

# Nexans Perspectives

#3  
MAY 2021

## MEGATRENDS

**More than just cables:  
systems and solutions set  
to electrify the future**

## INNOVATION

**Innovating to electrify:  
a conversation with  
Jérôme Fournier**

**“By 2030, we will need sustainable, renewable, decarbonized, digitally managed and optimized electricity — for people, for business and for the planet.”**

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# Simplify to amplify: Our path to electrify the future



**CHRISTOPHER GUÉRIN**  
CEO NEXANS

As Nexans faces the challenges ahead, I can't think of a time where our organization has been in such a favorable position.

Why do I say that? In February, on our Capital Markets Day, we announced exciting news: a new strategic plan that is set to shape our future success. More than an equity story, what we detailed last March was an in-depth blueprint to transform Nexans into a pure electrification player and global leader, thanks to our strategy "simplify to amplify".

After months of mega-trends analysis, it became clear that we are neither large enough nor resilient enough to remain a generalist with all the activities we currently undertake.

In short, remaining a global leader would require more investment than we are currently able to make.

So instead, our new strategic plan will keep us focused on electrification, targeting our investments across our entire value chain: transmission, distribution and usage of electricity.

By becoming a specialist, we will take the global lead so that, more than ever, we can proudly say: Nexans electrifies the future!

Simplify to amplify isn't only a philosophy to our activities — it will transform our portfolio as well. Which is why we took the opportunity to move away from focusing on 17,000 customers to only our most strategic 4,000 customers. Doing so means we can serve our

customers better, provide more value and ensure we shift from being a commodity to a valuable service and solutions provider.

In the coming months, we will widen our perimeter in electrification with an aggressive M&A sequence that will make Nexans a worldwide leader in this field. Our choices will be driven by our desire to find

companies that expand or enlarge our assets, values and skills in electrifications.

That said, I want to make it clear that the activities Nexans is divesting remain highly valuable and profitable in growing markets. We simply don't have enough resources to support them all in the long term.

In the meantime, we are not in a rush. There will be no radical transformation plan and no plants. We are, instead, looking for new investors and partners who are global specialists in their field and who can propose a real industrial development plan to support these activities and offer them the future they deserve.

As I said, I am extremely optimistic about the future of Nexans. For the first time in a long time, we are in a leading position, with a clear roadmap and a long-term vision.

The trust of analysts, investors and customers has returned. Our employees are engaged. Supported by mega-trends in electrification and backed by management, the best is yet to come.

By 2030, we will need sustainable, renewable, decarbonized, digitally managed and optimized electricity — for people, for business and for the planet. It's an electrical revolution that will demand a new generation of cables and systems capable of supporting massive flows.

And we are ready to take on that challenge because

we are the pioneers of tomorrow's electrification. We are Nexans.

In the third issue of our Digital Magazine, we delve deeper into Nexans' transformation into a pure play electrification leader — ready to supply the cables, systems and expertise needed to create the sustainable, renewable, decarbonized world of tomorrow. We also talk about our Innovation approach including the opportunity around the Internet of Things, Offshore Wind and some of our work in Africa to support the continent's electrification needs as well as our work there with the Nexans Foundation.

**Our new strategic plan will keep us focused on electrification, targeting our investments across our entire value chain: production, transmission, distribution and usage of electricity.**

# More than just cables: systems and solutions set to electrify the future

GUILLAUME EYMERY  
STRATEGY DIRECTOR

The race is on. Nexans is becoming an Electrification Pure Player by 2024 — leading the charge to a safer, sustainable, renewable, decarbonized and accessible new world of electrical energy.

To get there, Nexans is simplifying its 34 sub-sectors into 12 to better focus its resources to amplify its role in electricity generation, transmission, distribution and usage. This unique new positioning enables Nexans to scale up and specialize assets on an ecosystem that will represent more than 65% of the total cable business in 2030, while providing end-to-end solutions of ongoing electrification challenges.

## The wind in our sails

Offshore wind is increasingly profitable compared to other renewable technologies and will be a major enabler of sustainable energy

transition needed to help countries achieve their Paris Agreement goals over the next few decades.

The acceleration of energy decarbonization presents an incredible opportunity for growth in the offshore wind market, which is expected to expand from EUR 2.5 bn to EUR 8 bn by 2030<sup>1</sup>. While still in its early stages, the development of offshore wind energy — thanks in large part to major cost improvements, strong acceptance and regulatory push for renewables — represents an important market for power cables and Nexans moving forward. Many countries such as the U.S, UK and China are accelerating their plans for increased offshore wind projects which also include floating wind farms in deeper waters. And Nexans will support this growing market

with increases in cable production capacity as well as installation services using our new state of the art cable laying vessel, Nexans Aurora.

## We're all connected

As offshore windfarms rise up, ensuring continuity of energy supply for countries is critical. High-voltage interconnectors are important facilitating technology for leveraging offshore wind to successfully meet climate commitments. They run under the sea, underground or via overhead cabling to connect the electricity networks (highways) within and between two countries. This allows the trading and sha-

ring of surplus energy from any source. The interconnection cable market — including the design, manufacturing and installation of cables on land and subsea to exchange power — will grow as well to an estimated EUR 5 bn by 2030<sup>1</sup>.

## Useful for utilities

Trillions of euros of infrastructure investments have been announced across Europe, U.S. and Asia. These investments support the needed renewables development, like Wind as well as grid modernization to prevent power blackouts due to the average age of electricity grids in Europe and North America are now



more than 40 years. This key area of electrification is expected to see significant market growth — about 4.2%<sup>1</sup> a year over the next decade. Here too, Nexans is well positioned to support updated distribution needs and demand that depend on the modernization of infrastructure.

The building market

Significant growth of the building cable market is anticipated due to the increase of a growing electrified population as well as new electricity usages such as e-mobility . In emerging countries, the market is expected to reach EUR 81 bn by the end of the 2020s<sup>1</sup>. In industrial countries, the need is more focused on building modernization — in particular, those built in the 1970s and 1980s with PVC cables that can propagate fire and toxic smoke. There is a rising focus on safety.

