges. Even with a methodology to evaluate your options, it's important to go into the process with potential barriers identified and a strategy to overcome them.

Complete & Accurate Data



The Issue: Many organizations lack complete and accurate resource data across their entire portfolio of sites, including a lack of data in the format that allows for comparative analysis of renewable solutions versus current sourcing strategies.



The Solution: Tracking consumption and other data internally or via a trusted third-party partner will allow organizations to understand needs across their entire portfolio of sites and better plan an energy management strategy to meet goals.

Understanding of & Ability to Assess Available Options



The Issue: Terms and conditions of different renewable energy solutions will vary across providers and markets. Maintaining a working knowledge of markets, transaction types and pricing is very difficult, especially for multi-site organizations.



The Solution: Ideally, organizations can leverage one or more partners who regularly evaluate these solutions to make strategic recommendations on what makes the most sense based on their goals.

Funding Options for Onsite Renewables



The Issue: Incorporating renewable solutions into an operating budget involves identifying a business case and costs for solutions, which may give rise to unforeseen funding issues or timing challenges of getting funding included in forecasted budgets.



The Solution: In capital-constrained environments, organizations can pursue renewable solutions that do not require an upfront capital expenditure, or they can partner with vendors who offer performance-based contracting through which services are paid for via shared savings.

Counterparty Risk



The Issue: When assessing renewable energy options, it can be difficult to assess the stability, fitness and experience of different renewable energy service providers and products (i.e., batteries, fuel cells, solar panels).



The Solution: Organizations can mitigate risk by working through financially stable energy service providers who can source and bundle solutions and potentially act as a counterparty to shield from market risk.

Executive Buy-In



The Issue: Executive buy-in is a pervasive theme across organizations looking to transition a portion of their portfolio to green power. Providing market data on the scope of opportunity, investment, pricing trends, availability of price supports, and comparative risks is critical to obtaining support.



The Solution: Partnering with an advisory partner with diverse experience across products, suppliers and markets can help tailor renewable sourcing strategies to achieve executive buy-in.

Managing Risk Across Your Portfolio



The Issue: There can be a tendency to separately approach renewable sourcing strategies and traditional energy sourcing. This can be further exacerbated by separating those strategies between regulated and deregulated markets.



The Solution: Renewable opportunities will have to be incorporated into traditional energy strategies and processes already in place.

Facility Ownership Versus Lease



The Issue: Both the lease structure and term of leased facilities can complicate renewable energy strategies.



The Solution: A strong decarbonization strategy will start with a materiality assessment—identifying energy usage profile, location and facility terms & conditions—from the outset. With those characteristics established, organizations can prioritize sourcing strategies and incorporate solutions for leased portfolios.

Capital Constraints



The Issue: With a finite amount of capital available to pursue an organization's goals, distinguishing the relative value of deploying capital for renewable solutions can be a difficult sell internally.



The Solution: Many renewable agreements can be structured to avoid capital outlays, and capital investments can often generate returns that clear most corporate hurdle rates. Work with a partner that can identify solutions that meet your organizational requirements.

Uncertainty of Operation



The Issue: A common concern for retail and quick-serve restaurants, many businesses enter and exit markets routinely. This uncertainty can make it difficult to plan a renewables procurement strategy that meets the flexibility and contract terms needed.



The Solution: Work with an advisor to identify renewable products that offer the flexibility you need. Buyers can enroll or disenroll from utility programs at any time, for example, and VPPAs are financial instruments that are not tied to physical locations.

Time Constraints



The Issue: Many organizations can feel the pressure to act when they make time-bound commitments to renewable energy and have quickly approaching deadlines, but little progress. They need a clear roadmap and a strategy to communicate their short and long-term plan to achieve those goals.



The Solution: Depending on the goals of an organization, diversifying renewable solutions can help generate near-term success and mix in other longer-term strategies. It is critical to map out the location of usage, ownership structure of consuming facilities, regulatory restrictions of the markets where usage occurs, current contracted commitments for energy supply, and contracting flexibility of customers, to move from assessing opportunities to identifying executable options.

No barrier is insurmountable. By understanding what barriers they might come up against, and creating a plan to overcome them, organizations will be more likely to succeed and experience greater movement toward purchase.

EVALUATING RENEWABLES AS PART OF AN INTEGRATED STRATEGY

Specific to renewable energy options on the supply side, ENGIE Impact's approach to identifying the best strategies for our customers starts with reviewing a set of 12 characteristics of renewable solutions to help prioritize what is important to a given organization and match those characteristics to the products that best align.

Having this clear and repeatable process helps create a smooth experience and ensure no question is left unanswered. As with any organizational-level strategy, establishing the priorities, a process to evaluate specific opportunities, executing and measuring against expected outcomes are key to launching a successful initiative and making incremental gains through continued refinement.

Organizations considering renewable products should review the following 12 characteristics. Based on their priorities—locality or marketability, for example—organizations may determine that a particular project is not right for them.



