



YEARBOOK

2018



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PROFILE

In a world undergoing constant change, VINCI Energies focuses on connections, performance, energy efficiency and data to fast-track the rollout of new technologies and support two major changes: the digital transformation and the energy transition.

Keeping pace with market change, VINCI Energies supports its customers by offering increasingly innovative solutions and services, from design to implementation, operation and maintenance.

With their strong regional roots and agile organisational structure, VINCI Energies' 1,800 business units boost the reliability, safety and efficiency of energy, transport and communications infrastructure, factories, buildings and information systems.



PICTURES

365 DAYS WITH VINCI ENERGIES



Committed to helping children with heart defects

In 2018, VINCI Energies employees engaged in a number of actions designed to help children suffering from heart defects. Activities included signing up for the Virtual Regatta game, accumulating kilometres via the KM for Change running app, taking part in a children's drawing contest and making donations online. The employees raised €187,920 for Mécénat Chirurgie Cardiaque as part of the VINCI Energies partnership with the Initiatives-Cœur project. The funds will be used to pay for operations for 15 children.

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FOUNDATION

HELPING REFUGEES MOVE INTO EMPLOYMENT

In 2018, three VINCI Energies employees worked with the Fondation VINCI pour la Cité to help people with refugee status move into employment as part of a skills-based volunteer programme. The VINCI foundation has since 2017 been a partner of Kodiko, an NGO in Tours that conducts an innovative business mentoring programme to help refugees with international protection find employment in France.





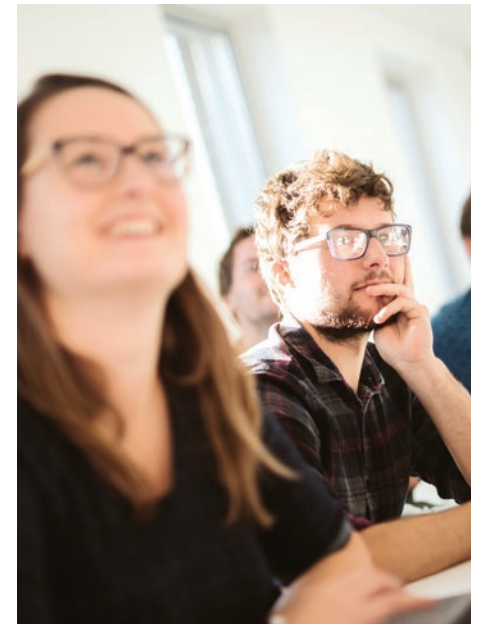
The Institut du Facility Management, accelerating skills development

Driven by the energy transition, service innovation and digital transformation, the building sector is undergoing rapid change. The Institut du Facility Management (IFM) was set up in 2018 to enable VINCI Facilities employees to actively participate in these transformations. Training is specially designed to match the specific features of each job. The training courses use active, operational and innovative teaching methods and are rolled out in a decentralised manner close to the business units. In partnership with the VINCI Energies Academy, the IFM supports and helps employees master changes in jobs. Seven training courses were introduced in July 2018 with the goal of adding further courses to the French catalogue in 2019. Training sessions have also been held in Morocco and Belgium.

TRAINING

RAPID ACCULTURATION OF NEW EMPLOYEES

In 2018, nearly 20,000 employees joined VINCI Energies, including nearly 6,000 following acquisitions, notably those of PrimeLine Utility Services in the United States and Wah Loon Engineering in Singapore. Between 2017 and 2018, VINCI Energies acquired 60 companies accounting for additional full-year revenue of €2 billion. To provide orientation for new teams arriving in the wake of these acquisitions, the international VINCI Energies Academy network has rolled out Group-specific training programmes covering such topics as Group administration and management, ethics, strategy, marketing, and health and safety. A similar orientation course is provided for newly hired employees to enable them to explore an environment in which VINCI Energies' operating principles and values are already being applied. Across all the world's regions, these training courses are based on a common foundation that reflects VINCI Energies' DNA.



OMEXOM INSTITUTE BOOSTING SKILLS AND PUTTING IDEAS INTO PRACTICE

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Launched by Omexom in 2018, the Omexom Institute is affiliated with the VINCI Energies Academy and designed to bring together and promote an international network of trainees and instructors. The goal is to make the most of Omexom's expertise and its ability to provide long-term support for its customers. An Omexom Institute is a space dedicated to learning and sharing focused on electricity infrastructure business lines. It is a space open to innovation that provides room for experimenting with the new technologies and jobs of the future. International from its inception, with locations in Germany, France and Morocco and more recently Brazil, the network plans to expand with projects in Indonesia, the United Kingdom, Senegal and Sweden. The learning by doing institution is backed by local e-learning platforms and virtual reality modules.

A first in Africa for InnoDays

The cities of Casablanca and Dakar welcomed the VINCI Energies InnoDays for the first time. The event, which included stands staffed by startups, round tables and presentations of partnerships with outside participants, familiarised employees with the Group's innovation programme and provided an overview of the innovation ecosystem in Morocco and Senegal. Another purpose of InnoDays was to strengthen customer relations with a focus on emerging issues. In both Casablanca and Dakar, the InnoDays event boosted exchanges between Group operational personnel and local stakeholders and opened up prospects for joint developments in 2019.



VIVA TECHNOLOGY, AN EVENT DEDICATED TO INNOVATION

For the third year in a row, VINCI Energies took part in Viva Technology, the world innovation rendezvous. From 24 to 26 May 2018, VINCI Energies teams ran two labs – “Human beyond digital, when humans augment technology” and “Africatech”, in partnership with AFD, Sanofi and Total. A total of 52 startups responded to the seven challenges on the themes of “human machine interface” and “blockchain applied to energy”. Visitors were plunged into more than 10 immersive demonstrations, notably the Nomad Mapping System, automated industrial inspection and the Smart City Command Center.





OPENWORK CONCEPT FOR LE BELVÉDÈRE

Le Belvédère, which offers 18,000 sq. metres of office space, is the first full BIM building in the La Défense business district. It meets high environmental and energy performance objectives. The project was carried out by VINCI Construction France and a VINCI Energies France works department, which handled power supply, ELV network, fire safety systems, Building Automation Systems, heating, ventilation, air conditioning and plumbing. Handed over at the end of 2018, Le Belvédère is the first building in La Défense to provide the OpenWork concept developed by VINCI Immobilier. OpenWork is a new office solution that accommodates changing use of workspaces.



“Hypervision” serving the smart city

VINCI Energies implemented a hypervisor for the Paris-La Défense business district. In an environment with multiple physical layers (RER regional express line, motorway, metro, pedestrian slab, interior roads, utility tunnels, etc.), the platform brings together the various site supervision systems and displays the data transmitted by more than 15,000 devices in 3D. In addition to providing geolocation support during incidents, the hypervisor is capable of coordinating all types of sensors and actuators to do things such as open doors for the fire brigade and regulate traffic lights during traffic congestion.

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SUCCESS

THALES RENEWS ITS TRUST IN VINCI FACILITIES

The contract signed by VINCI Facilities to manage Thales offices and buildings in France covers 59 sites and has a value of €330 million over five years. One of the commitments made in the contract renewal is to reduce office building energy consumption by 20%. Hypervision will make it possible to aggregate the full range of building data and provide Big Data support for Facility Management. Meanwhile, site users and visitors will receive increasingly customised services, notably via a network of 90 Hospitality Managers.

BOOSTING THE RELIABILITY OF THE ELECTRICITY GRID IN SENEGAL

In Senegal, access to electricity is a key economic and social development goal. VINCI Energies won a further project extending its activities – photovoltaic power plant implementation – in the country.

The project, carried out by Omexom, covers installation of five extra high voltage electrical substations, nearly 200 kilometres of overhead and underground EHV transmission lines and more than 100 distribution substations. The overarching goal is to expand, reinforce and secure the transmission and distribution grids in the cities of Dakar, Diass, Diamniadio, Thiès, Kounoune, Tobène and Tambacounda.



➤ 20,000 PEOPLE
SUPPLIED BY A PHOTOVOLTAIC UNIT IN FRANCE

400 km of cables, 54,920 solar panels and 2,743 trackers: in Sore, France, Omexom handed over a 24 MWp solar power plant able to supply 20,000 people. The Omexom business unit specialising in renewable energy in southwestern France worked on the project throughout the construction process, up to and including commissioning of the delivery substation. The contract also included the full range of engineering studies and maintenance of the generating unit for a period of five years.



A synchronous compensator to support a solar farm in Australia

In Australia, Omexom will install a 256 MWp synchronous compensator to connect a solar farm to a transmission grid for Total Eren. The €19.8 million contract covers design, supply, installation, testing and commissioning of the compensator at the Kiamal solar farm in the north-western part of the State of Victoria.





