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The *dual transition*

The path to a digital and sustainable economy

Conversations
FOR TOMORROW

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Executive conversations with...

NADÈGE PETIT

Chief Innovation Officer

Schneider Electric

POWERING A SUSTAINABLE FUTURE

Schneider Electric is a 180+ years old French multinational company, which specializes in digital transformation of energy management and automation. The company reported a revenue of €36 billion in 2023. It has featured in both, Corporate Knight's Global 100 list of Most Sustainable Corporations in the World and Dow Jones Sustainability World Index for 13 consecutive years.

Nadège Petit is the chief innovation officer of Schneider Electric and a member of its global executive committee. She oversees Schneider Electric's external innovation activities, including its corporate ventures arm, SE Ventures, as well as its incubations, partnerships, joint ventures, and prosumer businesses. Nadège joined Schneider Electric in 2004 and has held various operational and management positions globally. In May 2023, Nadège became a member of the supervisory board of E.ON SE, serving as a member of that organization's Innovation and Sustainability Committee. Nadège is based in Boston, USA.

As the Chief Innovation Officer of a firm at the center of the energy transition, how do you assess your progress and that of your customers toward net zero?

Nadège Petit,
Chief Innovation Officer,
Schneider Electric

At Schneider Electric, we often say that our scope 1 and 2 emissions become our customers' scope 3. So, our own progress toward net zero is crucial to ensuring that our customers can also get there. We are proud of our commitment, which has four key elements:

- **2025: Become carbon neutral in our operations**
- **2030: Achieve 25% absolute carbon reduction across our entire value chain, and get our operations 'net zero ready'**
- **2040: Become end-to-end carbon neutral across our value chain**
- **2050: Achieve net zero CO_2 emissions across our entire value chain**

We're certainly seeing a desire across industries and sectors to progress to net zero. This aligns with broader, undeniable trends toward greater sustainability, whether from a policy or public sentiment standpoint.

SCHNEIDER ELECTRIC AND THE DUAL TRANSITION TO SUSTAINABILITY AND DIGITAL

How is the dual transition to a digital and sustainable world transforming Schneider and its customers?

We embarked on this dual transition many years ago. It's ingrained in what we do – that's why it is core to our mission of being our customers' digital partner for sustainability and efficiency.

> **"It (dual transition) is core to our mission of being our customers' digital partner for sustainability and efficiency."**

For the grid to become more sustainable, it needs to become more flexible, more adaptable – and, yes, digital. It needs to evolve from the analog, unidirectional transmission of energy from plant to consumer, to become a truly multi-directional platform, through which energy is orchestrated from the grid to prosumers.

For prosumers, our upcoming range of home-energy management products will accelerate the adoption of clean-energy technologies. These will work in synergy with our portfolio companies including EnergySage, our online comparison marketplace operator, to help our customers choose a home energy system, as well as Qmerit, an installation partner, to facilitate easy and smooth installation.

For the grid, we've coupled the demand-side capabilities of Uplight, a customer-engagement platform, and Autogrid, a provider of distributed energy resource-management systems, with the advanced network-management software from our digital grid business. And, in the electric vehicle (EV) space, EVConnect can select, deploy and manage reliable EV-charging solutions.

Working together, these five portfolio companies offer a complete, end-to-end set of solutions spanning every segment of the grid-to-prosumer journey. This helps to simplify the experience and remove friction for the consumer – and accelerate progress toward a sustainable future.

ECOSYSTEMS FOR A GREENER PLANET

What is the role of collaboration and ecosystems in our collective transition to net zero?

Collaboration is essential. Ecosystems need to be able to align to create and realize efficiencies between them. This is equally true, whether it's utilities orchestrating prosumers' assets for virtual power plants (VPPs) to relieve stress on energy infrastructure, or whether it's at a more micro level, addressing the systems in a particular facility, or even within the home, sharing data and working together to optimize efficiencies, and power consumption and generation.

