ISKRAEMECO MAGAZINE

# engage

ISSUE 11

*Special edition*

*80 Years*

This year, we are celebrating 80 remarkable years

**of excellence and innovation.**

# Contents



iskraemeco
BY ELSEWEDY ELECTRIC

80 Years

## of excellence and innovation

**Thank you for the next 80 years!**

Together, we have navigated challenges, created new opportunities and empowered one another to grow.

We have built a legacy of inspiring stories and significant achievements while developing solutions that help shape a greener future.

With decades of experience, a spirit of resilience, and a unified vision, we continue to push the boundaries. With a strong foundation and the connectivity that unites us,

we embrace the opportunities the next 80 years will bring.

Our strength lies in collaboration, in the courage to explore new ideas, and in our commitment to sustainable development.

We look to the future with optimism and confidence, knowing that many more opportunities for growth, learning, and positive change lie ahead. We are proud of what we have achieved, but we also know that the best is yet to come.

Let us unite under a vision that inspires us and the passion that drives us to create a future filled with success, innovation, and lasting impact.

Thank you for being part of this special journey.

Together, we will continue writing a story we can all be proud of!

**#80YearsOfInnovation**

80 Years

**The past inspires us, the future leads us**





# Editorial

## Message from the CEO

As we navigate the evolving energy landscape, Iskraemeco proudly stands as a beacon of innovation and excellence, celebrating 80 years of shaping the future of energy. This remarkable milestone reflects our rich legacy and continuous commitment to pioneering sustainable, smart and digitally advanced solutions. This special edition of Engage magazine honors our journey, highlighting our contributions to innovation in smart metering, sustainability, and digital transformation as we continue to look ahead to the future by tackling global energy challenges and empower communities worldwide.

Last year, Iskraemeco reached significant milestones that reaffirm our leadership in energy transformation. We were honored with the first prize at the 'Innovation of Energy' 2024 for our innovative solution enabling flexibility in demand and generation through smart metering systems – a testament to our pivotal role in sustainable energy management. Our innovations were further recognized with both the Golden and Silver national innovation awards from the Chamber of Commerce and Industry of Slovenia (GZS), awarded for our IE.X smart metering and eIoT platform. These honors validate the effectiveness of our solutions in enhancing energy efficiency and operational functionality within the utility sector.

The beginning of the year brought a major business highlight – the successful acquisition of three large-scale projects: two in Poland and one in Greece. These wins are not just commercial achievements; they reflect our team's dedication, the strength of our partnerships, and the trust our customers place in us. They represent a strategic foundation for the next five years, ensuring continuity, growth, and stability for our company, not only in terms of delivering our proven hardware solutions, but also through expanding our digital platforms and services. This is the direction we've been working towards - a seamless blend of reliable technology and intelligent solutions that elevate energy efficiency, flexibility, and sustainability. Looking ahead, these accomplishments serve as both a reward and a responsibility.

Sustainability is a core principle at the heart of everything we do. Our commitment to the UN Sustainable Development Goals (SDGs) reflects our efforts to making a positive environmental, social, and economic impact. This dedication earned us the prestigious Golden EcoVadis Award, recognizing our leadership in sustainability and corporate social responsibility. Such recognition reinforces our drive to lead by example and deliver solutions that support global sustainability goals.

Our vision remains clear: to create a world where energy is smarter, greener, and more accessible by using the power of data. By combining advanced metering with cutting-edge digital platforms, we help utilities and communities optimize energy use, reduce waste, and accelerate the shift to a sustainable future. Today, we stand at a pivotal moment – ready to shape Iskraemeco's next chapter: more digital, more sustainable, and more globally relevant.

Reflecting on our 80-year journey, we draw inspiration from the milestones we have achieved together. From introducing innovative smart meters to developing robust data management systems, Iskraemeco has consistently delivered solutions that empower our partners to drive efficiency and sustainability. The future of energy is not just about technology – it's about people, partnerships, and purpose. We deeply appreciate the hard work and dedication of our team members, many of whom have been with us for over 30 years, with some even reaching up to 40 years of service. Their commitment and invaluable contributions have always been key in shaping our success.

Together, we have traveled an extraordinary journey – from humble beginnings to global presence. Today, we don't just look back, but mostly forward. Ahead of us are new opportunities, which we will realize through knowledge, innovation, and dedication. At Iskraemeco, we believe that we shape the future of energy together – through partnerships based on trust, with technology that creates value, and with a vision that exceeds the boundaries of the present. Eight decades of innovation have brought us to this moment, and with your support, the possibilities for the next 80 years are limitless.

*Thank you for being part of our journey and our future.*

**Thomas Petuaud-Letang**
CEO, Iskraemeco Group

80 Years

# 80 years of innovation and impact





## Dear employees, partners, and customers,

**As we celebrate Iskraemeco's 80th anniversary in 2025, I reflect on the incredible journey that has brought us here. Since 1945, Iskraemeco has been more than a pioneer in energy measurement—it has transformed how the world consumes, manages, and optimizes energy.**

A defining moment in Iskraemeco's journey came in 2007 when it became part of ELSEWEDY ELECTRIC. This acquisition was not just about expansion; it was about unlocking the full potential of a company with a rich legacy of innovation. As part of ELSEWEDY ELECTRIC, Iskraemeco has leveraged the strength of a global energy and infrastructure leader, accelerating growth, expanding technological capabilities, and reinforcing its presence in key markets. With access to the Group's resources and expertise, Iskraemeco has pushed the boundaries of smart metering and digital solutions like never before.

Over the past 80 years, Iskraemeco has grown from a local innovator in Slovenia into a global leader, serving customers across five continents. We have revolutionized energy management with next-generation smart meters and IoT-driven solutions that empower utilities and consumers alike. At the same time, our commitment to sustainability has driven meaningful change, helping partners reduce carbon footprints and transition toward a greener future. Through strategic collaborations with key industry players, we have accelerated digital transformation, ensuring our technologies remain at the forefront of innovation.

But the journey doesn't end here. The energy sector is evolving at an unprecedented pace, and Iskraemeco is ready to lead the next era of transformation. Backed by the power of ELSEWEDY ELECTRIC, we will continue advancing AI and digitalization to enhance grid intelligence and energy efficiency while expanding into new markets and developing next-generation water and energy solutions that drive sustainability. With a clear vision for the future, we remain committed to pushing the boundaries of innovation and creating a lasting impact on communities worldwide.

None of this would be possible without the dedication of our exceptional teams, the trust of our customers, and the unwavering support of our partners. To our employees—your expertise and passion fuel our success. To our customers and stakeholders—your trust drives us to push boundaries every day.

***As we mark this 80-year milestone, let's celebrate our legacy while embracing the future with confidence. Together, we will continue shaping a smarter, more sustainable world.***

With gratitude and ambition,

**Eng. Ahmed El Sewedy**
CEO, ELSEWEDY ELECTRIC

# A journey through history

*Smilja Dolgan Paternoster and Nina Merše*

**The company proudly reflects on its pioneering role in the development of energy metering solutions and its significant contributions to the global energy landscape.**

**From modest beginnings to becoming a global technology leader, Iskraemeco's journey over the decades has been defined by technological innovation, sustainability, and forward-thinking strategy.**

iskraemeco
BY ELSEWEDY ELECTRIC

80 Years





## From humble beginnings to industry leadership

1945

The story began in 1945, when the company-then known as Strojne tovarne- transitioned from pre-war manufacturing to focus on the development and production of electricity meters. The company's first breakthrough came a year later, with the creation of the single-phase induction meter E1, a revolutionary product that laid the foundation for years of innovation. In 1946, Strojne tovarne was renamed to Iskra, Factory for electrical engineering and precision mechanics Kranj, and by 1948, regular production of single-phase meters was in full swing.

The 1950's marked a period of rapid growth and diversification. Iskra expanded its product range into consumer electronics, producing telephones, TVs, hair dryers, and movie projectors. This decade was marked by rapid growth and diversification in the consumer electronics market. Meanwhile, the metering division—what would become Iskraemeco—continued to innovate. In 1954, Iskra launched the first conveyor belt in former Yugoslavia, and by 1956 it had developed the first three-phase meter, T1. The company's success continued with the dispatch of one million meters by 1958, a testament to its manufacturing expertise and the growing demand for its high-quality products.

In the 1960's the company focused on improving accuracy and reliability of its electrical meters. Iskraemeco's quality products and constant innovation began to establish its reputation in the industry. In 1961 Iskra – factory for electrical engineering and precision mechanics Kranj was renamed to Iskra – Industry for electromechanics, telecommunications, electronics, and automation. Key innovations followed, including the HS-TKM switching clock and dual-tariff meter in 1962, and the T2 three-phase induction meter in 1965. The company rebranded again as Iskra – United Company Iskra Kranj, signaling its growing stature.

## Innovation and international expansion

1970

The 1970's were marked by innovative breakthroughs as our experts developed first electronic high precision meters and ripple control receivers. The TE2 and TE3 industrial meters set new standards in accuracy. The company began exporting its products internationally, gaining traction in markets like Germany and the Netherlands, and installed its first industrial metering and billing system in Bosnia and Herzegovina. The company continued to innovate, introducing new technologies and expanding its product offerings.

In 1975 Iskra – Industry for electromechanics, telecommunications, electronics, and automation is renamed again to Iskra - Electromechanics Kranj. In 1977, the company introduced the T31–M42 series—third-generation three-phase induction meters enhanced with an electronic tariff device. That year TS1 was introduced, the first generation of ripple control receivers. In 1978, the T3 meter was developed with a mechanical maximum power indicator.

# Becoming a European powerhouse

1980

The 1980's marked a period of strategic transformation and technological progress. In 1981, the company developed a mechanical switching clock, and by 1982, Iskra – Electromechanics underwent a major restructuring, splitting into three companies. TOZD Števci continued the production of electricity meters under DO Iskra Kibernetika, maintaining the company's focus on innovation in metering. In 1986 the first system for the collection and processing of billing data was established and the following year, the TE22 dual-tariff transformer meter with mechanical meters was introduced.

The company's innovative spirit was further evidenced by its foray into Automated Meter Reading (AMR) systems in 1988, marking a shift towards more advanced, automated solutions that would define the company's strategy for years to come. This period also saw the development of silicon measurement chips and the first generation of electronic meters for both residential and industrial use.

At the end of the 1980s and the beginning of the 1990s, the first generation of electronic meters for residential and industry use was developed.

1990

# Smart technology and a new identity

As the 1990's began, Iskra Kibernetika – company Števci adopted a new name: Iskra Števci Kranj. With a strategic focus on exports, the company experienced substantial revenue growth. It introduced monolithic meters based on proprietary patents, aligning its operations with ISO 9001 international standards and pioneering early smart metering technologies. In the same time the company launched the T3FT three-phase induction meter followed by the MT30—the first monolithic three-phase meter.

Iskra Števci Kranj began transitioning from traditional production lines to integrated worksites, embracing the digital revolution and focusing on energy-efficient smart meters. This decade marked a fundamental shift towards intelligent, connected products, characterized by the modernization of production facilities, business processes, and technological capabilities.





# The birth of Iskraemeco

1994

The year 1994 marked a turning point in the company's history—the birth of Iskraemeco as we know it today. Emerging from the restructuring of Iskra Števci Kranj into a limited company, Iskraemeco stepped confidently onto the global stage, ready to seize new opportunities and expand its international footprint. By then, the company had already become the fourth-largest electricity meter manufacturer in Europe and a key player worldwide That same year, renowned Slovenian designer Miljenko Licul created the company's new visual identity. The logo—a point evolving into a three-dimensional plus sign—symbolized growth, accuracy, and technological advancement.

In 1997, Iskraemeco became a member of DLMS aligning itself with international standards for data exchange in smart metering. Two years later in 1999, the company established a production facility in Sarajevo, Bosnia and Herzegovina. The same year MT850 meter for industrial use and the MT300, the first three-phase electronic meter based on its proprietary measurement chip, were launched. The MT300's innovative design and advanced functionality earned it the prestigious iF Design Award.

As the 21st century dawned, Iskraemeco accelerated its digital transformation laying the foundation for a new era of smart energy solutions. In 2003, the company launched its first-generation smart meters, including the MT35X, the first household smart meter with an in-house developed chip and PLC technology.

2000

# Pioneering the smart meter era

A year later, in 2004, a breakthrough opportunity to expand beyond Slovenia's borders came -, when Iskraemeco successfully completed its first large-scale AMR project in Sweden. In Finland Iskraemeco partnered with local stakeholders to implement a GSM-based metering system covering half a million metering points. Iskraemeco continued to push the boundaries of smart metering, not only advancing its technology but also offering full interoperability—a key differentiator in a rapidly evolving market.

By 2005, sales of electronic meters surpassed those of traditional electromechanical meters, another key milestone in the company's evolution. The MT372 - first electricity meter capable of transmitting data over the 2G mobile network—was introduced along with the P2LPC data concentrator enhancing data collection and communication capabilities.

In 2007, Iskraemeco became part of Elsewedy Electric, a move that unlocked new opportunities for growth and expanded its reach in the global energy market. This strategic partnership has fueled Iskraemeco's vision of a smarter, more energy-efficient future, aligning with Elsewedy Electric's values and reinforcing the company's mission to drive sustainability and innovation across the energy sector.

In 2008, Iskraemeco achieved a breakthrough with SEP2W (today known as Symbiot), a system designed for the automatic reading and management of metering infrastructure. Capable of handling up to 1 million meters, this solution marked a significant leap toward large-scale smart grid implementation and addressed the challenges of manual data reading, enhancing efficiency and accuracy. That same year, Iskraemeco expanded its presence in Egypt by establishing an office in Cairo, marking a significant step in its regional growth.

Shortly after, the company reinforced its commitment to the market by opening a production facility, enhancing operational capabilities and fostering stronger partnerships with regional stakeholders 2009 saw the launch of several innovations, including the MT860 high-precision transformer meter, the MT174 household meter with RS485 interface for enhanced communication, and the P2CC, an external data communicator enabling reliable transmission over mobile networks. That same year, Iskraemeco further demonstrated its commitment to advancing industry standards by becoming a founding member of both the IDIS and ESMIG associations, playing a key role in promoting interoperability and collaboration across the smart metering ecosystem.

# From smart meters to smart solutions

2010

In 2010's the focus shifted towards smart infrastructure, sustainability and green technologies. Iskraemeco invested in energy-efficient solutions and embraced a more holistic approach to smart metering in alignment with global environmental goals.

In 2011 Iskraemeco joined the G3-PLC Alliance and introduced its first IDIS certified interoperable meter from the Mx381 family. As a founding member of the Interoperable Device Interface Specifications (IDIS) Industry Association, Iskraemeco played a key role in promoting device interoperability across manufacturers, helping to shape the future of smart grid ecosystems. By 2013, smart metering projects were gaining momentum, particularly in the Netherlands, where utilities were among the early adopters. In 2015, Iskraemeco joined the Fair Meter project in collaboration with two Dutch utilities. This initiative tackled sustainability challenges through a circular model focused on supply chain transparency, sustainable materials, and ethical production. That same year, the company launched the AM550, a fourth-generation modular smart meter designed for residential and small commercial applications. Several key product milestones followed including the launch of MT691 in 2014, followed by MT176 and MT631/MT632 in 2015, tailored specifically for the German regulatory requirements. In 2014 the company produced over half a million meters with GSM/3G communication. In 2016, the MT880 series was developed for industrial and commercial use, followed by the launch of the AC750 communication platform in 2017, enhancing connectivity and data exchange.

In 2018 Iskraemeco unveiled a new corporate logo –a circular design symbolizing its dedication to the circular economy, sustainability, and smart solutions. The red accent represents energy and determination, while the black lettering conveys strength and a serious commitment to addressing future challenges.