CUSTOMER SERVICE

A CUSTOMER CONTACT CENTRE CONVERTED TO AN OMNI-CHANNEL SERVICE PLATFORM

In Portugal, Axians supported Aegas Portugal Group in setting up a new platform for its customer contact centre. The new fully integrated system proposed by the Axians teams incorporates new channels such as social media and video to give the consumer a comprehensive overview via the full range of available communication flows and tools. The solution enables Aegas Seguros and Seguro Directo to expand and optimise their customer relations using innovative tools such as contact automation, advanced data analysis and artificial intelligence.

Connected tablet computers in fashion stores

In Italy, Axians is working with the OTB fashion group (which notably owns the Diesel brand) on an ambitious digital transformation project called “Tablet InStore” designed to provide an improved customer experience in stores and showrooms. Customers can use “Tablet InStore”, which is designed to browse the collection on tablet computers connected to a cloud-based content management system that is accessed via a wireless network. The project is global in scope, with more than 500 stores already equipped around the world.



New infrastructure for the Weser Stadium

Germany’s Werder Bremen football club wanted to modernise its infrastructure, including its wireless local area network (WLAN), in the Weser Stadium. Experts at Axians Germany recommended and implemented a network core concept centred on high-performance all-flash systems. The new unified architecture supports simplified operation. This solution reduces the needed space on traditional storage.

NETWORK

RELIABILITY AND SECURITY FOR THE STOCKHOLM NATIONAL MUSEUM

Stockholm’s National museum draws more than 400,000 visitors every year. The Museum awarded a contract covering the full range of its IT network operations to Axians. The objective was to install wireless networks and create modern, secure and reliable infrastructure. The project gave museum employees an identical, accessible digital workspace throughout the building.



New contract for the Central Station in Gothenburg

West Link is a double-track rail programme designed to improve access to the city of Gothenburg, Sweden. It notably includes construction of three underground stations. As part of this programme, Eitech is working with NCC Sverige AB and the Swedish national transport administration on the Central Station in Gothenburg. A contract was signed in 2018 under which Eitech is responsible for coordinating the full range of technical facilities, including the electrical, ventilation, monitoring and pipe systems. The scope includes the underground station on a suburban line and two kilometres of railway tunnel.



GRAND PARIS PARTICIPANTS

With order intake for 2018 amounting to nearly €170 million in 2018, the Grand Paris programme has become the main focus of VINCI Energies’ business activity in the transport sector. The year’s main project was the implementation of electrical infrastructure for Grand Paris Express Line 15 South. The €71 million contract covers implementation of the electrical architecture of the 20 kV network from the 10 supply and distribution substations in the line’s tunnels, stations and structures to its 250 Low Voltage distribution boards. In addition, VINCI Energies won several contracts for the Eole project – the 55 km RER Line E extension to the west. The contracts cover regeneration of fire safety systems in the existing Paris stations and the RER E extension between the Haussmann Saint Lazare and La Défense stations; and power supply and ELV systems for the RER E extension in the tunnel between Haussmann St Lazare and La Défense and the new Porte Maillot and La Défense stations.

MAJOR RAIL PROJECTS IN SCANDINAVIA

As a provider of railway and maintenance services in Stockholm North, Omexom has won renewal of its service contract with a value of about SEK 500 million (nearly €50 million). The contract covers a period of five years plus two years optional and enters into force on 30 September 2019. Omexom is also the acting service provider for the Arlandabanan and Hagalund rail lines, and it manages several other rail projects in the Stockholm region.



OPTIMISING THE OPERATION OF A VALEO PLANT IN INDIA

At the Chennai site in India, Actemium India Manufacturing and Robotics (AIMR) is working with automotive supplier Valeo to automate clutch part assembly. The idea is to combine two robots in each cell to handle the parts and two robots to supply materials. The goal is to shorten operating cycle time. The system on which AIMR is working is more particularly focused on developing display systems able to identify each component and indicate its location in 3D.



State-of-the-art technology to upgrade baggage sorting to standards

Paris Charles de Gaulle Airport handles 15,000 to 20,000 bags per day on the M module. The sorting system requires upgrading to the new explosive analysis and detection standard. This involves replacing the conveyor lines and adapting the electrical system and the machine monitoring and control systems. ADP Group awarded the contract to Actemium Paris Airports as part of a joint bid with TG Concept. Thanks to the two companies' baggage sorting engineering and simulation expertise, the operational phase will proceed without interrupting the day-to-day baggage sorting process.



AN INCREASING NUMBER OF PLCS IN NESPRESSO WAREHOUSES

As a specialist in automated logistics solutions, Actemium Lyon Logistics optimised the process at the Nespresso warehouse in Avenches, which prepares orders for Switzerland. An innovative counting system monitors preparation of orders of the famous capsule.





—FACTS AND FIGURES

VINCI Energies' robust performance and strong growth are driven by its agile business model. The simultaneously local and global Group brings together a network of business units on a human scale that operate close to their markets and customers, and brands that are market leaders in their fields.

A talk with the Chairman



ARNAUD GRISON,
CHAIRMAN AND CHIEF EXECUTIVE OFFICER OF VINCI ENERGIES



What is your take on VINCI Energies' activity in 2018?

It is very positive. 2018 was another strong growth year for VINCI Energies, under the leadership of my predecessor Yves Meignié. Our revenue rose from €10.8 to €12.6 billion, a 17.1% increase on an actual basis and a 4.6% increase like-for-like, and our margin continued to increase.

This momentum involves all continents and all business lines – infrastructure, industry, ICT and building solutions.

Another important indicator, the share of our volume generated outside France, now stands at 54% of the total, a reflection of our many acquisitions since 2016. In 2018, 28 new companies joined the Group. The most significant were Eitech, a Swedish company, PrimeLine Utility Services in the United States and Wah Loon Engineering in Singapore. These acquisitions have expanded our network in major VINCI Energies business activities.

“Our brands are powerful catalysts of the transformation under way in our markets.”



How has the VINCI Energies business environment changed?

In recent years, our brands have achieved growth in their markets. Each brand has, in its specific field, become a global player. Omexom supports its customers' energy transition; Axians works in digital transformation; Actemium focuses on industrial processes and the industry of the future; and lastly, Building Solutions covers the building life cycle.

These brands are powerful catalysts of the transformation under way in our markets and provide support for our customers. Within VINCI Energies, they are forging an increasing number of synergies and combining their expertise to offer original, often novel solutions. Overall, an increasing number of projects, initiatives and experiments are emerging in conjunction with our innovation ecosystems.

In addition, we have stepped up employee awareness raising with respect to our requirements in the areas of ethics, vigilance and human rights. This is a key endeavour within our business units.

“Against a backdrop of fierce competition for talent – made worse by skills shortages in a number of fields – VINCI Energies' ability to attract people determines our expansion.”



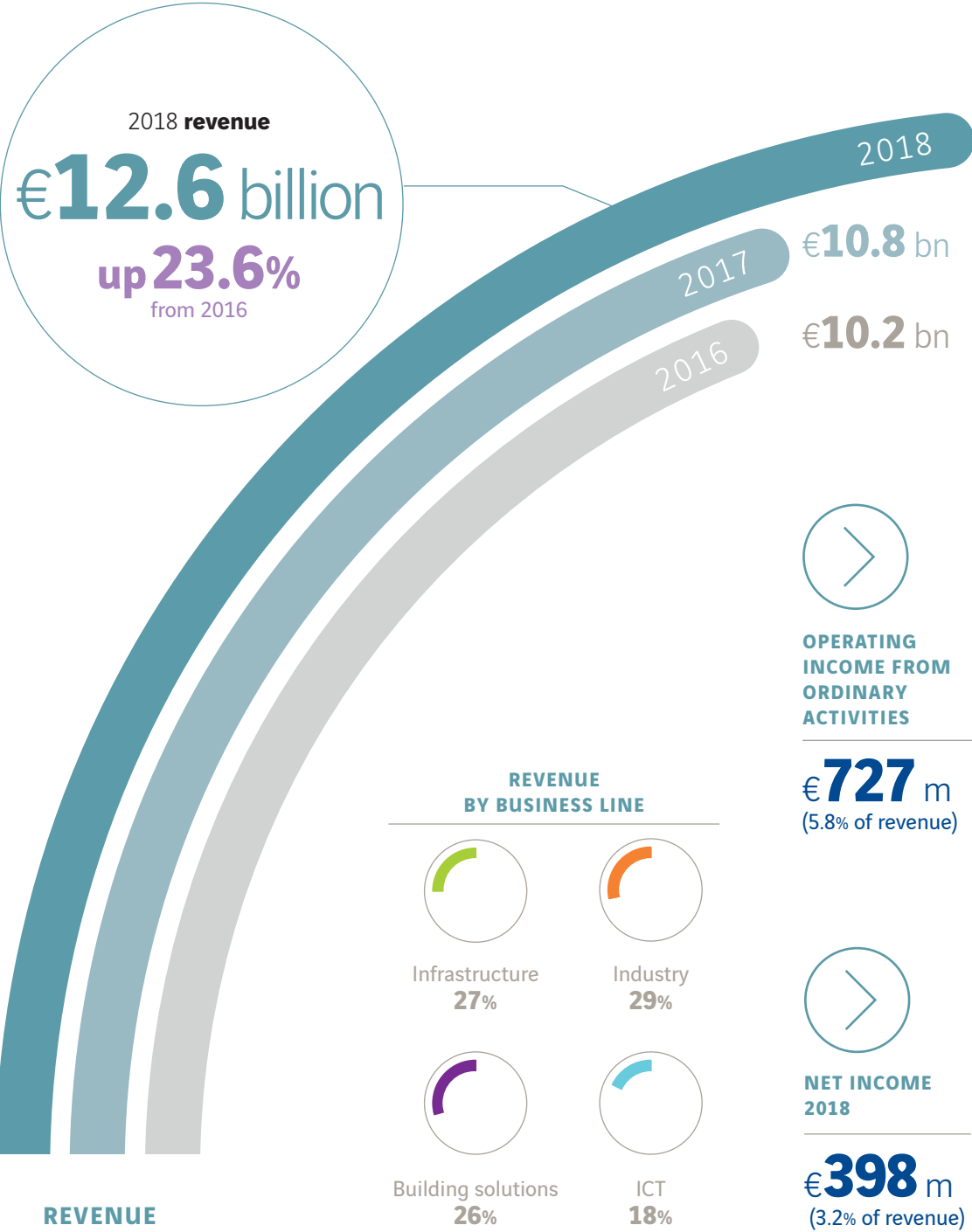
What initiatives did VINCI Energies take in safety and recruitment in 2018?

