Decarbonization

Addressing decarbonization at the grid edge

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Foreword

This whitepaper discusses decarbonization and how it affects consumers in the commercial and industrial (C&I) sector. It is based on expert insight and market interviews conducted during summer of 2020 and reflects Siemens' and Delta-EE's common view on the topic.

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Executive summary

Decarbonization is a critical transition that is affecting all businesses in the C&I space and is reshaping the foundations of the energy industry. A key driver of this transition is policy, spearheaded on a global scale by the Paris Agreement. In parallel to this, two other pillars transforming the energy landscape, **decentralization** and **digitalization,** are significant enablers of decarbonization, making it more technically feasible than ever before. These technical developments are helping overcome some of the challenges of decarbonization and are expanding the opportunities for optimization and new business models.

This transition is creating urgency for businesses to act. Action is needed to reduce exposure to potential risks from policy-driven **increased operating costs,** from increased energy costs or increased compliance costs. However, decarbonization also creates opportunities that go beyond long-term financial savings: **increased brand reputation, customer preference over competitors and attractiveness to investors** are some of the benefits for businesses who have started decarbonizing.

Consequently, many companies globally have already acted and have implemented decarbonization strategies. The success of any strategy will depend on a clear vision and strong commitment from the business, with responsibilities clearly allocated to those with a dedicated position, most likely the CXO level: **clear targets, clear commitments and a clear budget are key prerequisites.**

Strategies will differ from business to business, but typically will involve specific actions on the **management side,** on the **energy demand side** and on the **energy supply side.** For this purpose, expert support from specialist companies, can be invaluable, as it can help prioritize the right actions across the business and manage some of the risks around project implementation, performance and financing.

Siemens is well-placed to help its customers with their decarbonization goals, due to its coverage of the complete energy cycle from sustainable power generation over low loss power transmission to intelligent distribution and storage and efficient energy use, especially in C&I. Siemens is also implementing its own decarbonization strategy with a commitment to be carbon-neutral by 2030 and reduce its CO_2 footprint by 50% in 2020.

What are the political drivers for decarbonization?

Global policy to support a transition towards decarbonization

Climate change and its impact on the environment and our way of life have undoubtedly raised concerns and have shifted the political agenda globally towards decarbonization. The Paris Agreement, introduced at the UN climate conference in December 2015, has set the framework for a global response to climate change. Among the key measures that global leaders have agreed on is to keep global temperature increase "well below" 2 °C and to pursue efforts to limit to 1.5 °C. 194 parties and the EU have signed the agreement including some of the world's biggest polluters, which shows the significance of fighting climate change for the vast majority of governments around the world.

More specifically, the EU and its member states have set ambitious goals to reduce greenhouse emissions by 2020 and 2030 as well as achieve carbon neutrality by 2050. To meet these ambitions, different mechanisms and paths are being utilized globally.

Emissions trading schemes or carbon tax initiatives implemented around the world