

Walmart's Approach to Renewable Energy



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Aspiration: to be supplied by 100% renewable energy.

2020 Commitments:

- **Scaling renewables**

Drive the production of procurement of 7 billion kilowatt hours (kWh) of renewable energy globally by Dec. 31, 2020.

- **Accelerate efficiency**

By Dec. 31, 2020, reduce the energy per square foot intensity required to power our buildings around the world by 20 percent versus our 2010 baseline.

We get these kinds of questions all the time: Walmart is considered a global renewable energy leader and is the largest onsite renewables user in the U.S., yet you only have 24% renewable electricity while others say they're at 100%; why is that?

At Walmart, renewable energy is about our customers and helping them save money so they can live better. Walmart has a goal to be supplied by 100% renewable energy, and there are lots of ways to get there, including various types of renewable energy sources – most notably solar and wind – as well as several types of arrangements with energy providers, such as utilities and proprietary installations. After assessing all of these options, we have determined an approach to renewable energy that best leverages our scale and buying power to drive new renewable projects, while demonstrating that doing what's right for our future doesn't have to cost more today.

It starts with our world-class renewable energy team, which has thought about every gritty detail of renewable energy projects. They have talked with experts and leading non-governmental organizations about every complicated element in a renewable energy transaction and consulted with financiers, developers and manufacturers to deeply understand our role and how we can accelerate renewable energy development. When our renewable energy team started working on our goal to be supplied by 100% renewable energy in 2005, they were working in unknown territory. Today, we count more than 300 renewable energy projects in operation or under development worldwide. In the U.S. alone, we are the largest on-site green power generator, according to the EPA Green Power Partnership. For our partners who are renewable energy-geeks who love the complicated details, Walmart has a 90+ page paper describing in detail our approach to the nuanced world of global renewable energy. For those who want to understand our approach to renewable energy with less detail and fine print, we hope that this short overview will illuminate our drive to be a leader in the transition to renewable energy.



Overview



As part of our goal to be supplied by 100% renewable energy, Walmart envisions a world where people do not have to choose between electricity they can afford and renewable electricity that is good for communities and the planet. As we expand our global operations to meet rapidly increasing demand for retail services – such as healthier, safer foods that require a cold supply chain – we strive to be the most efficient and sustainable retailer possible.

Walmart's renewable energy activities are therefore focused on three core objectives:

- Development and installation of new renewable energy projects at scale
- Driving down the cost of renewable energy
- Securing cost-effective, stable renewable energy pricing that meets or beats utility power pricing

This methodology is consistent with our business model, the productivity loop and environmental responsibility. It also reflects our commitment over the long term to make renewable energy a part of our business well into the future.

Getting to 100% renewable: Walmart's approach

“One of SolarCity's biggest challenges is that customers are still stuck with the stigma that 'clean energy is expensive.' Walmart's scale, Walmart's brand, and Walmart's communication is sending the signal that says 'solar is cost effective.' Walmart is saying 'you can be sustainable, and you don't have to do this at a cost.'”

— Lyndon Rive, CEO Solar City

Our approach is consistent with our business strategy and mission, and will drive the biggest, fastest and most sustainable acceleration of new renewable energy projects globally. While this may mean that Walmart itself can't make a public claim that it is supplied by 100% renewable energy for some time to come, we believe it's the right thing to do and the best way to leverage our size and scale to drive positive change.

As a result, our approach is to directly drive new renewable energy projects through on-site generation such as solar, wind and fuel cells; large project off-take agreements such as wind farms; wholesale energy purchases in deregulated markets coupled with renewable energy supplies; utility green power purchases; and so forth.

There are several ways to adopt renewables, some of which require more investment of capital, time and resources than others. Below is a summary of the most common approaches and Walmart's position on each.

Driving scale through long-term power purchase agreements (PPAs).

To date, we have found the Power Purchase Agreement (PPA) to be a highly effective model for Walmart to leverage our scale and buying power to accelerate renewables. Under these arrangements, Walmart agrees to buy renewable power from an energy provider over a long period of time – often 5, 10, 15 or more years. Long-term PPAs have unlocked enormous renewable potential, but have also required a new way of thinking. Prior to 2006, the renewable energy industry sought 20-25 year PPAs, while Walmart was accustomed to buying power in 1-year or less contracts.

