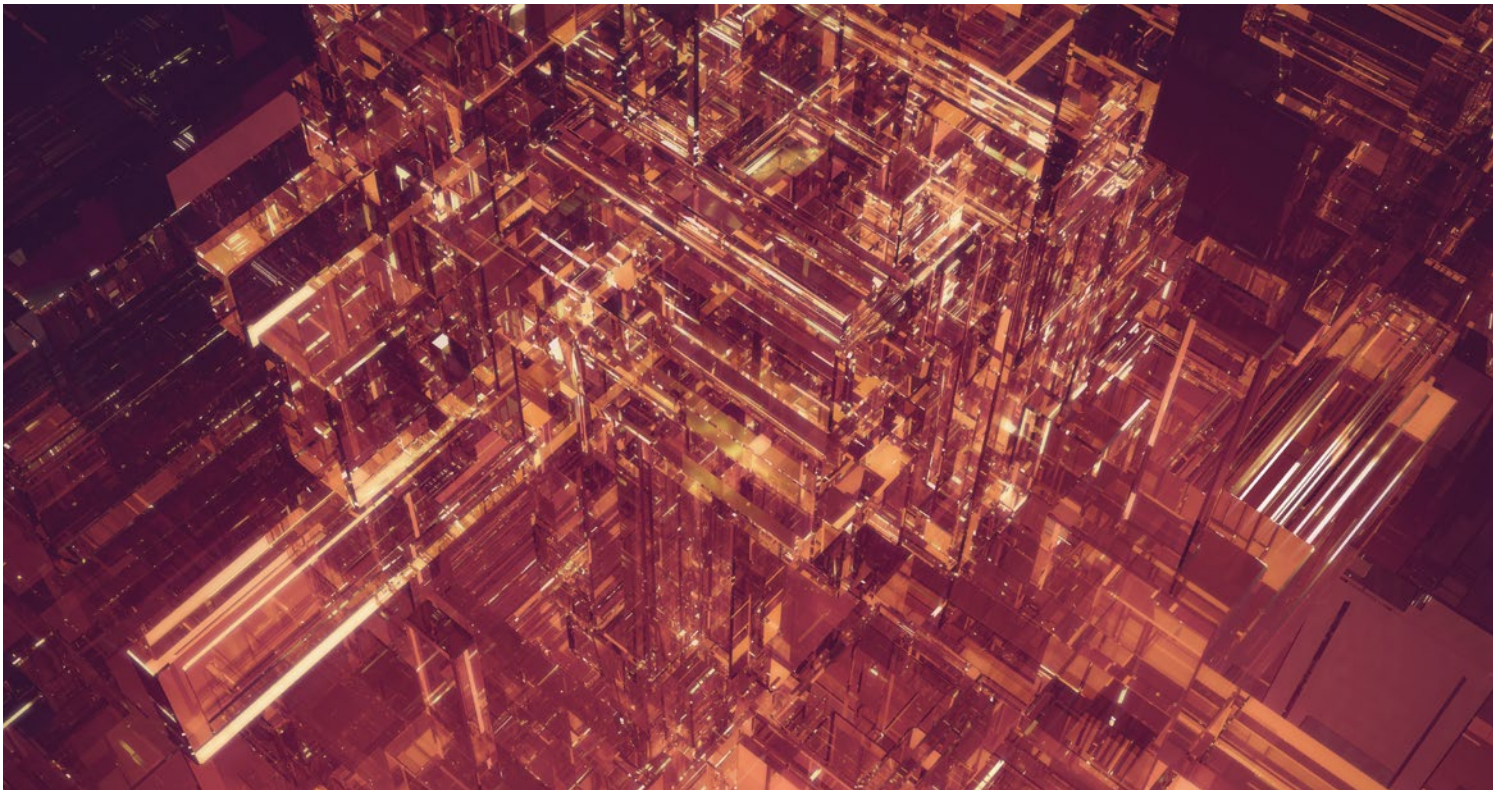
SMART ENERGY & UTILITIES

We evolve our Clients' business models and processes, along the entire energy chain, according to the paradigms of Digital Transformation.

WHAT ARE WE DISCUSSING?

1 TRENDS, CHALLENGES AND OPPORTUNITIES

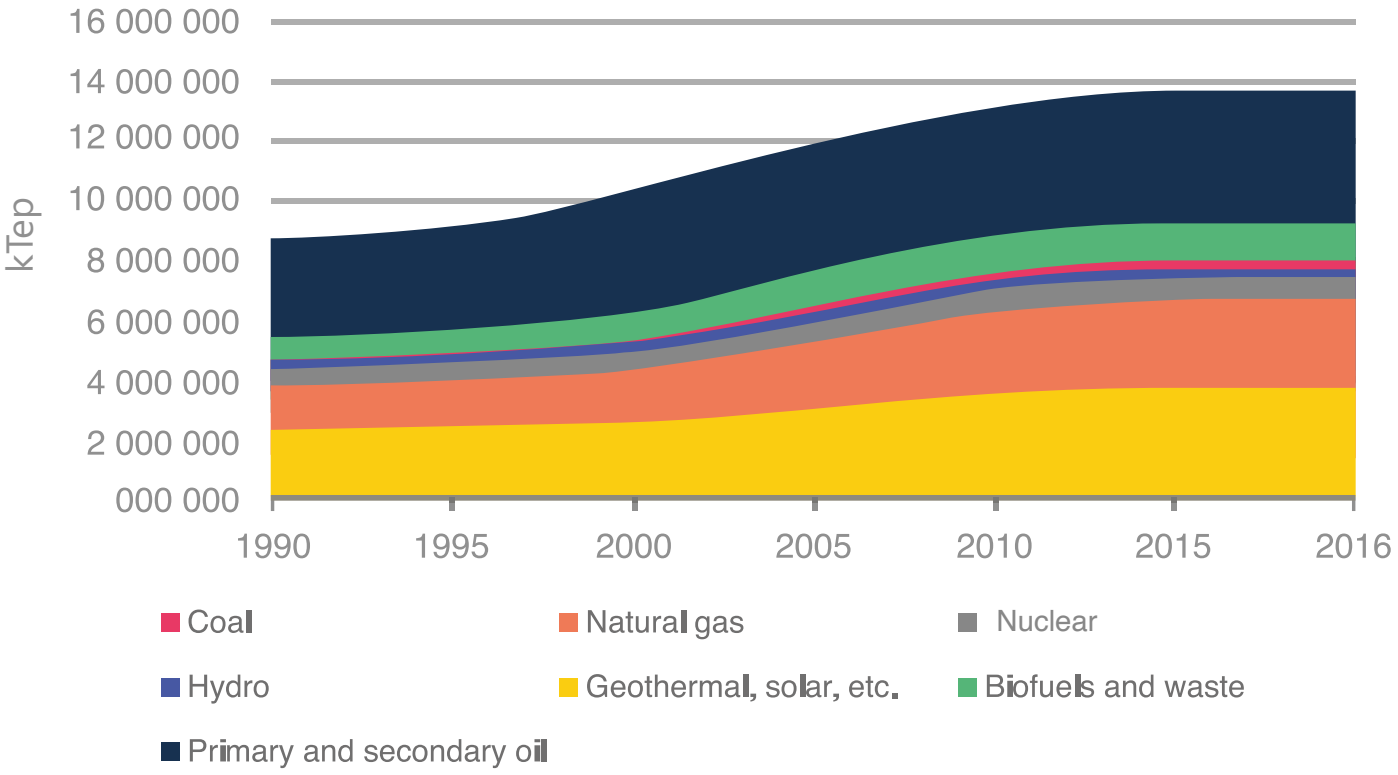


During the past decades, the continuous growth of the economy and global population has determined a strong increase in electricity demand. On a global level, current energy consumption has almost doubled compared to 30 years ago. In the future, this demand will be increasingly linked to the growth of renewable sources, as it is estimated that renewables will supply, by 2035, more than 50% of our energy needs.

In Italy, the importance of these energy sources is also demonstrated by the 2030 objectives defined by the Integrated National Plan for Energy and Climate:

- 30% of final consumption must be covered by renewable sources, through the installation of around 39 GW of new plants; this represents a strong challenge, as the growth of these sources between 2008 and 2018 accounted for 26.2 GW
- reach a minimum of 33% reduction in gas emissions at European level (in non-ETS sectors), compared to 2005
- increase the use of renewable sources in transport sectors, from 5% in 2017 to 22% in 2030
- guarantee a safe and complete phase-out of coal-fired thermal plants within 2025
- focus on energy efficiency to reduce primary and final energy consumption, respectively to 43% and 39.7% (compared to the PRIMES 2007 trend scenario).

Total Primary Energy Supply (TPES) by source [kTep] - World



In order to adapt such dynamics, the players of the Energy & Utilities sector are aiming to diversify and innovate their businesses, converging towards a unique way of conceiving energy needs, which will be no longer divided into distinct areas (gas, electricity, oil, etc.) but managed by following an holistic approach.

Hence, today's players, who aim at gaining a competitive edge and survive in the market ecosystem, must have transversal and comprehensive skills covering different market fields, to optimize the use of resources and create synergies inside or outside market verticals.

