



## Companies Quest for Carbon Neutrality – Role of Energy Storage

by Rida Arshad, *Research Analyst – at Power Technology Research*

- Globally as the Covid-19 associated lockdowns and restrictions were eased and economies finally opened up, an upward trend in private corporations committing to carbon neutrality was observed.
- 217 businesses have made commitments to 'The Climate Pledge' to achieve carbon net neutrality by 2040 which is 10 years earlier than the target set under the Paris Agreement.
- PTR believes energy storage will play an even greater role in the coming years, as battery prices go further down, and the business case for installing solar and storage becomes more feasible.

Globally as the Covid-19 associated lockdowns and restrictions were eased and economies finally opened up, an upward trend in private corporations committing to carbon neutrality was observed. An increasing number of companies are now shifting to alternative sources of energy to power their day-to-day operations. This is being done for several reasons ranging from reducing carbon emissions to achieving clean energy targets.

217 businesses have made commitments to 'The Climate Pledge' to achieve carbon neutrality by 2040 which is 10 years earlier than the target set under the Paris Agreement. The companies that recently became signatories of The Climate Pledge include IVECO Group, Arrival, Segro, Fortescue, Snap Inc, Precision QA and Waterbound Real Estate.

Google and Starbucks are two leading companies that are actively focusing on reducing carbon emissions and achieving carbon neutrality in the long run.

Google plans to procure renewable and battery storage assets amounting to USD 600 Million in order to power their data centers in Virginia from 90% carbon free electricity. On the other hand, it has also started working on a demonstration project at one of the data centers it owns in Belgium. The project will install a battery storage system aimed at providing back up power to the data center followed by provision of valuable services to the local electricity grid.

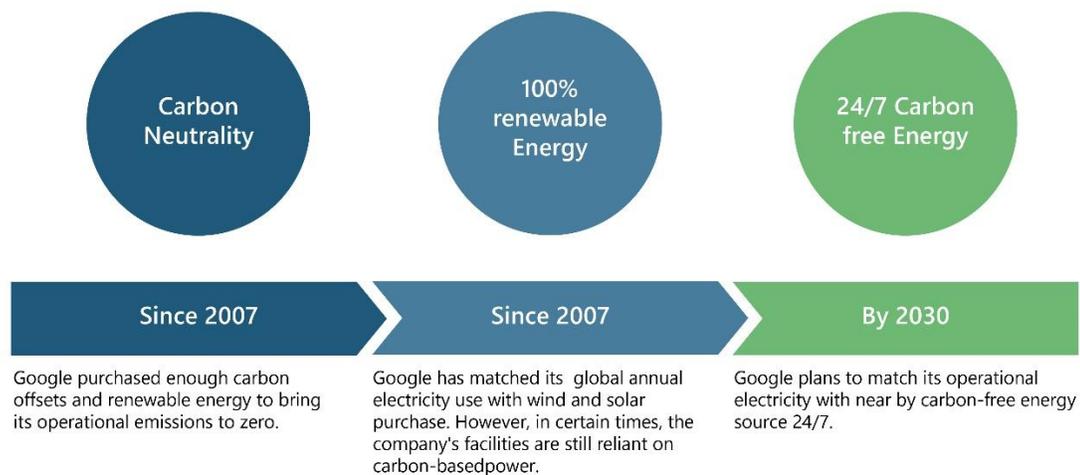


Figure 1: Google's journey to 24/7 carbon free energy.  
Source: Google

On the other hand, in order to support its sustainability goals, Starbucks is signing not only solar but solar plus storage virtual power purchase agreements. According to the deal carried out between Starbucks and Terra-Gen, 24 MW of solar and 5.5 MW of battery storage capacity from the Edwards and Sanborn project in Kern County will be provided to Starbucks. According to Terra-Gen, which is a renewable energy developer, the project is expected to come completely online before 2023.

Additionally, Starbucks made a global commitment that it will reduce carbon emissions by 50% by 2030. In line with these goals Starbucks Japan planned to transition 20% of its portfolio which accounted for 350 free standing operated stores to 100% renewable energy by the end of October 2021. 301 out of 350 stores of Starbucks in Japan were able to shift to transition to renewables till may 2021.

While the initiative from private companies on their own is significant, the role of government policies and incentives in this regard cannot be ignored which enables the private sector to transition to clean energy.