That same year marked a pivotal transition: Iskraemeco began evolving from a traditional electricity meter manufacturer into a comprehensive solution provider, offering integrated, future-ready energy management systems.

2020

# Digital transformation and strategic diversification

Iskraemeco's 80-year legacy is defined by innovation, excellence, and global recognition. The company has earned numerous awards for its advancements in technology, sustainability, and industry leadership. Since 2021, Iskraemeco is proudly serving as ambassador of the Slovenian economy, a role that reflects its significant contributions to the energy sector and Slovenian economy.

In 2020s Iskraemeco continued to evolve, expanding its portfolio with smart energy and water management solutions. The company entered the water business, offering digital solutions to improve efficiency of sustainable resource conservation. This decade marked a significant expansion into new markets and the introduction of cutting-edge technologies. To further support its vision of integrated water and energy management, Iskraemeco also acquired Holosys, a provider of high-value IoT devices and advanced connectivity solutions. These strategic moves expanded the company's capabilities and market reach.

Additionally, Iskraemeco initiated a Digital Twin development project to enhance lean production processes, reinforcing its commitment to operational excellence and digital innovation.

With the establishment of the Technological Design Center in Slovenia alongside the strategic regional hubs in Egypt and India, Iskraemeco has created a collaborative space where knowledge, creativity, and advanced technology converge. At the same time, the company introduced Green Penguin, a Slovenian award-winning initiative that uses gamification and education to engage young people in environmental action and climate goals.

Iskraemeco's digital transformation is anchored by the development of the eIoT platform and Symbiot–a secure, intelligent software suite for real-time energy and resource management. It supports real-time data processing and enables the creation of smart energy environments, from home automation to large-scale grids. Complementing this is the IE.X meter series, built on the eMOS operating system, which offers unparalleled flexibility in smart metering and seamless integration into IoT ecosystems.

In 2022 Iskraemeco started its eMobility division by acquiring GL Charge, and launched a comprehensive offering designed to meet the growing demand for electric vehicle infrastructure.





# Shaping the future of sustainability

2023

In 2023 Iskraemeco solidifies its positions as a driving force behind the digital and green transformations aligning its strategy with the global push toward sustainability and smart infrastructure. The company's business model was built around four key business streams: Electricity, Digital Platforms, Water, and eMobility. By integrating these sectors, Iskraemeco not only is able to provide comprehensive solutions but also unlocks new growth opportunities across industries.

Amid the accelerating global energy transition, 2024 marked a period of exploration for innovative digital technologies. During this time, Iskraemeco evaluated solutions such as Symbiot Twinner–a digital twin platform aimed at providing operators with real-time insights and enhanced control over energy distribution–and Elumia, an advanced lighting management system designed to improve energy efficiency and reduce operational costs in public infrastructure. Although these solutions are no longer part of Iskraemeco's current offering, they reflected the company's commitment to seeking technologies that drive environmental and economic benefits. In line with this vision, Iskraemeco established a strategic partnership with CLSM and Inventronics to further develop smart, cost-effective public lighting solutions.

In 2024, Iskraemeco's sustainability efforts were recognized with the EcoVadis Silver Medal, placing it among the top-performing companies in the industry. This recognition reflects the company's ongoing efforts in reducing environmental impact, increasing recyclability, and improving energy efficiency in its portfolio.

The same year Iskraemeco started the development of the next-generation of C&I+Grid meters. It also achieved a major environmental milestone with its first certified Environmental Product Declaration (EPD) for the MT880 meter, underscoring its commitment to transparency and lifecycle sustainability.).

Additionally, Iskraemeco was honored as a family-friendly enterprise, recognizing its dedication to employee well-being and inclusive workplace culture.

2025

# Leading the way with purpose

With operations in over 80 countries across four continents, Iskraemeco combines global reach with local expertise to deliver tailored solutions that meet the evolving needs of diverse markets. Its international presence is anchored by offices in Slovenia, Egypt, Dubai, Argentina, and India, and supported by a team of 1,500 dedicated professionals committed to excellence, innovation, and sustainability. With advanced smart metering production facilities located in Europe, Africa, and Argentina, our standardized manufacturing approach ensures consistent service and product quality across all locations. This enables us to respond swiftly to market demands, reduce delivery times, and efficiently meet local needs with greater flexibility.

As Iskraemeco continues to evolve, its mission remains clear: innovating for life. This guiding principle fuels every advancement, every partnership, and every solution we bring to the world. We are not just keeping pace with the changing energy landscape–we are actively shaping it.

Our vision is bold and future-focused: to create a fully digital, smart, and sustainable energy and water ecosystem. We are advancing smart metering into a new era, powered by edge intelligence, grid flexibility, and digital twin technologies that enable real-time decision-making and predictive insights.

At the forefront of the energy sector, Iskraemeco is developing next-generation smart metering solutions that integrate IoT, smart city infrastructure, and open-code platforms. These innovations are transforming how energy and water is measured, managed, and optimized–laying the foundation for a more efficient, connected, and sustainable world.

Through every innovation, we are making progress, advancing sustainability, and redefining what's possible in the energy sector.

The journey continues–and the best is yet to come.

## From spark to flame

Iskraemeco's legacy of innovation, quality, and sustainability has been a guiding force for the past 80 years, and as the company looks toward the future, its vision remains clear. From its early days as a small factory producing electricity meters to its current role as a global leader in smart metering solutions, Iskraemeco has continuously evolved to meet the challenges of the energy industry.

As Mirjan Gruden, the author of the company's name, once said in 1946, "The factory will evolve and expand. The spark will grow into a flame. May our Iskra enjoy an equally bright future."

Soon, the company changed its name to Iskraemeco. The name was coined by Stanislav Tadina, who justified the addition to the original 'Iskra' as being an abbreviation for Energy MEasurement COompany. The corporate image of the newly-named company was designed by Miljenko Licul, an acclaimed Slovenian designer, in 1995. The logo consisted of a point, from which the company linearly grew and transformed into a three-dimensional plus sign. Another interpretation of the plus, minus and point featured in the logo was that Iskraemeco's products provide decimal point accuracy, in plus and minus tolerances.

## From accuracy to intelligence for the future

The more advanced companies in the energy segment have moved beyond decimal point accuracy, pluses and minuses a long time ago. The development is focused on establishing circular economy, global connectivity and interdependence, as well as innovative and intelligent solutions that boost efficiency and observe the principles of sustainability. In recent years, Iskraemeco has been developing and delivering increasingly comprehensive smart metering solutions that also comprise digital and social components such as the IoT, new e-mobility, smart cities, open-code solutions, etc. Our redesigned corporate identity summarizes the company's key strengths as it enters the new development period.

## Knowledge, innovation and circularity

The meaning of the abbreviation IE is two-fold: firstly, IE is an abbreviated form of the name Iskraemeco, and secondly, it is a promise of bringing intelligence and innovation to the utilities and energy industry. The circular design of the central element of the logo implies cyclic movement, circularity, recycling and sustainable development. Red is the color of energy and determination, and the company's name written in formal black portrays the serious nature and strength of the corporation.

Today, Iskraemeco is that bright flame, and it is ready to continue lighting the way toward a smarter, more sustainable future for generations to come.



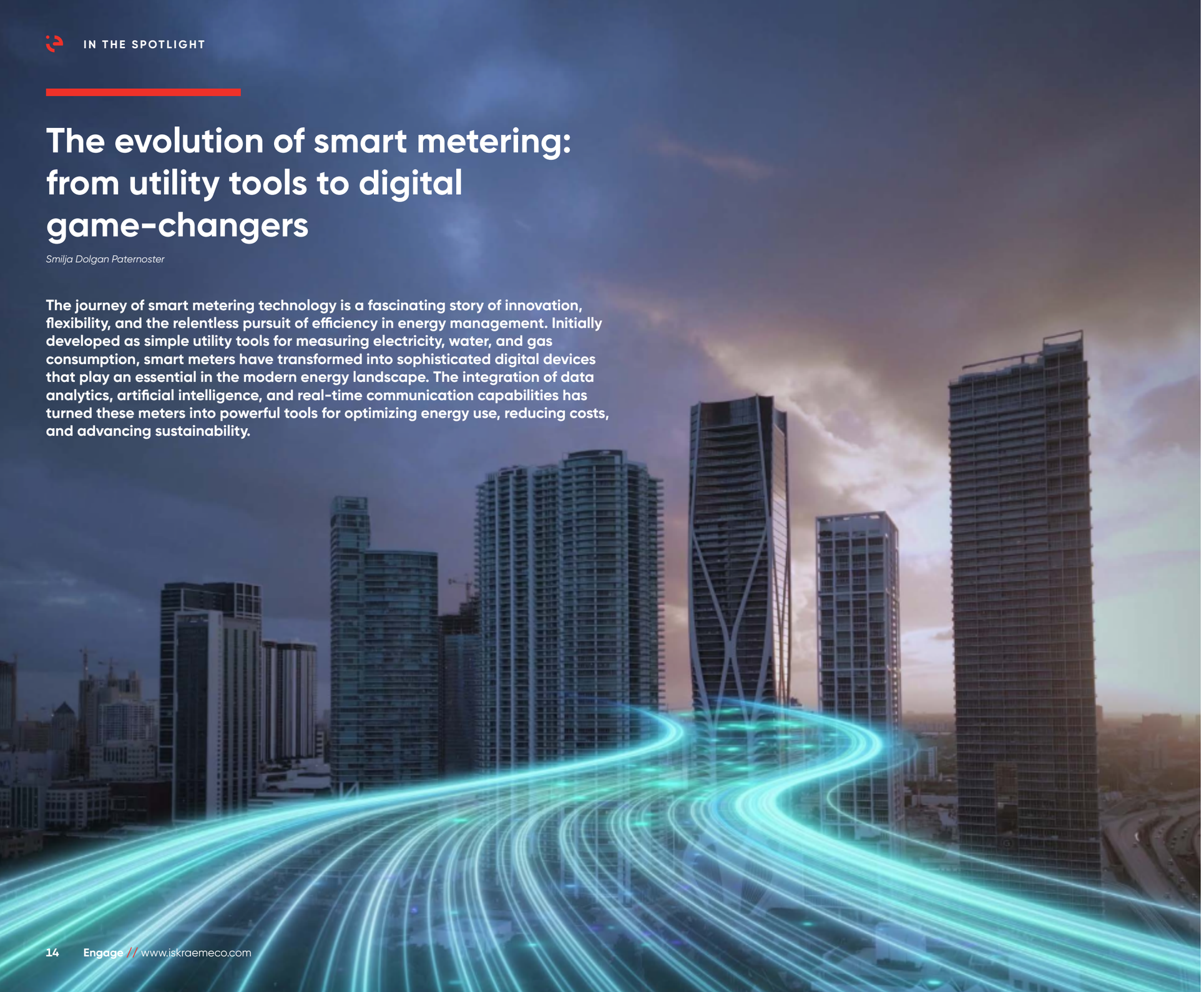

ISKRA | ISKRAEMECO | iskraemeco BY ELSEWEDY ELECTRIC

80 Years

# The evolution of smart metering: from utility tools to digital game-changers

*Smilja Dolgan Paternoster*

**The journey of smart metering technology is a fascinating story of innovation, flexibility, and the relentless pursuit of efficiency in energy management. Initially developed as simple utility tools for measuring electricity, water, and gas consumption, smart meters have transformed into sophisticated digital devices that play an essential in the modern energy landscape. The integration of data analytics, artificial intelligence, and real-time communication capabilities has turned these meters into powerful tools for optimizing energy use, reducing costs, and advancing sustainability.**







## The early days

Early electricity meters were simple devices made specifically to track the amount of electricity consumed by households and businesses. These analog meters, which first appeared in the end of 19th century, required manual readings by utility workers, a process that was time-consuming and prone to human error. The lack of real-time data meant that consumers had little visibility into their usage patterns, leading to wasteful energy use and inconsistent billing.

The first major advancement in metering technology came with the development of Automated Meter Reading (AMR) systems in the late 20th century. These devices allowed utilities to remotely collect consumption data without requiring manual meter readings, improving efficiency and reducing operational costs. However, AMR systems still had limitations, as they provided only periodic data rather than continuous monitoring. They were able to store consumption data and provide more detailed insights into energy usage patterns, laying the groundwork for more sophisticated metering solutions.

## The rise of smart meters

The true revolution in metering came with the introduction of smart meters in the early 21st century, which not only measured energy consumption but also enabled two-way communication between the meter and the utility company.

Unlike AMR systems, AMI-enabled smart meters could collect and transmit real-time data, allowing utilities and consumers to monitor energy usage in great detail. This real-time communication facilitated more accurate billing, reduced losses due to energy theft, and enabled demand-response programs to manage peak loads more effectively.

Governments and regulatory bodies worldwide recognized the benefits of smart meters and began promoting their adoption through policy initiatives and subsidies. The European Union, for instance, set ambitious targets for smart meter deployment, aiming to replace at least 80% of traditional meters with smart versions by 2025. Similarly, countries such as the United States, China, and Australia have invested heavily in smart grid infrastructure to support the widespread use of smart meters.

As the concept of smart grids began to take shape, the role of smart meters became even more integral. Smart meters function as the interface between consumers and the smart grid, providing real-time data that helps balance supply and demand, integrate renewable energy sources, and improve the overall reliability of the grid.

## The digital transformation

Today, smart meters are at the forefront of the digital transformation in the energy sector. Modern smart meters are equipped with advanced sensors, wireless connectivity, and artificial intelligence, enabling predictive analytics and automated decision-making. These capabilities empower consumers with real-time insights into their energy consumption, helping them make informed decisions to reduce their carbon footprint and lower their utility bills.

The integration of Internet of Things (IoT) technology and other digital technologies has further enhanced seamless communication between smart meters, home automation systems, and the power grid. This has allowed smart meters to evolve into sophisticated devices that offer a wide range of functionalities beyond energy measurement. This interconnectivity facilitates automated energy management and presents opportunities for new services and applications, such as dynamic pricing, which encourages consumers to shift their energy consumption to off-peak hours by adjusting electricity rates based on demand and supply conditions.

Additionally, smart meters are essential for the transition to renewable energy sources. By providing real-time data on energy generation and consumption, these meters help balance supply and demand, ensuring the efficient integration of solar panels, wind turbines, and battery storage systems into the grid.

## Challenges and opportunities

Despite their numerous benefits, the deployment of smart meters has not been without challenges. The privacy and security concerns surrounding the collection and transmission of comprehensive consumption data have resulted in the industry's critical priority of ensuring that smart meter networks are resilient to cyberattacks.

However, the potential benefits of smart metering technology far outweigh these challenges. Smart meters are key enablers of the transition to a more sustainable energy system. They facilitate the integration of renewable energy sources, support energy efficiency initiatives, and provide the data needed to develop innovative solutions for the future.