The need for increased connectivity in and between these structures will also be paramount. In both marketplaces — emerging and industrial — Nexans differentiation and product innovation are poised to make a big difference.

Already today, Electrification markets represent more than 70% of world cable demand. The opportunity for Nexans to transition to an electrification pure player is clear based on future market growth. However, we need to capture this opportunity by ensuring we continue to provide exceptional value to our customers.

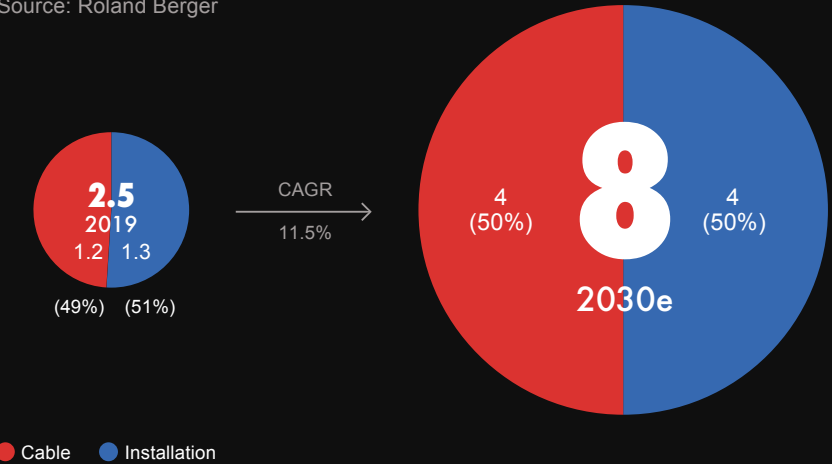
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1 — Electrification Market Study, Roland Berger, 2021

Key Figures

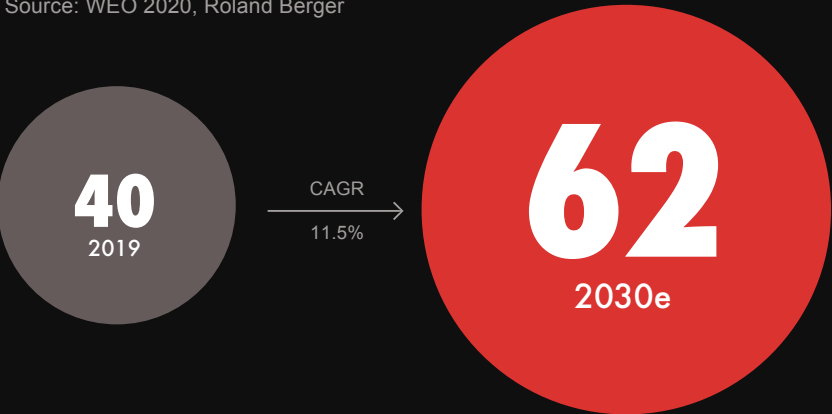
CABLE MARKET FOR OFFSHORE WIND FARMS

Offshore cable market, forecast and key figures including installation  
[EUR bn; 2019-30]  
Source: Roland Berger



CABLE MARKET FOR UTILITIES

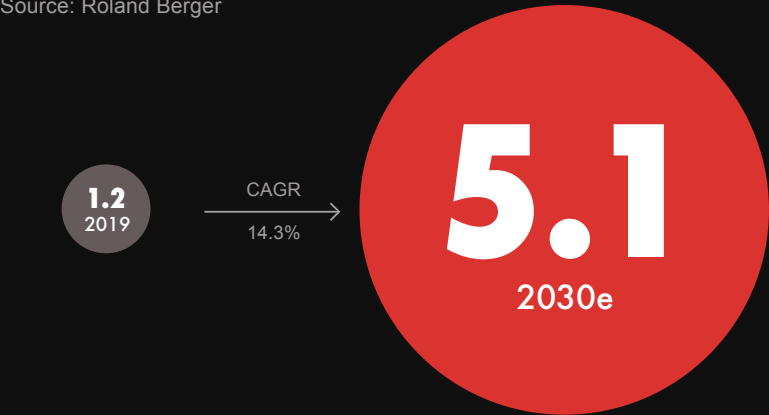
Utilities cable market forecast<sup>1</sup> and key figures  
[EUR bn; 2019-30]  
Source: WEO 2020, Roland Berger



1 – excluding accessories

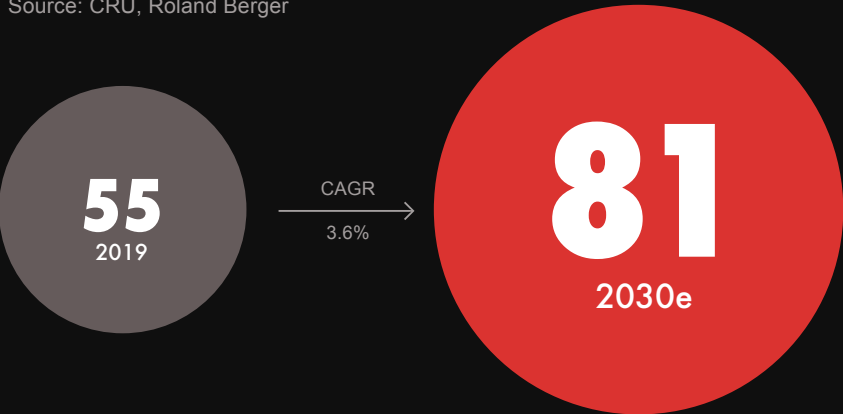
CABLE MARKET FOR INTERCONNECTIONS

Interconnection cable market, forecast and key figures including installation  
[EUR bn; 2019-30]  
Source: Roland Berger



CABLE MARKET FOR BUILDINGS

Buildings cable market forecast<sup>2</sup> and key figures  
[EUR bn; 2019-30]  
Source: CRU, Roland Berger



2 – excluding accessories

# Innovating to electrify: a conversation with Jérôme Fournier

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**Jérôme Fournier is Nexans Corporate Vice President, Innovation, Services & Growth, and previously spent over a decade involved in R&D at the Nexans Research Center in Lyon and Nuremberg.**

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**We asked him to share his thoughts about Nexans' amplification of its investment in electrification, including its decision to focus 100% of its R&D and services teams to electrification demand.**



**Q: What's driving the need for cable and cable services innovation in the electrification market?**

From Nexans' standpoint, there are actually a variety of parameters currently driving innovation — the energy transition, the increase in electricity needs, the rise of electric mobility, just to name a few. Innovative solutions are also needed to address our ageing grids, to reduce the risk of power outages and, ultimately, to deal with climate change and guarantee a climate trajectory below 1.5 °C.

