



Renewable Energy for your Business

A USER'S GUIDE



What is renewable energy?

Renewable energy refers to energy sources that can be replenished naturally within a human timescale. Unlike non-renewable energy sources such as fossil fuels (coal, oil, and natural gas), which are finite and contribute to environmental pollution and climate change, renewable energy is considered sustainable and environmentally friendly.





There are several types of renewable energy sources

Solar Energy

Solar power harnesses energy from the sun using photovoltaic (PV) cells or solar thermal collectors to convert sunlight into electricity or heat.



Wind Energy

Wind turbines capture the kinetic energy of wind and convert it into electricity. Wind farms with multiple turbines are often established in windy areas or offshore locations.



Hydropower

Hydropower relies on the flow of water, typically from rivers, to drive turbines and generate electricity. It can be obtained from large-scale dams or smaller run-of-river installations.



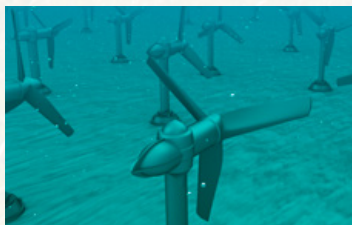
Biomass

Biomass energy utilizes organic matter derived from plants or animal waste. It can be converted into biofuels or burned directly to produce heat or electricity.



Geothermal Energy

Geothermal power harnesses the heat generated by the Earth's core. It involves extracting steam or hot water from geothermal reservoirs to generate electricity or provide heating and cooling.

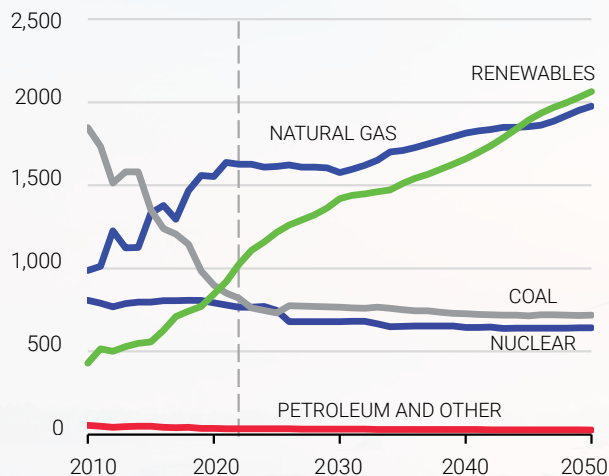


Tidal Energy

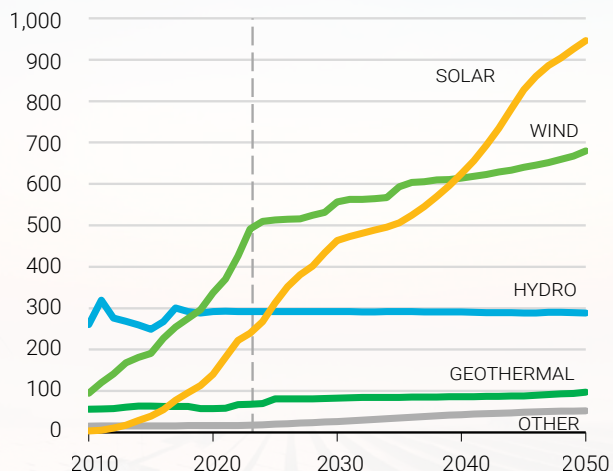
Tidal power harnesses the energy from ocean tides using tidal turbines. As tides rise and fall, the flow of water turns the turbines and generates electricity.

Electricity Generation U.S. 2010-2050

All Fuels BILLION KW/HRS



Renewable Fuels BILLION KW/HRS



*EIA, AEO 2020 Reference Case

Advantages

Renewable energy sources offer several advantages. They reduce greenhouse gas emissions, improve air quality, and contribute to mitigating climate change. They also provide a long-term energy solution, reduce dependence on fossil fuels, and promote energy security. Additionally, renewable energy can create job opportunities and foster economic development in the clean energy sector.

Limitations

Renewable energy sources also have limitations, such as intermittent availability (e.g., solar power at night) or geographical constraints (e.g., wind resources in specific areas). Nevertheless, advancements in technology and energy storage solutions are addressing these challenges and increasing the viability and integration of renewable energy into the global energy mix.