In terms of safety, we unfortunately suffered several severe accidents, some of them fatal. We deeply mourn these fatalities. Because there is no such thing as an unavoidable accident and because our responsibility is to protect each of our 77,300 employees and our subcontractors, we unrelentingly pursue our shared Safety Excellence ambition at the heart of our worksites. The Safety Week event held in our 1,800 business units is part of this endeavour. It helps us consolidate the safety culture within our teams. We notably emphasise risk perception, compliance with procedures and instructions, and the importance of the safety dialogue.

In human resources, we face a major recruitment and retention challenge. Against a backdrop of fierce competition for talent – made worse by skills shortages in a number of fields – VINCI Energies' ability to attract good people determines its potential for expansion. We recruited 12,000 new employees in 2018, 4,000 of them in France. Another key challenge is to improve gender balance in our business activities. We hope to welcome 25% women among the new engineers we hire in 2019.

Training is another key goal. We are continuing to expand our network of academies and we have set up two institutes – the Omexom Institute and the Institut du Facility Management – that focus on our techniques and business activities. Lastly, we have signed or renewed partnerships with several engineering schools, in which we support entire classes for the duration of their studies.

Key figures



The goals of our business lines

VINCI Energies operates according to a multi-local, decentralised business model that fosters entrepreneurship and networks the full range of its expertise to create value in day-to-day work for its customers. Operating in infrastructure, industry, building solutions and information and communication technologies, the 1,800 business units are organised around five global brands – Omexom, Citeos, Actemium, VINCI Facilities and Axians – and brands with a regional identity. These brands act and interact to develop common solutions and services.

INFRASTRUCTURE

FULFILLING
the promise of
the energy transition
in energy and transport
infrastructure

VINCI Energies helps electricity producers, transmission system operators, electricity suppliers and local and regional authorities fulfill the promise of the energy transition. Our goals, going forward, are to foster access to electricity, ensure secure supply and develop sustainable energy. VINCI Energies notably offers innovative solutions in the fields of renewable energy sources, natural gas networks, electricity storage and infrastructure and mobility management. The infrastructure business line accounts for 27% of VINCI Energies' revenue. The Omexom and Citeos brands are dedicated to the energy transition.



BUILDING SOLUTIONS

MAKING
buildings smarter
and more sustainable

VINCI Energies solutions deliver air, water, heating, refrigeration, energy and information. They combine energy efficiency and smart building technologies ranging from multi-technical maintenance to operation and facility management. The building solutions business line accounts for 26% of VINCI Energies' revenue. Facility management is provided under the VINCI Facilities brand. The work is performed under local brands.



INDUSTRY

HELPING
to continuously
improve industrial
performance

VINCI Energies designs and rolls out customised, integrated solutions and services for the factories of its industrial customers, including 3D design, augmented reality, collaborative robots, smart sensors, and predictive maintenance. As a major player in the transition to smart industry, we make industrial processes more productive and efficient and reduce their energy consumption. The Industry business line accounts for 29% of VINCI Energies' revenue. Actemium is the VINCI Energies brand dedicated to industry.



ICT

OPERATING
at the heart of digital
transformation

VINCI Energies leverages its broad range of expertise in data collection, transmission, storage, processing and protection technologies to provide customised solutions and services that help its customers undertake their digital transformation. Our specialised local teams are able to offer solutions tailored to the specific issues faced by our customers in their respective activity sectors. The ICT business line accounts for 18% of VINCI Energies' revenue. The Axians brand is dedicated to information and communication technologies.



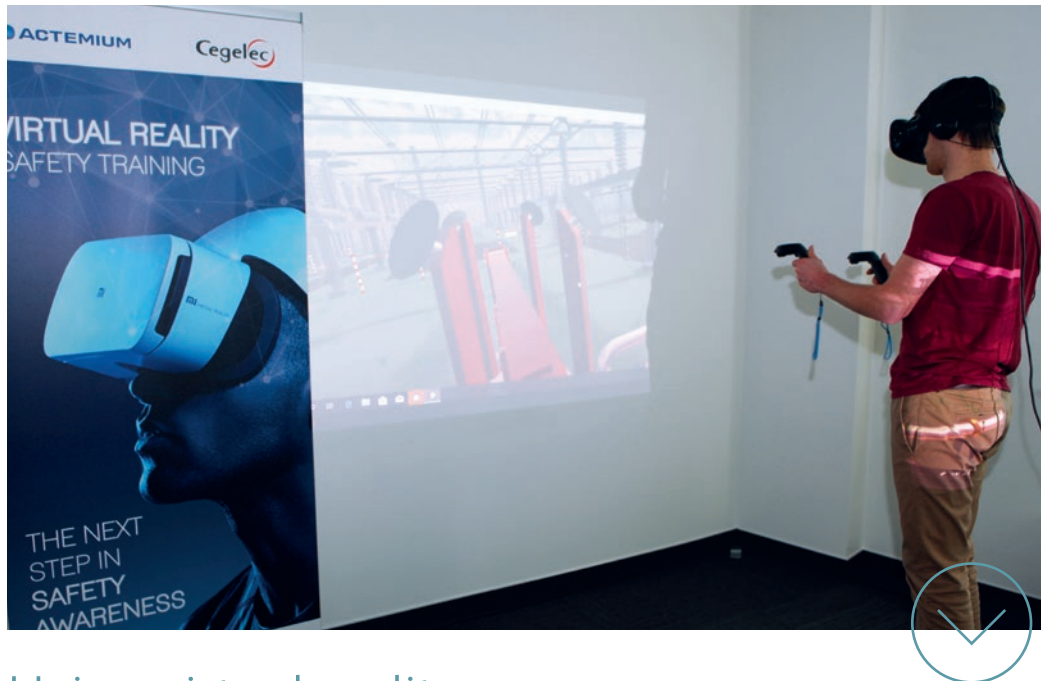


ACTION

**For VINCI Energies,
the greatest asset is people.**
This conviction underpins the
action we take to ensure health
and safety, share knowledge and
develop skills. Putting our values
into practice, we also reach out
to the people living near our worksites
by supporting a wide variety
of solidarity projects.

Health & Safety

VINCI Energies rejects the idea that workplace accidents and illness are inevitable. The Group's ambitious workplace health and safety policy, set out in the Safety Excellence programme, is designed to prevent them.



Using virtual reality to provide safety training

Actemium Netherlands and Cegelec Belgium designed a safety training programme using total immersion generated by a virtual reality helmet. They began by identifying the ten errors most frequently committed within their respective teams and then created a demonstration version to illustrate the corresponding risks faced by employees in the field.

The advantage of the system is the immersive power of virtual reality. The user experiences a fall so frightening that he or she will not soon forget it. Another advantage of the programme is that it places

the trainee in a technical environment that is rarely physically available for on-site training, either because of its remote location or because the risk of error involved in training is unacceptable, as for example in a power plant.

A variety of scenarios have been developed. Several business units are using the tool, which will also be employed to train customer employees. The next step will be to go beyond initial awareness training to address specific case studies.

The programme developed by Actemium Netherlands and Actemium Belgium can also be used to train customers.