“The credit level of Walmart Mexico as off taker of our first wind farm project was an important factor to obtain financing in favorable conditions. Otherwise, the economics would not have been good enough for us to start our renewable energy efforts in Mexico:”

— Thomas Mueller -Gastell,
Head of EDF – Energies
Nouvelles Mexico, a
subsidiary of Électricité
de France

“Walmart has the most [Bloom] fuel cell installations. Because of Walmart’s deployment and endorsement... we have been able to accelerate to scale a lot earlier than we otherwise could have:”

— Bill Kurtz, CFO
Bloom Energy

Walmart worked to bring the two perspectives closer together. Through information and education, Walmart has become comfortable with longer contracts, and helped renewable developers secure financing for much shorter contract lengths. Today, many in the industry enjoy renewable PPAs in the 10-15 year time frame, giving retail customers more flexibility as well as the ability to match system installations with roof life expectancies. We are still exploring direct investment in projects – an ownership model – that meet the company’s financial requirements.

PPAs are mutually beneficial for Walmart and the energy provider.

Under PPAs, the energy provider also owns, installs, and operates the renewable energy systems, relieving Walmart of that operation and maintenance responsibility. For project developers, PPAs provide a predictable stream of income, which is what financiers and banks say is the key to the low cost of capital and preferred financing arrangements. When Walmart promises to buy the electricity, the project can be built with low-cost financing and deliver electricity at or below non-renewable power prices.



If PPAs are such a win-win arrangement, what’s stopping Walmart and other big energy buyers from doing more of this? Well, the biggest obstacle is public policy. Instead of just quotas and subsidies, big energy buyers like Walmart need more market freedom to go directly to renewable energy developers and negotiate and enter into PPAs. Competition is a good thing for renewables, but in many countries and some U.S. states, it is against utility market rules/regulations for end-use customers like Walmart to purchase renewable energy directly from renewable projects as compared to going through the utility. As a result, it is still against the rules or extremely difficult to buy renewable power directly from independent power producers in many cases. Walmart is working with policymakers to address this restriction.

Green power purchases (GPPs) come in many forms, including wholesale green power purchases which bundle green electricity with renewable energy credits (RECs) or other instruments in deregulated markets, or utilities’ GPP programs of bundled power with RECs or other instruments. GPPs are not Walmart’s preferred path to achieve our 100% renewable energy goal, since GPPs provide less assurance that the power comes from a new renewable project.

Occasionally, however, project dynamics, real estate constraints, inability to execute PPAs, participating utility rules/guidelines, or other unique project conditions may create the need for green power purchases.

Renewable Energy Certificates (RECs) or other non-power instruments.

We want to do more than just shift around ownership (and marketing rights) of existing renewable energy, so we have made a decision that under normal circumstances, we prefer not to simply offset our non-renewable power by purchasing standalone renewable energy credits (RECs) or other certificates. While REC purchasing may allow us to more quickly say we are supplied by 100% renewable energy, it provides less certainty about the change we're making in the world.

Walmart's preference is not to purchase standalone RECs to offset our nonrenewable power consumption for a number of reasons.

- First and foremost, we do not have confidence that offsetting instruments alone are sufficient to drive new renewable projects, as opposed to simply shifting around ownership of existing renewable electrons. Thus, RECs may not have the desired impact of accelerating renewable energy development. In fact, some NGOs have expressed concern that big companies buying up RECs may not accurately reflect their contribution to the renewable future and may simply push paper around a static network .

- In all cases where Walmart claims that we have been supplied by Walmart-driven renewable energy projects, we retain evidence that no other energy consumer has procured the same renewable energy. This practice ensures that we're not double counting Walmart's renewable energy purchases. In some markets this means retaining/retiring RECs or similar instruments; in other markets, the PPA alone serves this purpose.

- Many governments are more interested in greening the whole society than in greening one company. In such cases, Walmart may pursue a PPA, but because of other important project elements (like feed-in tariffs or REC sales), we may be required to – or choose to – export the electrons to the wider community grid (and we do NOT then claim to be "supplied by" those electrons).

A Global Endeavor

With Walmart operating in more than 25 markets globally, every Walmart market is expected to contribute to our renewable energy future. But in each country and market where we operate, our business may face unique challenges, and not every market is able to move as quickly as another.

We have identified nine key conditions in which renewables thrive, and the more that align, the faster Walmart can move.

1. **Renewable resource availability.** There must be plentiful wind, solar, geothermal or other renewable resources to ensure the renewable technologies have sufficient efficiencies and operating potential.

2. **Mature technologies and providers.** The companies that install and maintain the technologies must be available to turn the renewable resources into usable energy.

“Walmart’s goals are not only a sign of strong leadership for the company, they can spur others around the world to take action. Walmart’s commitments show that it understands the urgency of embracing renewable energy to reduce pollution and greenhouse gases, while driving business growth that is cleaner and more efficient. WRI has provided advice on Walmart’s renewable energy strategy and has seen the company in action in the United States and in emerging markets, like India. By following through on these commitments, Walmart can set a powerful example for businesses and government officials alike who are looking to move to a more sustainable and low-carbon future.”