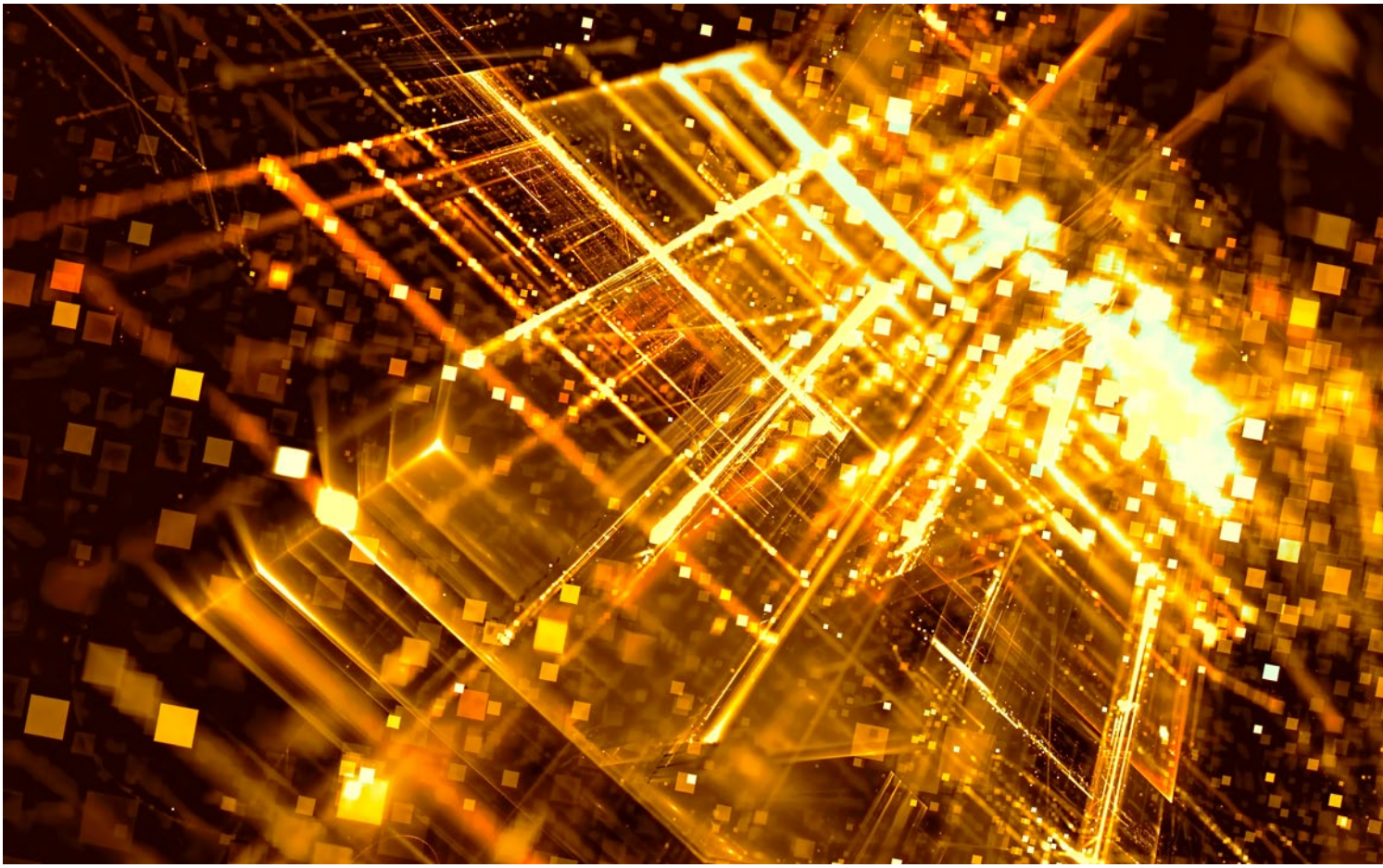
In Italy, the evolution of the industry during recent years has been strongly influenced by the liberalization of the market, which eliminated the support of the State, forcing companies to innovate in order to remain competitive.

Market players have managed to respond to this challenge by relying on technological partners, such as Engineering, working together to optimize their core processes and quickly acquire new knowledge and skills.

Industry evolutions stem from several global drivers, such as:

- **Digital Transformation,** which redesigns traditional processes and business models through "enabling" digital technologies, such as: AI & Advanced Analytics, Cloud, Cybersecurity, IoT, RPA, AR/MR/VR, Blockchain, Digital Twin. Such transformation generates new paradigms, improving existing processes and solving so-called "traditional problems", making the most out of the power of data.

- **Technology-based Trust,** which will allow Customers to operate on safe IT ecosystems that do not involve a central authority, thus reducing possible frictions between ecosystem participants. Technologies such as Blockchain are the main actors in this area



- **Green Energy,** the energy of the future, partly already adopted today, coming from renewable sources will be stored locally. In this process, the final consumer will adopt a new identity, as both energy "producer" and "re-seller". This is among the most likely scenarios, which could lead companies to increasingly adopt the process of "decarbonisation".

- **Power to the Digital Player,** as we live a "democratization" of technology, where digital players open up tools and information, previously available for a few actors, for other stakeholders. Moreover, the barriers that, in the past, separated different market sectors are falling, thus allowing technology companies to access previously unexplored areas. For example, in recent years, players who did not belong to the energy sector, but who exploited their skills in terms of services (e.g. Google and Amazon), or infrastructures (e.g. Siemens and ABB) entered the energy industry.

In this scenario, the main market players understand how important new digital technologies are in enabling innovative solutions and, therefore, new opportunities. These actors are preparing to manage new technologies through a framework declined on:

- the **"offline"** world, referring to processes and activities that the final user / customer doesn't see (e.g. CRM solutions, billing, ERP, etc.)

- the **"online"** world, referring to processes and activities that you want the final user / customer to see (e.g. innovative or strategic activities).

In order to manage this framework, market players increasingly tend to entrust the "offline" world to their technology partners, while taking care of the "online" world internally – or outsourcing it to niche suppliers.

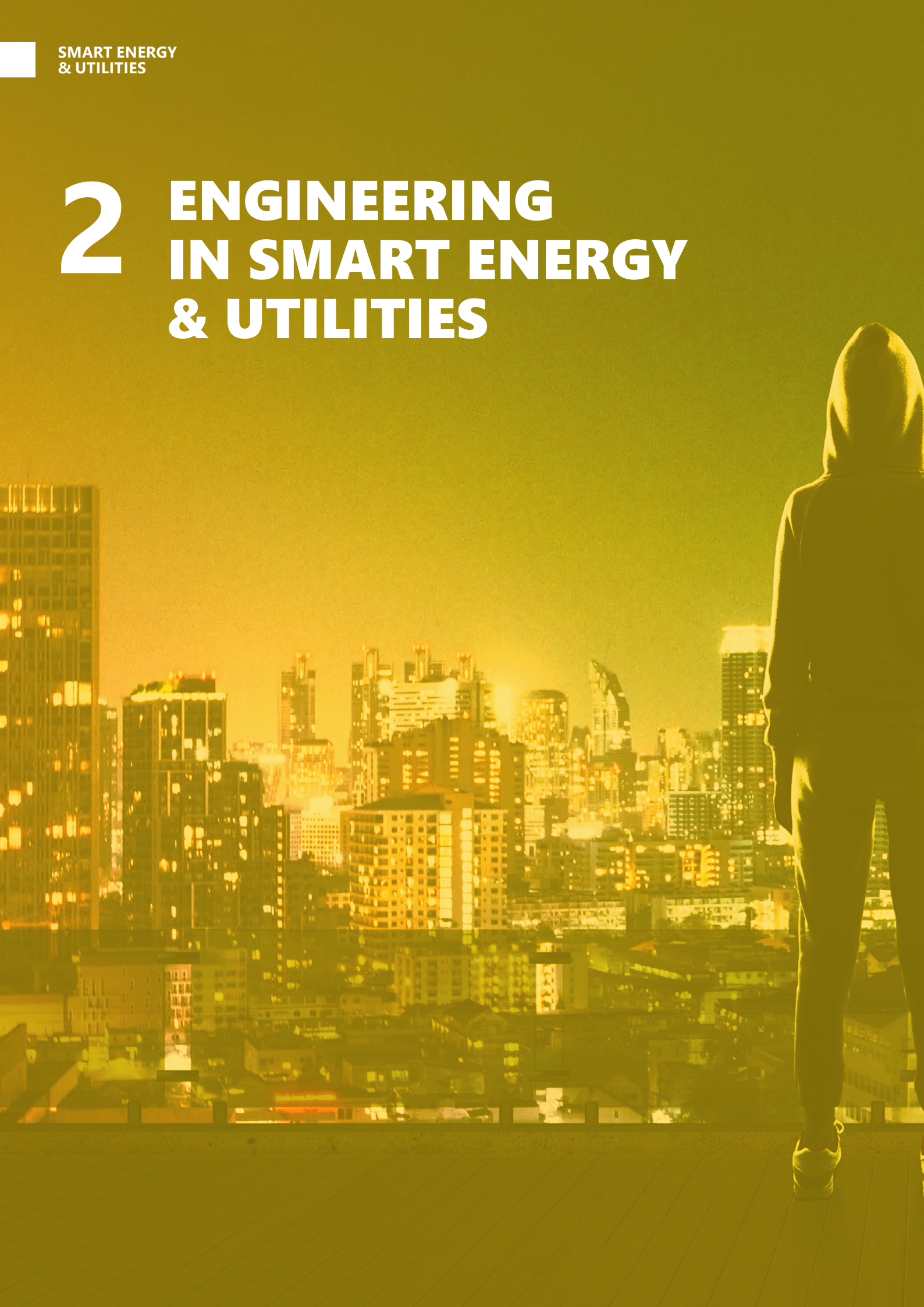
In particular:

- large players, mainly active in the Energy sector, are diversifying their business by focusing on renewable energy and on identifying and applying new technologies and solutions. At the same time, these players are looking for partners with whom to innovate in a rapid and flexible fashion, not only to optimize their processes with "traditional" solutions but to face market changes.
- medium and small players, mainly in the Utility sector, instead adopt Digital Transformation in a more agile way on non-core processes, also due to a lower investment capacity with respect to that of larger players.