Locality/Proximity

The ability to point to a specific source of renewable power within a certain proximity



Market Risks

Potential for cost increases due to market movements



Sustainability Impact

How much influence a product will have on achieving sustainability goals



Budget Certainty

Predictability in month-to-month costs



Production Risks

Amount of energy/RECs



Contract Simplicity

Certain products require complex legal documents with intricate compliance, tax, and accounting requirements



Company Credit Rating

Can influence which renewable investment is right for an organization



Developer Credit Risk

The risk of default or contract termination that stems from a renewable energy developer's credit rating



Additionality

Describes transactions that support the construction of new clean energy facilities, additional emissions reductions that would not otherwise exist



Lead Time

The amount of time required to deliver renewable products, which can range anywhere from weeks to years depending on the structure



Marketability

Determines what organizations can publicly state about their investment in renewables



Contract Term Flexibility

The ability to contract for short terms (3+ years) or longer terms (10-20+ years), assignability, shifting deliverables across multiple locations, termination for convenience and other terms related to customer performance

Understanding organizational priorities from these 12 criteria is just the start. It takes a thorough process to understand the current state of sourcing strategies and portfolio characteristics to help develop a business case for renewable solutions. But the process is critical and can help to surmount obstacles that may arise even as organizations move forward.

Ongoing reporting on performance is key to ensuring long-term satisfaction and trust and additional investment in future recommendations. Organizations should also look to performance data to support long-term program optimization and maximize their approach to renewables.

Strategic Energy Sourcing & Procurement Process



Current State Assessment

- Current generation portfolio
- Review goals
- Industry and regulatory watch

Integrated Sourcing Strategy

- Business case development
- Procurement planning across traditional (Brown) and renewable (Green) energy options

Procurement Program Management

- Procurement plan execution
- Proposal evaluation and contracting

Measure & Report on Performance

- Benchmarking of existing assets
- Tracking progress towards goals
- Verification of performance

Performance Optimization

- Performance optimization on both supply-side and demand-side

THE FUTURE OF RENEWABLES PROCUREMENT

Throughout this eBook, we discussed the current state of procurement and the forces that have shaped where we are today. We looked at what's driving urgency and action as well as the barriers that still exist for companies looking to integrate renewables. And we discussed considerations for evaluating renewables as part of an integrated procurement strategy.

We hope this has shown you that the renewable energy journey is unique to your organization—helping you find a way to explore the steps to take based on your risk appetite and growth ambitions. Already, local policies in several markets, demand from consumers and investors, and advancing technologies are driving ambitious sustainability goals and the growth of renewables is influencing key financial performance metrics. This means that renewable energy investments might very well

transition from the realm of 'nice-to-have' to a competitive advantage. And as this space evolves and grows—because all signs point to growth—you can be sure we'll keep a close eye on what the future brings.

Learn More

Read recommended content below or visit our [Insights](#) page to explore more.



The Sustainable Resource Maturity Scale: From Tactical to Transformative

Global strategies on how to unlock opportunities and mature your sustainability program.

[Read Report](#)



The Role of Green Hydrogen and Clean Fuels Demonstrated in a Sustainable City Environment

In the city of Dunkirk, ENGIE Lab CRIGEN is trialing the GRHYD project, an innovative approach that uses natural gas and hydrogen networks to create renewable energy solutions.

[Read Case Study](#)



Charting Your Transformation Journey To Net Zero Carbon

Keep pace to goal with three dimensions of transformation: scales, levers and enablers.

[Read Article](#)





ABOUT THE EXPERTS

Brian Dooley

Senior Director, Renewables Consulting

Brian Dooley is the Senior Director of Renewable Consulting at ENGIE Impact leading clients through the transition to low and zero carbon business solutions that implicate those clients' business model, financial return requirements, sustainability and corporate responsibility goals, corporate governance structures, operating portfolios, executive approval processes and public reporting expectations. Brian has over 22 years of renewable energy experience including development of industry-leading programs from within Fortune 50 companies and enterprise solution development for such clients as an external development partner. Brian has a bachelor's degree in political science from the University of Wisconsin, Madison and a J.D. from William Mitchell College of Law, Saint Paul, Minnesota.

Ben Taylor

Senior Manager, Energy & Water Advising

Ben Taylor leads ENGIE Impact's Energy & Water Advising team, which applies a data-driven strategic approach to developing and managing programs which optimize resource consumption and improve facility operations as part of a holistic sustainability management initiative. Ben has over 13 years of experience in the energy industry, with roles in engineering, consulting, and operations management. He has a bachelor's degree in mechanical engineering from California Polytechnic State University, an MBA from Eastern Washington University and is a Certified Energy Manager and a licensed Professional Engineer.

Jonathan Lee

Manager, Analytics Intelligence

Jonathan Lee leads ENGIE Impact's Energy & Sustainability Analytics Intelligence team, which focuses on energy market intelligence, utility rate forecasting, and historical data acquisition to help provide insight into clients' current and future energy spend. He and his team also deliver weekly energy pricing insights and market predictions on his [Energy Price Hub](#). Jonathan has more than 13 years of experience in the energy industry and is a regular contributor to various natural gas industry polls and articles, including Argus Media, Bloomberg, Platts and Reuters. He has a bachelor's degree in finance and marketing from Concordia University, Portland, Oregon.