**Q: Can you tell us more about Nexans' innovation goals and strategy?**

Of course. Electrification is the biggest market of our industry and one that holds the greatest potential for change and growth. It's why we've decided to allocate 100% of our R&D and innovation to support electrification — with 100 M€ annually to spend, 800 experts and the development of more than 50 innovations each year to help us achieve technological leadership in this area.

We are committed to amplifying our R&D investment to enrich and accelerate our offerings in three main areas: customer experience, digital solutions and sustainable development.

But we can't do it alone. Our innovation process relies on a number of partnerships such as a risk management process with Bureau

Veritas, digital partnerships including cloud, data and AI solutions with Microsoft, Connectivity partnerships for worldwide deployment of our IoT solutions with leaders like ffly4u, Sigfox and Orange. We've also proposed a recycling service in collaboration with Suez and we're working closely with Carbon 4 and EcoPassport to reach our commitment to carbon neutrality to fight climate change.

**Q: Can you share more details about these partnerships?**

For example, in order to integrate digital solutions into our industrial processes, we've called on Schneider Electric to support us through their own digital transformation experience and EcoStruxure platform to help accelerate our journey. Partnering with Schneider will allow us to advance rapidly in Industry 4.0. And, by digitizing our factories, we'll further improve our commitment to achieve carbon

neutrality and our cable products and services customers will experience the benefits through enhanced product availability.

On the customer experience front, we've signed a long-term partnership with Shippeo, a leader in multimodal supply chain transportation,

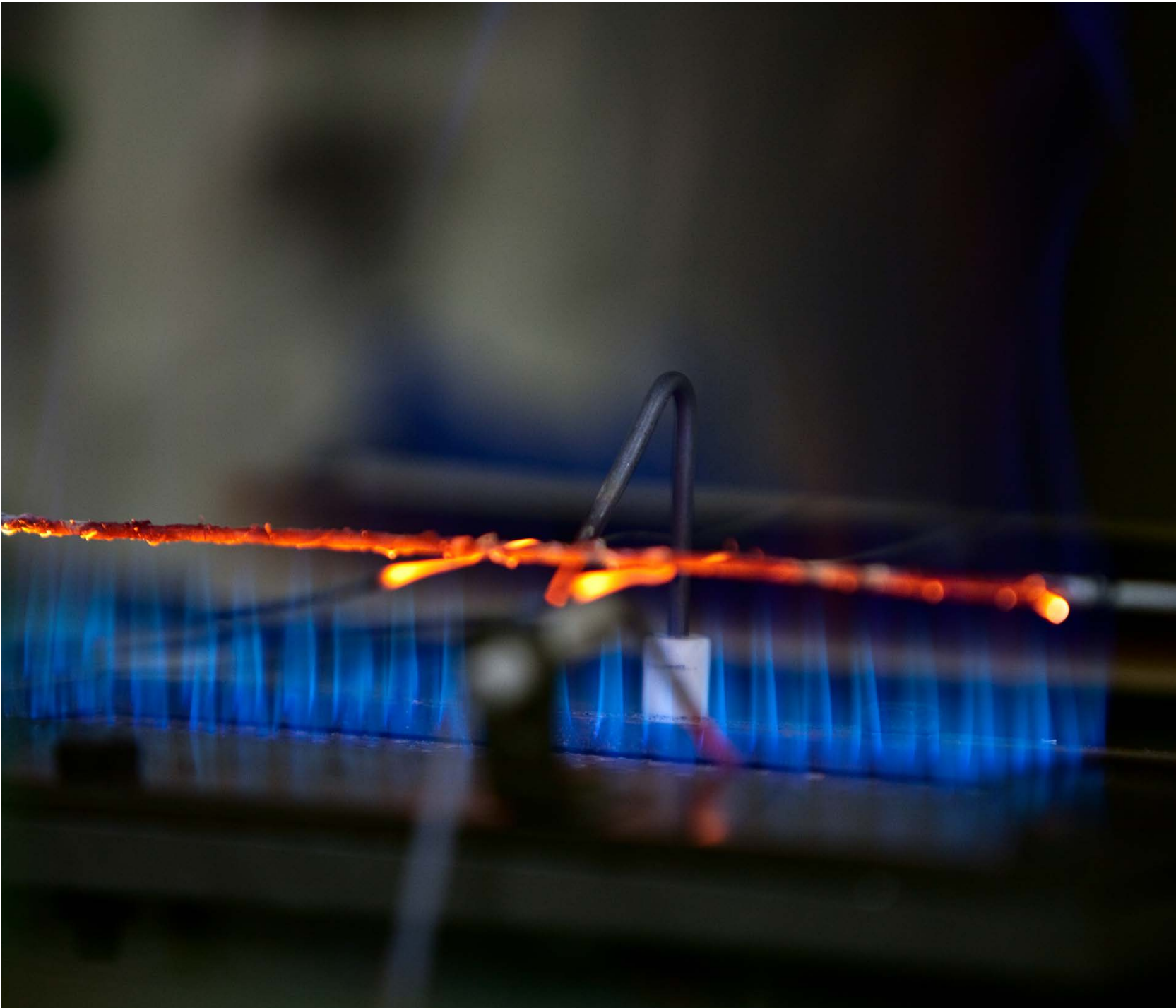
to implement an innovative new digital service that leverages automation and artificial intelligence to expand our global transport operations capabilities. We began rolling out this transportation offering earlier this year. And this will accelerate our vision for enhanced customer satisfaction