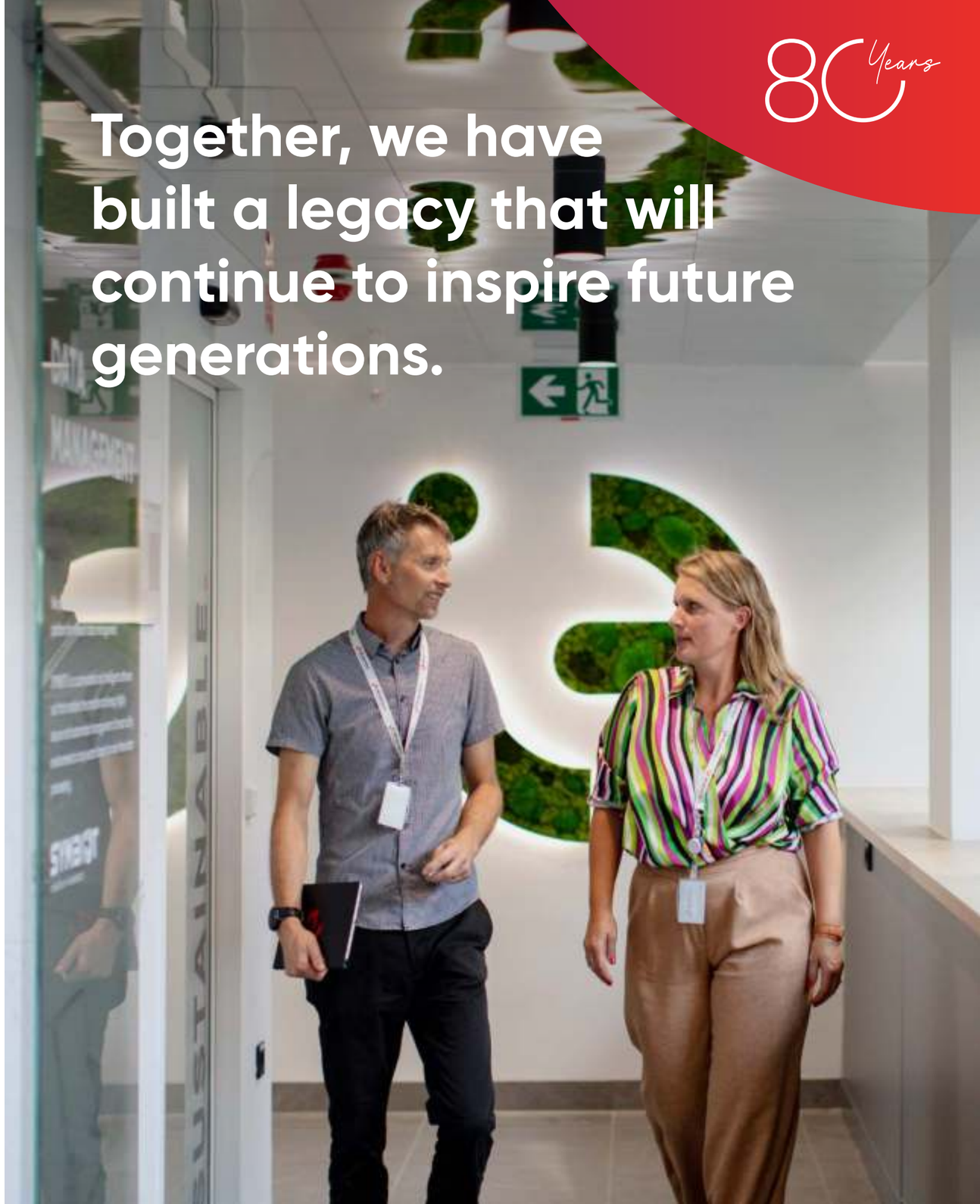
### The future of smart metering

Looking ahead, the evolution of smart metering technology is set to continue at a rapid pace. Advances in artificial intelligence, machine learning, blockchain technology and big data analytics are expected to further enhance the capabilities of smart meters, enabling even greater levels of energy optimization and consumer engagement.

In addition, the growing of electric vehicles and the growing popularity of distributed energy resources, such as rooftop solar panels, will drive the need for more sophisticated metering solutions. Smart meters will play a crucial role in managing the complex interactions between these various elements of the modern energy system.

In conclusion, the evolution of smart metering technology from basic utility tools to digital game-changers is a testament to the power of innovation in transforming industries and improving our daily lives. As technology continues to evolve, smart meters will play an increasingly vital role in shaping the future of the global energy landscape, driving progress towards a more intelligent and interconnected world.





# Iskraemeco's path to the EcoVadis Gold Medal

*Dalija Delić*

**At the start of the year, Iskraemeco was awarded the EcoVadis Gold Medal for our approach to corporate social responsibility (CSR) – an achievement that places us in the top 1% of companies in our industry. With a score of 79 out of 100, this recognition reflects our structured and committed approach to environmental, social, and governance (ESG) performance and marks a 12-point improvement over our 2023 result.**






## The global standard for resilient, sustainable supply chains

EcoVadis is a globally recognized platform for evaluating corporate responsibility. It is widely used by large multinational companies, including many of our customers, partners, and competitors. Over 150,000 companies have already been assessed through this system. The platform provides a transparent, data-based assessment of a company's maturity and performance in areas such as environmental management, labor and human rights, ethics, and sustainable procurement.

Because the EcoVadis rating is well known across industries, it is an important reference point in business relationships. Our customers and potential partners can use our score to objectively evaluate our CSR performance and compare it with others in the market, strengthening their supply chain. In increasingly ESG-focused markets, such third-party validation carries significant weight.

## Strict methodology, increased transparency

Achieving a Gold Medal is not simply a matter of claiming best practices. The EcoVadis evaluation process is highly rigorous. The assessment is based on a detailed questionnaire with over 50 questions, each requiring multiple supporting documents as evidence. These documents must validate policies, actions, and outcomes across the four main scoring themes: Environment, Labor & Human Rights, Ethics, and Sustainable Procurement.

The process is reviewed by independent EcoVadis analysts, and each submitted response must be backed by policies, reports, certifications, internal guidelines, and other formal records. There is little room for general claims or superficial answers. The result is a credible and verifiable benchmark of a company's actual ESG standing.

## Collaborative preparation an gap-based improvement

Preparing for the assessment required close coordination across departments. Sustainability, Quality, Procurement, HR, IT, Legal, and others worked together to gather documentation, improve reporting structures, and identify priority areas for action. The work was led and coordinated by the Sustainability Department.

Following our previous EcoVadis submission in 2023, we carried out a gap analysis to identify weaknesses, inconsistencies, or areas that lacked supporting documentation. Based on this, we defined a set of targeted projects and policy updates to improve both our ESG performance and the way we collect and organize data.

We implemented improvements in several key areas:

- Reduced carbon footprint per product and improved energy management.
- Publication of an Environmental Product Declaration (EPD) for MT880.
- Updated sustainability strategy together with goals,
- Greater transparency in our supply chain and procurement process.
- Introduction and updates to policies on human rights, diversity, fair labor, supplier relationships.
- Expansion of internal compliance and ethics procedures.
- Improved documentation and reporting protocols.

These improvements not only helped us achieve a higher EcoVadis score—they also strengthened our broader organizational practices. For example, clearer reporting has increased accountability across departments, while more comprehensive policies have reinforced internal compliance standards.

## Key contributors and cross-functional teamwork

The success of this initiative was driven by a cross-functional team of specialists. The Sustainability department coordinated the overall assessment process and oversaw the implementation of action plans. Expertise from our environmental specialist played a crucial role in achieving a high score in the Environment category (93/100). In addition, numerous colleagues from various other departments contributed their expertise and time to ensure a comprehensive and well-supported submission.

**Although the EcoVadis Gold Medal is a significant recognition, we see it as a step in an ongoing process rather than a final goal.**





## Beyond the score: A tool for continuous progress

Although the EcoVadis Gold Medal is a significant recognition, we see it as a step in an ongoing process rather than a final goal. The assessment provided clear insight into where we excel and where we can improve. The structured feedback and scoring breakdown give us a useful basis for further internal development—not only in CSR but also in how we manage processes, track data, and communicate performance.

Moreover, we are already making use of the EcoVadis score in customer communication and tenders, where sustainability credentials are becoming increasingly important. The rating offers external stakeholders a clear, objective measure of our ESG maturity, backed by a respected third-party platform.

### Looking ahead: Next assessment in fall 2025

We are not standing still. Our next EcoVadis submission is scheduled for fall 2025, and preparations are already underway. We are using the insights from this year's assessment to further refine our processes, introduce new measures, and improve internal awareness around CSR topics.

In the months ahead, we will continue to strengthen our ESG activities—both to maintain a high standard in future assessments and because these practices bring value across our organization. They help us manage risk, improve transparency, and build long-term trust with customers, partners, and employees.

The EcoVadis journey has helped us turn our ESG approach from a set of goals into a measurable, operational reality. The Gold Medal validates that we are on the right track and gives us a strong foundation to keep building from.

# IE.7 RC smart meter wins Golden Innovation Award

*Mariia Iglova Andreuzzi*

**The IE.7 RC smart meter, equipped with external Rogowski coils, has received the Golden Innovation Award from the Gorenjska Regional Chamber of Commerce and Industry. This recognition places Iskraemeco among the leading innovators in the region, where 17 projects competed for top honours. Only six innovations received gold.**

**The IE.7 RC has also been nominated for the National Innovation Award, to be presented on September 16, 2025, as part of Slovenia's national Innovation Day.**






## Responding to the complexity of modern low-voltage grids

Low-voltage grids are becoming more complex due he growing adoption of distributed energy resources (DERs), increasing electricity demand, and stricter power quality regulations. Grid operators often lack real-time visibility and rely on delayed fault reports or costly field diagnostics.

The IE.7 RC is designed to help utilities shift from reactive to proactive grid management by providing:

- **Near real-time insight** into voltage quality and network conditions,
- **Early detection of anomalies** (e.g., voltage sags, phase imbalances, harmonic distortion),
- **Remote control and optimization of connected loads** such as PVs, EV chargers, and heat pumps.

## What is IE.7 RC?

The IE.7 RC is a next-generation smart meter that expands the capabilities of both conventional meters and portable power quality analysers. It uses external Rogowski coils for easy, non-intrusive installation, making it ideal for retrofitting substations or standstill LV transformers without service interruptions or infrastructure changes.

It integrates power quality monitoring compliant with EN 50160, real-time grid visibility, and local device control, enabled by EDGE intelligence. While designed for utilities, it is equally valuable for industrial and commercial users, supporting precise load management, optimization of self-generation, and reduction of peak demand.

Unlike conventional portable power quality analysers—which are costly, limited to selective deployment, and dependent on manual setup with delayed data retrieval—the IE.7 RC offers continuous monitoring, early issue detection, and actionable insights to support preventive maintenance.

## Improved data management with the Symbiot software suite

Paired with the Symbiot software, the IE.7 RC transforms raw data into clear, actionable insights. Symbiot enables visualization of key metrics such as power quality indicators, harmonic analysis, phase angles, and real-time values like voltage, current, and power factor.

## Built on the modular eIoT platform

The IE.7 RC is built on Iskraemeco's modular eIoT platform. The platform addresses the limitations of conventional metering by shifting focus from basic energy measurement to multifunctional capabilities. It supports energy management, grid diagnostics, power quality analysis, and integration of DERs.

The eIoT platform improves data handling, enables new network monitoring features, and ensures higher cybersecurity standards—supporting the evolving needs of utilities in the era of decentralized energy.

**The IE.7 RC is designed to help utilities shift from reactive to proactive grid management.**

## EDGE intelligence

With the EDGE compute module, the IE.7 RC goes beyond standard AMI functionality. It becomes a local intelligence hub, equipped with embedded AI and machine learning capabilities to support advanced data processing at the grid edge. The module also provides enhanced cybersecurity, including VPN-protected communication, role-based access control, and threat detection. Additionally, it allows for local control of various applications—such as load management, device scheduling, and DER coordination—making the meter a powerful tool for distributed energy management.

## Committed to sustainability

The IE.7 RC was developed with sustainability in mind, following circular economy and ecodesign principles. Its modular construction supports a longer product lifecycle, easier upgrades, and individual component replacement. Non-invasive installation via Rogowski coils avoids physical changes to infrastructure and reduces environmental impact. Manufacturing is optimized to minimize material use and lower the carbon footprint.

## What makes the innovation unique?

The IE.7 RC stands out as the only smart meter in its class that combines power quality monitoring, real-time LV grid visibility, and EDGE-based control in one compact, cost-effective retrofit solution.

It installs without disrupting operations and replaces the need for multiple devices, such as analysers and controllers, making it ideal for wide-scale deployment.

This innovation simplifies grid modernization, strengthens grid resilience, and actively supports the energy transition.





*"With IE.7 RC, we are expanding what a smart meter can deliver. It provides power quality monitoring, real-time grid visibility, and device control in a compact retrofit solution. Developed through close collaboration with a visionary utility partner and our in-house experts, it integrates seamlessly with existing infrastructure and meets the demands of today's distribution networks. This award confirms that focused, practical innovation drives the future of grid intelligence,"* said **Klemen Belec, Global product portfolio director at Iskraemeco.**

*"At Iskraemeco, we see the future of energy rooted in visibility, flexibility, and intelligence at the grid edge. The IE.7 RC was designed with this vision in mind. It upgrades existing substations quickly and non-invasively, enabling operators to shift from reactive to proactive grid management.*

*It's also a valuable solution for active consumers—particularly large industrial and commercial users—helping them control onsite devices like PV systems, EV chargers, and heat pumps. With embedded EDGE computing, they can balance loads, optimize self-generation, and manage peak demand effectively,"* said **Tomaž Dostal, Innovation manager at Iskraemeco.**

**We invite you to explore how the IE.7 RC can help turn today's energy challenges into tomorrow's opportunities.**

# The key to effective flexibility management in the energy sector

## Advanced metering systems

*Tomaž Dostal*

**Iskraemeco presents a breakthrough innovation in the field of flexibility management in electricity grids. In an era of intense electrification and decarbonization, energy infrastructure is facing increasingly complex challenges. On one hand, we are witnessing a rise in large electricity consumers such as electric vehicles, heat pumps, and industrial facilities. On the other hand, a surge of distributed energy sources like solar and wind power are becoming massively integrated, generating output depending on weather conditions.**

Electricity grids, originally designed for one-way power flow are not prepared for such a dynamic and bidirectional environment. As a result, we are seeing issues like overloading, voltage fluctuations, and other disturbances that threaten the reliability of electricity supply.

While increased consumption can still be addressed through investments in new infrastructure, surplus production—such as on sunny days when everyone produces more than they consume—cannot be effectively tackled with traditional solutions. What we need is a new approach to energy management: flexibility.





### Grid flexibility – The foundation of modern energy systems

With the increasing share of renewable sources and the integration of large consumers, loads are shifting to distribution grids originally designed only for one-way power flow—from the source to the consumer. Today, those consumers are also becoming producers. For example, the total capacity of solar power plants is already comparable to that of traditional power sources.

This transformation requires new understanding and new tools. A key concept that enables the balance between consumption and production in real time is flexibility—the system's ability to quickly adapt to changes and maintain operational reliability.

Grid flexibility refers to the ability to adjust energy consumption or production in real time based on the current network status. This allows the system to operate more efficiently without the need for additional investments. However, flexibility is not just about reducing consumption—it also involves shifting consumption over time (e.g., charging an electric vehicle at night instead of in the afternoon), adapting production, using batteries, and implementing advanced management systems.

Although the idea of flexibility is not entirely new—older systems such as ripple control allowed grid operators to temporarily disconnect certain loads—modern energy system requires much more advanced, decentralized, and automated solutions. This is largely due to the high penetration of renewable sources, whose production is unpredictable and independent of user demand.

With the proper use of flexibility, grid operators can ensure a more reliable and sustainable energy supply. In addition to improved grid stability, flexibility also brings economic benefits—by optimizing consumption and more efficiently managing production, we can reduce the need for new investments and better utilize existing infrastructure.

## FLEXiUM – Iskraemeco's solution for smart flexibility management

Iskraemeco has developed an innovative flexibility management system called FLEXiUM, which enables dynamic management of consumption and production without directly controlling individual devices. At the core of the system is the Advanced Metering System (AMS), which, through Distributed Dynamic Load Management (DDLM), enables fast and automatic adaptation of the network.

Unlike traditional approaches, FLEXiUM does not directly control devices. Instead, it communicates allowed consumption or production limits to the user—whether it be a household, a business, or a building. The user's energy system then autonomously adjusts its operation. This means the system is non-intrusive, allowing the user to retain control over their devices while still participating actively in grid stabilization using information provided by FLEXiUM.