In this scenario, Engineering well responds to the flexibility demand of the industry, as we manage to interact both with larger and more innovative entities - also abroad -, and with small and medium-sized Italian companies. **We guide customers in their Digital Transformation path thanks to a strong knowledge of our Customers' core processes, the dynamics of the utility sector, and by supporting both the ability to innovate and that of managing also the traditional aspects of the business.**

Engineering has a consolidated experience in the activities that customers consider "offline", and is considered as a strategic partner in the development of innovative solutions related to the "online" area. Today, Engineering's excellence is recognized for providing solutions in back-end activities, but also on agile and dynamic platforms across the IT sector, with particular attention to customers' user experience, thus moving towards a new concept of supplying services at 360°, not as separated commodities.

2 ENGINEERING IN SMART ENERGY & UTILITIES



With more than three decades of experience in the energy sector and in the core processes of its major market players, Engineering supports the transformation of business models and the digitalization of customer processes, promoting the creation of new and reliable business paradigms, enabled by new digital technologies. Engineering brings strong added value to customers by:

- ensuring regulatory compliance, thanks to an in-depth knowledge of Italian and European regulations and the proven ability to assess the impacts of their evolutions related to IT systems and business processes
- bridging the gap between customers and their end users, providing innovative and user-friendly solutions
- providing cloud solutions that maximize return on long-term investments.

We are a strong partner for our customers as we address both their needs for reliability and operational efficiency through a traditional model - solid, accurate and safe -, and the need for agility and efficiency through an agile and innovative model. In this sense, we also value the research and development of new solutions by exploring services and innovative business ideas, thanks to our Research and Innovation Department.

Furthermore, Engineering recognizes an important role for technological and business partners, as these allow us to extend and integrate our capabilities, both in terms of geography and of best-fit technology.

According to this approach, we exploit a global network of partners, on whom we draw according to the needs of our customers. For example, we collaborate with SAP - especially on the Cloud platform SCP -, Salesforce.com, Microsoft - in particular for Office365, Dynamics and Azure -, Oracle (e.g. DBMS), Tibco.

Engineering is a leading player at national and international level in supporting customers during the evolutionary path towards "smart" energy management. For us, "smart" for Energy & Utilities sector means adopting new technologies to create value-added solutions and services, but also to adopt **new methodologies** (e.g. agile, design thinking, devOps), and collaborating with industry experts.

We carry out our activities with a strong focus on sustainability, as stated in our Corporate Social Responsibility Report: "betting on ingenuity, on human intelligence that can transform the world and improve it, respecting its delicate balance and preserving its increasingly precious natural resources".

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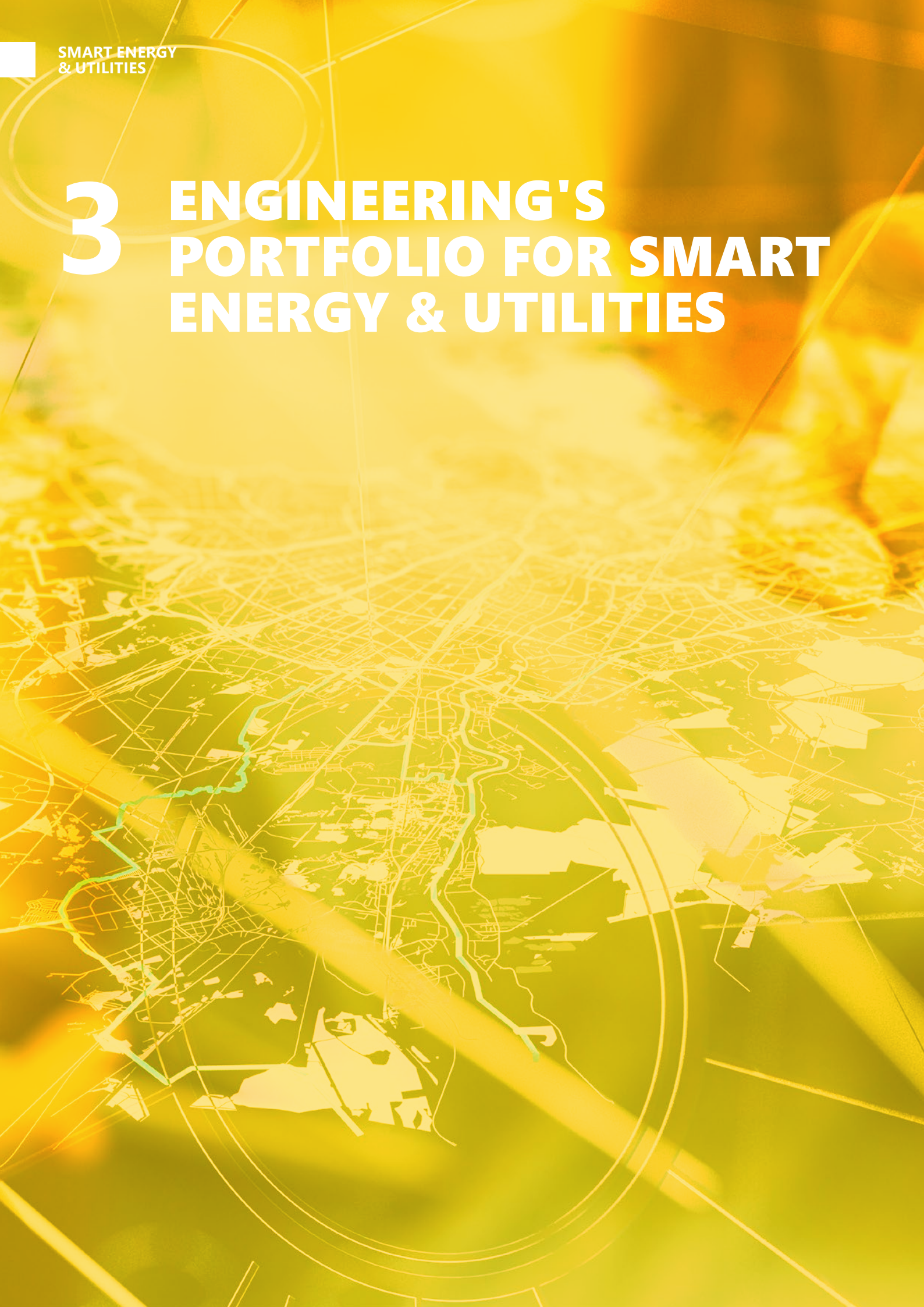
3 ENGINEERING'S PORTFOLIO FOR SMART ENERGY & UTILITIES



In the field of Smart Energy & Utilities, we provide services and projects, globally, through an organizational structure that counts more than 900 professionals, in Italy and around the world, and over 300 clients.

We can also provide to our clients strong vertical experience on specific fields, thanks through our Competence Centers. These are specialized, cross-market business units (e.g. on CRM, ERP, PM, etc.) that can be involved in running projects or directly on our clients.

We evolve our Clients' business models and processes, along the entire energy chain, according to the paradigms of Digital Transformation.

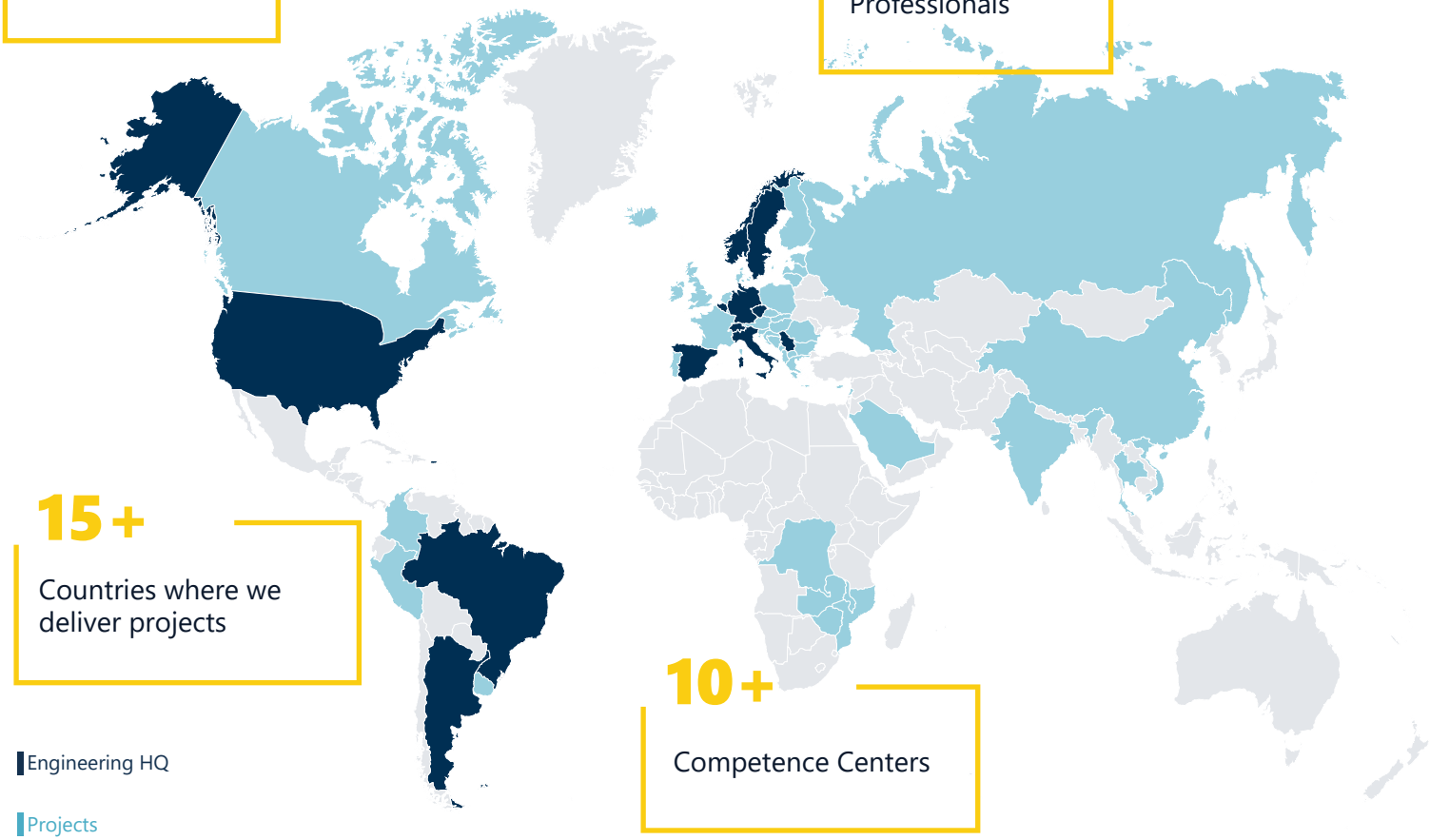
More in detail, Engineering supports large national players, also supporting their internationalization processes, as well as small and medium-sized enterprises, both in the Utility and Energy sectors. In particular:

- for large companies, Engineering is mainly a system integrator that supports them in their Digital Transformation path, thanks to the capability of delivering solid solutions and technologies applied to business processes, and exploiting them to enable new digital paradigms. We work with large customers to promote and support their international expansion, closely following their projects, pivoting on our experience and global presence, as well as on global partnerships.

- for hundreds of small and medium-sized Italian companies, Engineering is a partner that stands out for the strong reliability of its solutions, mostly proprietary, in the Energy & Utilities sectors. We guide and support customers by also offering end-to-end services, from the analysis of legislation and business, core services – e.g. metering to cash, measurement of energy consumption -, up to the management of all credits generated. Also in this field, we are a partner for Digital Transformation of the most innovative market players.

300+
Clients

900+
Professionals



15+
Countries where we deliver projects

10+
Competence Centers

Engineering HQ

Projects

We evolve our Clients' business models and processes, along the entire energy chain, according to the paradigms of Digital Transformation.

Engineering developed a specific framework, the Portfolio Map, to describe its end-to-end competencies in the Energy & Utilities sector.

By integrating our competencies, our deep knowledge of the sector and digital platforms, dedicated services and enabling technologies, we evolve the business models and processes of our customers along the entire energy chain, in a completely secure manner, according to the paradigms of Digital Transformation.

In fact, Engineering ensures constant Cybersecurity through one of the most important Cybersecurity centers in Europe, with more than 550 specialists and over 10 Petabytes of data managed.

Engineering's success is proven by the several installations of our integrated proprietary platform, the **Neta Open Suite**.

NETA
OPEN SUITE

Our composable, agile, innovative solution enabling digital ecosystems to efficiently support and anticipate the evolution of Smart Energy & Utilities.

WHAT IS IT?

Neta Open Suite enables the management of **"core" processes** for sales and distribution operators in the **gas, water & electricity markets**.

It is the **leading Customer Information System (CIS)** solution for managing **Meter2Cash** and key E&U processes.

It **adapts to the needs of Clients** by offering innovative SaaS solutions that improve operational efficiency and help achieve business goals with **Cloud, Artificial Intelligence and Machine Learning**.

WHAT DOES IT DO?

Neta Open Suite gives value to data as an enabler of digital transformation, supporting value creation through new products that can be integrated with other market solutions.

- **Saas**: new solutions fostering an ecosystem approach;
- **Data-driven**: Integrates data from different sources, creating new value;
- **Process-driven**: Leverages our deep market knowledge;
- **Composable**: Enables the adoption of "best fit" solutions including third parties;
- **VAS enabling**: Ensures the development of new digital services.

HOW DOES IT WORK?

It includes a set of next-generation, cloud-native and **composable modules** that enable CRM, ERP and payment management, even within a specific market domain (e.g., gas distribution), covering:

- **regulated services** (gas, electricity, water services);
- **new services, not yet regulated** (e.g. energy communities).

It is enabled by the **Neta Open Platform**, which, through API and Data Lakehouse Management services, enables **access, integration, flexibility and openness** of the Suite modules to data and systems:

- **Client's IT ecosystem** (e.g. legacy systems, "core" data);
- **External ecosystem** (e.g. 3rd parties', weather, social data).

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WHERE DO WE APPLY IT?

NETA OPEN SUITE CAN BE APPLIED TO:

- **Metering**
- **Billing**
- **Credit Management**
- **Accounting, Logistics and Warehousing**
- **CRM**
- **Energy Communities**
- **Distribution**

40%
WATER MARKET

50%
GAS MARKET

+60M
BILLS ISSUED PER YEAR

1BN
BILLS ISSUED UP TO NOW

60%
ELECTRICITY MARKET (excl. meters run by Enel)

+150
CLIENTS IN ITALY, SPAIN, SOUTH AMERICA

WHY CHOOSE US?

COMPOSABILITY

- **Ease of integration**
- **Preserves investments by enhancing the IT ecosystem**
- **As-a-Service & On Prem, Cloud-ready delivery**

INNOVATION

- **New Value-Added Future-proof Services**
- **Reduced human interaction**
- **Reliability**
- **Multidimensional data management**
- **Cloud-native microservices approach**

AGILITY

- **Flexible architecture**
- **Adaptable to current and future stakeholders' needs**
- **Continuous functional improvement**
- **Compliant with industry regulations**

4 ELECTRICAL POWER & RENEWABLE ENERGY

The electricity sector is going to play a fundamental role in the future of world economy. In 2018, global electricity production exceeded 25,000 TWh, but demand is expected to double by 2050, driven by increased consumption expected in transport, industrial and private buildings sectors.

In the light of the above, the future will no longer be characterized by large thermoelectric power plants where energy is produced at very low cost and transported for thousands of kilometers to the final consumer, in an unidirectional logic. Instead, we will observe the rise of "meshed" ecosystems, providing for a logic of local micro-production and an energy exchange between end-users.

This will lead to more efficient electricity grids (less transmission losses, less energy dependence and dispatching complexity), to a considerable reduction in fuels (solids and liquids, in particular) and the direct involvement of citizens in the energy transition.

The reduction in the costs of photovoltaic systems (-45% from 2011 to 2016 in the residential sector), greater user awareness and support mechanisms (bill savings, personal income tax deductions, simplified procedures, on-site exchange, etc.) have allowed the diffusion of a new configuration of the electricity ecosystem: distributed generation. Here, the citizen takes the role of a "prosumer" (producer-consumer).

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Engineering supports customers in managing activities related to the whole electrical power cycle, from production to transportation, to distribution and sales. For example, we provide solutions:

- to the national transmission grid operator, Terna, such as SCADA, control and management of network data, metering and dispatching
- in the area of electricity distribution, by playing a primary role in supporting e-Distribuzione, the main Italian player in the sector, as well as one of the most important in the world. This multi-year collaboration has led to the development of increasingly cutting-edge solutions, covering the areas of measurement, WFM, CRM
- in the field of energy measurement, SIME and Exabeat projects were developed for Enel to re-engineer measurement systems, on a global level, creating a Big Data infrastructure
- in the sales area, we count several installations of our Net@Suite platform, chosen also by Eni Gas & Luce, as central system for the management of the meter-to-cash process, in dual-fuel mode (light and gas).

The concept of Smart Energy involves a careful consumption of electricity and a direct contribution of the end-user in improving the energy balance. Furthermore, the use of renewable energies plays a fundamental role, and has been supported in Italy first through a growing number of photovoltaic plants, then by wind plants and other types of production plants from renewable sources.

Since the beginning of this trend, Engineering has immediately developed expertise in this area, providing solutions for the largest Italian players in the field of renewable energies. We supported Enel Green Power, Erg Renew, Acciona, as well as Gestore dei Servizi Energetici (GSE), the company identified by the Italian Government to pursue the objectives of environmental sustainability related to renewable sources and energy efficiency.

On the latter area, that of energy efficiency, Engineering is an active player through an innovative proprietary platform, Home EnergIA. It provides efficient energy measurement and allows to achieve strong energy savings in household electricity consumption (e.g. with reductions by 20% to 30%).