APPENDIX

Integrated Energy Management: What, Who and Why

You know renewables are inevitably part of your energy supply future, but with so many options available it can be difficult to keep up with what's on the market, what companies will benefit and why you should consider it as a part of your holistic energy management strategy. Let's break down the basic demand and supply-side options to better understand each.

Demand-Side Strategies

	What is it?	Who can benefit?	Why consider it?
Energy Efficiency	<p>A low-risk, cost-reduction opportunity for delivering economic, operational, and sustainable value.</p> <ul style="list-style-type: none">• Equipment upgrades, such as LED retrofits and HVAC optimization• Technology upgrades, such as controls optimization• Maintenance and monitoring	<p>Customers who are aiming to:</p> <ul style="list-style-type: none">• Achieve energy reduction targets• Meet sustainability goals• Replace outdated equipment• Improve infrastructure• Reduce maintenance costs• Improve workplace safety	<ul style="list-style-type: none">• Potential savings from reduction in energy use (kWh)• Potential savings from managing peak demand (kW)• On-bill financing for qualifying customers• Utility incentives for increased ROI and payback
Demand Response	<p>Reductions in consumption for periods of two hours or less at frequencies dictated by the market and/or the ISO.</p> <ul style="list-style-type: none">• Price alerts• Demand alerts• Real-time metering• Reliability-based programs• Economic/ancillary programs	<p>Customers with:</p> <ul style="list-style-type: none">• Smart or IDR metering• Ability to curtail load for short periods• Load flexibility	<ul style="list-style-type: none">• Large commercial and industrial customers with significant curtailable load can earn revenues

Supply-Side Strategies: DERs

	What is it?	Who can benefit?	Why consider it?
Distributed Energy Resources (Onsite Generation)	<p>Installing onsite generation to produce energy. For example, solar, either with ground-mounted or rooftop panels that are typically connected to the local utility grid. Used to offset consumption, reduce energy costs, and improve environmental responsibility.</p>	<p>Customers with:</p> <ul style="list-style-type: none">• Sustainability targets• Space availability• High electricity rates• High solar radiation with good roof quality• Large energy offset• Favorable lease agreements or sites at owned locations	<ul style="list-style-type: none">• Usage and potential demand reductions enable significant cost reductions• Can ensure fixed price for portion of load• Supports sustainable brands with environmental and marketing claims• State incentives and federal tax credits
Distributed Energy Resources (Storage)	<p>Battery-based storage that enables customers to use power more cost-effectively.</p>	<p>Customers aiming to:</p> <ul style="list-style-type: none">• Reduce high electricity costs by addressing energy demand (kW)• Improve resilience• Increase sustainable impact if coupled with renewable technologies	<ul style="list-style-type: none">• Greater control over energy costs with time-shift usage, deploying stored energy when prices are high and charging systems when prices are low• Revenue generation potential• State incentives and federal tax credits

Supply-Side Strategies: Offsite Renewables

	What is it?	Who can benefit?	Why consider it?
Renewable Energy Credits (RECs)	RECs are tradeable instruments representing the production of 1 MWh of renewable generation.	Customers seeking: <ul style="list-style-type: none"> Contract simplicity and flexibility Fast progress on sustainability goals 	<ul style="list-style-type: none"> Can buy for a portion, or all, of energy consumption Rapid turnaround time for sustainability impact Minimal contract complexity
Power Purchase Agreements (PPAs)	PPAs represent a contract between two parties that includes sourcing RECs and renewable energy.	Customers seeking: <ul style="list-style-type: none"> Expense management opportunity in favorable markets Fixed portion of energy expense or fixed REC pricing 	<ul style="list-style-type: none"> Source volumes of renewable energy that exceeds usage at one site and may be allocated to multiple sites Hedge against energy price volatility
Green Retail	Contracted physical volumes of renewable energy—primarily wind or solar—through retail supply agreements.	Customers who are: <ul style="list-style-type: none"> Aiming for fast progress on renewables targets Seeking to reduce environmental impact—and market actions—within one or two months 	<ul style="list-style-type: none"> Firm volume and fixed-price offerings ensure predictability in costs Significant sustainability impact Marketing rights to reference specific assets Simplified contracting through standard retail supply agreements

Supply-Side Strategies: Tariff Monitoring & Optimization

	What is it?	Who can benefit?	Why consider it?
Green Tariffs and Riders	Green tariffs and riders are optional programs in regulated electricity markets offered by utilities and approved by state public utility commissions that allow larger C&I customers to buy bundled renewable electricity through a utility rate.	Customers who: <ul style="list-style-type: none"> Have sites/locations in regulated markets Need sourcing strategies with shorter term, more flexible transactions 	<ul style="list-style-type: none"> Opportunity to source renewable energy in regulated markets when retail choice is not available



ACCELERATING DECARBONIZATION TOGETHER

To explore opportunities and discuss your current strategy further, schedule a discovery session with an ENGIE Impact consultant today.

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your decarbonization journey
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