## How does the FLEXiUM system work?

Each connection point (e.g., in a household or commercial building) is equipped with a smart meter that calculates the maximum available power for consumption or production. This value changes depending on the current state of the network.

The system monitors key parameters (power, voltage, frequency, etc.) across the grid and reports them to the backend system. The collected data is then analysed and compared with the network's operational limits. Based on this analysis, the system determines whether the network capacity is being exceeded.

This information is then sent back to the smart meters, which adjust the permitted power accordingly. If the situation is stable, the limit is increased; if there is an overload, the allowed power is reduced.

## DDLM – Distributed Dynamic Load Management

The DDLM algorithm (Distributed Dynamic Load Management) operates on a decentralized approach: each meter or smart device in the network independently receives and processes network condition data and responds accordingly.

The central part of the system monitors network saturation. When a critical condition occurs, a binary signal (saturated/unsaturated) is sent to all devices, which respond by locally executing necessary adjustments. This ensures high reliability and rapid response—eliminating the need for centralized control, which could become a bottleneck or point of failure.

## Practical implementation

To monitor the grid status, dedicated IE.7 smart meters are used, sending real-time data continuously via LTE networks. For residential measurements, IE.5 smart meters are employed. They detect deviations or irregularities in the network and automatically trigger an alert to the backend system.

### Advantages of FLEXiUM

FLEXiUM offers numerous benefits that translate into both reliability and ease of use:

- **Grid stability:** The system prevents overloads and enables better utilization of grid capacity.
- **High reliability:** A robust architecture ensures self-healing and continuous operation even during sudden changes.
- **Automatic operation:** No manual configuration is needed—the system adapts automatically to network conditions.
- **Simple communication:** Since only basic data is transmitted, the system works with various communication technologies.
- **Investment optimization:** Enables higher efficiency of existing infrastructure and reduces the need for new investments.






## A step towards a sustainable future

FLEXiUM represents the next step in the evolution of energy systems—a solution that supports the transition to a carbon-free and sustainable future.

It allows users to take an active role in the grid management while preserving their freedom of choice. All smart household meters can support the FLEXiUM system, and the end user decides whether they want to participate in flexibility programs.

With this system, Iskraemeco not only addresses the technical challenges of modern energy systems but also strengthens collaboration between users and energy providers—an essential component of a successful energy transition.

SYMBIOT
POWERED BY ISKRAEMECO

# Supporting the energy transition with Symbiot

*Mariia Iglova Andreuzzi and Aleš Glavina*

**For over eight decades, Iskraemeco has been a leader in smart metering engineering. Today, it has evolved into a digital solutions provider with deep software expertise, supporting energy stakeholders in navigating the rapidly changing energy landscape.**

**At the heart of this transformation is Symbiot, Iskraemeco's flagship digital platform. Developed through close collaboration with energy professionals, Symbiot offers a modular ecosystem that supports utilities in managing grid data, improving operational performance, and actively engaging end-users—while playing a key role in accelerating the energy transition toward a more sustainable, flexible, and digital energy system.**





## Key milestones in Symbiot's development

**Iskraemeco's digital journey began in the late 1980s to collect, manage, and present measurement data from various measurement devices.**

**1993** — Launch of SEP2 DOS for automated data collection.

**1998** — Development of MeterView for improved meter configuration capabilities and visualization.

**2006** — SEP2W expanded to support 10M+ residential and 100K+ industrial meters across multiple countries.

**2021** — SEP2W evolved into Symbiot—a new-generation platform designed to address the complexities of the modern utility landscape. Since its launch in 2021, Symbiot has achieved key certifications, including ISO 33061, the Swiss Cyber Security Examination by METAS, and compliance with the 2016 CENELEC AMI standards. With more than six major releases to date, Symbiot is on track to support up to 5 million metering points.

## Helping various energy players to navigate energy transition

The increasing complexity of modern energy systems—driven by local overloads, grid congestion, and rising peak loads—is pushing Distribution System Operators (DSOs) to rethink conventional grid management strategies. Symbiot supports this shift by offering near real-time grid monitoring, combining smart metering, data management, and advanced analytics in one integrated AMI solution. It also enables scenario planning and "what-if" analyses to support dynamic grid planning and investment decisions. With embedded flexibility tools, Symbiot helps DSOs maintain network stability, relieve congestion, and maximize the use of existing infrastructure.

Transmission System Operators (TSOs) face challenges with limited visibility into high and mid-voltage networks. Balancing the grid has become more complex due to the increasing integration of renewable energy sources and fluctuating cross-border energy flows. TSOs also struggle with planning due to a lack of validated models and simulation tools that capture new grid dynamics. As grid operations become increasingly digitalized, cybersecurity risks rise.

Industrial and commercial energy users are under increasing pressure to reduce energy costs and actively participate in energy markets. Many of these facilities operate on-site generation assets, such as solar PV systems or energy storage, but often lack the real-time automation needed to align energy usage with market signals and grid conditions. Symbiot addresses this gap by enabling automated energy optimization. It integrates directly with building energy management systems. The platform continuously monitors grid condition, allowing users to maximize self-consumption, participate in demand response programs, and export surplus energy during peak-price periods.

### Symbiot: one platform, many solutions

Symbiot's modular design enables utilities to build a future-proof ecosystem tailored to their operational needs.

**Core components**

**HES**
Head-end system focusing on collecting data from multiple sources.

**MDM**
Meter data management system and analytics software.

**FieldAssist**
Platform for organized and efficient field work.

**Water**
Digital water management.

**Energy360**
Meter management customer application.

**Billing**
Solution for billing, consumption tracking, and payments.





## Proven impact

Symbiot digitizes utility operations by turning raw, fragmented data into advanced analytics and predictive insights. Leveraging AI and machine learning, the platform moves beyond basic correlations to uncover patterns and forecast scenarios—creating a foundation for smarter, proactive grid management.

## Grid monitoring

Symbiot seamlessly integrates smart metering, data management, and analytics. By processing data from 5 million metering points, it provides utilities with near real-time visibility into energy usage and grid conditions. The result?

- **Fair billing and loss detection:** identifies theft, tampering, and unmetered energy, helping reduce non-technical losses by up to 30%.
- **Operational efficiency:** cuts manual data handling and documentation work by up to 98%, saving thousands of hours.
- **Foundation for advanced services:** Symbiot collects granular usage and load data, enabling customer segmentation, targeted insights, and support for dynamic pricing, flexibility services, and smarter customer engagement.

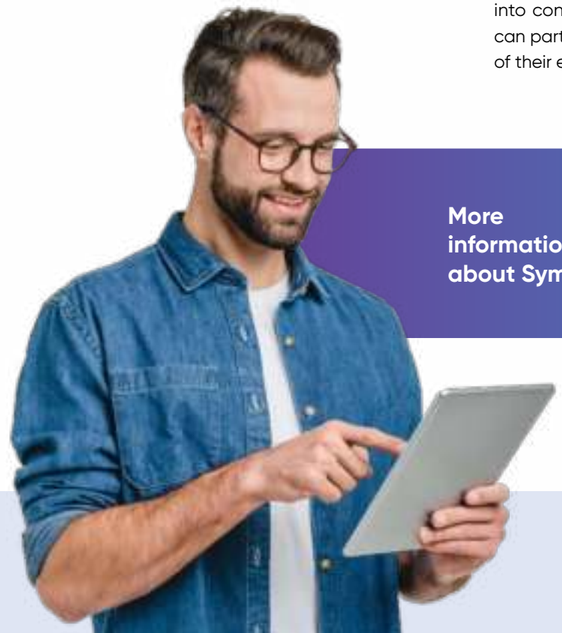
## Grid planning

Symbiot enables dynamic scenario planning with "what-if" simulations. It supports grid expansion modelling, predicts peak demand based on usage and weather, and identifies high-risk equipment to prevent failures. This helps DSOs shift from reactive to proactive planning and optimize investment timing. It helps to utilise the current grid and avoid unnecessary infrastructure upgrades, reducing costs by up to 10%.

## Grid protection and flexibility

Symbiot empowers utilities to manage today's more dynamic and decentralized energy systems, enabling DSO and TSO for demand-side flexibility. The platform continuously monitors key grid parameters—voltage, power flow, frequency, and feeder loads. When the grid is under stress, Symbiot triggers capacity signals that are transmitted to smart meters. These meters then calculate household-specific import/export power limits, which are sent to local energy management systems (EMS) to control flexible devices such as batteries, EV chargers, HVAC units, and PV inverters.

Symbiot allows utilities to maintain grid stability and prevent overload, overvoltage, and congestion—while enabling consumers to actively contribute to the energy transition. By turning distributed energy resources (DERs) into controllable, value-generating assets, households can participate in market programs and improve the ROI of their energy investments.



**More information about Symbiot.**

# The future of water metering

## How smart meters, IoT, and granular data are shaping the next generation of water management

*Sara Medhat*

**In a world facing growing water stress, climate uncertainty, and urban expansion, utilities are under mounting pressure to do more with less. They need to reduce water losses, educate users on rational water use, and address environmental concerns. Central to this challenge is one unassuming device undergoing a dramatic transformation: the water meter.**

> Long seen as a simple billing tool, the water meter is evolving into a powerful asset for data collection, operational insight, and revenue protection. From ultrasonic technology and prepayment models to real-time data and leak detection, the metering revolution is redefining how utilities operate—and how they serve their customers.

### The shift from mechanical to ultrasonic smart metering

For decades, mechanical water meters have been the global standard. Built with internal turbines or pistons, they've offered rugged reliability—but with limitations. Mechanical meters are prone to wear, require regular maintenance, and are often inaccurate at low flow rates, contributing to revenue loss and undetected leaks. The average lifetime of a mechanical meter is about five years, after which metrology inaccuracies tend to arise due to mechanical parts usage.

In contrast, ultrasonic water meters are redefining performance standards. These meters measure flow using high-frequency sound waves and have no moving parts, which means longer lifespans, minimal maintenance, and significantly improved accuracy—especially at low flows. Their digital architecture also makes them inherently compatible with advanced communication and data platforms. The average lifetime of an ultrasonic water meter is about 15 years under normal working conditions.

The adoption of ultrasonic technology is growing rapidly, but the cost of these meters compared to mechanical meters remains a challenge.

At Iskraemeco, we offer both meter technologies in our portfolio, providing customers with the best choice in terms of metrology performance 6.

**For more information about water solution, scan the QR code.**

## Prepaid vs postpaid: modernizing water billing and choose the best billing method based on utilities customer profile

While postpaid billing remains dominant, many regions are rapidly adopting prepayment systems. In a prepaid model, customers pay for water in advance—often through mobile apps or smart cards. This approach empowers consumers with better control over usage and helps utilities improve collection rates and reduce the administrative burden of overdue accounts.

Prepaid smart meters are proving particularly effective in parts of Africa, Southeast Asia, and Latin America, where utilities face challenges in billing and infrastructure expansion. In contrast, developed markets are enhancing postpaid systems through digital upgrades—offering remote monitoring, flexible billing, and usage analytics for both customers and providers. Iskraemeco offers both technologies, allowing customers to choose the billing method that best fits their end customer characteristics.

## The influence of the meters in reducing Non-Revenue Water

Non-Revenue Water (NRW)—water that is produced but never billed—continues to plague water utilities worldwide. Causes range from leaks and burst pipes to meter inaccuracies and unauthorized connections. In some regions, NRW accounts for over 40% of water loss.

Smart meters are emerging as a frontline defence. Ultrasonic accuracy ensures precise measurement across all flow rates, reducing under-registration. Modern meters now include embedded sensors that can detect leaks, pressure anomalies, and tampering or backflow, helping secure utility revenue. These capabilities allow for faster response, reduced water loss, and improved customer service. Revenue protection is a crucial element in the NRW account, and meters are central to this effort.

## Granular consumption data: a utility game-changer

Perhaps the most transformational advancement in modern water metering is the ability to collect and analyse high-granularity consumption data. Where traditional meters offer only monthly readings, smart meters provide detailed logs at intervals as short as 15 minutes or other period configurable.

This real-time insight enables a host of operational and strategic benefits, including smarter production and demand forecasting, leak detection, network efficiency, and empowered customers. Connectivity is a characteristic of smart meters, building the Water IoT.

With precise usage data, utilities can align water production with actual demand, optimizing energy use and chemical treatment while avoiding overproduction. Patterns across districts or time zones help forecast peak periods and long-term consumption trends.

- **Leak detection and network efficiency**

Unusual spikes, nighttime flows, or pressure drops become immediately visible, allowing for proactive maintenance and faster issue resolution. Integration with GIS and SCADA systems creates a digital model of the network—enabling scenario simulations and predictive planning.

- **Empowered customers**

Granular data also benefits consumers. Real-time usage alerts, leak notifications, and mobile dashboards provide unprecedented transparency. This not only encourages conservation but also builds trust through fair and accurate billing.

## Building the water IoT

Modern smart meters are equipped with advanced communication capabilities, allowing seamless data transmission without the need for manual reading. The choice of technology depends on geography, density, and infrastructure. These technologies support automated meter reading (AMR) and advanced metering infrastructure (AMI), creating a foundation for smart water networks that are responsive, efficient, and scalable.

Modern smart meters are equipped with advanced communication capabilities, allowing seamless data transmission without the need for manual reading. The choice of technology depends on geography, density, and infrastructure:

- NB-IoT (Narrowband Internet of Things): ideal for dense urban environments, offering deep coverage and low energy use.
- wM-Bus (Wireless M-Bus): widely used in Europe, suitable for mid-range communication and compatible with many legacy systems.
- LoRa (Long Range): a strong choice for rural and low-density areas, providing wide-area coverage and long battery life.



## From measurement to management

Water meters are no longer passive endpoints—they are active nodes in a connected, intelligent water grid. With ultrasonic precision, smart communication, and granular consumption data, modern metering is unlocking a new era of water stewardship. For utilities, this means better control. For customers, more transparency. For cities and the planet, a more sustainable way to manage our most vital resource.



## Regional trends

Water metering transformation is a global movement—but one that reflects local challenges and priorities. Europe and North America are focused on upgrading aging infrastructure and integrating smart postpaid systems with data-driven analytics. Asia-Pacific markets like China, India, and South Korea are leading in smart meter deployment, often favouring prepayment models to address service equity and efficiency. Africa and Latin America are leveraging prepaid smart meters to expand access, improve billing, and strengthen utility performance in underserved communities. The Middle East, facing some of the world's highest water stress, is investing in metering as part of broader conservation and desalination strategies.

## The road ahead

Looking to the future, water metering will evolve far beyond billing and measurement. Key innovations on the horizon include AI and machine learning for predictive maintenance and demand forecasting, edge computing, enhanced cybersecurity, and multi-utility metering. The convergence of these technologies will enable utilities to manage water not just as a commodity, but as a strategic, intelligent resource.

# The role of emerging technologies in the future of energy sector

*Tomaž Dostal*

**The global energy sector is undergoing a profound transformation driven by the urgent need for sustainability, efficiency, and resilience. Emerging technologies such as blockchain, quantum computing, artificial intelligence (AI), extended reality (XR), and next-generation connectivity are at the forefront of this shift. These innovations are not only enhancing today's infrastructure but are laying the groundwork for more adaptive, transparent and cleaner energy future.**

Together, they are enabling the evolution from the current concept of a "Smart Grid" to a truly "Intelligent Grid"—a system where grid components communicate autonomously, self-optimize in real time, and operate with minimal human intervention to achieve peak efficiency within physical and environmental constraints.