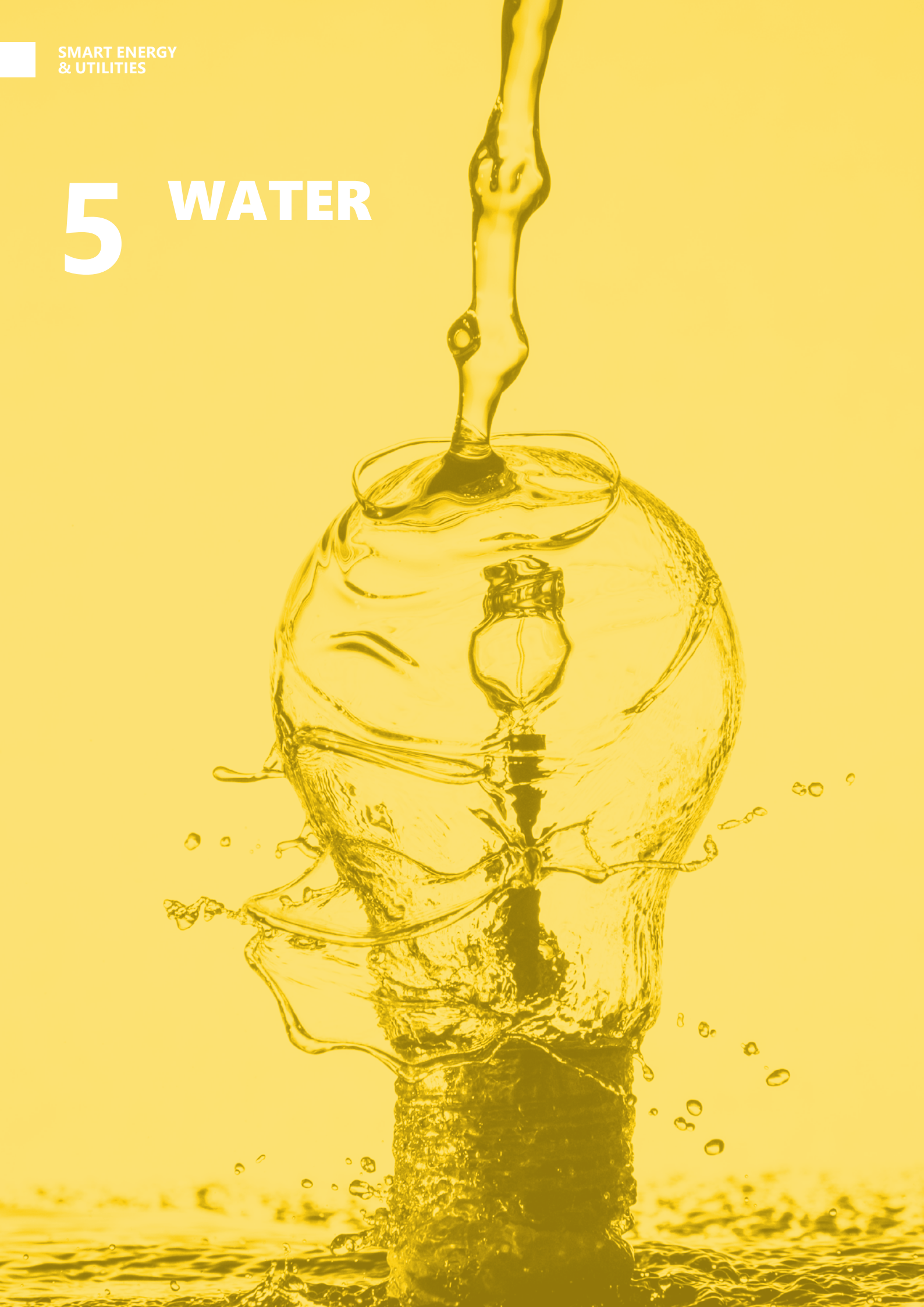
Home EnergIA is built on a Cloud and IoT architecture and is integrated with an electrical socket that measures the consumption of all devices connected to the electricity grid. The integrated Machine Learning algorithms recognize the "fingerprints" of electronic devices and record this information in a dedicated database.

By combining our Home EnergIA platform with new technologies such as Blockchain, we carried out an innovative project that allows to increase the efficiency of energy consumption, enabling the final user to act as "Prosumer" within the ecosystem.

The project, carried out with ENEGAN, created a real "Energy Bank" that implements a Blockchain transaction system. The latter allows private users of the energy network to optimize production, storage, use and exchange of energy from renewable sources, as well as to buy and sell "white certificates".

> Engineering demonstrated strong competences in supporting us in a very innovative project, by recognizing the vision underlying our needs, and developing the solution that achieved our goals. Three adjectives describing Engineering are security, reliability and innovation.
>
> **Maurizio Castagna**
> Research & Development Manager, ENEGAN

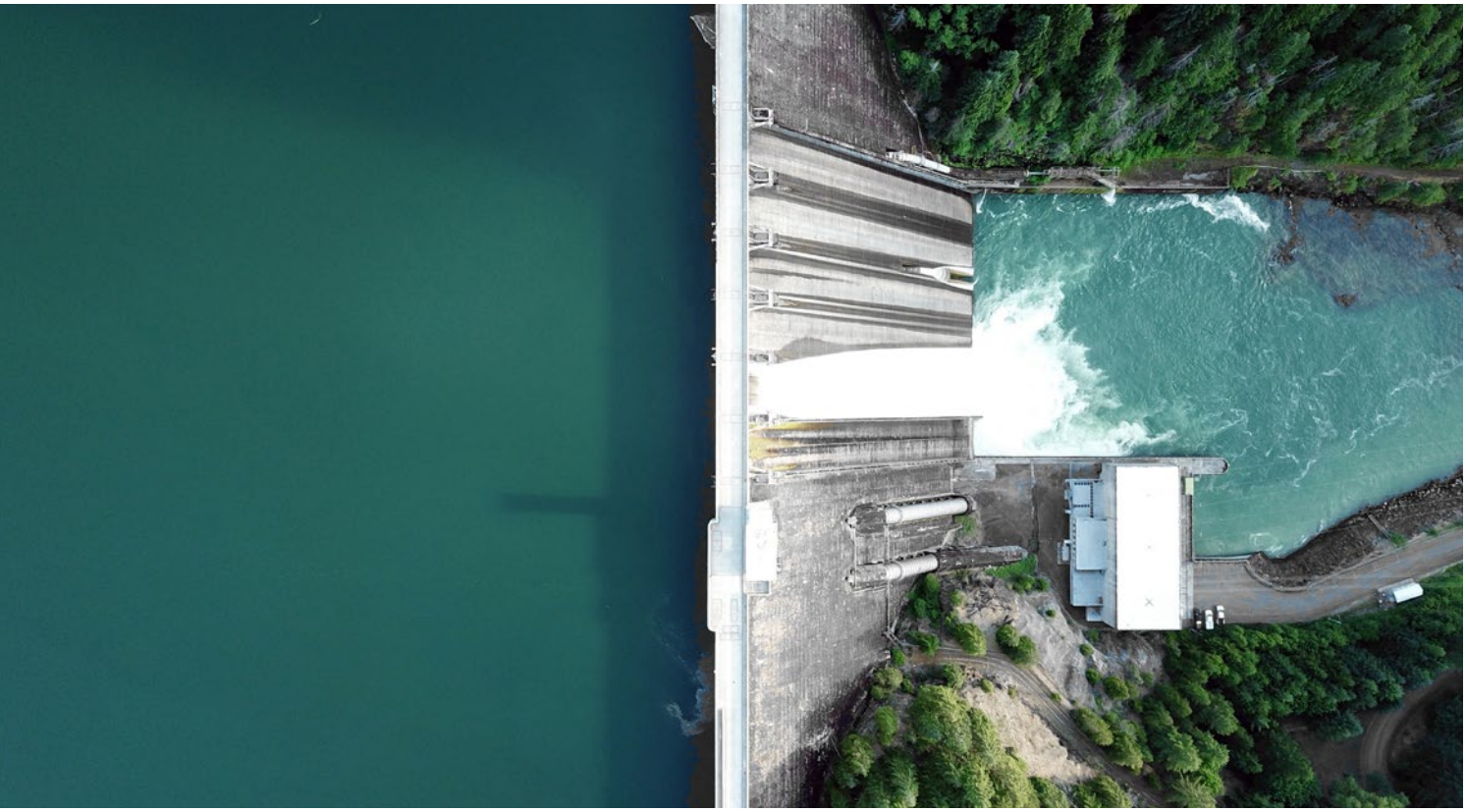
5 WATER



The water sector is facing very complex challenges: by 2050, the world population is expected to reach 10 billion people, and, in the same period, the demand for water will increase by 55%. However, not only water demand worries market players, but also the decline in water quality, which will transform a large part of today's water in unusable resources.

For this reason, today the market requires innovative systems for monitoring water networks that no market player has ever managed to provide, despite the central role that these solutions have in optimizing control and maintenance of very expensive infrastructure. Engineering responds to this need by making the most out of new technologies, such as Artificial Intelligence and sensors placed on the water network, as well as by adopting the most mature technologies related to Workforce Management. The latter, integrated with other areas such as Asset Management and GIS technologies, allows optimal management, better coordination and planning of working activities.

For decades, in the Italian market, the water sector has played a secondary role with respect to gas and electricity, due to the combination of low marginality of the underlying asset and its "political" management. Today, however, also because of regulatory dynamics, at both national and European levels, the water sector is becoming increasingly important.