Why should businesses implement renewable energy?

2022 ENERGY STATS



16.9_{GW}**

**RENEWABLE
ENERGY CONTRACTED
IN 2022**



13.1%⁺

**OF ELECTRICITY
IN 2022 WAS FROM
RENEWABLE
GENERATION**



54%

**COMPANIES WERE
FIRST TIME BUYERS/
37 COMPANIES**

Implementing and utilizing renewable energy is important for businesses for several reasons:

► **Environmental Sustainability**

Renewable energy sources, such as solar, wind, hydro, and geothermal power, produce electricity without depleting natural resources or releasing harmful emissions like greenhouse gases. By using renewable energy, businesses can significantly reduce their carbon footprint, mitigate climate change, and contribute to a cleaner and healthier environment.

► **Cost Savings**

While the upfront costs of installing renewable energy systems can be significant, they often provide long-term cost savings. Renewable energy technologies have become more efficient and cost-effective in recent years, and their prices continue to decline. By generating their own energy, businesses can reduce their reliance on expensive fossil fuels, stabilize their energy costs, and potentially save money over time.

► **Energy Independence and Security**

Relying on traditional energy sources, such as fossil fuels, makes businesses vulnerable to price fluctuations, supply disruptions, and geopolitical tensions. By diversifying their energy sources with renewable energy, businesses can gain more control over their energy supply, reduce their exposure to volatile energy markets, and enhance their energy security.

► **Competitive Advantage and Reputation**

Incorporating renewable energy into business operations can enhance a company's reputation and brand image. Consumers and stakeholders increasingly value environmentally responsible practices and support businesses that demonstrate sustainability commitments. Adopting renewable energy can differentiate a business from its competitors, attract environmentally conscious customers, and improve overall market positioning.



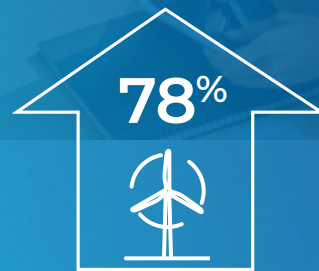
► Regulatory Compliance and Incentives:

Governments around the world are implementing policies and regulations to encourage the adoption of renewable energy and reduce greenhouse gas emissions. By embracing renewable energy, businesses can ensure compliance with these regulations, avoid potential penalties, and capitalize on various incentives, such as tax credits, grants, and subsidies, which are often available to support renewable energy projects.

► Innovation and Job Creation:

The renewable energy sector offers significant opportunities for innovation and economic growth. By investing in renewable energy technologies, businesses can drive innovation within their own operations and contribute to the overall advancement of clean energy solutions. Moreover, the renewable energy industry creates job opportunities across various sectors, supporting local economies and communities.

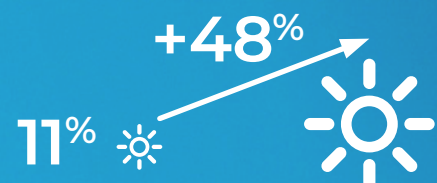
In summary, adopting renewable energy is essential for businesses to reduce their environmental impact, achieve cost savings, improve their reputation, comply with regulations, and contribute to a sustainable future.



What is the fastest-growing source of energy in the world?†

Renewable energy, of course! Consumption of renewable energy is set to rise by 78% between 2015 and 2040.

As for which type of renewable energy specifically, solar power is the fastest-growing source of energy, projected to grow from providing 11% of the US's renewable energy to 48% by 2050.





What are your company's goals and objectives regarding renewable energy?



GOAL FOR 2030***

Your company's sustainability objectives can vary depending on the industry, size of the organization, and its specific priorities. However, here are some examples of common corporate sustainability objectives:

1 **Greenhouse Gas Emissions Reduction**

Setting targets to reduce carbon emissions and other greenhouse gas emissions to mitigate climate change. This may involve adopting renewable energy sources, energy-efficient technologies, and implementing sustainable transportation practices.

2 **Waste Reduction and Recycling:**

Implementing waste management strategies to minimize waste generation, increase recycling rates, and reduce reliance on landfills. This could include promoting recycling programs, implementing composting initiatives, and exploring innovative packaging solutions.