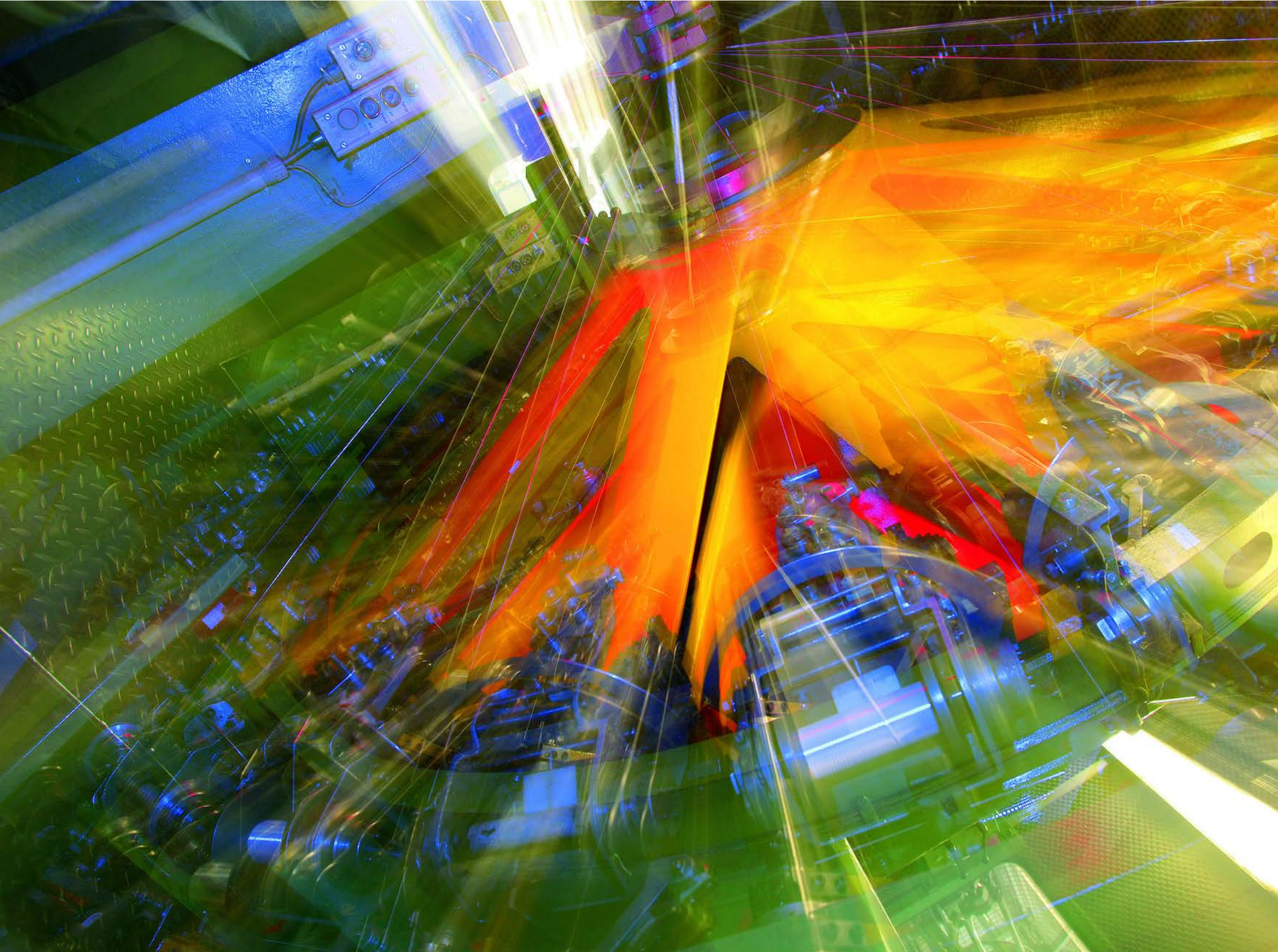
and transition to an even more customer-centric organization. Digitizing our supply chain is an integral element of our goal to electrify the future and our partnership with Shippeo helps us take that objective to the next level.

We've also launched a disruptive company

performance model called the E3, with the E standing for Economic, Environment and Engagement. Every quarter, our activities, unit by unit, are challenged through an innovative model to find the right balance of performance between those three elements.

**"We are committed to... R&D investment... in customer experience..., digital solutions and sustainable development."**





**Q: And finally, can you tell us about an example where Nexans is excelling in innovation?**

Well, it's about making the electrical grid smarter and the smart technology behind superconductivity is an important part of that. Two-thirds of the world's population will live in cities and megacities where the density of buildings and infrastructure doesn't allow for traditional. A single cable with Nexans Superconductivity technology can convey the equivalent of 3 nuclear reactors in several seconds, anywhere at any time.

We've also developed connected cable solutions and connected accessories to improve the reliability, efficiency and safety of all types of operations in electrical industries, using real-time data and we're from 10,000 to 100,000 connected devices in three years.

All told, I think the technological innovation in electrification being spearheaded by Nexans is key to sustainable, balanced and equitable growth that benefits our customers and, ultimately, humanity. It's an exciting time!

# Making vital connections for offshore wind: key to the world's carbon-neutral future

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**Ragnhild Katteland,**  
Executive Vice President  
of the Subsea and Land  
Systems Business Group

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**The European Union, UK, Japan and the U.S., together with more than 110 other countries have pledged carbon neutrality by 2050; China says it will do so before 2060. These targets are incredibly ambitious, demanding rapid change and significant investment.**



Electrification, efficiency gains and behavior changes are central to achieving a carbon neutral future. Core to this will be the Power sector investment needing to triple from \$760 billion in 2019 to \$2,200 billion in 2030, with more than one-third spent to expand, modernize and digitalize electricity networks. As well, transportation, factories and buildings need to be powered by sustainable electricity. Providing this incredible amount of electricity from solar, wind and hydro will be the defining challenge of the race to net-zero carbon emissions.