SAFETY

A GREEN ARMBAND TO PROMOTE SHARED VIGILANCE

In September 2018, the VINCI Energies TTE (energy transmission and transformation) division decided to launch the green armband initiative. The idea is for works teams to appoint a safety officer to exercise particular vigilance, detect dangerous situations and infringements of the safety rules, listen to his or her colleagues and suggest improvements to the site supervisor. To remind everyone of the officer's responsibility, the employee wears a green armband bearing the three principles: "look, warn, share." Team members take turns acting as safety officer for a limited period of time. The safety officer is responsible for helping the team focus on vigilance in day-to-day worksite operations.



ANNE-LISE VALLA,
Health and Safety
Coordinator within
the VINCI Energies
nuclear division

“Improving our culture and thereby our safety behaviour”

TIM Attitude is the 2018-2019 safety action spanning the nuclear division. It enlists business unit managers in the endeavour to improve behaviour and risk perception. To support this programme, we have asked each business unit to encourage people to report dangerous situations. In parallel, a dedicated information system has been set up to post the most significant safety events every month within each business unit. In 2019, the Tim Attitude activity will focus on raising employee awareness.

It will build on the findings of neuroscience studies designed to better understand how the human brain works. In terms of safety results, our accident prevention programme is bearing fruit: our frequency rate has been halved – from 5.7 to 2.4 – in just three years.

HEALTH AND SAFETY INDICATORS

FREQUENCY RATE

2010
10.34

2018
4.85

SEVERITY RATE

2010
0.72

2018
0.29

% OF BUSINESS UNITS WITH ZERO ACCIDENTS*

** with lost time*

2010
64%

2018
79%

Human Resources

Developing the company's talent, maintaining a talent pool by forging close ties with schools and students and welcoming young people with all types of qualification are some of the ways in which VINCI Energies strives to transmit knowledge as part of its ambitious managerial and human resource policy.



2,300 YOUNG PEOPLE
under the age of 26 recruited
under permanent contract
in 2018



**12,500 PERMANENT
CONTRACTS**
signed in 2018



In Belgium, 150 employees serve as ambassadors for the Group

To boost employee retention, strengthen employee engagement and foster talent recruitment, VINCI Energies Belgium initiated the Ambassador Project system. In response, 150 employees volunteered to take part.

Grouped by scope, they were first invited to express their assessment of VINCI Energies Belgium in a variety of areas: HR and values, rewards and recognition, training and development, vision and identity, mobility and retention, leadership and management and workplace and wellbeing. The

scope for improvement identified in each of these areas will serve as input for action plans.

During an Ambassador Day gathering, the ambassadors took several training courses: "How and what to post in the social media", "How to speak on behalf of a group of people and build your narrative" and "How to build your narrative for a short ambassador video". The most recent activity is workshops designed to professionalise the teams and help them make better use of the social media, track and analyse data and draft documents to be posted on the Web and recruitment texts.



SPONSORSHIP

OFFERING PROSPECTS TO STUDENTS AT THE ESTP PARIS ENGINEERING SCHOOL

Ties between ESTP Paris students and VINCI Energies are to be strengthened under an agreement between the engineering school and the company covering sponsorship of the 2021 graduating class. The sponsorship involves a variety of cultural, technical and scientific events along the lines of the "VINCI Energies Express" live escape game held on 27 September 2018. In the same spirit, a Job Dating day will be organised for the students to fill 100 internships. More broadly, VINCI Energies will support the future engineers throughout their three-year course of study and contribute to teaching and research activities at ESTP Paris.

VINCI Energies sponsors cultural, technical and scientific events as part of its endeavour to engage in a special dialogue with the students at the ESTP Paris engineering school.



For more collaborative, more connected training

For several years now, Axians Audiovisual Belgium has been helping the K.U.L.A.K. university campus in Belgium to introduce new training methods such as collaborative learning (based on discussions and mutual assistance between learners using digital tools). The VINCI Energies Academy, convinced of the validity of these methods, has included them in its training courses. The next step, to be taken in 2019, will be to move towards virtual classrooms (in which the course is disseminated via a network solution to geographically scattered trainees). This method will save employee time and travel while maintaining the physical presence of instructors.



180,835
HOURS of training
provided in 2018
in our academies



12,097
EMPLOYEES
on training leave
in our academies



€112
MILLION
invested in training
in 2018

PARTNERSHIP

A SPONSORSHIP AGREEMENT WITH THE ÉCOLE DES ARTS ET MÉTIERS ENGINEERING SCHOOL

The major objectives of the three-year sponsorship agreement signed by VINCI Energies and the École Nationale Supérieure des Arts et Métiers engineering school include supporting student entrepreneurship, developing digital training, implementing technological excellence research and transforming campuses into benchmark technology sites. The partnership dovetails with the school's strategy of becoming the leading French school serving the industry of the future. For its part, VINCI Energies wishes to promote its image and its business model among students at the school. The sponsorship will be coordinated by representatives of the local VINCI Energies networks and the eight Arts et Métiers campuses.



RIDA LYAHYAQUI,
Head of HR, communications
and the VINCI Energies Academy
in Africa, VINCI Energies
West Africa

“We want to strengthen ties with
young African engineers”

Africa is a continent with a wealth of opportunities, but where skills are scarce and generally not tailored to the needs of our business activities. VINCI Energies is therefore proactively working to identify and support people with suitable profiles who can potentially join its subsidiaries in Sub-Saharan Africa. To this end, the Group has signed several agreements with engineering schools: the École d'Ingénieurs en Génie des Systèmes Industriels (EIGSI) in Casablanca, the École Supérieure Polytechnique in Dakar and the Ecole Polytechnique in Thiès. In addition to offering students internships during and at the end of their training, these partnerships are designed to promote technical innovation as part of projects developed jointly with the engineering schools. Similar relationships were established with two schools in Guinea in 2018.

Solidarity projects

Solidarity is a core value at VINCI Energies.
It is notably reflected in the sponsorship agreement with a charity, Mécénat Chirurgie Cardiaque, and the massive engagement of our employees around the world in raising funds for its cause.



BRINGING EMPLOYEES ON BOARD A PROJECT THAT SAVES LIVES

Designed to compete in high-profile races with funding support from sponsors, the Initiatives-Cœur sailboat works with the Mécénat Chirurgie Cardiaque association to save children born with heart defects. After signing a four-year partnership with the sailboat in 2017, VINCI Energies carried out a range of activities to publicise the partnership among its employees, enlist them in the effort to save children and give them an opportunity to engage in supporting the project.

One example is the KM for Change application, which brings together runners and companies to participate in solidarity projects. The application enables employees and their families and friends to rack up kilometres, which VINCI Energies then converts to donations that are made

to the Mécénat Chirurgie Cardiaque association. The Group is planning to promote this application among students in partner schools to increase the number of runners, kilometres and hence donations.

VINCI Energies has also launched a fundraising platform. Each VINCI Energies entity can create its own fundraising drive to benefit Mécénat Chirurgie Cardiaque. To gain a clear picture of the amounts donated to the association, the VINCI Energies Mécénat Charity has been set up to channel all funds raised.

In 2019, other projects will be launched to give employees an even more active role in the partnership. They will involve a number of local events that have been expanded.



“When the focus is on the human being, miracles are possible”



ORSO CHETOCHINE, DIRECTOR OF MÉCÉNAT CHIRURGIE CARDIAQUE ENFANTS DU MONDE

The average cost of surgery to save a child with a heart defect is €12,000. Funding is therefore crucial for a small association such as ours. But the VINCI Energies employees are giving us more than funding. They also serve as sponsors, volunteer at events and sometimes host the patients who come to be operated on in France. In a very short period of time, our history has been widely shared and each sponsor does his or her best to help us in whatever way he or she can. We are all now looking forward to the 2020 Vendée Globe race. My hope is that a large number of VINCI Energy teams will join this wonderful partnership and become part of the solidarity chain that will enable us to circumnavigate the world.



RODOLPHE CROMBEQUE,
Project head at Actemium Poissy

“Nothing is more gratifying than to pursue your passion to benefit a good cause”

Virtual Regatta is an online game that simulates major ocean races. To start the Route du Rhum with VINCI Energies, each participant had to raise a minimum of €100 for Mécénat Chirurgie Cardiaque. As an amateur sailor, I was immediately drawn to the project. I enlisted six colleagues and we collected €560. As time went on, other business unit colleagues reading the in-house newsletter joined in. There was a lot of discussion about rankings and tactics, and there was a lot of encouragement. And when we came in first among the 62 teams participating across VINCI Energies, we were overjoyed.



NICOLAS RICHARD,
Director of HR Development,
VINCI Energies Asia Pacific

“There was a massive outpouring of enthusiasm for the Group’s push to promote our common values”

For a division like ours, which is geographically spread out and culturally diverse, it is very important to generate and share a sense of belonging within VINCI Energies. Since the countries in our area have a strong relationship with the seas and the oceans, the Initiatives-Cœur participation in the Route du Rhum was an ideal opportunity for adventure. We encouraged our 3,200 employees to follow the race and take part in the charity events. The result is very positive. There was a massive outpouring of enthusiasm for the Group’s united push to promote our common values.