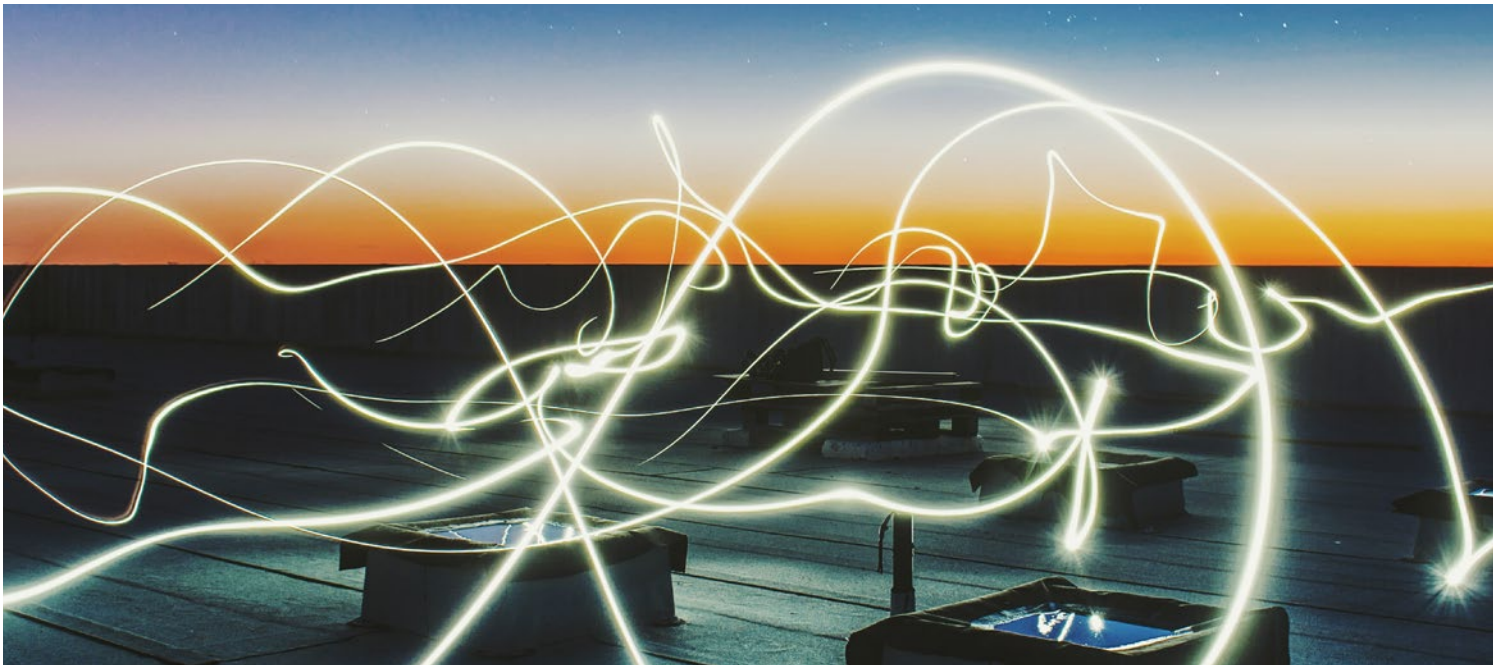
In the water sector, Engineering is a top-level player, highly appreciated and known by customers. This is due to the widespread adoption of proprietary platforms, designed exclusively for operators in the water sector and developed on Cloud, such as Net@2A, which supports Customers in managing the measurement and invoicing cycle.

Among the customers who recognize our strong skills in the sector, there are the top 2 national players and over 30 among the most important Italian players of the market.

In particular, Engineering manages the core processes of CRM, M2C, WFM, Revenue management, Asset management, SCADA by delivering professional services and proprietary platforms, covering the entire chain from production to distribution, up to the sale to the final customer. We also provide strong system integration capabilities.

6 WASTE

According to data released by The World Bank, the world population consumes about 2 billion tons of solid urban waste every day: such a huge amount is expected to reach 3.4 billion by 2050. In the next few years, the waste sector will therefore see an important evolution towards a "circular" approach, and its value will be increasingly recognized: an optimal waste management leads to cleaner cities, improved public spirit, and, in general, to a better quality of life for citizens.



In recent years, social and political interest in the Circular Economy increased as it represents an opportunity to ensure a sustainable socio-economic development, and represents, as well, a possible solution to several challenges (e.g. resource scarcity, waste generation and environmental pollution). The benefits stemming from the development of this field will be not only environmental or economic, but will also have a social impact by increasing the need for new competencies and professional figures.

For example, a number of benefits can derive from the evolution of the Waste Electrical and Electronic Equipment (WEEE) management system. In Italy, between 2025 and 2030, a recent study expects almost 15,000 jobs created, 340-390 million euros saved without purchasing raw materials (against the current €120 million), and climate-altered gas emissions savings for almost 2.5 million equivalent tons of CO2 (approximately 100 million euros a year).

In general, the challenges to achieve a model of sustainable development are increasingly important and harsher, and relate to reduction of single-use plastics, de-carbonization, effective separate waste collection, lower share of waste sent to landfills. We need to increase our efforts and act on several fronts.

In Italy, operating in this sector means to be very close to municipalities. Engineering pursues this objective with Municipia, a company of Engineering Group that supports over 600 Italian municipalities with market solutions, proprietary platforms and dedicated services. Our objective is to redesign production and management processes of the entire life cycle in order to improve environmental performance and integrate new technologies into the waste management cycle.

In the coming years, new technologies such as Blockchain, IoT devices (sensors, RFID, readers, etc.) will play a central role in these processes, improving waste traceability (both for collection and transport operations). This will evolve the concept of intelligent cities into Augmented City, according to Engineering's vision. In the field of Waste Management, these technologies will be fundamental for the remote monitoring of waste collection vehicles, as well as for checking the status of containers collecting waste. In this context, we are currently developing vertical solutions for our customers operating in the sector, such as AMA (Municipality of Rome), Veritas Venezia, Hera Bologna, etc..

Our relationship with our customers is very strong, as we provide solid professional services and proprietary platforms that support the core processes of CRM, WFM, Revenue management, Asset management, throughout the operational phases of collection / disposal and retail of the waste management chain.

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7 HEATING

Heating is based on the concept of using and conveying, to end users, the thermal energy generated by production sources fed with different energy resources, such as geothermal energy, cogeneration, heat recovery from waste-to-energy plants or depuration plants.

Productions processes generate, in addition to their primary effect (e.g. electricity, water depuration, waste destruction, etc.), a certain quantity of energy that, in normal conditions, would be lost. The use of these solutions allows to recover thermal energy for primary uses (process steam, local heating, etc.) or for the use of district heating infrastructure – for the latter, it can be sold through the network to other users (businesses, homes, etc.).

In Italy, the heating sector often overlaps with that of gas and mainly includes district heating. It is growing strongly, also thanks to major investments by the European Commission: recent studies show, in fact, that by recovering heat that is usually dispersed across Europe, it would cover 40% of the European thermal energy demand. Investing in district heating networks and in those systems that are needed to connect networks to the different types of users (even small and medium-sized ones), appears to be a necessary choice to drive Digital Transformation in the energy sector.

In order to carry out such transformation, substantial investments will be needed, in first place. Moreover, it will be necessary to activate appropriate models of collaboration between users and network and define innovative business models to better cover costs.

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While the growing flexibility of the market increasingly involves smaller users, who can often link to multiple energy networks (gas, heat, electricity – e.g. small cogeneration plants, Data Centers, plants, Power to Gas etc.), it often produces a surplus of thermal energy. The latter could be exploited by injecting it into the district heating network through bidirectional connection points, enabling the creation of local heat markets restricted to the areas covered by the district heating network. In this way, multi-energy users would benefit on more energy markets and contribute both to a greater coverage of costs and to the reduction of their environmental footprint.

In this context, Engineering's experience is mainly linked to the supply of IT support and solutions, which use process specialists and proprietary platforms within the following core processes:

- **CRM**
- **M2C**
- **WFM**

For example, in this sector we support Hera's Workforce Management processes thanks to OverIT's innovative technologies. Through its SPACE1 Virtual Collaboration solution, we exploit the potential of "Head-Mounted Display Devices" to optimize the interaction between the field operator and the supervisors in the control room. The benefits achieved by the customer relate to greater productivity and quality of work, along with a reduction in training costs for resources.

8 GAS

“

The world of energy is changing: new policies, technologies and sources suggest the beginning of a new era. An energy transition in search of sustainable consumption models and solutions to fight global warming, climate change and provide, to the growing global population the energy needed for an appropriate level of development.
This transition will also be shaped by the digitization of the sector.
We need to think about the future, safeguarding our values by projecting them in our to-be context, finding a balance between the two factors that will undoubtedly make the difference for organizations: people and technologies.