**Offshore Wind helping to make sustainable electrification possible**

One of the key pillars of this effort is offshore wind power, a resource that has gone largely untapped until recently. Further away from land, wind speeds are higher and more predictable, and higher wind speeds produce far more electricity; for instance, a turbine in 24km/h wind generates double the energy of a turbine in 19km/h wind.

Offshore wind has the potential to generate a significant proportion of much

of the world's energy. Currently, Germany and the UK lead the way in offshore wind power. Over half of the world's total offshore wind power is generated by these two countries and Nexans has been a leader across Europe with a successful track record of end to end

supply, install and protection of power export cables for projects like Hornsea 1 and the new Seagreen wind farm, which will be the largest in Scotland. However, to meet the ambitious net-zero carbon goals, Europe, Asia and the U.S. must greatly increase their number of offshore wind turbines.

Fortunately, technological improvements have made offshore wind farms increasingly viable with the reduction of Levelized Cost of Energy by more than five times over the last ten years. Offshore wind is now increasingly profitable compared to other renewable technologies, driving significant growth. The EU recently announced plans to increase the amount of power it generates through offshore wind by 25 times by 2050. It currently produces 12 gigawatts (GW) and aims to increase this to 60GW by 2030. The UK currently generates 10GW from offshore wind and the government has increased its 2030 generation goals from 30 to 40GW.

Outside Europe, other nations are also investing heavily in offshore wind. Over the next decade, China intends to build 50GW of offshore wind capacity and India plans to build 30GW. The International Energy Agency estimates that, by 2030, the industry in the United States will grow by 13 per cent and continue to add 20GW of capacity every year. Globally, experts estimate offshore wind will provide 200GW of clean power in the next decade alone. These worldwide goals are driven by

**"Offshore wind has the potential to generate a significant proportion of much of the world's energy."**

technological improvements. Larger turbines are currently coming on-line which can each generate 15 megawatts, enough power to support 20,000 homes, and offshore wind farms are becoming more efficient.

**"80 per cent of the world's wind potential is found in waters deeper than 60 metres."**

But this becomes impractical at water depths greater than 60 metres. Yet some 80 per cent of the world's wind potential is found in waters deeper than 60 metres. To reach this potential, we must use turbines mounted on floating platforms moored

**Floating Offshore Wind**

Another important development comes in the form of floating offshore wind farms. Currently, most wind turbines are fixed to the seabed.

to the seabed. Nexans has been a pioneer in floating offshore wind farms in supplying dynamic and static cable solutions for Equinor's Hywind Demo





and Hywind Scotland floating wind turbine projects. Hywind Scotland, the world's first floating wind farm, has been producing electricity since 2017. It has achieved just over 57% capacity factor for the 12 months ending March 2021 which is a new record for offshore wind farms. The project features five turbines with 154 meter diameter rotors, with a total installed capacity of 30 MW. It is connected to shore by a 30 kilometer long export cable at a transmission voltage of 33 kV.

The coming decade's ambitious offshore projects will be the most complex, risky and demanding efforts to date. We have a very sound risk management track record as we have experienced no internal failures of our offshore export cables. To help the industry with certainty around offshore projects, we have initiated a long-term partnership with Bureau Veritas. Together, we will certify the Nexans way of managing EPCI (Engineering Procurement Construction Installation) projects and risks and develop new standards for the Offshore Wind and Interconnection industry. This will reduce the risk profile of such projects.

### Cables and Interconnectors

We produce every type of land cable that connect turbines to grids, and we are the number-one supplier of subsea high-voltage export cables that brings power to shore. And we expertly install them to ensure project success.

We also provide cables inside the wind turbines themselves as plug and play harnesses that are driving the cost of new turbines down. This year we will launch the CLV Nexans Aurora, the world's most advanced cable-laying ship, and approximately half the new installations in Europe will use Nexans products.

Interconnectors are a critical element in improving the security of supply while Europe's

**"Interconnectors are a critical element in improving the security of supply while Europe's energy markets undergo a period of dynamic change."**

energy markets undergo a period of dynamic change. The exchange of Norway's hydropower with Germany's wind generation will enable Statnett and Tennet to achieve the best possible match between electricity supply and demand.

NordLink is a visionary energy project between Norway and Germany that

started test operation at the end of 2020. It is one of the growing numbers of high voltage direct current (HVDC) interconnectors designed to enable two countries to exchange and store energy generated from renewable sources. Playing a key role at the heart of this success was Nexans's advanced submarine cable technology and installation expertise.

The future is bright for offshore wind power. Our industry will be the major enabler of the sustainable energy transition needed to achieve Paris Agreement goals. As electrification specialists, Nexans enables the offshore wind industry to electrify the future by harnessing the power of wind.

# Playing our part to become a pure electrification player

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**Vincent Dessale,  
Chief Operating Officer and  
Senior Executive Vice President**

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**The use of electricity is everywhere around us: where we have human activity, we have the need for electricity – in all buildings (residential, commercial, industrial); infrastructure such as schools, hospitals; in all means of transportation such as railway station, terminal airports even e-mobility; and data centers for which electricity supply is as critical as data connectivity.**



It's an exciting time to work with energy. Countries around the world are setting out on projects of unprecedented scale and capacity, and global energy demand is set to increase by around 40 percent by 2030. Asia and Africa will see the most significant growth, using electricity to power further industrialization, urbanization and rural development. But as Chris Guérin, Nexans's CEO said, all these megatrends lead to the same conclusion – the need for global electrification. As a company, our intention is not only to help drive the process of electrification, we're also committed to taking decisive action to reduce our own carbon footprint.

Sustainable Electrification means that a si-

**"Nexans has always been part of the history of electricity playing a crucial role in the electrification of the world, which is its purpose: Electrify the future."**

gnificant amount of new energy infrastructure must be provided by renewable resources to meet the demand from consumers, governments and conscientious producers. Wind and solar installations are growing rapidly, and the next few decades could see northern Europe powered exclusively by renewables.