Iskraemeco is proud to be an active contributor to this transformation. With a strong legacy of innovation and a forward-looking strategy, we are integrating these technologies into our products, platforms, and internal processes. Our goal is clear: to help shape a digital energy ecosystem that is not only intelligent, but also sustainable, secure, and future-ready.





01

## Blockchain

### Enabling decentralized energy markets

Blockchain, as an alternative to a traditional transaction system, is a decentralized digital ledger that records transactions across multiple computers in a way that ensures the data is secure, transparent, and tamper-proof. Thus, it introduced an enhanced security and transparency by ensuring that all transactions are recorded in a tamper-proof, decentralized ledger. It also enabled greater efficiency and trust in processes by removing intermediaries and allowing for real-time, verifiable data sharing.

These characteristics makes it a very good candidate (and is already implemented on few platforms) for a transaction platform of decentralized energy markets. Some examples of the applications are:

- **Peer-to-peer energy trading:** homeowners with solar panels can sell excess energy directly to neighbours.
- **Grid management:** smart contracts automate billing, load balancing, and flexibility services.
- **Carbon credit tracking:** immutable ledgers ensure accurate accounting of emissions and offsets.

02

## Quantum computing

### Optimizing energy systems

Quantum computing is a new kind of computing that uses special particles called qubits, which can do many calculations at once. This means quantum computers could solve really hard problems much faster than regular computers.

As such, quantum computing offers powerful tools for solving complex energy challenges, not possible with existing technologies, few examples are

- **Grid optimization:** quantum algorithms can model and optimize large-scale energy networks in real time. Models of energy grid are very complex, including large sets of different devices with diverse operating characteristics which may influence the operation of the grid itself. To optimize their operation, heavy computing is required which traditional computers are unable to perform in real time. Quantum computing and its related algorithms may overcome these limitations and enable more efficient and reliable operation of the grid.
- **Battery design:** simulating quantum interactions helps develop more efficient and longer-lasting energy storage. As battery storage is seen as a solution for the volatile and amorphous nature of distributed energy resources, their low prices and high energy density will support their market penetration thus enable the stabilization of the grid.
- **Climate modelling:** quantum simulations improve the accuracy of climate and energy impact forecasts and thus enables better energy generation forecasting. Better energy generation forecasting results in better utilization of the grid which essentially leads to better efficiency and more stable operation.

03

# Artificial intelligence

## Powering smart energy

AI systems can analyse large amounts of data quickly, learn from patterns, and improve their performance over time without being explicitly programmed for every task. This leads to benefits like faster decision-making, automation of repetitive tasks, personalized experiences, and smarter technologies in areas like healthcare, transportation, and customer service.

Since new, intelligent grid will need to make decisions on a large set of data, coveting maybe thousands of dimensions, AI will play a crucial role in the energy systems of the future. In fact, AI is already revolutionizing how energy is produced, distributed, and consumed. Some of potential areas are:

- **Predictive maintenance:** AI can detect faults in turbines, transformers, cables, and pipelines before they fail thus ensuring the reliable and continuous delivery of electrical energy to all of us which is a crucial feature of more and more electrified world.
- **Demand forecasting:** machine learning models predict energy usage patterns to optimize supply which will help to operate the electrical energy system in predictive and reliable way, preventing any kind of supply interruption; the society of the future will simply not be able to sustain the energy outages since world will literally run on electricity and ability to predict what will be a demand in a short and long term future is a key for efficient management.
- **Renewable integration:** AI helps balance intermittent sources like wind and solar with grid demand which goes hand in hand with demand forecasting; only combining the two can lead to stable electrical energy system.
- **Grid optimization:** combined with quantum computing, that will lead to the optimal utilization of the grid; while AI itself can already optimize, combination with quantum computing can give a real high-performance operation.

04

# Extended reality (XR)

## Training and visualization

XR technologies enhance safety, training, and planning in the energy sector:

- **Virtual training:** workers can practice operating complex equipment in immersive simulations which will both increase the quality of the work and increase the efficiency of it; by virtual training, "learning-by-doing" become more efficient and easier to implement; it needs to be said that real work cannot be completely replaced by XR, but XR can significantly reduce the required real work (just recall the F1 drivers who train the track in XR).
- **Remote inspections:** AR headsets allow technicians to receive expert guidance while on-site as well as using drones to provide the real-time images which can be combined in augmented reality so technicians can get all relevant data for efficient and safe work.
- **Infrastructure planning:** VR models help visualize new energy projects before construction resulting in faster and less costly projects.





05

# Next-generation connectivity

## 6G and smart grids

Advanced connectivity is the backbone of the future energy ecosystem as all above mentioned technologies rely on fast, on-time and reliable data exchange (since we are talking about intelligent grid, the quality communication between the parts of it is an absolute necessity):

- **Smart grids:** 6G enables ultra-fast, low-latency communication between millions of IoT devices supporting swift and timely responses.
- **Real-time monitoring:** sensors across the grid provide instant feedback for better control so the system can react fast enough to prevent misfunctions of the system.
- **Remote operations:** high-speed networks allow for remote management of energy assets in harsh or distant environments.

**The convergence: A smarter, greener future**

The convergence of these technologies is where the real transformation happens:

- **AI + Blockchain:** secure, intelligent energy trading platforms.
- **Quantum + Grid Management:** real-time optimization of energy flows.
- **XR + Training:** safer, more effective workforce development.


**With a strong legacy of innovation and a forward-looking strategy, we are integrating these technologies into our products, platforms, and internal processes.**

## The role of Iskraemeco in energy transition

Iskraemeco has always been at the forefront of technological innovation. From our earliest days, we've embraced new technologies to stay ahead of the curve—and we continue to do so today. With the emerging "Digital Platforms" stream, we are actively monitoring the evolution of emerging technologies and implement them as market needs evolve.

We are already taking concrete steps:

- **Artificial Intelligence (AI)** is being integrated across multiple areas of our operations, from product development to internal processes.
- **Extended Reality (XR)** has been successfully piloted, showing strong potential in areas such as training and manufacturing.
- **Quantum computing,** while still in its early stages, is on our radar as we explore its long-term potential.
- **Blockchain** presents exciting opportunities, though it requires new business models to unlock its full value.

We are not just observing these trends—we are acting on them. Our products are beginning to incorporate these technologies, and our ambition is clear: to lead in this new digital energy landscape.

The transition from a traditional Research & Development (R&D) department to the Technology Development Center (TDC) was a strategic move to better align with the demands of a rapidly evolving energy sector. While R&D focused primarily on product development, TDC was established to expand our innovation capabilities, enabling faster experimentation, cross-functional collaboration, and proactive technology scouting.

TDC is designed to explore and pilot emerging technologies before they reach mainstream adoption, foster agile innovation across departments, support the shift from hardware to platform-based solutions and serve as a central hub for digital transformation

Our Technology Development Center (TDC), along with the Innovation team, is actively exploring new technologies and working closely with management and product owners to define implementation roadmaps. At the same time, our IT department is leading the AI revolution within the company, while other departments are identifying where these innovations can bring the most value. For example, AI and XR are poised to significantly enhance our meter manufacturing processes.

None of this would be possible without the visionary support of our leadership team, who understand that innovation is not just a function—it's a mindset that drives our future.

## Conclusion

The energy sector stands at a pivotal moment—where innovation is not just an opportunity, but a necessity. Emerging technologies are no longer simply enhancing existing systems; they are redefining the boundaries of what's possible. From AI and XR to blockchain and beyond, these tools are enabling a future that is cleaner, smarter, and more resilient.

At Iskraemeco, we are not content to be passive observers of this transformation. We are actively integrating these technologies into both our products and internal processes, ensuring we remain at the forefront of the digital energy revolution. With a clear vision, strong leadership, and a culture of innovation, we are shaping the future of energy—one breakthrough at a time.



# A triumphant start to a milestone year

*Smilja Dolgan Paternoster*

## 2025: A year of legacy, leadership, and landmark wins

We find ourselves not only reflecting on eight decades of innovation and resilience—but also stepping boldly into a future defined by growth, trust, and transformation. And what a start to the year it has been.

After months—and in some cases, years—of dedicated effort, strategic collaboration, and constant commitment, we are proud to announce that 2025 began with a resounding success: Iskraemeco has secured three major smart metering projects across Europe. These wins are more than contracts; they are a testament to the strength of our technology, the expertise of our people, and the trust placed in us by some of the continent's most forward-thinking utilities.





## Three projects, one vision

In Poland, we are honored to have been selected by Enea Operator and Tauron, two of the country's leading energy providers. These projects mark a significant step forward in Poland's digital energy transition, and we are proud to be at the heart of it—delivering smart metering solutions that will empower consumers, enhance grid intelligence, and support national sustainability goals.

Meanwhile, in Greece, our partnership with HEDNO (Hellenic Electricity Distribution Network Operator) represents one of the most ambitious smart metering rollouts in Europe. With over 1.1 million meters to be delivered in the first phase alone, this project is a cornerstone of Greece's energy modernization strategy—and a powerful example of how Iskraemeco's innovation is shaping the future of energy.

## A celebration of progress

These achievements are not just milestones for 2025—they are the culmination of years of hard work, perseverance, and belief in our mission. They reflect the dedication of our teams across the globe, who continue to push boundaries and deliver excellence in every project.

As we celebrate, we do so with immense pride in our past and even greater excitement for what lies ahead. The journey continues—with new challenges, new partnerships, and a shared vision for a smarter, more sustainable energy future.

**Explore the details of our recent projects with Enea Operator, Tauron, and HEDNO later in this issue.**

# Iskraemeco to deliver smart electricity meters as part of Enea Operator's large-scale metering system upgrade

*Smilja Dolgan Paternoster*

**Iskraemeco, in collaboration with Polish consortium partner PPH Politech, is set to play a key role in one of Poland's most ambitious smart metering rollouts to date. Enea Operator, one of the country's largest energy distribution companies, has launched a comprehensive metering system upgrade with the goal of deploying three million smart meters across its network by 2030.**

**The project is a vital step in Poland's energy modernization journey, with the first phase alone involving the delivery of 600,000 remote-reading smart electricity meters. This initial phase represents a substantial investment of nearly PLN 250 million. By the project's completion, total investments will exceed PLN 1.3 billion. These efforts align with national energy policies and regulatory mandates while enabling Enea Operator to strengthen the foundation for a smarter, more resilient energy infrastructure.**





## Advanced technology and regulatory compliance

Ahead of awarding the contracts, Enea Operator conducted thorough market consultations with leading manufacturers and research institutions to ensure technical excellence and regulatory compliance. As part of an innovation partnership model, selected suppliers will be responsible for the full lifecycle of the metering systems—from design and production to delivery.

Iskraemeco's smart meters, tailored for Enea Operator, will include advanced eSIM modules utilizing 2G, LTE CAT-M1, and NB2 communication. This connectivity ensures secure, efficient, and reliable data transmission - crucial for real-time monitoring and analytics in the evolving energy landscape.

## A strategic collaboration for a smarter grid

As one of four key suppliers selected for the project, the Iskraemeco–Politech consortium brings extensive experience and deep technological know-how to the table. This partnership reflects Iskraemeco's ongoing commitment to enabling digital energy solutions that empower utilities and consumers alike.

> *"The deployment of remote reading meters is a pivotal step toward modernizing the energy sector,"* said **Franci Čučnik, Head of Sales** for the C/E Europe region at Iskraemeco. *"These smart meters will enable real-time monitoring, ensure better quality control of energy distribution, and contribute to more efficient network management. We are proud to be part of this ambitious initiative, delivering innovative solutions that will shape the future of Poland's energy landscape."*

> *"This project is a significant milestone for Politech,"* added **Błażej Cąber, CEO of PPH Politech**. *"This project is a significant milestone for Politech, reflecting our dedication to advancing smart metering solutions in Poland. Our partnership with Iskraemeco ensures that Enea Operator receives the highest quality technology with functionality of the Electricity Quality Indicators W1-W4, unique in this segment of meters, tailored to meet the evolving demands of the energy sector. We look forward to contributing our expertise to this groundbreaking initiative."*

> **Enea Operator CEO Marek Szymankiewicz** emphasized the strategic importance of the investment: *"The purchase of remote reading meters by Enea Operator is not only to meet the legal obligation under the law. The functionalities that will be implemented in the meters will allow better management and monitoring of energy consumption by consumers and will enable the company to obtain current data on the quality of electricity supplied, flexibly manage the operation and development of the distribution network, which is particularly important in the ongoing energy transition. We assume that the data obtained from the meters will contribute to the optimal use of funds from the investment plan for expansion and modernization of the network."*

## Looking ahead

With the agreements now in place, Iskraemeco and its consortium partner are entering the next phase: finalizing designs and preparing for production. The first deliveries of smart meters are scheduled for 2025, with installations expected to begin shortly thereafter.

As the energy sector accelerates toward digital transformation and sustainability, Iskraemeco is proud to stand at the forefront—delivering intelligent metering solutions that will empower Enea Operator and millions of Polish consumers in building a smarter, greener energy future.

# Iskraemeco delivers remote reading system Symbiot HES for TAURON Dystrybucja's large-scale AMI project

*Mariia Iglova Andreuzzi*

**Iskraemeco has been awarded one of the most significant Advanced Metering Infrastructure (AMI) projects in Europe. As part of TAURON Dystrybucja S.A.'s ambitious AMI upgrade initiative in Poland, Iskraemeco will supply its remote reading system – Symbiot HES – to support the utility's digital transformation efforts from 2025 through 2032.**

**This landmark agreement reinforces Iskraemeco's leadership in AMI solutions and marks a significant milestone in the company's mission to support utilities in building smart, efficient, and sustainable energy systems.**






## Enabling a smarter grid with Symbiot HES

TAURON Dystrybucja, one of Poland's leading energy distributors, has selected Iskraemeco's Symbiot HES to serve as the backbone of its large-scale metering modernization. The system is designed to support up to 6 million smart meters, offering a scalable, secure, and high-performance solution for remote meter data collection and grid monitoring.

In addition to delivering the system, Iskraemeco will provide:

- System design, development, and implementation.
- Seamless integration with existing infrastructure.
- Licenses and operational documentation.
- Comprehensive training for TAURON's personnel.
- Long-term maintenance, support, and development services.

The initiative aligns with Polish regulatory mandates and TAURON's strategic goals to enhance operational efficiency, improve customer service, and contribute to smart grid advancement.

Prior to awarding the contract, TAURON Dystrybucja undertook extensive preparatory work, including market consultations with industry leaders and research institutions. A competitive dialogue procedure, in accordance with the Public Procurement Law, enabled TAURON to define its specific needs and expectations.

*"The system selection process was conducted as part of a competitive dialogue, which allowed us to create a solution tailored to the needs of our company. During this process, we conducted multi-stage talks with five contractors, during which we analyzed in detail the technical requirements, expectations regarding functionality, and aspects related to the security and scalability of the system. Contractors had the opportunity to present their proposals and adapt the solutions to the needs of TAURON Dystrybucja,"* said **Wojciech Kozok, Head of the Measurement Office at TAURON Dystrybucja.** *"In this way, we prepared the final description of the subject of the order, taking into account all the key requirements, such as operational reliability, compatibility with the existing infrastructure, and the possibility of further expansion. Thanks to this, we managed to select a solution that best meets the expectations of our company."*

## Enhancing grid operations and customer experience

With Symbiot HES, TAURON Dystrybucja will gain powerful capabilities to configure, manage, and control millions of smart devices across its metering infrastructure, including electricity meters, as well as data concentrators of PLC meters.

Key benefits include:

- Improved grid visibility through near real-time monitoring, diagnostics and alerts.
- Quick identification and resolution of issues like power outages and voltage fluctuations, improving operational transparency and compliance.
- Boosted customer satisfaction thanks to proactive issue resolution and data-driven support.
- Future-readiness through scalable architecture and compliance with evolving regulations.