Solidarity projects

Working with the Fondation VINCI pour la Cité

The values of solidarity and responsibility are also reflected in the involvement of many VINCI Energies employees in long-term community activities, either with Group business units or with the Fondation VINCI pour la Cité. The latter has expanded its original framework by diversifying the types of engagement offered to employees.

Create your future!

In November 2018, the Mobility business unit, working with the Crée Ton Avenir (create your future) association, welcomed 18 students from middle schools belonging to priority education networks in Vaulx en Velin, Bron and Villeurbanne. Overseen by 30 employees and two association education specialists, the students explored the business unit and drew up their first curriculum vitae. They also imagined transport systems in 2035: operating without fossil energy sources, protective of the environment and accessible to all. The week's activities culminated in a ceremony at the end of the programme attended by all the protagonists and the principals of the partner middle schools.



Culture for everyone

Since 2013, the VINCI Stiftung, modelled on its parent foundation, the Fondation VINCI pour la Cité, has developed a special programme dedicated to non-profits working in priority neighbourhoods: "Cité Solidaire", in German "Solidarische Stadt". The programme focuses its activities on underprivileged urban neighbourhoods and supports projects that benefit their residents. In Mannheim, the Kulturparkett Rhein-Neckar e.V. association, sponsored by Sylvia Greven of G+H Kühllager- und Industriebau GmbH, facilitates access to cultural events for the underprivileged residents of the Unterstadt, Jungbusch and Neckarstadt West neighbourhoods.



EMPLOYMENT

A CHOCOLATE FACTORY TO RETURN TO EMPLOYMENT

In the Netherlands, the React Twente association is helping 250 people return to employment. One of the projects carried out with the VINCI NL Foundation helps young people explore the chocolate sector thanks to a chocolate plant located next to a retirement home, whose residents can come to savour chocolate over coffee. But there are also a store, a tearoom and guided tours that enable the chocolate factory to operate while training young people in chocolate production. Thanks to their sponsor Frank Ruiter, who works at Axians, the association received a subsidy to expand its activity.

37



IHSSANE NIAR,
and **MYRIAM ELKOBY,**
VINCI Facilities project managers

"Sharing and transmitting"

From 1 to 15 September, we went on community service leave – organised by Planète Urgence and co-funded by the Fondation VINCI – to Tsiroanomandidy, a city in western Madagascar, where we held a social and educational event focused on books and designed for the children enrolled in the city's Alliance Française. The Alliance students' eagerness to acquire knowledge, obvious pleasure in reading and great motivation to continue their studies despite financial or geographical obstacles were admirable. Our activity was highly gratifying!





— PROJECTS

VINCI Energies offers its customers **an innovative operational approach and state-of-the-art solutions** that help them transform their operations to become more agile and more efficient. This puts them in a better position to optimise their energy efficiency, upgrade their plant and equipment and make the most of building data modelling.

Becoming a key player in the energy landscape



INTERVIEW / GUILLAUME GARRIC, DIRECTOR OF THE OMEXOM BRAND



To fulfil the promise of the energy transition in energy and transport infrastructure, VINCI Energies is banking on state-of-the-art technology tools, the search for innovative solutions and networked expertise.

How do you see the energy sector developing?

The market will undergo very strong growth. An estimated \$10,000 billion will be invested worldwide between now and 2050 to provide access to energy, ensure reliable supply and develop carbon-free sustainable sources. Given this outlook, Omexom confirms its positioning across the entire value energy chain, from production to transmission, transformation, distribution and project rollout. We are going to boost our involvement in the smart grid solutions that make it possible to fine-tune grid management. And we will also be paying close attention to cyber-security when rolling out these technologies on a broad scale.

What other areas of innovation are Omexom and Citeos focusing on?

Intermittent solar and wind generation calls for the development of new grid stabilisation tools such as voltage regulation systems and energy storage. These systems are crucial if we are to support the energy transformation, and Omexom has a substantial track record in this field around the world. Another major topic is

asset management. If we are to optimise the life span of the infrastructure that helps bring energy to the various regions, we need to have a long-term maintenance and management strategy. We are beginning, for example, to develop software that can model breakdowns to support predictive maintenance.



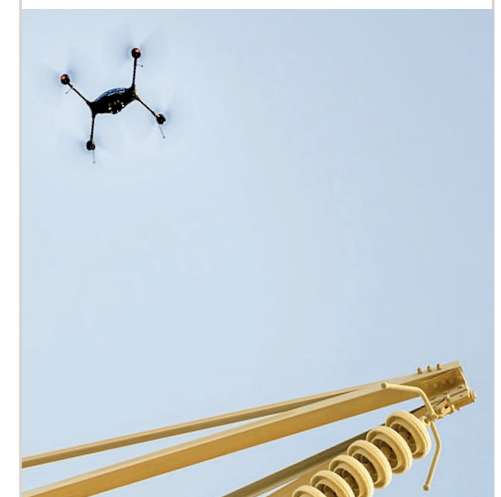
“One of our strengths lies in the fact that we operate around the world, generating 70% of our revenue outside France.”

What is the brand doing to become the leading energy transition provider?

Our networked organisational structure enables us to bring together experts around the world to pool their expertise and share their experience. This is a major advantage and we are working to make the most of it. For example, we are capitalising on our regional engineering expertise in France to carry out studies and look at ways to help smart cities emerge around the world. Local and regional authorities are aware of the need to take comprehensive action to optimise the operation and attractiveness of their cities and regions. By boosting our ability to provide advice before they begin their projects, we are expanding our ability to serve as partners.

TRENDS THE DRONE ACES INSPECTION

Using drones to inspect high-voltage transmission lines has many benefits in terms of time, personnel and cost savings and greater efficiency. Omexom provides this solution for nearly 900 kilometres of transmission lines in France and the Gulf States. While visual inspection of a single transmission tower typically requires four hours of work by three people, drones can perform the operation in less than 30 minutes. The benefits are also qualitative. Because there is no risk of electrocution, the drone can move closer to the live cables and use a UV camera to detect corona invisible to the naked eye. Equipped with a lidar, it can generate a 3D model of the line and identify shifts of sand on the ground that could possibly cause electric discharge without contact.



In Guadeloupe, Baie Mahault becomes a smart city

Xeria and Citeos Ingénierie won the eight-year energy performance contract (EPC) for the city of Baie Mahault in Guadeloupe. The contract covers reconstruction of the public lighting equipment fleet – comprising 8,000 remotely-monitored 100% LED light points – and installation of more than 200 connected electrical cabinets. In addition, it includes installation of a motion detection system (to adjust the light level to need), supervision of solar energy production (to supply electric vehicle charging stations and energy-autonomous bus stops) and the launch of a citizen application enabling local residents to report malfunctions. The overall goal is to reduce energy consumption by more than 70%.



The city of Baie-Mahault will be equipped with 8,000 remotely-monitored 100% LED light points and 200 connected electrical cabinets.



GCCIA

MODERNISING A KEY SUBSTATION IN THE MIDDLE EAST

The 400 kV Ras al Qurayyah substation in Saudi Arabia is a key part of the country's interconnection with Bahrain. To boost its performance, the GCCIA (Gulf Cooperation Council Interconnection Authority), the authority responsible for managing the electricity interconnection of the Gulf States, decided to modernise it. Two Group business units, Omexom Saudi and Omexom Casablanca Postes, won the contract. The project includes integration of two reactances in the network to improve the facility's power factor and replacement of conventional with gas-insulated switchgear.



TENNET

SUPPORTING THE ENERGY TRANSITION IN GERMANY



To cope with the growth of renewable electricity flows between Denmark, on the one hand, and central and southern Germany, on the other hand, the construction of a 380-kV OHTL has been decided by the German government in Berlin. As part of this important project, Omexom has been contracted by the Grid operator TenneT to construct two lots for the Audorf-Flensburg overhead transmission line section. The works, which are spread over an area of 35 km, began in May 2018. In addition to the technical complexity of the project, there are also high environmental protection requirements involved which need to be implemented and adhered to. Once all the sections have been commissioned, no less than 3,000 MW of electricity can be transported over long distances. This is seven times as much, as before, on the old existing 220 kV OHTL, which Omexom will also dismantle after commissioning.

Stepping up the conversion to smart industry



INTERVIEW / BRUNO NICOLAS, DIRECTOR OF THE ACTEMIUM BRAND



Actemium is building on its local expertise, its reputation as a benchmark integrator and its strong network to introduce operational innovation at its customers' sites and thus provide more productive and efficient industrial processes that consume less energy. Bruno Nicolas, Director of the Actemium brand, reviews the challenges, goals and prospects.

What is your view of the market in which Actemium operates?

The market is buoyant, driven by world economic growth exceeding 3%, but it is also subject to uncertainty due to geopolitical instability and trade tensions. In our main segments – chemicals, automobiles, food processing, aerospace and oil & gas – there are common trends. First, strong technology change driven by digital technologies and disruptive innovations such as 3D printing, machine learning and the digital twin; second, an increasing focus on environmental issues, driven by tighter standards and growing scarcity of raw materials; and lastly, a change in the expectations of customers, who now want to limit the number of their suppliers and be able to rely on more efficient, innovative partners.