Environmental consciousness goes far beyond demand for renewable energy. That's why at Nexans we are dedicated to sustainability in all our endeavors. Safety, decarbonized pro-

duction, energy and water conservation, waste management and pollution are all areas which will see increased focus in the years ahead.

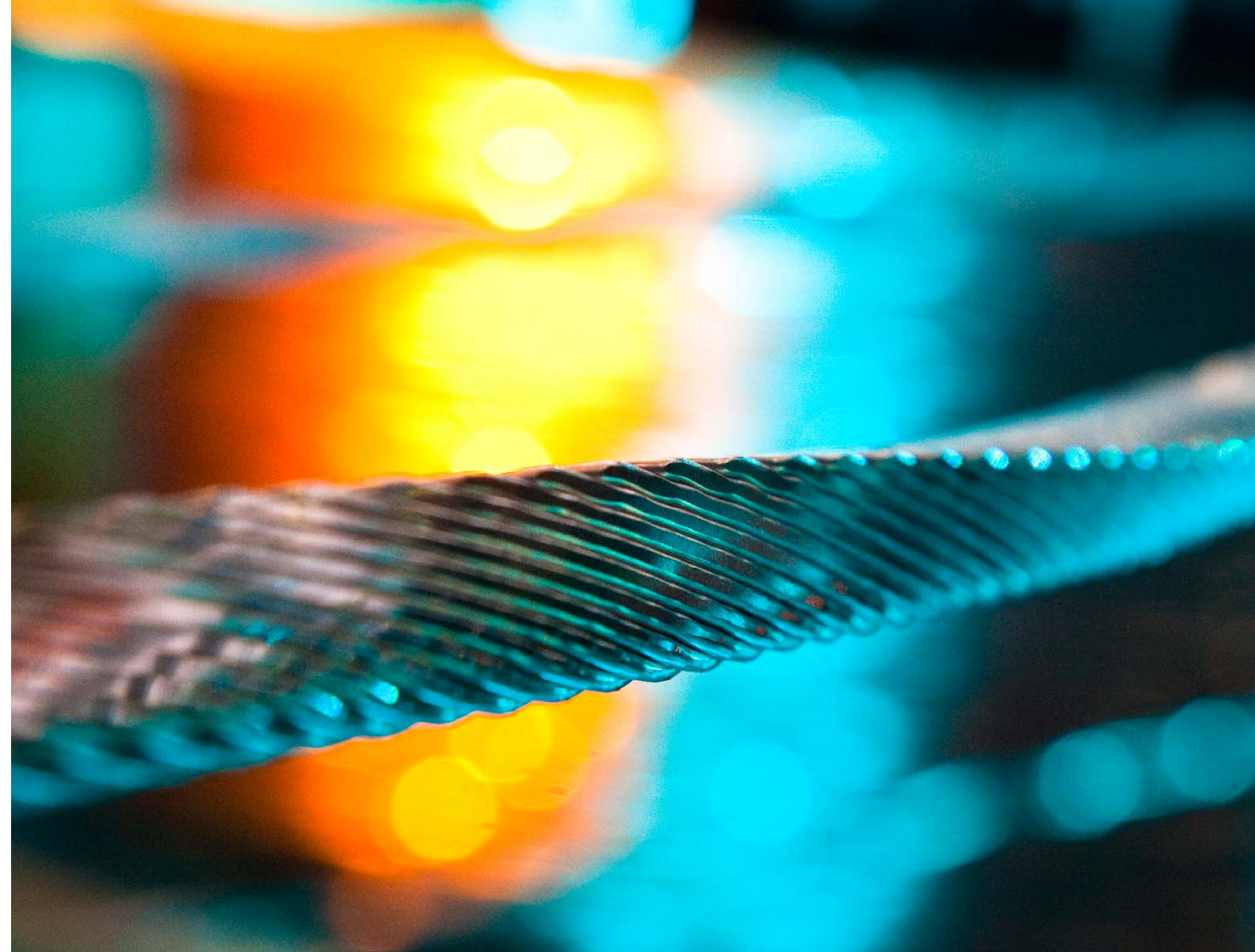
### Recycling cables

It's vital that responsible industry account for the entire lifecycle of their cables to ensure they exert the lowest possible impact on the environment. For the last three decades we put a waste management in the plants through to a global program to recycle cables for our customers. Creating a circular economy for our cable production means we can significantly reduce our carbon footprint. This is a global effort, for example, in Europe in 2008, we established one of the largest cable recycling units in the region while in Chile, our copper recycling projects are making excellent progress.

A key element that delivers maximal sustainability and user-friendliness is our very own Lifemark™ cable marking – a unique marking method which puts a complete content declaration on the cable sheath. This makes it easy to recycle the cable appropriately at the end of its lifetime, minimizing waste and energy use.

### Cables designed for increased security and safety

Because of the increased demand for electricity, old and outdated installations are mostly under-sized, increasing the risks for electrical fires. A recent report shows that over 25% of domestic fires in Europe are of electrical origin<sup>1</sup>. The choice of appropriate cables becomes critical for people's safety. Common building cables often use halogens that emit



heavy smoke and hazardous fumes when burning, impairing evacuation. Nexans advocates the transition to a new generation of cables featuring HFFR (Halogen Free Flame Retardant) insulation with improved features for an easy and quick installation.

The fire-resistant cables play a vital role in hospitals and shopping centers, as well as in tunnels and residential buildings where they maintain the continuity of critical electrical services, such as alarms and emergency communications, during fire outbreaks.

Creating a sustainable future isn't a one-time event. We must continuously take actions to drive our industry forward and make a real difference. We will continue to design products with careful thinking on materials, construction and function through their entire. Every one of our advancements is designed to produce a better experience for our customers, higher standards for our industry and a more sustainable and electrified world.

1 — FEEDS, Residential Electrical Safety: How to Ensure Progress – March 2020

### Taking action every day

# Power up Africa

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**Vijay Mahadevan,**  
Executive Vice President,  
Building and Territories  
Southern Region

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**According to the International Energy Agency (IEA), current and planned efforts to provide access to modern energy services in Africa “barely outpace population growth” and, without addressing this issue, by 2040, 90% of people around the world without access to modern energy will be living on that continent.**



To tackle this immense challenge — particularly in rural areas — Nexans is leading the charge, working with individual African countries, primarily through grid renewal and expansion, to provide safer, reliable and connected access to electricity that benefits their citizens and economies now and over the long term.