"Collaboration is essential. Ecosystems need to be able to align to create and realize efficiencies between them."

NEXT-GENERATION GRIDS

What are the key technologies that you believe will have an outsized impact on energy grids?

I would first say VPPs – which are formed when we aggregate the energy storage of groups of prosumers to augment traditional generating capacity. VPPs can rapidly add significant surge capacity to the grid and, when integrated into advanced distribution management systems (ADMS), the resulting automation is game-changing. Such prosumer technologies will have a huge impact, and all are necessary to equip the grid for the new (electrified, digital) energy landscape.

How is Schneider harnessing emerging tech such as artificial intelligence (AI) to build solutions for the future?

AI has the potential to be transformative as we build the new energy landscape. AI-powered VPPs can aggregate and optimize large portfolios of distributed energy resources (DERs), from EVs and battery storage to solar panels and smart loads, using algorithms to account for each DER's specific characteristics and maximize overall utilization. This, in turn, reduces the need for balancing with inefficient and polluting sources (such as gas peaking plants). It can also strengthen the resiliency of the grid,

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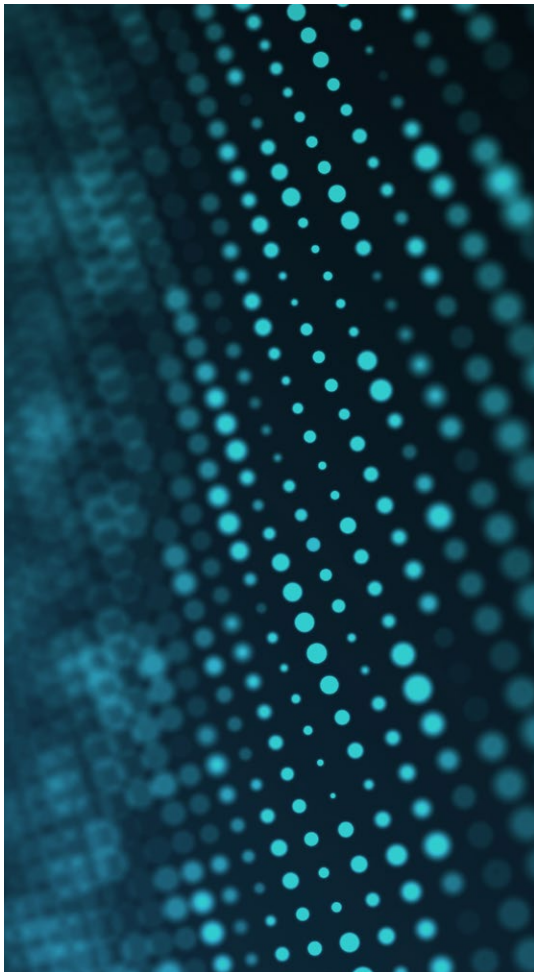

predicting maintenance needs and minimizing downtime, and can help us in the discovery of novel materials for batteries, carbon capture, and hydrogen production.

Increasingly, AI will be at the heart of the modern electrical grid, to develop predictive models of energy production and consumption, and to manage distributed resources accordingly.

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How does interoperability enable innovation and sustainability?

Interoperability can be a huge accelerator, while closed standards and hardware 'walled gardens' can often be a drag on innovation. That's why, as we develop new technologies, products, and services in the prosumer energy space, we aim to be hardware-agnostic and interoperable. So, for example, our home energy systems can interoperate with components from other providers, and our software-based grid-management solutions are designed to coexist with a broad array of infrastructure and hardware.