3 **Sustainable Supply Chain**

Focusing on sustainable sourcing and responsible procurement practices throughout the supply chain. This may involve engaging with suppliers to ensure ethical and environmentally-friendly practices, promoting fair trade, and reducing the carbon footprint of logistics and transportation.



4 Renewable Energy Adoption
Committing to increasing the use of renewable energy sources to power operations. This could include installing solar panels, wind turbines, or investing in renewable energy certificates (RECs) to offset energy consumption.

5 Employee Well-being and Diversity
Prioritizing employee health, safety, and well-being, as well as fostering diversity and inclusion within the organization. This could involve implementing wellness programs, providing work-life balance initiatives, and promoting diversity in hiring and leadership positions.



6 Stakeholder Engagement
Engaging with stakeholders, including employees, customers, communities, and investors, to gather feedback, address concerns, and collaborate on sustainability initiatives. This may involve regular sustainability reporting, hosting stakeholder dialogues, and implementing transparent communication channels.

7 Community Engagement and Philanthropy
Investing in local communities through philanthropic initiatives, volunteer programs, and partnerships with nonprofits and social enterprises. This may involve supporting education, healthcare, environmental projects, and other community-driven initiatives.



It's important to note that sustainability objectives should be tailored to the specific circumstances and goals of each organization, and they should align with the United Nations Sustainable Development Goals (SDGs) and other relevant frameworks.

How will the energy market impact my renewable energy purchase?

The energy market plays a significant role in influencing the purchase of renewable energy. Several factors related to the energy market can affect the demand and availability of renewable energy sources. Here are some common ways in which the energy market affects the purchase of renewable energy:



Pricing and cost competitiveness:

The cost of renewable energy technologies, such as solar and wind, has been declining over the years, making them increasingly competitive with traditional fossil fuel-based energy sources. The energy market determines the pricing of different energy options, and as the costs of renewables become more favorable compared to fossil fuels, the demand for renewable energy increases. Lower prices for renewable energy can incentivize individuals, businesses, and governments to opt for renewable energy sources.



Regulatory policies and incentives:

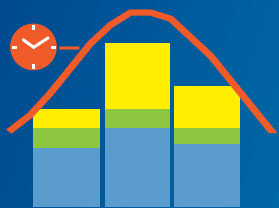
Government policies and regulations have a significant impact on the energy market. Many countries have implemented renewable energy targets, feed-in tariffs, tax credits, and other financial incentives to encourage the adoption of renewable energy. These policies create a favorable market environment for renewable energy projects and can drive up the demand for renewable energy.



Market mechanisms and electricity markets:

The structure of electricity markets and the integration of renewable energy sources into these markets are crucial for their growth. Energy markets determine how electricity is bought, sold, and transmitted. The design of these markets, including mechanisms for pricing, dispatch, and grid integration, can either facilitate or hinder the uptake of renewable energy. For example, if the market provides favorable terms for renewable energy producers, it encourages their participation and investment.





What is 24/7 CFE?

24/7 CFE is a continuous and uninterrupted supply of renewable energy and is designed to provide power 24 hours a day, 7 days a week. In the context of renewable energy for business, 24/7 CFE often refers to a custom solution for a company in specific geographic region(s) that operates continuously, ensuring a reliable supply of electricity to meet the energy demands of the business. Power sources for 24/7 renewable energy include solar, wind, hydro or a combination that can generate renewable power for every hour.



Consumer preferences and corporate sustainability goals:

Increasingly, consumers and businesses are expressing a preference for renewable energy. Environmental concerns, sustainability goals, and corporate social responsibility commitments drive many consumers and companies to seek renewable energy options. Energy market players, including utilities and retail energy providers, respond to this demand by offering renewable energy products, such as green power purchase agreements or renewable energy certificates (RECs), allowing consumers to choose renewable sources for their electricity consumption.



Investment and financing:

The energy market influences the availability of investment and financing for renewable energy projects. Investors and financiers assess the potential returns and risks associated with renewable energy ventures. Favorable market conditions, such as stable policy frameworks, supportive regulations, and growing demand, can attract more investment in renewable energy infrastructure, making it easier for renewable projects to secure funding and expand.