How does Actemium strive to improve its operational performance and competitiveness?

To achieve this, our decentralised organisational structure is an invaluable asset. Each of the 380 business units operating under the Actemium umbrella is in direct touch with the concerns of its customers; meanwhile, each business unit is part of a network within which it can share experience and best practices with the others, virtually in real time. This puts us in an excellent position to meet industrial demand, by, for example, going beyond the role of installer to design comprehensive, multi-technical and multi-local solutions, work to continuously improve productivity, or set up a predictive data-based system to anticipate incidents.



“What we want is to roll out the world’s largest network dedicated to sustainable industrial performance.”

What areas of innovation is the brand exploring?

Our goal is to make the factory of the future more efficient by taking action in four different areas: strengthening process efficiency; introducing augmented-reality solutions to make the human-machine interface more seamless; upgrading the connected part of industrial systems; and improving the capture, storage and utilisation of data. In parallel, we have initiated a variety of programmes designed to better integrate innovation in our projects. The topics addressed include such things as remote monitoring and display of installations; energy efficiency; and 3D enriched environments. These are ways we can boost industrial transformation.

TRENDS

ROBOTS SUPPORT QUALITY CONTROL

In the aerospace sector, inspection of complex industrial assemblies is subject to very stringent requirements. To limit inspection time and boost efficiency, Actemium Toulouse Robotique & Automation has developed a robotised solution. Together with a startup, it devised a 2D and 3D vision system installed on a robot, which is in turn installed on an automated guided vehicle. In the event of a missing screw, an improperly inserted electrical connector or mechanical interference, the robot compares the digital model of the assembly in real time with the actual component being observed, identifies every defect, automatically programmes its own path and takes account, without reprogramming, of all changes in the CAD model.



A new step towards robotisation of automotive assemblies

Actemium Trappes, which specialises in the design, implementation and commissioning of turnkey industrial installations, notably operates in the automotive sector. It worked with Actemium Berlin to develop a new cell dedicated to automotive body assembly. The German Actemium Trappes office near Osnabrück is in charge of building the equipment for Gestamp, a major producer of automotive components with more than 100 factories around the world. The cell, made up of eight robots designed to carry out spot welding operations, will be used in the production of the Audi A3.

Actemium has developed a cell made up of eight robots to assemble automotive bodies for Gestamp.



Helping Total start production in a giant oil field

At the end of 2018, Total began production in the Egina oil field, 130 kilometres off the coast of Nigeria, at a depth of more than 1,500 metres. Several VINCI Energies business units were involved in the project: PACE, Actemium Oil&Gas Engineering, Actemium Oil&Gas Maintenance, Actemium Oil&Gas Commissioning, Actemium Korea, Actemium Oil&Gas Training, Comsip and Autochim. The Egina field will ultimately produce 200,000 barrels per day, i.e. 10% of the country's overall output. The 330 by 60 metre FPSO (floating production, storage and offloading unit) used to develop the field is the largest ever built by Total. VINCI Energies will now maintain the offshore facilities.

IoT SMART SOLUTIONS FOR BREWERY CUSTOMERS

In Belgium and the Netherlands, 30 breweries have undertaken to invest in high-tech solutions in coming years. Actemium Veghel, which has long worked to automate brewery sites, has developed an innovation geared to the needs of this market: Telling Tank. This data analysis solution gives brewers a comprehensive overview of the beer in the tanks at the catering points. An IoT sensor placed in each tank records data such as pressure and temperature. This enables customers to optimise logistics by alerting them to the quantity of the product remaining in the tank. Meanwhile, Actemium Aalter developed SmartCIP, a system that combines the machine learning concept with data analysis to reduce brewery water consumption.



Telling Tank, the solution developed by Actemium, checks the filling level in brewery tanks in real time.

Digital technologies based on use



INTERVIEW / OLIVIER GÉNELOT, DIRECTOR OF THE AXIANS BRAND



Against the backdrop of an increasingly complex digital landscape, Axians builds on its data lifecycle expertise and its familiarity with its customers' business to support their transformation.

How do you see the market in which Axians operates?

Because technology is changing at an increasingly fast pace, digital transformation potentially affects all processes within the company. The scope for transformation is therefore huge, and customers are keen for advice to help them set action and investment priorities. Expectations differ from one business sector to another with respect to digital solutions such as real-time operation, accessibility and security. Therefore, it is important for Axians to build different solutions and services based on the use to which the technology is to be put. Another observable trend is that many companies do not have in-house resources to ensure the constant upgrade of their infrastructure and digital tools, so that they are turning to services provided by outside companies – network operations, “as a service” solutions and cloud services, for example.

How will Axians position itself with respect to the rollout of the 5G standard?

As a major player in developing optical fibre and mobile telecommunications, we have a major advantage because the 5G network will be both mobile and fibre-based. In addition, its rollout will

use IT technologies, such as network virtualisation and artificial intelligence, two areas in which we have expertise to bring to the process. Thanks to the increase in performance that 5G will provide in terms of data rate, latency and communication reliability, new uses are in the offing across a wide range of areas such as industry, healthcare and education. We are used to working with these market segments, for which we will be able to identify and support higher-value-added applications.



“Once the technologies have been rolled out, we provide change management support to help users adopt them.”

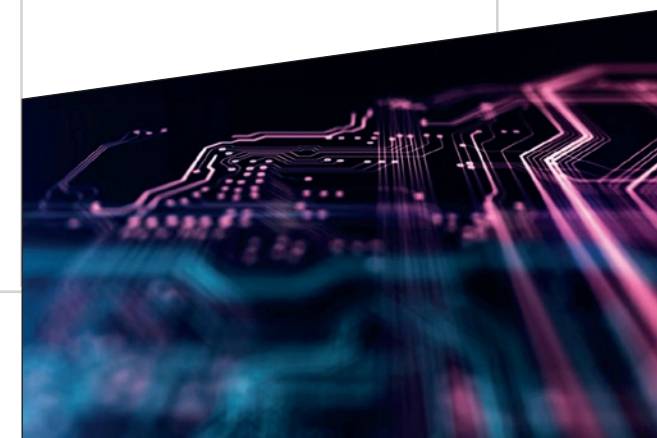
What is your roadmap for artificial intelligence?

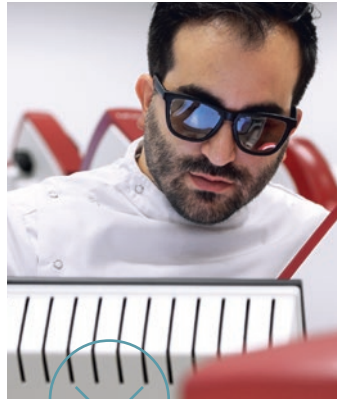
In the medium term, all business processes will incorporate a component based on artificial intelligence. Here again, the goal is to start from basic uses to help customers sort out the various possible fields of application, the conditions to be met in order to properly capitalise on big data, and the potential benefits. When it comes to optimisation of IT performance levels, tariff calculation based on yield management, recognition of spare parts for the augmented technician, video surveillance to anticipate dangerous behaviour by means of real-time algorithms, language recognition and chatbots – Axians has already delivered a number of projects, and we are just getting started!

TRENDS

VIRTUAL NETWORKS BOOST COMPANIES' AGILITY

To meet companies' need for connectivity, mobility and data access, WAN IT networks, which cover wide geographical areas, are crucial. But they can be complex and costly. This is where the SD-WAN (Software-Defined Wide Area Network) comes in. The virtual technology is installed over the physical network. It enables remote sites to access applications by combining several types of connectivity (4G, 5G, MPLS, etc.) without using a gateway. “Disconnecting the application traffic from the underlying infrastructure generates substantial flexibility,” says Chris Gilmour, Technical Practice Lead at Axians UK. “By creating an application-centric ‘cloud first’ model, the SD-WAN acts as a transformation accelerator.” By the end of 2019, nearly one in three companies will have rolled out the virtual network over its physical network, according to Gartner Consulting.





The Vrije Universiteit has a guaranteed data transfer rate of 100 gigabits per second.

NETWORK

THE VRIJE UNIVERSITEIT AMSTERDAM MOVES TO HIGH-SPEED BROADBAND

VU Amsterdam decided to improve its digital infrastructure in order to optimise conditions for research work carried out within its walls on subjects that can range from DNA to complex mathematical calculations. The goal was a guaranteed data rate of 100 gigabits per second. Axians designed and implemented a local network to meet these specifications and even – in anticipation of future customer needs – made the VU network into the fastest university network in the Netherlands. Another strength of the solution is a monitoring platform that can manage vulnerabilities – for example, those relating to the flow of information from a growing number of connected objects – and ensure very rapid response to incidents.