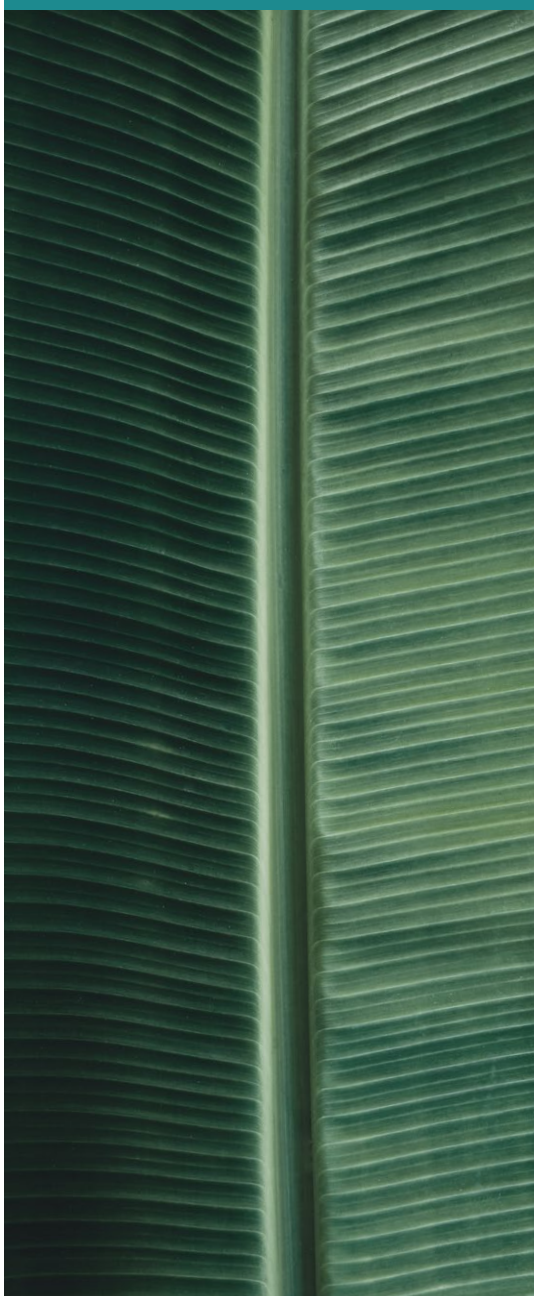
"Interoperability can be a huge accelerator."

What are the roles of prosumers and microgrids? How do you envision the energy grid of the future?

The energy grid of the future will be distributed and multidirectional. We have two joint ventures to deliver customized Energy-as-a-Service solutions: AlphaStruxure™ and GreenStruxure™. These help consumers and communities improve energy resilience and sustainability, while also reducing performance risk and capital burden. At one end of the scale, you have large projects, such as the new terminal at JFK airport or the bus transit system for Montgomery County, Maryland. At the other end, there are small, local microgrids, bringing reliable power supply to remote locations in developing countries.

Microgrids make all of this progress happen. When a microgrid connects multiple prosumers, each with their own power generation and storage capacity, you unlock the true potential of this adaptable and flexible grid.

"The energy grid of the future will be distributed and multidirectional."



IN CLOSING

How do you build a culture of innovation and sustainability in a large firm such as Schneider?

We all know that the culture of large organizations can stifle innovation. To help overcome this challenge, we have set up our Innovation at the Edge organization. It acts as an internal innovation engine, with our own R&D resources, with external input from our investments in early-stage innovative companies. This helps us discover, develop, and deliver the disruptive technologies that we need to progress towards our collective goal of a new, electrified, and digital energy landscape.

If you had a magic wand, what would you change to make the planet more sustainable?

More electrification! We now have the tools and the technologies available to bring emissions under control. We can retrofit existing buildings and industrial operations; we can electrify; we can digitize … but what I would change first would be to bring every building, every structure, into the prosumer equation. Imagine if every home, every commercial or industrial building was able to produce its own clean, renewable energy, storing the excess and feeding it back into a digital, intelligent grid for use when needed. This is the dramatic change I'd like to see.

Nadège Petit,
Chief Innovation Officer,
Schneider Electric

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