*"We have already installed nearly 1.7 million remote reading meters. By the end of 2025, over 2.1 million customers will benefit from smart metering,"* said **Grzegorz Marek, Director of the Measurement Department at TAURON Dystrybucja.** *"This partnership with Iskraemeco is another step toward delivering sustainable and customer-centric energy solutions."*

## A strategic partnership for a digital energy future

The awarded project underscores Iskraemeco's continued dedication to delivering advanced, secure, and adaptable AMI software solutions. Through Symbiot HES, TAURON Dystrybucja will be equipped with a next-generation head-end system that enables multi-source data collection, smart grid functionality, and long-term support for energy transition goals.

*"The deployment of Symbiot HES is a pivotal step toward modernizing the energy sector. Symbiot HES will enable near real-time monitoring, ensure better quality control of energy distribution, and contribute to more efficient network management. We're proud to support Poland's energy transformation,"* said **Aleš Glavina, Global Software Product Management Director at Iskraemeco.**

*"This project is a major milestone for Iskraemeco in Poland,"* added **Bernard Hajduk, Area Sales Manager.** *"It highlights our capability to deliver tailored, high-performance smart metering solutions and further strengthens our presence in this key market."*

## Future outlook

With the agreement signed, Iskraemeco and TAURON Dystrybucja will collaborate closely throughout all phases of the project – from system design and implementation to integration with the existing Central Billing Platform (CBP/MDM). Together, they aim to build a more intelligent, responsive, and sustainable energy system that meets the challenges of the future while delivering tangible benefits to customers today.

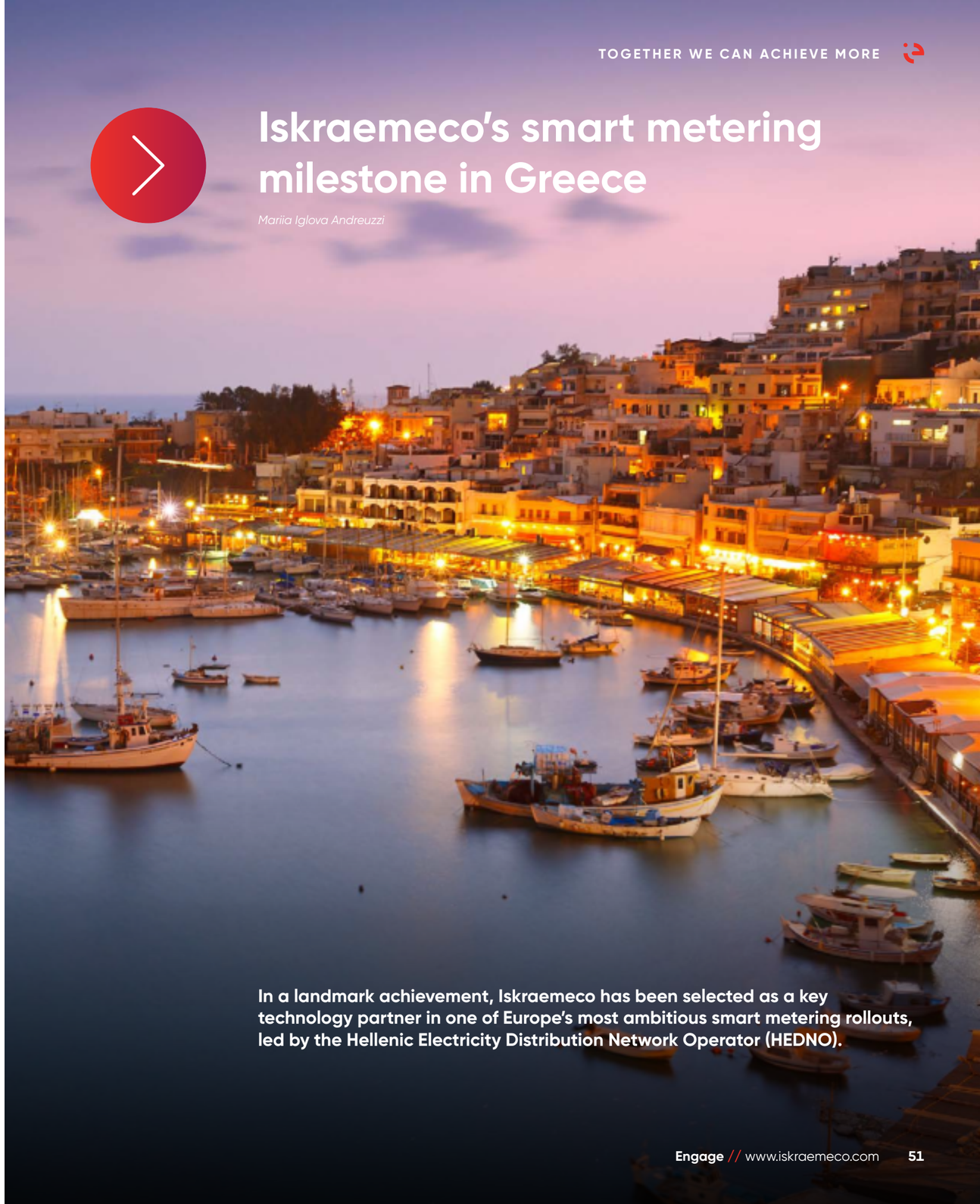
This partnership reflects Iskraemeco's commitment to enabling the digital energy transition – one system, one utility, and one country at a time.





# Iskraemeco's smart metering milestone in Greece

*Mariia Iglova Andreuzzi*



**In a landmark achievement, Iskraemeco has been selected as a key technology partner in one of Europe's most ambitious smart metering rollouts, led by the Hellenic Electricity Distribution Network Operator (HEDNO).**


## A vision for a faster transformation and modernization of the Greece energy market.

HEDNO is leading a transformative initiative to modernize Greece's electricity infrastructure. With a goal to replace all traditional meters with smart meters by 2030, the project involves the procurement of 2.76 million next-generation devices and the deployment of a new Meter Data Management (MDM) system. This effort is central to Greece's broader energy transition strategy, aligning with EU directives and national climate goals.

The **HEDNO CEO, Mr. Anastasios Manos,** stated: *"This is the most important modernization project of the Greek electricity market. Smart meters pave the way for the transition of the electricity market to a more efficient, transparent, and sustainable operating model. Their installation is crucial for the green transition, enhancing customer participation in the market, while also creating all the necessary conditions for a more competitive and flexible energy sector with new demand response services that benefit both customers and suppliers as well as overall energy costs. Smart meters are not an option but a necessity for a sustainable and digitally advanced energy future".*

## Leading the charge

Among the three selected suppliers, Iskraemeco—partnering with Oracle France SAS—secured the largest share of the contract, delivering 1.104 million smart meters and an Advanced Metering Infrastructure (AMI) system. This milestone underscores Iskraemeco's reputation as a trusted innovator in smart energy solutions.

The company's IE.5 smart meters and Symbiot Head-End System (HES), delivered as a Software-as-a-Service (SaaS), will form the backbone of this digital transformation. The first 100,000 meters are set for delivery in 2025, with full deployment expected by 2027. The infrastructure is expected to be fully operational by the end of May 2026.

*"Our IE.5 smart meters and Symbiot HES will provide near real-time insights into electricity consumption, enhance grid monitoring, and support the integration of renewable energy sources, ultimately improving the quality of services provided to customers, "* said **Hisham Tadros, Managing Director for Greece at Iskraemeco.**





**The company's IE.5 smart meters and Symbiot Head-End System (HES), delivered as a Software-as-a-Service (SaaS), will form the backbone of this digital transformation.**

## Project impact and expected benefits

The deployment of Iskraemeco's smart metering solution will enable.

**For consumers:**

- Near real-time insights into electricity consumption and cost-saving opportunities, along with access to advanced energy services such as usage profiling and personalized efficiency recommendations.
- Dynamic tariffs and multi-tariff support, enabling cost savings based on consumption timing.

Prosumers are empowered to participate in energy markets by selling, storing, and supplying energy to the grid when market conditions are most favourable.

**For utilities:**

- Faster outage detection and improved service reliability.
- Enhanced forecasting and grid stability.
- Reduced electricity theft and operational inefficiencies.
- Grid visibility and more efficient exploitation of distribution network. Near real-time data collection from the network EDGEs in combination with advanced analytics provides the ability to visualize the state of the network and offer innovative flexibility services.

## A strategic partnership for progress

With a framework agreement spanning eight years and the potential to scale up to 7.7 million meters, this project is a cornerstone of Greece's energy modernization. Already, HEDNO has installed over 1.1 million smart meters, covering more than 55% of the country's energy consumption.

*"This collaboration is a strong reflection of the trust in our technology, our people, and our long-term commitment to innovation and sustainability,"* said **Thomas Petuaud-Letang, CEO of Iskraemeco.** *"We see this project not just as a delivery of smart meters, but as a foundation for a smarter, more resilient, and customer-focused energy future."*

**Mahmoud Mouaz, Chief Commercial Officer,** added, *"This project is so important to the Greek people and will help manage all present and future electricity grid challenges. HEDNO is taking strong and solid steps toward sustainable growth."*

As Iskraemeco celebrates eight decades of excellence, its role in Greece's smart metering revolution is a testament to its enduring mission: delivering intelligent, sustainable energy solutions that empower people and protect the planet.

# Voices of our partners and customers

*Nina Merše*

**Iskraemeco's journey has always been driven by more than just technology — it has been defined by the strong, lasting relationships we have built along the way. Our partners and customers are not only an essential part of our success, but also co-creators in the solutions we develop and deliver around the world.**

We are proud to share a collection of reflections, thoughts, and kind words from those who know us best. These short interviews and statements offer a unique perspective on what collaboration with Iskraemeco means in practice — from shared innovation and trust to mutual growth and a forward-looking mindset.

Their insights are a meaningful reminder that progress is never a solo effort. It is something we achieve together — through open dialogue, shared vision, and a commitment to creating smarter, more sustainable energy solutions.



STATEMENT

## Wilfred Shereni

### Smart Metering Project - Project Manager, Zimbabwe Electricity transmission and distribution companies – ZETDC

*Sara Medhat*

I am excited to give a solidarity message on behalf of the ZESA and its subsidiary, Zimbabwe Electricity transmission and distribution companies - ZETDC, to one of our key OEM's Iskraemeco.

They have travelled a long journey with this Iskraemeco spanning over 12 to 15 years, where they supplied us with the prepaid meters, smart meters and 18 systems. Iskraemeco's advanced meter infrastructure and robust data analytics capabilities have been instrumental in improving our energy accounting and loss detection processes. Their technology enabled us to gain real time visibility into our network, streamline operations and make data-driven decisions that directly address inefficiencies and technical losses. With these climate cost metering systems integrated into our distribution network, we successfully identified and resolved inefficiencies and the leakages across the meter to catch value chain. This achievement not only improve the operational performance, but also reinforce the value of smart grid solutions in transforming our service delivery. What stands out most is their deep industry knowledge, responsiveness and willingness to adopt solutions to unique challenges. Their collaboration is always felt like a true partnership built on trust, transparency and shared commitment to excellence.

If I am asked to describe Iskraemeco in three ways, I would say innovative, reliable and visionary. Iskraemeco is well positioned to lead the change in details in the utility sector. They have continued focus on sustainable intelligent technologies, will drive efficiency in power consumers and support utilities in managing increasingly complex networks. They are truly paving the way toward a smart greener future.

**Once again, I would like to congratulate Iskraemeco on turning 80 years of innovation, excellence and impact. Your legacy is not just about the technology you have developed, but the positive change you have enabled around the world. We are proud to be part of your journey and excited to see what the future holds.**

**In this exclusive interview, Herman Mare', General Manager of Protection & Control at ACTOM Smart Technologies, shares how Iskraemeco's advanced metering solutions and expert support have played a crucial role in overcoming industry challenges. From enhancing energy efficiency and billing accuracy to promoting sustainability and customer satisfaction, Herman highlights the tangible impact of this strategic partnership.**

INTERVIEW

# Herman Mare'

## General Manager - Protection and Control, Actom Smart Technologies

*Sara Medhat*

### How has Iskraemeco's technology and expertise helped your business tackle key challenges?

Iskraemeco's technology and expertise have been instrumental in addressing several key challenges for businesses in the energy and water sectors. Here are some ways their solutions have made a significant impact on ACTOM Protection and Control and their customers.

**Tackling key challenges**

1. **Energy efficiency:** Iskraemeco's smart metering technology helped ACTOM Protection & Control, and their customers monitor and manage energy consumption more effectively. This led to reduced energy wastage and lower operational costs.
2. **Billing accuracy:** Advanced metering solutions ensured precise measurement and billing, minimizing errors and disputes with customers.
3. **Sustainability:** Their focus on sustainable solutions supported ACTOM Smart Technologies customers in reducing their carbon footprint and promoting environmental responsibility.
4. **Data analytics:** The integration of data analytics with smart meters provides valuable insights into consumption patterns, enabling better decision-making and strategic planning.
5. **Customer satisfaction:** Improved accuracy and transparency in billing and energy management enhance customer trust and satisfaction.

Iskraemeco's innovative approach and reliable technology have empowered businesses to overcome these challenges and achieve greater efficiency and sustainability.

### Can you share a specific success story or milestone achieved with Iskraemeco's solutions?

Some notable success stories involve the implementation of Iskraemeco's smart metering solutions in many a major utility, hospitals and a bank in and around Johannesburg and South Africa. Of note, ACTOM Protection & Control installed Iskraemeco MT831 meters and smart systems at Netcare Hospitals in 2009. Ekurhuleni Municiaplity a big metro; also used Iskraemeco MT831 Smart metering systems in their substations.

### What do you appreciate most about collaborating with Iskraemeco?

Their commitment and dedication are coupled with excellent technical and sales support to ACTOM Protection & Control. Iskraemeco, always gives ACTOM Protection & Control their best tailor-made solutions, and teams help to implement or demonstrate solutions for big tenders and customer challenges thus giving us an edge over our competitors.

- **Innovation:** Their commitment to continuous improvement and cutting-edge technology keeps us and our customers ahead of the curve.
- **Reliability:** Iskraemeco's solutions are robust and dependable, ensuring consistent performance and customer satisfaction.
- **Support:** The Iskraemeco's proactive support and partnership approach foster a collaborative and productive relationship.

### If you had to describe Iskraemeco in three words, what would they be?

Any 3 of the below.

- Innovative
- Reliable
- Sustainable
- Passionate
- Dependable
- Quality
- Dynamic

### How do you see Iskraemeco shaping the future of the energy and water industry?

Iskraemeco has been a pioneer in the energy and water industry, providing innovative solutions that address key challenges faced by businesses. Their expertise in smart metering and energy management has enabled companies to optimize their operations, reduce costs, and enhance sustainability.

### What message would you like to share with Iskraemeco as we celebrate 80 years of innovation?

Congratulations on 80 years of innovation! Your dedication to advancing technology and providing innovative solutions tailored to fit customers' needs in metering have helped ACTOM Protection & Control stay ahead of the curve. All this whilst always providing us with quality products and dedicated expert technical and sales support. Here's to many more years of groundbreaking achievements and successful collaborations with ACTOM Protection & Control!