A new network architecture for Kahramaa

Kahramaa, the sole transmission and distribution system owner and operator for the electricity and water sector in Qatar, wished to modernise its electricity grid and water system. These networks use an outdated synchronous digital hierarchy network, making it difficult to integrate new services such as video surveillance and remote services. Axians Portugal will provide overall management, design, engineering and network rollout for the five-year project. Cegelec Qatar will support the business unit by providing local assistance and power installation. Ultimately the new IP/MPLS architecture will boost data resilience and network security with traffic segregation.



“We give optical fibre a new lease on life”



**JEAN-FRANÇOIS MORIZUR,
CO-FOUNDER OF STARTUP CAILABS**

Increasing data rates raise the issue of transmission capacity in aging optical fibre systems, especially the multi-mode systems used for communication over short distances. We have developed a technology that changes the shape of the light passing through the fibre and can increase the data rate by a factor of 400. This gives optical fibre networks a new lease on life at less than half what it would cost to replace the fibres and without disrupting customer activity. Our range of solutions was picked up by Axians is now an integral part of the Axians range of solutions and services, with a special focus on universities, hospitals, urban transport systems and office buildings.



Supporting the digital transformation of hospital groups

In France, the Resah hospital purchasing network has selected the Axians range of services to support the modernisation of information systems for the Groupements Hospitaliers des Territoires (GHT). Axians Cloud Builder provides this digital transformation service. It will call on Axians Consulting to perform audits, on Axians Cybersecurity Paris to manage security and standards and on Axians Communication & Systems business units to roll out the network in the regions.

Building management as a source of value



INTERVIEW / PHILIPPE CONUS, DIRECTOR OF BUILDING SOLUTIONS



The building is undergoing rapid change and becoming increasingly efficient, connected, cost-effective and comfortable. VINCI Facilities supports these changes by rolling out new technologies with a focus on service and co-construction with the customers. Brand Director Philippe Conus reviews the strategic approach.

How does VINCI Facilities go about improving its operational performance and competitiveness?

Given the increasingly competitive market conditions, our approach consists in initiating an excellence programme based on continuously improving our maintenance policies and making state-of-the-art digital tools available. A good example of these tools is hypervision, which provides a vast range of real-time building data to support more rapid decision-making based on better information. Another example is the use of BIM to introduce new user services. These are customised solutions that are often co-constructed with the customers.

Why is the rollout of new technologies and services a strategic objective?

Facility management is still too often considered a commodity delivered by interchangeable providers. To gain customer loyalty, it is necessary to provide a faultless core service – technical

maintenance – but also to demonstrate a focus on service and to proactively pursue innovation. Above and beyond that first level of requirements, VINCI Facilities aims to address more strategic goals, such as, for example, boosting the attractiveness of the workplace, optimising the use of space and enhancing assets. This requires additional skills. We therefore recently launched a specific training programme at the Institut du Facility Management.



“Our goal can be stated simply: to take care of buildings, their end users and the environment.”

How do you plan to encourage collaboration and synergies between the works and operation business activities within the building solutions business line?

The building solutions business line, which brings together VINCI Facilities and the works brands, has already built strong positions in a number of countries such as France, Belgium and Morocco. One of our major goals is to branch out from our installation work to cover long-term maintenance of complex, multi-technical systems. The fact that our teams are present at the sites and in touch with customers and end users gives us an advantage. It enables us, for example, to advise our customers in the preparatory phases of renovation projects. Our technical expertise in smart building solutions during both the installation and operational phases will also be an invaluable asset.

TRENDS BUILDING DATA FACTORY: A COMPREHENSIVE OVERVIEW OF THE BUILDING

To aggregate and correlate the full range of data collected in smart buildings, VINCI Facilities has created the Building Data Factory, a digital management and analysis system supported by the company's technology value added. In addition to substantial storage capacity, its main advantage is its ability to connect to most commercial tools (CMMS, BAS, space management, etc.) and to facility management tools. By integrating technologies such as dynamic data analysis and artificial intelligence, the Building Data Factory will put the operation of tomorrow's smart buildings into practice.



Significant contract in Singapore

As one of the leading M&E engineering companies in Singapore, Wah Loon Engineering was recently awarded a new data center project to be carried out for a Singapore administration. The contract covers the full range of mechanical and electrical works packages: air conditioning, mechanical ventilation, fire protection, high and low voltage electricity distribution, plumbing, building automation system, IT system and security.



A new lease on life for the Tazi Palace in Tangier

In Tangier, Qatar National Hotels Company Morocco awarded the turnkey contract for a luxury hotel to Sogea Maroc (VINCI Construction, for structural works) and VINCI Energies (for technical works packages). The 36,000 sq. metre structure will replace the former Tazi Palace. The project is an illustration of VINCI companies' ability to join forces to take on a large project without calling on subcontractors.

"The digital twin ensures agile maintenance"

BERNARD JEAN,
POLE GENERAL MANAGER, FACILITIES, GERMANY



Digital Twin is a solution that displays the data used to manage a building's facilities. The tool was developed by the NavVis company and interfaces with the VINCI Facilities computer assisted management system. The tool enables technicians to locate the place where they are to work, to carry out a first virtual inspection and to retrieve full information concerning the equipment to be serviced or repaired – the most recent maintenance report, the relevant tutorial, etc. It significantly boosts efficiency. In addition, the preliminary digitalisation of the area can be carried out easily and quickly.



Construction of the Bergheim middle school is set for completion in July 2019.

PROPERTY BUILDING A MIDDLE SCHOOL GEARED TO TEACHING GOALS

In Germany, VINCI Facilities SKE has won a 25-year public private partnership (PPP) contract to finance, plan, build and maintain a middle school in Bergheim. The school will have distinctive modular spaces that can be rearranged to accommodate changing educational needs. Prior to winning this contract, VINCI Facilities SKE carried out 16 projects under PPP contracts, primarily for school buildings, giving it substantial experience, notably in optimising the life cycle of materials and equipment.

Onward and

UPWARD

THE INNOVATION LOG

“Our unique approach to innovation builds on our open and pragmatic innovation programme”



LYDIA BABACI-VICTOR,
BUSINESS DEVELOPMENT AND
INNOVATION DIRECTOR, VINCI ENERGIES



Life is increasingly fast-paced, the way we work is changing, trade and travel are globalising and technologies are shifting and modifying the products and services provided by companies. The role of VINCI Energies is more than ever to support energy transition and digital transformation against a backdrop of acute awareness that the old ways of doing things no longer work.

We believe that human intelligence alone is capable of innovation. To further boost innovation performance, we encourage multi-disciplinary and collaborative work. Our unique approach to innovation builds on our open and pragmatic innovation programme. We operate at the heart of an intelligent, structured, complex and changing ecosystem with tools and services that encourage, support and accelerate innovation, to move it from idea to financing and industrialisation.

Though we do not have our own R&D teams, we have thus been able to foster the emergence of a work environment in which innovation can flourish, thanks to action we have been taking for the past three years. We have now reached the point where innovation is being put into practice, value is being created, and the results are being included in the day-to-day work of all Group business units.



ENERGIZE,

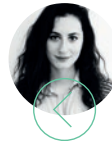
AN ACCELERATION PROGRAMME FOR INNOVATIVE IN-HOUSE PROJECTS

Energize gives VINCI Energies intrapreneurs access to methodological support, including mentoring and training, as well as financial support. It also gives them access to the VINCI Energies international network of technology experts when developing their project. To be eligible for selection, the project must involve a technical innovation that can be industrialised by VINCI Energies as a whole.



13 POCs
(Proofs of Concept)
supported by the
Energize programme

MEETING WITH JEANNE BONNET,
PROJECT MANAGER AT CITEO INGÉNIERIE
AND ENERGIZE PROGRAMME BENEFICIARY
WITH THE SOLAR CAMP PROJECT



How did the Solar Camp project come about?

JEANNE BONNET: The founding partners of thecamp, an international innovation campus in Aix en Provence, France, wanted to test the implementation of a smart power grid dedicated to a fleet of electric bicycles and cars. My business unit decided to put the idea into practice with a full-scale smartgrid project. And what better place to do it than thecamp?

What challenges lie ahead?

J.B. : Ultimately, we want to find a **Vehicle-to-grid** business model. We are working on integrating a blockchain application to manage energy with Bovlabs, a startup incubated at thecamp. ARII* is also helping us define a business model that can be duplicated in other regions.



The **Vehicle-to-grid** concept involves the innovative use of electric vehicle and bicycle batteries, which can produce electricity. During peak consumption periods, they can re-inject energy into the local grid to help balance it.

* Agence Régionale pour l'Innovation et l'internationalisation en Provence-Alpes-Côte d'Azur (regional innovation and internationalisation agency).



HERMES

STIMULATING COLLECTIVE INNOVATION

Following a lengthy co-creation process bringing together the innovation community within VINCI Energies, Hermes was launched in March 2018. The new platform lists all innovative projects carried out by the group and their proofs of concept (POCs), as well as the startups deemed most relevant to our issues, with feedback in each case.