— Andrew Steer, President and CEO, World Resources Institute

3. **Finance capital availability.** The market must have banks and financial institutions willing and able to lend to project developers. Often, lenders offer lower cost of capital and other preferred financing terms as a result of Walmart’s low-risk profile as one of the project partners. In some of our markets, unexpected finance risks -like past currency crises - have made international lenders unwilling to finance projects in those markets, especially for utility-scale projects.

4. **Government incentives.** In some markets, renewable energy projects are viable without government incentives; however, in many regions, government incentives such as feed-in tariffs or subsidies help make the project viable. Conversely, in some markets, local-content laws or import tariffs on renewable technologies can slow down renewable energy’s viability.

5. **Cost of electricity.** The current and projected long-term price of electricity is an important financial consideration in renewable energy procurement and project development.

For off-site utility scale projects, these additional conditions apply:

6. **Favorable regulatory framework.** Probably the most important of the nine factors, Walmart (or other energy consumers) must have the regulatory freedom to directly source electricity from project developers or independent power producers. In some of our markets and many states within the U.S., our ability to drive scale is diminished because we are not able to sign direct power purchase agreements (PPAs).

7. **Grid access.** The electricity must be able to reliably and affordably transmit from the project site to our stores.

For on-site distributed generation projects, we consider the following:

8. **Rooftop rights.** Installing onsite renewable energy is far more viable when we own the building and have access to the roof, parking lot and other real estate to install systems. Some of our markets lease space in the basement of multistory high-rises, creating both ownership and engineering barriers. For future projects, favorable leasing language providing for the addition of renewable energy technologies is important.

9. **Permitting and regulatory freedom.** Many of our attempts to install renewable energy on our roofs, parking lots or land have required significant time working with regulators to manage permitting rules that inadvertently prevent renewable installations.

Walmart is actively working with key global stakeholders such as the World Economic Forum, the World Resources Institute, and the World Wildlife Fund to remove barriers and accelerate catalysts related to the nine conditions above.



Greenhouse gas (GHG) emissions and renewable energy



In 2005, Lee Scott, Walmart's Chief Executive Officer at the time, said, "Climate change used to be controversial, but the science is in and it is overwhelming. Every company has a responsibility to reduce greenhouse gas emissions as quickly as possible." We still believe this today. More than ever, we know that our goal to be supplied 100% by renewable energy is the right goal. And we know that complementing renewable energy with energy efficiency is especially powerful. Walmart can help lessen impact to climate systems, reduce greenhouse gases, save money for our customers, and reduce dependence on oil.

Energy to power our buildings generates 80% of our corporate GHG footprint from operations and we will always need energy to power our stores to bring people the products they need and love.

Successfully achieving our 2005 goal to reduce GHGs by 20% from 2005 stores, clubs and distribution centers avoided about 3 million metric tons of GHGs. When fully implemented by 2020, we forecast that our Vision 2020 commitments to reduce energy intensity (kwh/sq.ft.) by 20% and to drive the production or procurement of 7 billion kilowatt hours of renewable energy will avoid 9 million metric tons of GHG emissions per year. That's the equivalent of taking 1.5 million cars off the road.

We have big plans to grow and serve many more customers in the years ahead. With those plans, many would expect our greenhouse gas emissions to grow significantly as well. From 2005 to 2013, our square footage increased 45% and sales grew 51% while our emissions grew only about 12%. We've shown that we can grow our business while slowing our environmental impact.

As Walmart grows around the world, our energy demands will increase – even with dramatic efficiency efforts. Thus, we need to accelerate our efforts to make sure we are serving customers more efficiently and sustainably than anyone else. Walmart's Vision 2020 energy goals will further uncouple our growth from our GHG emissions. In fact, we forecast for the first time that the greenhouse gas emissions from our buildings' energy use will decrease by 2020.

Conclusion

Walmart's commitment to be supplied 100% by renewable energy is consistent with our business strategy and mission. Just as importantly, it reaffirms our leadership role and allows us to leverage our size and scale in a way that benefits not only our customers and the communities we serve, but it also drives meaningful change in promoting widespread adoption of renewables. Renewable energy is our energy future, and we are unwavering in our commitment to reach our goal in a way that advances our mission: to help people save money and live better.

At the same time, renewable energy is not the only component of our strategy. As a company, we are consistently striving for excellence in operations. This applies to energy, too. By adopting new technologies in energy efficiency, we are reducing the amount of energy required to power our stores. Scaling renewables while accelerating efficiency is our vision for a more sustainable business.

Walmart's approach is ever-evolving as new approaches to renewable energy emerge. The company reserves the right to edit and update this document in time.