Dario Pagani
Executive Vice President & CIO, Eni

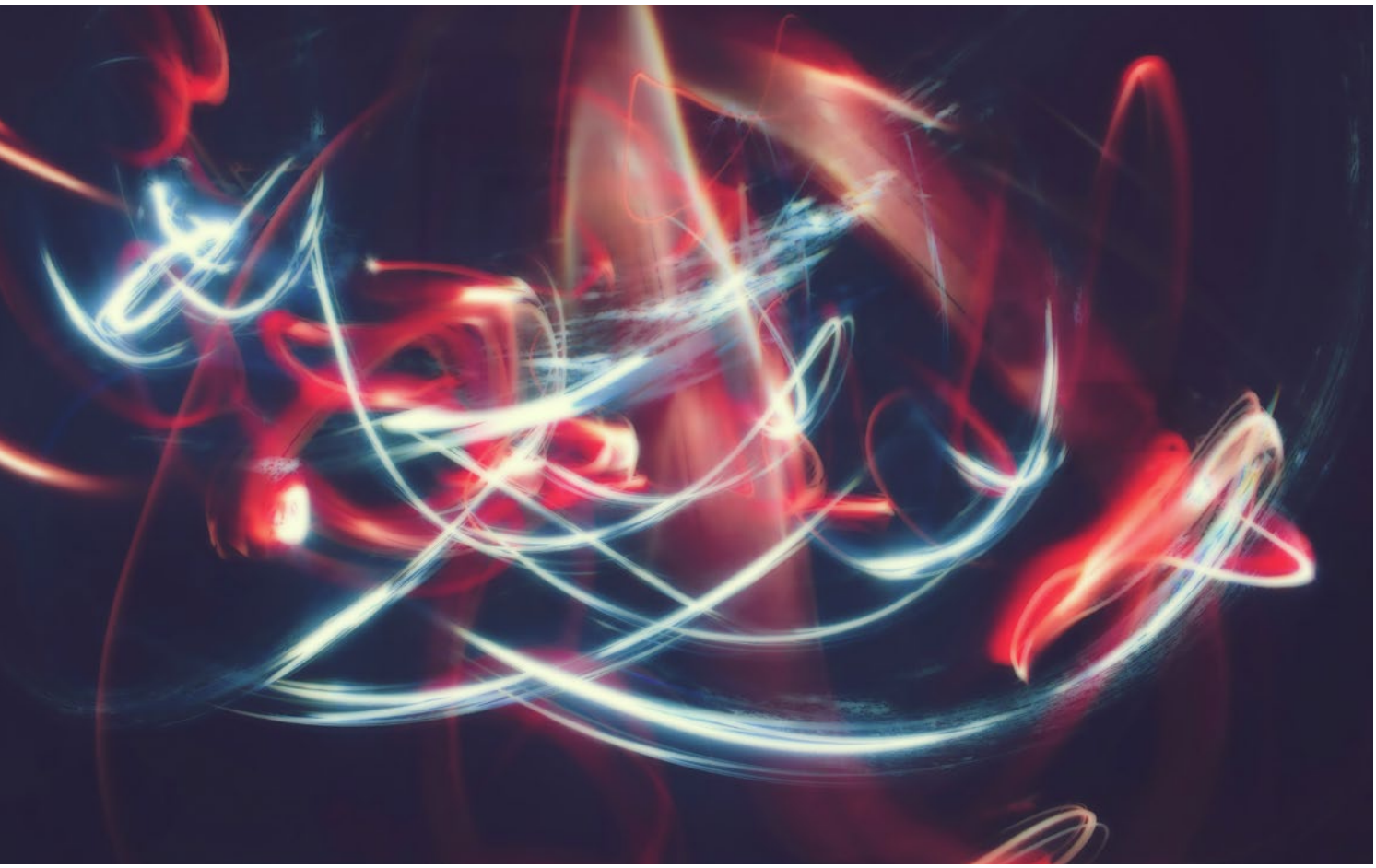
During the next years, gas will continue to represent a relevant resource for the energy sector, and will evolve with respect to its production and distribution.

On a European level, the concept of "Gas to Power" is being strongy developed: such term evolves the production of gas in a "micro-plant" perspective, which aims at delivering energy to homes through electric cables, not gas pipes.

With respect to the distribution process, power-to-gas will develop across the most efficient districts, and in around 10 years, B2B gas market will observe a substantial growth.

In this context, Engineering's activities in the sector are mainly linked to two areas:

- management of the gas transportation and distribution process, where a few large national transporters and distributors operate, and a large number of buyers managing the "last mile" of gas transportation deal with sales to end customers
- management of the sales process, related to Utilities, where the main market actors are a few large players and a strong number of small and mainly local companies.



In detail, Engineering covers the entire range of IT activities and solution by delivering professional services and proprietary platforms on the core processes of our customers: ERP, CRM, M2C, WFM, Revenue management, Asset management, SCADA, along the whole energy chain, from production to distribution, to trading and sales to the final customer. For example:

- in the field of gas transportation, Engineering has a multi-year collaboration with SNAM group, for which it has developed and currently manages platforms dedicated to Gas Metering System, Gas Commercial Dispatching and Gas Balancing System
- in the area of gas storage and distribution, we provide custom solutions, built according to specific customer needs, such as commercial systems developed for Edison Stoccaggio and Ital Gas Storage or the metering systems and 2iReteGas
- to all clients in the field of gas, we provide proprietary solutions based on products developed internally by the Energy & Utilities Department, or by the Group's subsidiaries. For example, we count several installations of our Net@Suite platform, among which that in Eni Gas & Luce, for which our product manages billing processes for all of its end-customers.

9 OIL

The decarbonization process is changing the hydrocarbon market and the rising of electric mobility is accelerating this process, causing a strong impact on demand: according to analysts, by 2035 the sale of electric cars will reach 100 million vehicles per year. Therefore, it is expected that in 2035 more than 50% of the energy will be supplied from renewable sources. In the medium term, and at least for the next decade, oil and its byproducts remain, in any case, the primary solution for medium and long-range transportation. However, market players are organizing themselves in order to face the ongoing transformation, diversifying their offering and evolving their final products towards more sustainable solutions.

Engineering operates as a system integrator and provider of proprietary solutions with solid expertise in managing the commercial refining process for over ten years. Our experience has grown hand in hand with the development of the business of the largest Italian player in the sector, and by collaborating with other major oil companies operating in Italy. In particular, we offer a range of professional services and proprietary platforms covering the core processes CRM, M2C, WFM, Revenue management, Asset management, SCADA, along the entire chain, from extraction to distribution to sales.

Within this area, we have been collaborating with Eni for several years to support their Digital Transformation on multiple business areas. We support our customer to adopt and evolve their platforms with new technologies (e.g. roadmap to S/4Hana and C/4Hana for CRM systems, apps on SAP SCP PaaS), and also by promoting and adopting new approaches and methodologies (e.g. Agile, Design Thinking, devOps). For example:

- in the Upstream area, we manage the evolution of Eni's GIS platform and the implementation of a specific solution for asset geo-referencing
- in the field of Refining and Marketing, we manage the evolution of the new marketing and Loyalty platform, based on SFDC Marketing Cloud
- in the area of Eni's general services, we develop solutions to optimize the management of internal processes (e.g. group portals, intranet, IoT solutions for flow management and security in canteens, implementation of SFDC Service Cloud CRM solution for AGI)
- transversally, we provide the infrastructure management of Eni's CED through Engineering D.HUB, our company specialized in this area, providing infrastructure services - traditional or in Cloud - and collaborating with international players (e.g. AWS, SCP).

10 EXTRA COMMODITY

Extra commodity relates to additional services that energy suppliers provide to their final customers, in order to deliver a set of products and services that support the primary service provided. In Italy, the largest players in the energy market have developed, and are currently developing, a portfolio of offerings that involves the development of new business models.

Extra commodity solutions can be provided to complete the sales / purchase relationship, by rewarding the end customer, or can be sold in integrated packages for competitive prices.

Energy players developed new business lines, parallel to their traditional offerings, providing services and products such as: appliances, boilers, air conditioners, installation, maintenance and repair services, etc..

As part of the current collaborations with our Energy & Utilities customers, we have developed solutions aimed at managing activities and processes related to the extra commodity market, such as the development of web portals, solutions managing the purchasing and billing processes.

In this area, we are also providing dedicated IT solutions to Enel X, an innovative company in the extra commodity sector, which also provides solutions for the production and sale of solar energy and for infrastructures needed to charge electric vehicles.

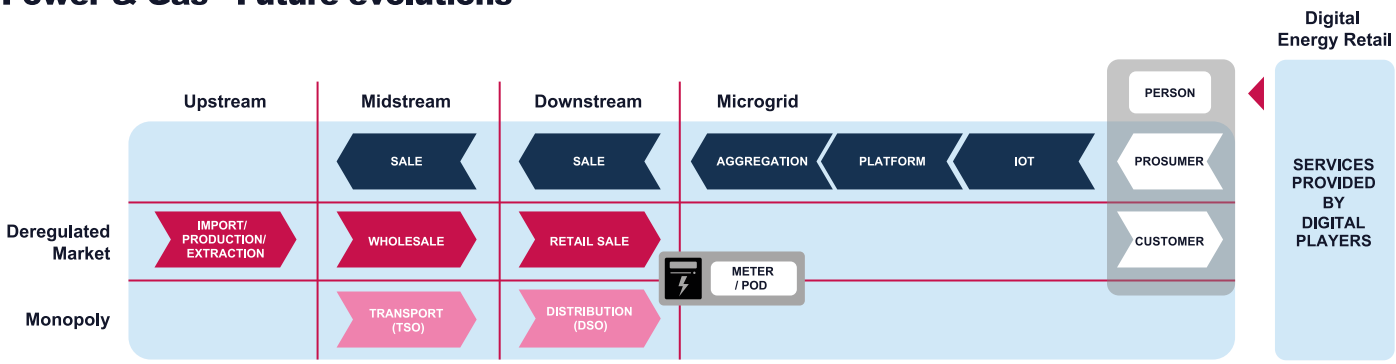
11 WHAT IS THE FUTURE OF SMART ENERGY & UTILITIES?

The Energy & Utilities sector is at the dawn of a great change due to global phenomena, such as sustainability and Digital Transformation, which will transform market dynamics lowering the barriers across energy sectors and hence favoring the rise of digital players. Such transformation has a two-fold perspective, and is related to both market dynamics and the use of new technologies.

At market level, the combined effect of evolutionary trends brings a strong decentralization of energy production and distribution activities. These, until less than ten years ago, followed a "centralized" model according to which energy was cheaply produced in a few but large energy plants, to be then transported for thousands of kilometers, following an unidirectional logic.