### Transformation requires investment

Large-scale deployment of renewable energy could provide half the continent's electricity generation capacity, according to the International Renewable Energy Agency (IRENA). But such a transformation requires an average annual investment of US\$70 bn over the remainder of the next decade.

To support Africa's transition to a more connected and sustainable energy network, we recently brought electricity to 43 rural communities across Côte d'Ivoire by delivering its NEOGRID® turnkey, ready-to-use power infrastructure solution that went beyond cables to applying the company's expertise in project execution — from securing financing to planning, design and installation of aerial low- and medium-voltage cables, poles, transformers, substations and more.

All of the critical equipment was manufactured or supplied by the Nexans plant in Abidjan. We opened our new Abidjan plant to help address the lack of suitable equipment and products for electrification by enabling local production based on our international and standardized expertise.

### From Côte d'Ivoire to the entire continent

We're making progress, rolling out products from the plant as part of Nexans' turnkey solution to bring electricity to even more rural communities but we still have a lot of work to do. In 2013, only 34% of the country's population of 25 million had access to electricity. While that figure is close to 70% today, the reality is over 60% of Côte d'Ivoire's rural communities still don't have electricity. Nevertheless, I'm excited by the progress that's being made. It is really a great experience and satisfying to see the glow in the eyes of habitants when they see light after sunset for the first time in their lives.

While we are primarily focused on northwest Africa right now, we are committed to making headway across the continent. This year, Engie was selected by Nexans Morocco to build a 2.5 MW solar power plant on the roof of our cable manufacturing plant in Mohammédia, near Casablanca to support our distribution expansion activities in northeast Africa.

We are also close to making a decision on expanding electrification plans into eastern or southern Africa. The expansion is intended to create long-term manufacturing capability rather than service one-off projects and it will likely create up to 500 jobs.

"It is really... satisfying to see the glow in the eyes of habitants when they see light after sunset for the first time in their lives."



# The value of Internet of Things (IoT) solutions and innovation—now and in the future

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**Thibault Goulin,  
Head of Digital Solutions**

There are billions of IoT devices—connected devices with internet protocol (ip) addresses that provide timely and relevant insights from data that are transforming industries.



For example, connected appliances, smart home security systems, autonomous farming equipment and wearable health monitors to name a few. And the benefits of using IoT devices to companies are substantial which include reducing costs, optimizing performance, and increasing productivity.

At Nexans, IoT technology is used to help our customers track cable drums, a connected solution, in order to reduce losses and material theft, and to control cable drum rent and storage costs. Going further, by making them “smart and enhanced”, with the addition of a GPS system and a 3D accelerometer with embedded intelligence, customers can remotely determine how much cable is left on each drum for supply management improvements.

In addition, field staff can access the data of any drum using a smartphone or an RFID reader, since RFID tags are integrated into the drum during ma-

nufacturing. Product data sheets are included in the information stored in the drum’s tag, which helps those that working in a warehouse or on a building site to easily identify the type of cable, its use, and the rules to follow.

For Nexans customers, this means improved management of drum logistics and faster return of empty drums. It’s an entirely new business model and service being offered to our customers. The connected solution is powered by Microsoft Azure, which provides the hosting and security for IoT data.

Beyond transportable products, Nexans also provides connected solutions for companies’ fixed assets. The Infrabird™, another IoT technology enabled solution, enables customers in the telecom and energy sectors to remotely monitor the state of street cabinets and other equipment to improve public services and decrease fault response time.

### Rapid emergence of edge computing

The benefits of IoT are supported by major trends such as cloud computing and artificial intelligence (AI). Combining these technolo-

gies has given rise to edge computing—a distributed computing paradigm that brings computation and data storage closer to the location where it is needed, allowing sensor data to be managed locally. Edge computing works to handle decentralized information processing, close to the company’s assets,

without having to use remote servers each time—sometimes located hundreds or thousands of miles away.

In this scenario, IoT sensors can “think by themselves,” thanks to AI solutions and sophisticated algorithms capable of identifying standard situations. This extension of the cloud, which is another service supported by Microsoft Azure, gives companies the opportunity to deploy services as close as possible to their assets, and to develop them according to their specialized needs.

Localized data processing also brings increases

**“The benefits of using IoT devices to companies are substantial which include reducing costs, optimizing performance, and increasing productivity.”**





in speed for companies, with less lag time between action and results. However, this also means an increase in energy and bandwidth. With a rapid increase in the number of IoT sensors worldwide, such decentralized processing is set to grow exponentially. The company will ultimately contribute to boosting the power, efficiency, and profitability of IoT.

### Transforming infrastructure

The mass deployment of connected objects, which are becoming increasingly powerful and intelligent through edge computing, has implications for the infrastructure of companies, and the way in which they design products and manage assets.

One of Nexans's most exciting projects is the creation of a complete digital ecosystem, potentially bringing together a company's connected assets to form a "digital twin"—a digital model capable of monitoring a company's entire infrastructure, based on IoT sensors that provide accurate, real-time data for lean management.

The design of this digital twin opens up unprecedented possibilities in manufacturing and identifies business opportunities for Nexans. It will help managers to make the best possible choices when it comes to ergonomics, design, and increased performance of products and services. Based on past data and behavior, companies can conduct precise simulations to identify risks and implement predictive and preventative maintenance. In 2019, Nexans

launched the Asset Electrical service, which provides companies in the utilities sector with decision-making support, to better manage the maintenance and renewal of their assets.

### Union of IoT and mixed reality

Other technological developments are also in progress, such as mixed reality. Nexans and Microsoft are currently working together on HoloLens 2 mixed reality headsets, with the goal of providing new services like remote support and training.