RICARDO CARVALHO,
IOT SOLUTIONS ARCHITECT,
AXIANS PORTUGAL

Collaborative work has never been more important. The way we work is being radically transformed as business models rapidly evolve, become more and more sophisticated and call for new skills. In the field of innovation management, the trend is even more pronounced. Across a group like VINCI Energies, our business units are creating dozens of innovative projects every year. It is therefore crucial that we acquire a central knowledge base, not just to facilitate sharing of new ideas and projects, but above all to make the most of best practices and feedback. The knowledge base must include projects that did not succeed. Day-to-day, our customers challenge us to resolve specific issues. Hermes enables me to look for tested and approved solutions that I can offer customers, either by working with startups or via in-house projects. Recently I discovered a suitable project involving geolocation within buildings that could be of interest to one of my customers.



298 startups
and 87 in-house
projects listed



807
members



Building on the success of La Factory in France, the Digitalschmiede opened in Frankfurt, Germany on 6 April 2018. The facility, which covers several hundred square metres, combines an innovative work environment with a demonstration space exhibiting the latest Industry 4.0, smart energy, smart building and smart city technologies. The Digitalschmiede is designed to put the ideas of VINCI Energies' customers and employees into practice.

THE DIGITAL-SCHMIEDE

DUALITY: FROM IDEA TO IMPLEMENTATION

Duality is the VINCI Energies Deutschland consulting firm that helps customers take an idea for an innovative project to concrete prototypes within less than a month. Within the Digitalschmiede, Duality applies design thinking methodologies, with the customer as the focus of the analysis.



THE CORNERSTONE OF THE VINCI ENERGIES FACTORY NETWORK



BERNHARD KIRCHMAIR,
CHIEF DIGITAL OFFICER, VINCI ENERGIES DEUTSCHLAND

After a year in operation, we consider this a very positive experience. This facility, which is dedicated to innovation, has hosted 150 workshops, projects and events involving more than 2,000 people. A strong collective momentum has been created. Not only are we working with partner companies such as ABB, Cisco, Dell EMC, DJI, IBM, KUKA, Microsoft, Siemens and several startups, but we are also organising meetings and workshops with public authorities, such as the city of Heidelberg, and with private sector companies such as Evonik, KPMG, Sanofi, Sennheiser and Vattenfall. Our goal is to foster the emergence of new solutions.

The Digitalschmiede space is emblematic of our approach to innovation: we see it as a way to further develop our solutions and services by stepping up co-creation with our customers. We put together joint project teams in which our employees and our customers work together to develop value-creating digital solutions. Here we can devise and test the latest state-of-the-art technologies to support our customers' digital transformation. We are also considering working more closely with the German startup community to perhaps take inspiration from them and develop new business models.



2,000
visitors



150
projects, events
and workshops



15
demonstrators

INERBIZ

supporting startups
and providing
testing grounds

Inerbiz is the VINCI Energies managerial investment fund that works with startups to design new solutions and services. The Inerbiz programme aims to forge long-term industrial and commercial partnerships by acquiring stakes in startups that focus on our customers' business issues. When a startup joins the Inerbiz programme, it receives customised operational support (mentoring) and opportunities for testing and prototyping its innovations together with VINCI Energies business units.



28
mentors trained



8
investments
in startups



LEARNING TO BECOME A MENTOR

If the pace of joint projects involving startups and VINCI Energies business units is to be stepped up, each must acquire knowledge of the other's environment. In 2018, the VINCI Energies innovation department therefore set up training in how to be a mentor. Trainee employees learn how to define the best approach to supporting startups and managing the specific features of an innovative project (intellectual property, finance, team, etc.).



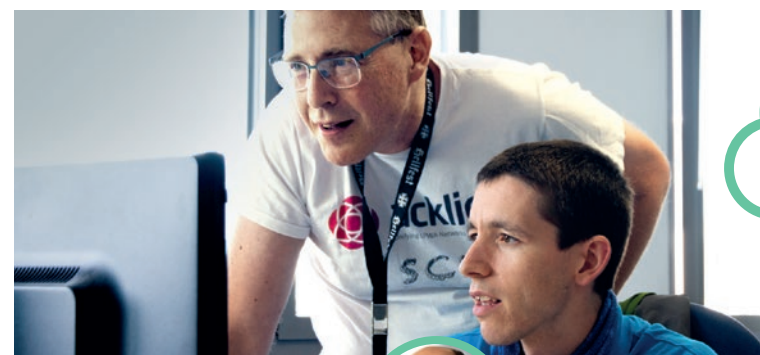
Mentor training gave me the tools and methods I need to coach the development of an innovative or even radically disruptive idea together with the business unit. I learned how to successfully provide support – how to stand back and let the innovator do things rather than doing them yourself, how to guide and not dictate the work, and finally how to be able to slow down or step up the project as needed. Innovation causes reactions and involves codes that you need to understand. I am now able to adapt to all situations.

SÉBASTIEN OGER,
Technical Director, Mobility



ACKLIO, CREATING AN IOT VALUE CHAIN

Acklio is an innovative technological solution for the Internet of Things market. The startup originated with the meeting of two IMT Atlantique research scientists. Together they created the SCHC (Static Context Header Compression) protocol, which ensures interoperability between LPWAN networks and IP protocols. The protocol moved in less than a year from innovative technology to market standard status. A 15-person team including seven PhDs and seven different nationalities is supporting the founders in developing the startup.



“A radically disruptive approach to the Internet of Things (IoT) market”

Acklio created a new protocol that simplifies standardised data collection. Discovered at the World Mobile Congress, Acklio is now part of the VINCI Energies strategy of creating an IoT value chain for our customers and contributes a further offer. Beyond their innovative solution, the Acklio team impressed the jury at Inerbiz, the VINCI Energies investment and managerial fund, with their entrepreneurial spirit, which closely resembles that of our employees. This similarity of values underpins a close working relationship on which we are building a virtuous partnership. My role, through Inerbiz, is now to promote the expansion of the startup both internally and externally. My mission resembles that of a translator: I analyse the needs of the startup and guide it to the right VINCI Energies business units and their partnership network. I am also there to “sort” the requests made by our employees and select the most relevant ones, so as not to overburden the startup.

JUAN LOPEZ,
Technical Director, VINCI Energies France
Communication & Systems



“Our mentor gave us guidance to help us meet operational needs”

There are now millions of connected objects and soon there will be billions. They play a crucial role in managing major infrastructure such as lighting and energy networks and hospitals. In all these markets, we have created a technology brick that constitutes only a tiny part of the overall solution to be addressed. We therefore met with integrators such as VINCI Energies to obtain feedback on the possible uses of our products. We very quickly decided to apply to join the Inerbiz programme. Our mentor gave us guidance to help us meet operational needs. He gave us the keys to a detailed understanding of the integrator's business activity. Today, we feel stronger in bidding on contracts, notably in the smart city and energy fields.

ALEXANDER PELOV,
CEO Acklio



WITH TOTAL, *CO-INNOVATING* TO ACHIEVE COMMON OBJECTIVES

Total and VINCI Energies are focusing on co-innovation between large groups. A good illustration of the strong trend is Total's "Plant 4.0" startup incubator, which it has opened to several industrial partners, including VINCI Energies. The multi-corporate co-innovation and sharing programme is designed to boost efficiency, as Jean-Michel Lang, VINCI Energies Oil&Gas Director, and Michael Offredi, Digital Ecosystem & Innovation Officer at Total, explain.



JEAN-MICHEL LANG



MICHAEL OFFREDI

Why did you launch the "Plant 4.0" incubator?

MICHAEL OFFREDI: The incubator was launched as part of our roadmap for accelerating the introduction of innovative digital technologies in Total's industrial activities.

It rounds out our in-house programme and confirms our open innovation approach, which involves both startups and other industrial groups.

JEAN-MICHEL LANG: To deal with maintenance issues at their industrial site, VINCI Energies and Total employees wanted to implement innovative, long term solutions within a short period of time. It therefore made sense to call on startups.

What benefits does a startup derive from joining an incubator?

J.-M. L.: The major advantage for a startup is to rapidly gain access to a place where it can experiment with its innovation. We give startups access to a living laboratory!

M. O.: The multi-corporate approach enables a startup to present its solution to a range of industries and thus gives it a better chance of carrying out experiments in an industrial setting and gaining access to technical and business experts. Over 200 startups have applied to join the incubator since 2017.

What lessons have you learned from this initiative?

J.-M. L.: Successful co-innovation by large groups requires them to share common issues with feedback from the POC. Transparent discussion generates tangible, pragmatic solutions.

M. O.: We hope to transform these experiments into industrialisation projects and have already done so for four incubator startups. But we do not aim for a 100% conversion rate. Innovation involves shots in the dark - which are also very instructive, for both startups and industrial companies.



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