## Role of Governments in Incentivizing Companies Towards Carbon Neutrality

Governments have a significant role in providing the much-needed push to private corporations to shift to cleaner sources of energy through a number of measures including carbon taxes, incentives and rebates.

### Carbon Taxes and Incentives

Imposition of carbon tax plays the role of an enabler when it comes to deployment of clean and sustainable energy resources. Currently, there are approximately 64 carbon pricing initiatives, among which the European Union Emissions Trading Scheme (EU ETS) is one of the largest carbon pricing initiatives globally. The 'cap and trade' system includes emissions from factories, power plants and other installations in 27 EU member states. US and Australia are few examples of developed economies that do not have nationwide carbon pricing schemes in place till date.

Similarly, incentives and rebates are also quite effective in pushing private corporations and industries to cut down on carbon emissions. For instance, consider the Efficiency Maine's C&I Prescriptive Program that provides set incentives to industries and other commercial entities. These incentives are aimed at reducing the cost of projects that assist the industry to consume energy more efficiently.

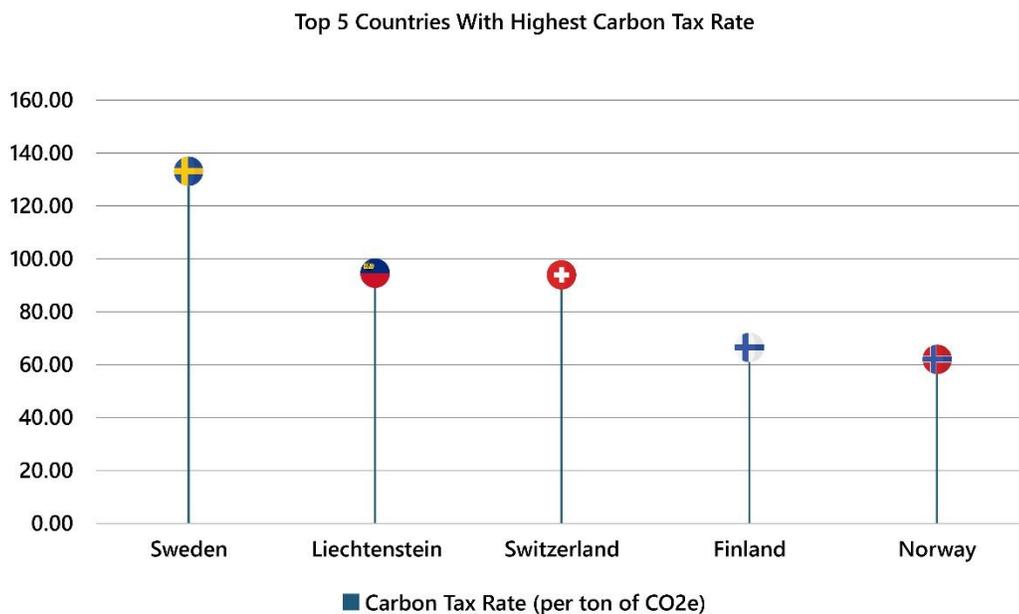


Figure 2: Top 5 countries with highest carbon tax rate.

Source: World Tax Foundation

## Looking Ahead

PTR believes energy storage will play an even greater role in the coming years, as battery prices go further down, and the business case for installing solar and storage becomes more feasible. For countries where per unit cost of electricity is on the higher side, it makes much more sense to install solar alongside storage to help curtail peak time charge and reduce electricity bill while catering for carbon emissions.

However, PTR believes while installing energy storage it makes much more sense to proceed with a case-to-case approach instead of a general approach. For instance, in Ontario under the Global Adjustment Charge (GAC) which is an electricity pricing regime imposed by transmission operator Ontario Independent System Operator (IESO) requires companies with large electric loads to pay a hefty premium in order to draw power from grid during peak hours. Hence, installing batteries to shift peak demand to off peak hours can help reduce costs drastically along with the provision of assistance in achieving clean energy targets of private companies.

That, with supporting policies and each country's climate targets, will encourage more companies to either install on-site solar and storage or buy it through PPAs. However, policy and carbon taxing will play a huge role as companies, regardless of their green energy goals, will only transition to renewables, if the business case has financial viability.

### Contact:

Hassan Zaheer - Exec. Director Client Relations & Advisory

+49-89-12250950

([hassan.zaheer@powertechresearch.com](mailto:hassan.zaheer@powertechresearch.com))