> ***Iskraemeco's solutions are robust and dependable, ensuring consistent performance and customer satisfaction.***

INTERVIEW

# Mossa Ali Al Abri'

## AMI project manager, Nama Electricity Distribution

*Maja Mouaz*

**Mossa Ali Al Abri of Nama Electricity Distribution reflects on a longstanding and evolving partnership that has shaped Oman's smart metering journey. From early collaborations to the pivotal role Iskraemeco played in advancing the country's AMI project, this interview highlights the impact of cutting-edge metering technology in supporting Oman's Vision 2040. Mossa discusses the value of Iskraemeco's reliability, the tangible benefits of their smart solutions, and the future opportunities that lie at the intersection of digital transformation and sustainable energy.**

**Iskraemeco is celebrating its 80th anniversary this year. Looking back, what has your relationship with the company meant to you and your organization over the years?**

Our collaboration with Iskraemeco has been instrumental in advancing Oman's energy infrastructure. Since the initial deployment of Iskraemeco meters in Oman, the company has become a cornerstone of our smart metering strategy. Iskraemeco' s commitment to quality and innovation has significantly contributed to the our national project of AMI, aligning with Oman Vision 2040's goals of digital transformation and energy efficiency.

**How did you first come to work with Iskraemeco, and what was it about the company that made you decide to partner with them?**

Our partnership is very old but become more advanced in 2017 when we sought a reliable and scalable solution for our Advanced Metering Infrastructure (AMI) project. Iskraemeco stood out due to its extensive experience in the Middle East, offering a comprehensive suite of smart metering solutions that met our technical and operational requirements. The company's proven track record in the region, coupled with its commitment to quality and customer support, made them an ideal partner for our ambitious project.

**Iskraemeco is known for its innovative solutions in energy metering and smart grid technologies. How have these innovations benefited your organization specifically?**

Iskraemeco's innovations have been pivotal in enhancing our operational efficiency and service delivery. The deployment of Iskraemeco's smart meters has enabled real-time data collection, improving billing accuracy and reducing operational costs. Additionally, the integration of advanced analytics has facilitated proactive maintenance and better load management, contributing to a more reliable and efficient energy distribution network.

**In your opinion, what sets Iskraemeco apart from other providers in terms of product quality, reliability, and service?**

Iskraemeco distinguishes itself through its unwavering commitment to quality and reliability. The company's products undergo rigorous testing to ensure they meet the highest standards, which is very important for the demanding conditions of our network. Furthermore, Iskraemeco's responsive customer service and technical support have been invaluable in addressing challenges promptly, ensuring minimal disruption to our operations.

**What future trends or challenges in the energy industry do you think Iskraemeco should focus on to stay ahead of the competition?**

Looking ahead, the energy industry is moving towards greater integration of renewable energy sources and the adoption of smart grid technologies. Iskraemeco should continue to innovate in areas such as energy storage solutions, demand response capabilities, and enhanced cybersecurity measures to protect the integrity of smart grid systems. Additionally, developing solutions that facilitate seamless integration with emerging technologies like electric vehicles and decentralized energy resources will be crucial in maintaining a competitive edge.

TOGETHER WE CAN ACHIEVE MORE

> *Iskraemeco's responsive customer service and technical support have been invaluable in addressing challenges promptly, ensuring minimal disruption to our operations.*

Germany has long been one of Iskraemeco's most significant markets. Our deep understanding of the local business environment, paired with a strong focus on customer needs, has enabled us to establish a robust and lasting presence in this dynamic landscape. To date, more than 20 million of our meters have been successfully installed across Germany, including over 8 million lean meters delivered as part of the nationwide smart meter rollout.

INTERVIEW

# Volker Nordberg

## Managing director, Heinz Lackmann GmbH & Co. KG

*Nina Merše*

**Strategic partnerships lie at the heart of our success across Europe, particularly in Germany. We are proud to collaborate with reputable German companies that share our vision for innovative and efficient energy solutions. Among our valued sales partners in the German energy sector are Lackmann and Dornscheidt long-standing and respected provider of integrated energy solutions, known for its dedication to delivering reliable electricity services.**

**In this edition, we had the opportunity to speak with Volker Nordberg, Managing Director of Heinz Lackmann GmbH & Co. KG, to explore their perspective on the German energy market, the evolving needs of utility companies, and the strength of our partnership.**

### Can you share a memorable project or experience you've had working with Iskraemeco that stands out in your mind?

The long-standing collaboration between Iskraemeco and Lackmann spans over 50 years and includes numerous successful joint projects. The launch of the smart metering project at RWE in Germany (2010/2021) is certainly unforgettable. We were able to secure the initial rollout phase with over 10,000 PLC smart meters, data concentrators, and the Iskraemeco backend software solution. The holistic approach made the difference back then. This continues to be a key success factor in our partnership. A one-stop shop for the energy transition.

### Over the years, how has Iskraemeco's technology and innovation impacted your business?

The product management of both companies and our customer proximity have enabled us to integrate current requirements into our products. This has always enabled us to successfully innovate on the German market.

Continuous improvements in production processes and internal logistics have led to a lean factory.

### How do you see the role of smart metering evolving in the next decade, and what role do you believe Iskraemeco will play in this transformation?

To ensure that we continue to meet the technical requirements of smart metering systems in the future, it is very important to consider current and future encryption technologies to ensure system interoperability. Constant change and speed in market development are the new normal. By combining Iskraemeco's outstanding development team with Lackmann's expertise in designing complete metering systems, we look to the future with confidence.

### Looking ahead, how do you envision your partnership with Iskraemeco evolving in the next 5-10 years?

Our focus will continue to be on innovation, efficiency, and value creation. We will continuously examine new opportunities and challenges to ensure sustainable growth and resilience in Europe's largest energy market.

### In your opinion, what qualities or strengths of Iskraemeco make them a reliable partner in the long term?

Iskraemeco's greatest strengths as a long-term partner lie in its deep technical expertise, consistent commitment to innovation, and customer-centric approach. The company's strong focus on sustainability, digital transformation, and quality assurance ensures reliable, future-ready solutions. Additionally, Iskraemeco's transparency, flexibility, and collaborative mindset build trust and create a solid foundation for long-lasting partnerships.

### What message would you like to share with Iskraemeco as we celebrate 80 years of innovation?

On Iskraemeco's 80th anniversary, I would like to express my sincere admiration for the company's unwavering commitment to progress, sustainability, and excellence. And a heartfelt thank you from Lackmann for this long-term partnership.

Your journey from a regional manufacturer to one of the world's leading providers of metering solutions is a testament to your leadership, dedicated teamwork, and tireless pursuit of innovation. At Iskraemeco, people make the difference. Here's to your legacy—and to an even brighter future. Congratulations on this remarkable milestone!

> *Iskraemeco's transparency, flexibility, and collaborative mindset build trust and create a solid foundation for long-lasting partnerships.*

INTERVIEW

# Johannes Geist

## Staff Function Digital Transformation, Wiener Netze

*Mariia Iglova Andreuzzi*

**We had the pleasure of speaking with Johannes Geist, Staff Function Digital Transformation and former Program Manager for Smart Meter Implementation at Wiener Netze—one of Austria's largest distribution system operators and a valued long-term partner of Iskraemeco. Our discussion highlighted the shared commitment to quality, innovation, and sustainability that has shaped this successful collaboration. From the rigorous smart meter rollout to jointly navigating the energy sector's transformation, Wiener Netze emphasized the importance of trust, open communication, and a shared vision for the future. This interview offers insights into what makes the partnership unique—and why working together is key to building smarter, more resilient energy systems.**

### Reflecting on our long-standing partnership, what values or qualities do you associate with Iskraemeco? From your perspective, what makes our collaboration unique/ important?

At Wiener Netze, we deeply value our partnership with Iskraemeco, which has been built on a drive of innovation. Over the years, Iskraemeco has consistently demonstrated a commitment to reliability, technological vision and sustainability—qualities that align closely with our own mission. What makes our collaboration truly unique is the open and forward-thinking approach Iskraemeco brought to our smart meter rollout. This partnership is more than a business relationship – it's a joint effort to shape the future of our Energiewende.

### What are the key benefits that Wiener Netze has experienced from working with Iskraemeco?

Our collaboration with Iskraemeco has been a valuable part of our journey toward introduction of smart metering in the turbulent last couple of years. We also appreciate the open communication and responsiveness that characterize our partnership. It's not just about the technology—it's about working with a team that listens, adapts, and shares our commitment to continuous improvement. One of the key benefits has been the opportunity to learn and grow together – combining our operational experience with Iskraemeco's technological expertise. While there's always more to learn and achieve, we're grateful for the progress we've made together so far.

### The energy sector is changing. In your view, how can partnerships between DSOs and technology providers like Iskraemeco support the development of smart power grids? What is the main focus? What are the main expectations from such collaborations?

As the energy landscape evolves, partnerships between DSOs and technology providers are essential to building resilient, intelligent, and sustainable foundations for our Energiewende. The main focus of such collaborations should be on:

- **Digitalization:** Leveraging real-time data and analytics to optimize grid performance.
- **Forward Focus:** Engaging with new and emerging technologies such as artificial intelligence.
- **Flexibility:** Enabling integration of renewable energy sources and decentralized generation.
- **Controllability:** Establishing resilient interfaces to control supply and demand in critical grid situations.

From these partnerships, we expect agility, co-innovation, and long-term support.

### If you could send some wishes or messages to the Iskraemeco team on the occasion of its 80th anniversary and for the years to come – what would it be?

On behalf of Wiener Netze, I extend our warmest congratulations to the entire Iskraemeco team on this remarkable 80-year milestone. Your legacy of innovation, quality, and partnership is truly inspiring. As you look to the future, we wish you continued success, bold innovation, and enduring impact in the global energy sector. May the next decades bring even more groundbreaking achievements and strengthened collaborations. We are proud to be part of your journey.

> *One of the key benefits has been the opportunity to learn and grow together.*

# A human-centred digital journey

*Robi Zorman*

**Over the past decade, Iskraemeco has gone through one of the most significant transformations in its history — a shift that has touched every part of the company. From rethinking internal processes to integrating advanced digital solutions, we've laid the groundwork for a more connected, transparent, and responsive organization.**

## What made this journey possible was not just technology — it was the people behind it.

**Across all teams and global locations, it has been our people who have driven change — identifying opportunities, challenging the status quo, and constantly asking how things could be smarter, faster, or more meaningful. From implementing enterprise systems to digitizing everyday workflows, their mindset has shaped a new way of working: one that blends human insight with digital precision.**

### Building a common future

By continuing to digitalize, optimize, and humanize the way we work, we are not only transforming Iskraemeco — we are positioning ourselves to deliver even greater value to our customers.

These advances will help us grow on the global stage, not just as a technology provider, but as a trusted partner in building a common future with maximum impact. One where energy is smarter, systems are more connected, and success is shared.

Our journey is far from over — and the most exciting part is what comes next.

We are ready for it. And we are building it together.





## The digital ecosystem we have built

Over the years, we have brought together a powerful set of tools that now serve as the digital backbone of our operations:

- A fully renewed **ERP platform** that streamlines operations and enables faster, data-driven decisions.
- A modern **CRM system** that supports stronger, more personal relationships with customers around the world.
- Full **HR digitalization,** making it easier for people to grow, develop, and navigate their careers with confidence.
- A centralized **PLM solution,** creating full transparency and control over our materials, product development, and lifecycle management.
- Deep integration of **Microsoft tools** into daily operations — connecting teams, automating tasks, and simplifying communication.
- A **unified analytics environment** that combines data from across systems into a single, intuitive business view — guiding strategy, measuring performance, and enabling fast responses to change.

This digital foundation is helping us move with greater agility, serve customers with more precision, and make smarter decisions every day.

## Human potential through intelligent automation

As we look forward, our focus is sharper than ever: bringing even more intelligence into daily operations — not to replace people, but to empower them.

We are investing heavily in AI and automation technologies, embedding them into our processes to remove manual effort, increase accuracy, and unlock time for creativity, innovation, and strategic thinking. From RPA in finance and logistics, to AI in product analytics and customer engagement — these tools will help every individual work more effectively, make better decisions, and focus on what truly matters.

Because we believe the future is not about choosing between people and technology. It is about combining the two — using automation and AI to help each person reach their full potential.

# The legacy and evolution of Iskraemeco's meter production

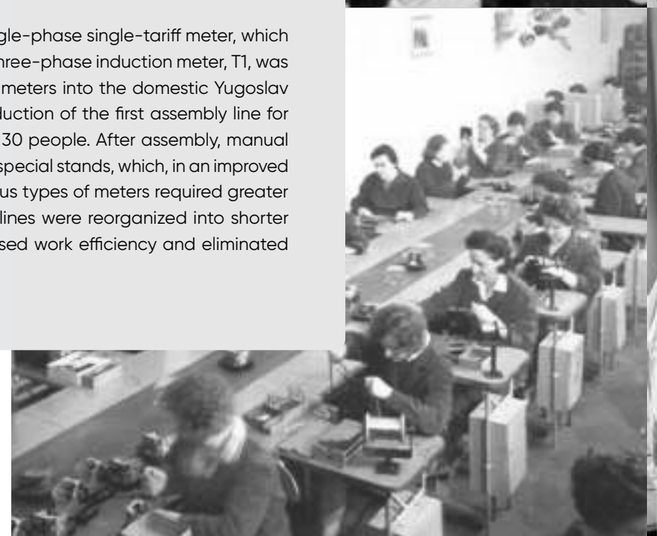
*Mirko Šalej*

**1947**

In the long history of the Iskra factory, production has played a significant role. At the Savska Loka location in Kranj, the manufacturing of single-phase electromechanical (induction) meters began shortly after the second war. The first meter, E1, left the production facilities as early as 1947. The quantities produced were small, and the work was mostly manual. Iskra Elektromehanika had a strong background in the mechanical and electrical industries, so the Meter Factory quickly began introducing new machines that increased productivity and the quality of the manufactured components. Since the market of the then Yugoslavia was mostly closed, all components of the meter were produced domestically. The meter frames and bearings were produced by today's Iskra ISD, while other components (rotor, dial, terminals, bakelite housing, wires, cores, coils, etc.) were manufactured at Iskraemeco.

**1967**

Home engineers continuously improved the first single-phase single-tariff meter, which soon received a dual-tariff version. In 1967, the first three-phase induction meter, T1, was produced, marking the end of the mass import of meters into the domestic Yugoslav market. The increased production led to the introduction of the first assembly line for meters at the end of the 1960s, employing around 30 people. After assembly, manual calibration and inspection of the meters followed on special stands, which, in an improved form, are still in use today. The introduction of various types of meters required greater flexibility in production, so in 1988, long assembly lines were reorganized into shorter lines with integrated workstations. This also increased work efficiency and eliminated the monotony of individual operations.







**Production engineering continuously ensures improvements in production processes and equipment that meet modern industrial standards.**

**1980**

In the 1980s and 1990s, the main goal of induction meter production was to maintain quality and reduce production times by optimizing individual operations. During this time, numerous automations and improvements were introduced in the areas of cutting and drilling current terminals, frame processing, winding current and voltage electromagnets, stamping lamellas, and assembling cores. At the end of the 1980s, the first 6-axis robot "Rocky" for assembling bearings and the first neodymium laser from the "Mihajlo Pupin" Institute for marking name plates were installed.

**1990**

The development of electronics in the 1990s also influenced induction meters, which were upgraded with tariff devices and displays (KSM), representing the first beginnings of smart meters. Such meters were sold to Germany at a good price, earning them the nickname "golden eggs." The production of induction meters reached its peak in 2004, with nearly 2.6 million meters produced, and continued until 2016, when the induction meter program concluded with approximately 50 million meters manufactured.