IoT data and digital twins can also help develop augmented-reality training modules, that si-

mulate realistic scenarios around building security, for example. Simulations are projected onto the headset, immersing the wearer in any situation as desired. New recruits can rehearse a dangerous situation, as many times as necessary, in a safe virtual space until they remember

the correct actions and procedures to perform. These technologies will be used to make manufacturing facilities more reliable and secure, and reinforce the protection of those working in potentially dangerous situations—whether they are employees or service providers.

Looking ahead, Nexans envisions 3D mapping of production sites to design made-to-measure machines before they are installed, and remotely visualize the production line to better understand the malfunctions reported by IoT sensors; the possibilities are endless.

**"Design of this digital twin opens up unprecedented possibilities in manufacturing and identifies business opportunities."**

# Nobody Left Behind

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**Laurence Vandaele,  
Corporate CSR Director  
and Secretary General  
for the Nexans Foundation**

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**It's hard to imagine life without electricity. But for more than 750 million people around the world – 10% of the global population – life without electricity is a daily reality.**



**Q: Sustainability means making sure everybody gets a fair share of the world's resources. Yet millions still have no access to electricity. What can be done?**

It's hard to imagine life without electricity. But for more than 750 million people around the world – 10% of the global population – life without electricity is a daily reality.

The challenge is greatest in sub-Saharan Africa, where just 47% of the population had access to electricity in 2018. In one African state, Burundi, only 11% of the country's nearly 12 million citizens can take advantage of electrical power.

While good progress is being made in expanding the availability of electricity – more than one billion people were connected between 2010 and 2018

– there is still a long way to go. Indeed, the International Energy Agency (IEA) estimates that about 620 million people will still not have access to electricity by 2030, the UN's target date for 100% access to modern energy.

The Covid-19 crisis adds a new layer of uncertainty. Supply chain disruption and economic contraction threaten to slow down electrification programmes and reverse the progress made so far.

"Even before today's unprecedented crisis, the world was not on track to meet key sustainable energy goals. Now, they are likely to

become even harder to achieve," Fatih Birol, Executive Director of the IEA, warned in a statement earlier this year.

"We must double our efforts to bring affordable, reliable and cleaner energy to all – especially in sub-Saharan Africa, where the need is greatest – in order to build more prosperous and resilient economies."

**Q: Why does electrification matter?**

Ensuring access to affordable, reliable, sustainable and modern energy is one of the United Nations' 17 Sustainable Development Goals (SDGs). Access to electricity is a fundamental part of these goals.

What makes electricity so important is that it touches just about every facet of social and economic development. In fact, electrification contributes directly and indirectly to almost all the UN's Sustainable De-

velopment Goals.

Education is one area where electrification can make a real difference. In schools, electricity provides lighting, as well as power for computers and access to information, while electric fans and cooling systems help to create a comfortable environment for students and teachers. In the home, electric light extends the time available for study and homework, without the need for smoky kerosene lamps or candles.

Research cited by the UN confirms the positive correlation between electrification and

**"What makes electricity so important is that it touches just about every facet of social and economic development."**



improved education. In Bhutan, rural electrification contributed to 0.65 additional years of schooling for girls and 0.41 additional years for boys. Meanwhile, research in villages in Madagascar show that household electrification helps children keep up with school. It also reduces gender inequality by providing girls, traditionally more engaged in housework than boys, with opportunities to study after dark.

Electricity also plays a vital part in fighting disease and safeguarding public health. Clean and reliable electricity for health centres, for example, not only keeps the lights on, but also powers communications, IT and

medical apparatus – as well as refrigerators for life-saving vaccines. On top of this, electricity plays a key role in the provision of clean drinking water and sanitation.

Access to electrical power has an equally big impact on economic activity, enabling new businesses and boosting the productivity of existing ones.

It also has huge potential to promote gender equality, reducing the domestic burden for women and opening new economic, political, and social horizons. Data from Tanzania and Ghana shows a positive relationship between the productive use of electricity and women's economic empowerment.

### What needs to be done?

Meeting the UN's target of getting power to everyone by 2030 will require dedication from governments, international agencies and NGOs.

Business also has a critical role to play. Nexans was the first company in the cable industry to create a corporate foundation to serve the public interest. Established in 2013 with an annual budget of €300.000, the Nexans Foundation

supports access to energy for disadvantaged populations all over the world.

In Ivory Coast, the foundation is working with IECD, an NGO, to sponsor the training of young electricians in a country where more than 8 million people

currently have no access to electricity.

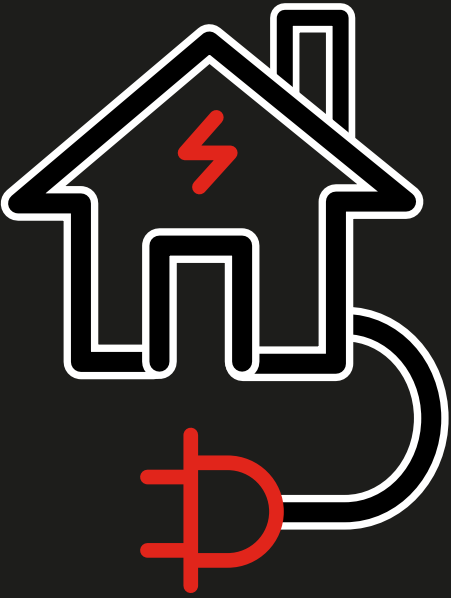
In Peru, the foundation is working in partnership with energy charity Light Up The World (LUTW) to provide photovoltaic systems for families living off grid. Training is given to solar entrepreneurs to stimulate the creation of clean energy jobs.

And in Brazil, Nexans is working with international development organisation Trias to provide better access to electricity for farmers.

These are just some of the examples of the vital work being carried out by the Nexans Foundation. The foundation has supported more than 120 projects in 38 countries since its formation seven years ago – creating a brighter future for more than 1.8 million people.

**"Electricity also plays a vital part in fighting disease and safeguarding public health."**

## Key Figures



**1 billion+**  
people gained access to electricity  
between 2010 and 2018



**789 million**  
people had no access  
to electricity in 2018

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