In summary, the energy market's pricing, regulatory environment, market mechanisms, consumer preferences, and investment landscape all influence the purchase and adoption of renewable energy. As these factors evolve and become more favorable to renewable energy sources, the demand for and availability of renewable energy increase, driving the transition towards a cleaner and more sustainable energy system.

What kinds of renewable energy solutions are available for purchase?



Power Purchase Agreements (PPAs):

A PPA is a long-term contract between a corporation and a renewable energy project developer or generator. The corporation agrees to purchase a specified amount of energy at an agreed-upon price over an extended period, often 10-20 years. PPAs provide stable pricing and help support the development of new renewable energy projects.

Renewable Energy Certificates (RECs):

RECs represent the environmental attributes of renewable energy generation. By purchasing RECs, corporations support renewable energy projects indirectly. The purchased RECs offset the corporation's conventional energy consumption, and the environmental benefits are claimed by the buyer.

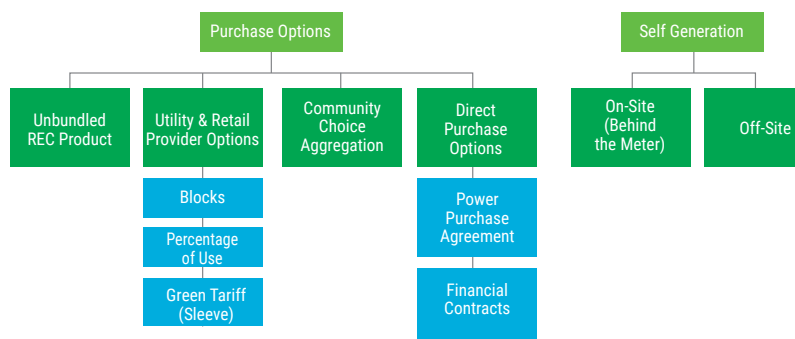
Green tariffs and utility programs:

Some utilities offer green tariffs or programs that allow customers to purchase renewable energy directly from the grid. These options may vary depending on the region and local utility offerings.

Custom Terms

Contract options may vary depending on the location, regulatory environment, and the options available in a particular region. Consulting with renewable energy experts or engaging energy consultants can be valuable to navigate the complexities of the process.

Voluntary Green Power Supply Options ^{††}





How do I go about purchasing renewable energy?

Purchasing renewable energy for a corporation typically involves a combination of strategies and considerations. Here are the general steps and options involved in the process:

► Set goals and assess energy needs

Determine the corporation's renewable energy goals, such as a target percentage of renewable energy usage or carbon reduction targets. Assess the current energy consumption and identify the potential for renewable energy integration.

► Conduct an energy audit

Evaluate the corporation's energy usage patterns, peak demand, and overall consumption to understand the amount of renewable energy required to meet the goals.

► Evaluate financial and contractual terms

When considering renewable energy procurement options, carefully analyze the financial implications, contract terms, pricing structures, and risk factors associated with each option. It is often helpful to involve legal and financial experts to ensure the best outcome for the corporation.

► Explore on-site renewable energy options

Consider installing renewable energy systems directly on the corporation's premises. This could include solar panels, wind turbines, or geothermal systems. On-site generation provides direct control over the energy supply and may result in long-term cost savings. However, it requires sufficient space, appropriate resources, and upfront investment.



After exploring your options, you may implement and monitor a renewable energy procurement strategy. Once the procurement agreement is finalized, you may work with the chosen renewable energy provider or project developer to establish the necessary infrastructure to track your organization's progress towards its renewable energy goals.

One great option for your renewable energy needs is leaning on the expertise of RPD Energy. RPD Energy can help your organization procure renewable energy solutions with their innovative and robust industry team of experts. They work as your trusted partner to make the process seamless, using shorter contracts and local renewable energy on your terms.



Learn more at www.RPDEnergy.com or email info@RPDEnergy.com

*EIA, AEO 2020 Reference, <https://www.eia.gov/todayinenergy/detail.php?id=42655>

** , *** CEBA, 2022 State of the Market, <https://cebuyers.org/state-of-the-market/>

**** <https://resource-solutions.org/learn/buying-renewable-energy/>

† <https://inspirecleanenergy.com>

†† <https://www.eia.gov/tools/faqs/faq.php?id=92&t=3>