New models of mutual collaboration between consumers and energy producers, enabled by energy networks and platforms, will transform final users into energy exchange nodes between different energy networks. The increasing use of renewable energy sources will require a strong degree of flexibility of the energy network, as well as stability of energy supply: for this reason, "multi-energy" users will be increasingly necessary to ensure both objectives.

Power & Gas - Future evolutions



The customer of the Utilities market will gain the role of prosumer (as both consumer and as an evolved producer of energy). The production, accumulation and sale of energy will transform the model from "one-to-one" (from a single system for a single end user) to "one to many" (single system for multiple consumers).

Even more important will be the transition to an ecosystem of the "person", intended as an enrichment of the profile of the customer who uses energy. Information about habits, interests and needs will represent elements of better knowledge, transforming the energy user / provider of energy services into a "person", who is potentially subject to sales campaigns delivered by providers outside the Utilities market services sector.

In order to monitor and anticipate these evolutionary trends, Engineering works with the main players in the sector and invests in the future, also by coordinating with our Research & Innovation Department several research projects, co-financed by the European Commission under the H2020 program (e.g. Store & Go, Catalyst and Magnitude, WiseGrid, NobelGrid and Inertia). The aim of these projects is to develop innovative solutions and tools for data monitoring and analysis, decision support, optimization of energy flows.

The application of new enabling technologies to the energy sector will strongly support the decentralization trends related to the management of energy demand-supply, also by impacting on the concept of **Smart Grid**. In this new context, control and monitoring play an increasingly crucial role in network management and coordination of prosumers' flexibilities: new technologies are able to ensure the critical concepts of reliability, flexibility and security. In this perspective, Blockchain turns out to be among the enabling technologies that can have the strongest positive impact for the reliability and stability of the energy network.

In recent years, Engineering has explored the use of Blockchain by participating to a number of dedicated European projects (DLS-OCS, eCube, eDREAM, SOFIE, CoordiNet, Platone), where several use cases were explored, in the areas of:

- measurement and billing
- cryptocurrencies, tokens and investments
- decentralized energy trade
- green certificates and carbon trade
- network management
- IoT, intelligent devices, automation and asset management
- electric mobility.

In the future, a further evolutionary driver of energy sector will relate to the application of 5G communication technologies aimed, especially, to the Smart Grid field. 5G will have a positive impact in supporting the transition from traditional centralized electricity distribution models to new decentralized models. In particular, the peculiarities of 5G play a key role in covering the last mile, enabling immersive communication between all electrical devices: meters, renewable sources and any type of
energy-consuming device.

Engineering is an active player also in the field of 5G, thanks to several activities carried out by our Research & Innovation Department (e.g. NRG-5 project, funded by the European Commission). We continuously invest in R&D activities in order to be constantly aligned to market evolutions and allow our clients to benefit from the applications of frontier technologies. The project carried out for ENEGAN with Blockchain, previously described in Chapter 4, is a clear example of our commitment.

NRG-5

The project aims to create a new generation of "100% renewable" energy networks by developing innovative solutions based on 5G technologies and artificial intelligence systems merged into a new, unique and complete ICT solution. In this regards, dedicated 5G solutions have been developed in a framework based on the use of Virtual Network Functions, combining:

- reliable, scalable and smooth plug-in 'n' play support for several smart energy devices
- virtual models of 5G devices built via digital twin, to enable security, scalability and high energy efficiency communications
- extended mobile edge cloud, which reduces network load and increases the overall network capacity in order to reduce transmission delays and maintain the stability of the network through a low latency and the use of demand side management strategies.

ENGINEERING

For more than 40 years Engineering has been one of the main actors in the digital transformation of both public and private companies and organisations, with an innovative range of services for the main market segments.

With approximately 11,600 professionals in 40+ locations (in Italy, Belgium, Germany, Mexico, Norway, Serbia, Spain, Switzerland, Sweden, Argentina, Brazil, and the USA), the Engineering Group designs, develops, and manages innovative solutions for the areas of business where digitalisation generates major change, such as Digital Finance, Smart Government & E-Health, Augmented Cities, Digital Industry, Smart Energy & Utilities, and Digital Media & Communication. In the course of 2020, Engineering has supported its partners in the continuation and protection of their businesses and key processes, assisting in the design of their 'New Normal' and the mapping of new digital ecosystems. With its activities and projects, the Group is helping to modernise the world in which we live and work, combining specialist skills in the final frontier of technologies, technological infrastructures organised in a unique hybrid multi-cloud model, and the ability to interpret new business models. With important investments in R&D, Engineering plays a leading role in research, coordinating national and international projects with a team of 450 researchers and data scientists and a network of scientific and academic partners throughout Europe. One of the Group's strategic assets is the expertise of its employees, whose development is promoted by a dedicated multidisciplinary training school that provided more than 15,000 training days over the last year..

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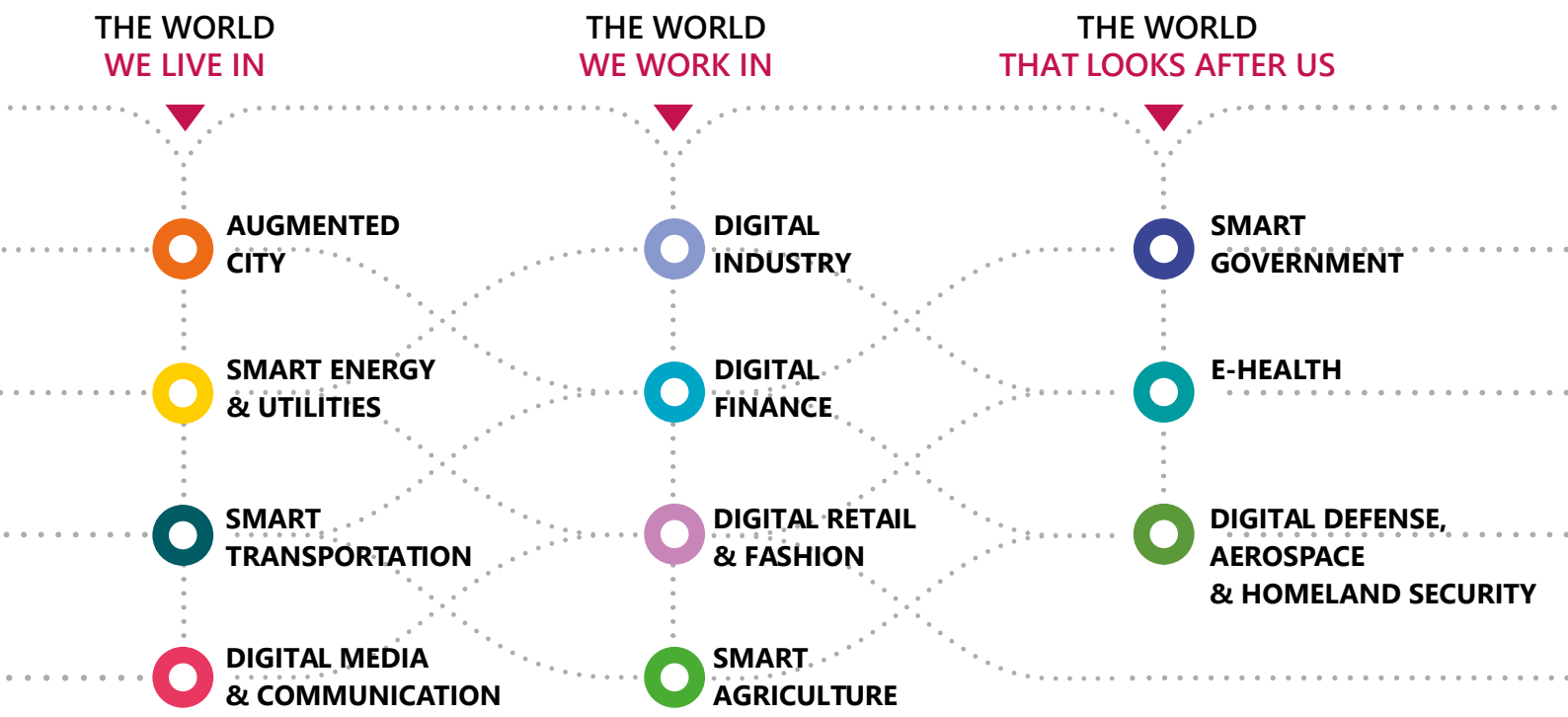

We evolve our Clients' business models and processes, along the entire energy chain, according to the paradigms of Digital Transformation.

Our point of view on

DIGITAL TRANSFORMATION

ENGINEERING INNOVATION

ENGINEERING THE NEW NORMAL

WHERE BUSINESS MEETS TECHNOLOGY

AUGMENTED CITY

DIGITAL DEFENCE, AEROSPACE & HOMELAND SECURITY

DIGITAL FINANCE

AUGMENTED MIXED AND VIRTUAL REALITY

BLOCKCHAIN

DIGITAL INDUSTRY

DIGITAL MEDIA & COMMUNICATION

DIGITAL RETAIL & FASHION

CLOUD

CYBERSECURITY

E-HEALTH

SMART ENERGY & UTILITIES

SMART AGRICULTURE

DIGITAL TWIN

IOT INTERNET OF THINGS

SMART GOVERNMENT

SMART TRANSPORTATION

Coming Soon

ROBOTIC PROCESS AUTOMATION

AI & ADVANCED ANALYTICS

DIGITAL WORKPLACE

DIGITAL WASTE

DIGITAL EXPERIENCE: CULTURE & TOURISM

SUPPLY CHAIN

OT SECURITY

PROJECT MANAGEMENT

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