**The production of induction meters was not limited to Kranj but was also established in the following locations:**

- Spain (Barcelona), 1976, Licensed production at Metrega.
- Tunisia (Hammamet), 1980, Licensed production at Siame.
- Colombia (Cali), 1987, Licensed production at Inelca S.A.
- Australia (Brisbane), 1992, Measurement laboratory at Formway PTY LTD.
- Russia (Yekaterinburg), 1993, Production at Iskra Ural.
- Argentina (Buenos Aires), 1993.
- Italy (Bologna), 1996, Licensed production at Ducati (later Ducati – Iskra).
- Malaysia (Ipoh), 1997, Production at Iskraemeco Malaysia.
- Croatia (Zagreb), 1997, Production at Iskraemeco Zagreb.
- Bosnia and Herzegovina (Čapljina), 1997, Production at Elektrokontrol.
- Bosnia and Herzegovina (Sarajevo), 1998, Production at Iskraemeco Sarajevo.
- Saudi Arabia (Riyadh), 1998, Licensed production at MEMF.
- Portugal (Porto), 2000, Production at Iskra CdE.
- India (Tiruchirappalli), 2002, Production at Iskraemeco Seahorse India.
- Romania (Arad), 2002, Licensed production at Contor Zenner.
- Egypt (Cairo), 2009, Production at Iskraemeco Egypt.

**In 1947, only 37 meters were produced; by the following year, that number rose to 10,000.**

**After ten years, Iskraemeco had already manufactured 1 million meters.**

**By 1985, production reached 10 million single-phase and 3 million three-phase meters.**

**To date, Iskraemeco has produced and delivered over 100 million meters, including more than 8 million smart meters.**





## Production of electronic meters

Of course, Iskraemeco did not rest on the laurels of induction meter production, so at the end of the 1980s, they began the accelerated development of electronic meters and devices. The first SMT line with a Quad pick&place machine was delivered in 1988. Initially, high precision meters for larger consumers, ripple control receivers, and time switches were developed, as this was a segment where Iskraemeco did not have suitable products at the time.

The concrete expansion of electronic household meters began in 1994 with the production of the first single-phase meters ME100 and three-phase meters MT300. For this purpose, a monolithic integrated circuit based on the Hall sensor was developed in collaboration with the Faculty of Electrical Engineering. The production of silicon wafers took place in Belgium, while the etching of frames, cutting of wafers into individual chips, and encapsulation of chips into ceramic housings were done in Kranj. For this purpose, a special cleanroom was built, and dedicated equipment was purchased, which was an exceptionally advanced achievement in this part of Europe in the early 1990s.

The first electronic meters did not yet have displays but showed the consumed energy on one or two mechanical registers (dual-tariff meters). As the production of electronic meters increased, a new facility (Building 20) was constructed in 1998, where all final assembly of electronic meters and devices moved to the first floor. The center of the building housed a high-rack warehouse, and the ground floor included a packaging area, receiving, and shipping areas.

In 2000, the first million electronic meters were produced. That year also saw the installation of the first automated assembly line for the production of three-phase electronic meters MT300.

> **Iskraemeco remains true to its values, prioritizing the quality of products manufactured in modern factories.**

After 2000, new electronic meters with additional functions were developed. Displays replaced mechanical registers, and new communication technologies (RS485, DLC, and GSM) emerged, enabling the beginnings of remote reading. The first major order for a system with automatic meter reading system (AMR) was received in 2004 for Vattenfall Sweden, where 140,000 meters with DLC and GSM communication were delivered. In 2008, the production of electronic meters exceeded 1 million units per year, surpassing the declining production of induction meters. Space in Building 20 became scarce, so certain single-phase lines moved to Building 11, where induction production was shrinking. A significant milestone was the ERDF France order, where in 2010, 100,000 Linky meters were produced in a new robotic cell. In 2016, the production of a multi-year order for the SMM project in the Netherlands began with new smart meters AM550. Increasing demand for smart and LEAN meters for Germany led to the acquisition of new automated lines. The long-standing desire to consolidate all production in one place was realized in 2020 when the production of assembled boards and meter assembly merged in Building 11, which was also thoroughly renovated. Additionally, the former bakelite workshop and drilling areas were included. All installations, lighting, ESD flooring, doors, and corridors were renovated. Today, the production facilities represent a clean and orderly working environment that we proudly present to our customers. Production engineering continuously ensures improvements in production processes and equipment that meet modern industrial standards.

The production of electronic meters was also established in the following locations:

- Iran (Tehran), 2004, Licensed production at Iran Communication Industries.
- Malaysia (Ipoh), 2005, Iskraemeco Malaysia.
- Tunisia (Hammamet), 2005, Licensed production at Siame.
- India (Tiruchirappalli), 2006, Iskraemeco India.
- Egypt (Cairo), 2009, Iskraemeco Egypt.
- Bosnia and Herzegovina (Sarajevo), 2010, Iskraemeco Sarajevo.

Despite various global challenges, Iskraemeco remains true to its values, prioritizing the quality of products manufactured in modern factories. It ensures market competitiveness through continuous improvements, the introduction of new technologies, and a global presence. Long-term goals are focused on automation, digitalization, efficient energy use, and a pleasant working environment, where the worker remains at the center.

INTERVIEW

# Stane Štraus

## Former head of Production department at Iskraemeco in Slovenia and director of Iskraemeco in Malaysia and India

### How do you remember your time as part of the Iskraemeco team?

This journey, which left me with more pleasant than unpleasant memories, lasted almost 40 years. There were many minor and major challenges that we had to overcome to make Iskraemeco what it is today. I was an active participant in the events. In the 1980s, our company attracted the attention of the large Ljubljana-based Iskra, which wanted to incorporate us into its operations. TOZD Števci was part of the wider Iskra system. As an important exporter, we played a key role in strengthening the ISKRA brand. Later, we were one of the first Iskra companies to change its ownership structure with the help of certificates.





### How would you describe the production environment at Iskraemeco over time?

The beginnings were quite difficult. Production was cramped, squeezed into a very small area. In assembly, transitions between workstations were limited to one person, and materials were mostly carried by hand. Due to certain restrictions on movement, any increase in production volumes required a great deal of understanding on the part of the employees. Every time we wanted to inspect production, we had to agree in advance on the time and route of the inspection. Despite everything, we introduced improvements and changes to the product range. During the 14-day war, production ran normally, and customers did not experience any order shortages. Production areas slowly expanded, as did the production program – there were signs of a transition from induction to electronics. Leaving Iskra was an important turning point and an incentive for further development. This was also reflected in the expansion of production areas and the modernization of machinery and equipment, which enabled the production of new advanced products. For more than a decade, the production of induction meters provided financial resources and thus helped the development and production of electronic meters, but this changed completely at the beginning of the 21st century.

> **In my opinion, we are part of a rare group of companies that have successfully built on the certificates they have obtained and converted them into concrete business benefits.**

### Which achievement or project from your time as a head are you most proud of?

It is difficult to choose just one, as many changes have taken place over the past 40 years. I would highlight a few:

- The development of a process and equipment design for increased insulation resistance of voltage coils. Of course, the process has been adapted over the years to meet changing needs, but the principle has remained the same. This has enabled us to manufacture meters for markets subject to voltage surges (lightning strikes).
- I contributed to the smooth running of the company during the war of independence.
- I am very proud to have been part of the team that, with determination and vision, defended our independence and fought to preserve it, despite proposals to join the large Iskra group. We then continued with the transfer of ownership to the workers and the establishment of a joint-stock company. In my opinion, we are part of a rare group of companies that have successfully built on the certificates they have obtained and converted them into concrete business benefits. Nevertheless, due to various circumstances and external pressures and interests, we were later forced to transfer our shares to new owners.
- Management of the establishment of affiliated companies (Malaysia, India, Italy, Romania). However, the development of these companies varied greatly, and the rapid growth of local market demand for specific products largely prevented the continuation of cooperation. I also had the honour of managing two affiliated companies.
- I should also mention my involvement in obtaining the initial ISO certificates.

# Quality excellence at Iskraemeco

*Gregor Kita*

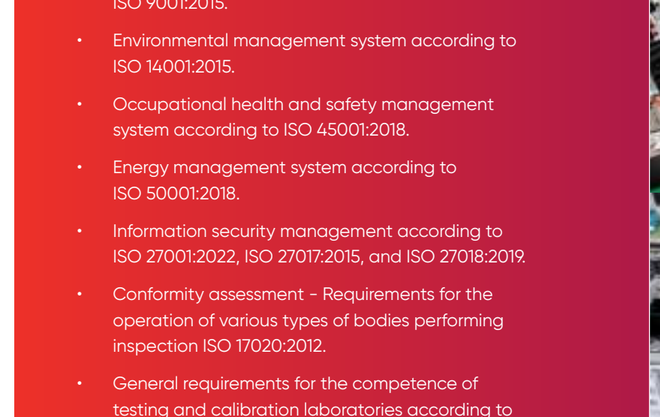
**What is one of the key reasons a company can celebrate such a significant anniversary? Undoubtedly, it is the generations of employees and various leaderships that have successfully navigated the challenges of their times. It required a great deal of sacrifice, effort, ingenuity, and perseverance. As times changed, so did the market, customers, products, and technology. However, two things remained constant and are likely the main reasons for an optimistic outlook: excellent employees who believe in the company and its mission, and a commitment to achieving the highest quality.**

A quick review of quality development through quality management systems shows rapid and visible progress. While ISO 9001 was at the very beginning of systematic quality management, today Iskraemeco has so many standards that it would be hard to find a process not governed by a specific standard.

Two new standards are coming, covering two new areas: ISO 22301 Standard + ISO 22313 (guidance and recommendations for applying the requirements of the business continuity management system (BCMS)) and ISO 28000:2022, which specifies requirements for a security management system, including those aspects critical to the security assurance of the supply chain.

**We monitor the following in our management review:**

- Quality management system according to ISO 9001:2015.
- Environmental management system according to ISO 14001:2015.
- Occupational health and safety management system according to ISO 45001:2018.
- Energy management system according to ISO 50001:2018.
- Information security management according to ISO 27001:2022, ISO 27017:2015, and ISO 27018:2019.
- Conformity assessment - Requirements for the operation of various types of bodies performing inspection ISO 17020:2012.
- General requirements for the competence of testing and calibration laboratories according to ISO 17025:2017.
- Process assessment model for software lifecycle processes according to ISO 33061:2021.



MANUFACTURING THE EXCELLENCE

This is undoubtedly a firm commitment to quality and a step towards maintaining the Iskraemeco brand, which is synonymous with the highest quality and technologically advanced products for our customers. But it's not just that. It's about understanding our customers' needs, being sensitive to the vulnerability of the energy network managed by our customers, and understanding the geopolitics and risks associated with placing our products in critical infrastructure

Performance Visibility of single process in company is delivered by Quality and reporting via BI enables process owners' strong tool to monitor, change and improve their processes. Enabling process orientation and transfer from silos organization is the main mission and Quality presents strong peer achieving this task.

Eighty years of quality have also brought about a significant investment in upgrading our accredited laboratory, which has regionally recognized competencies, and a brand-new Validation Center that allows us to conduct advanced testing of our products and solutions live, together with our customers.

Customer demands and market needs have brought a new dimension to quality: a global quality structure. The quality organization in the company has adapted and supported the customers' demand for uniform high standards regardless of where production takes place. Today, we have established a global quality structure in the company, allowing our customers to view Iskraemeco as a single company operating globally.

So, we come back to the beginning of this article. Everything starts and ends with people, their mindset, motivation, and responsibility. Quality will continue to develop in the company. AI is coming, new technological solutions are emerging, and new dimensions of complexity with new risks are on the horizon. We are ready for tomorrow's challenges and look forward to the future.

# Embracing agile

*Tamara Ćetković*

**In today's fast-paced business environment, agility and adaptability are key to success. Agile is a philosophy built on four values: emphasizing the importance of individuals and interactions over processes and tools, focusing on delivering a functional product that meets user needs over comprehensive documentation, prioritizing ongoing collaboration with customers over contract negotiation, and encouraging flexibility and adaptability to accommodate changes throughout the project lifecycle. This approach allows teams to work more efficiently, respond quickly to changes, and deliver better results.**

The Agile Manifesto, introduced in 2001 by a group of software developers, promotes customer satisfaction through early and continuous delivery of valuable products, welcoming changing requirements even late in development. It encourages frequent delivery of working products, close collaboration between business and technical teams, and building projects around motivated individuals. Agile values face-to-face communication, measures progress through working products and supports sustainable development. It emphasizes technical excellence, simplicity, and self-organizing teams, while advocating for regular reflection and adaptation to improve effectiveness.





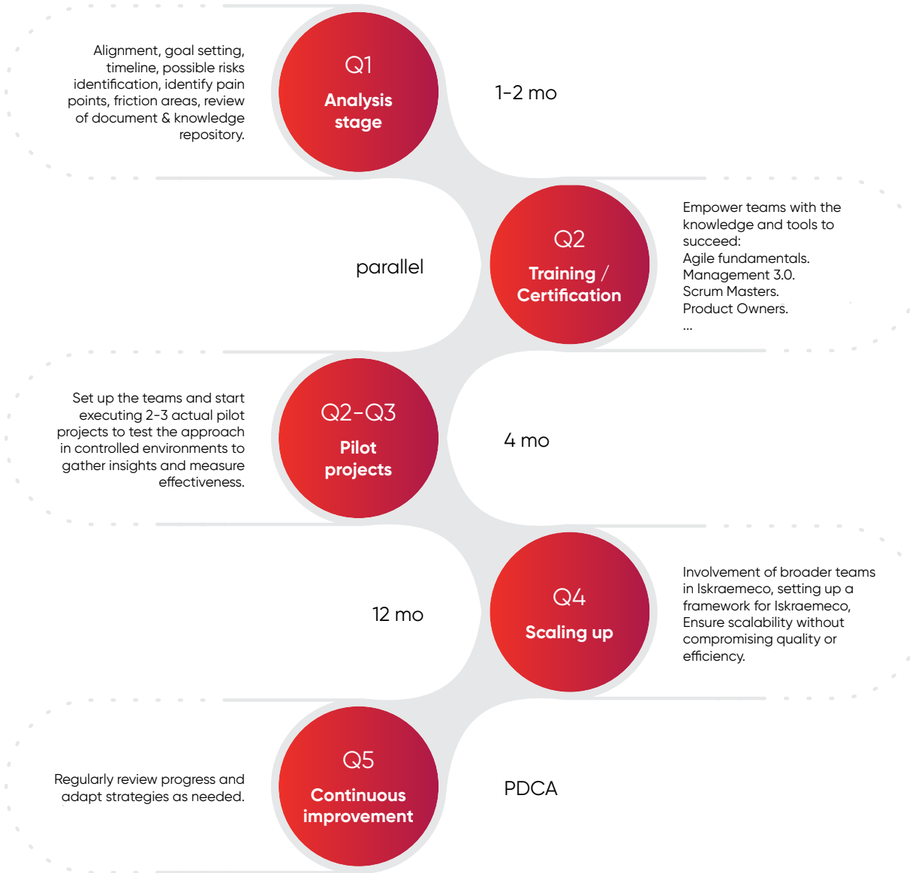
## Aims - why are we doing this?

At Iskraemeco, we embraced Agile to become more customer centric. By involving customers in co-creating tailored solutions, we can quickly adapt to evolving requirements through feedback and pivoting. This will build trust and long-term relationships, improve time to market, and streamline processes for faster iterations and delivery. We emphasize collaboration and communication, fostering open channels, encouraging cross-functional teamwork, and using tools to enhance productivity. By challenging traditional methods, we cultivate a mindset of growth and curiosity to drive meaningful change.

## The approach

At Iskraemeco the agile approach is not new, but it is limited to following Agile rituals mainly in the SW development team. The broader adoption of Agile in Iskraemeco involves a gradual approach. We started with an analysis stage to align goals, set timelines, and identify potential risks to assess the readiness for introducing agile approaches. This is followed by pilot projects to test the model and approach in controlled environments, continuous improvement through regular progress reviews, and training and certification to empower teams with the necessary knowledge and tools. Finally, the approach will be scaled up to involve broader teams within the organization.

### Gradual adoption of a custom approach



## Iskraemeco's model

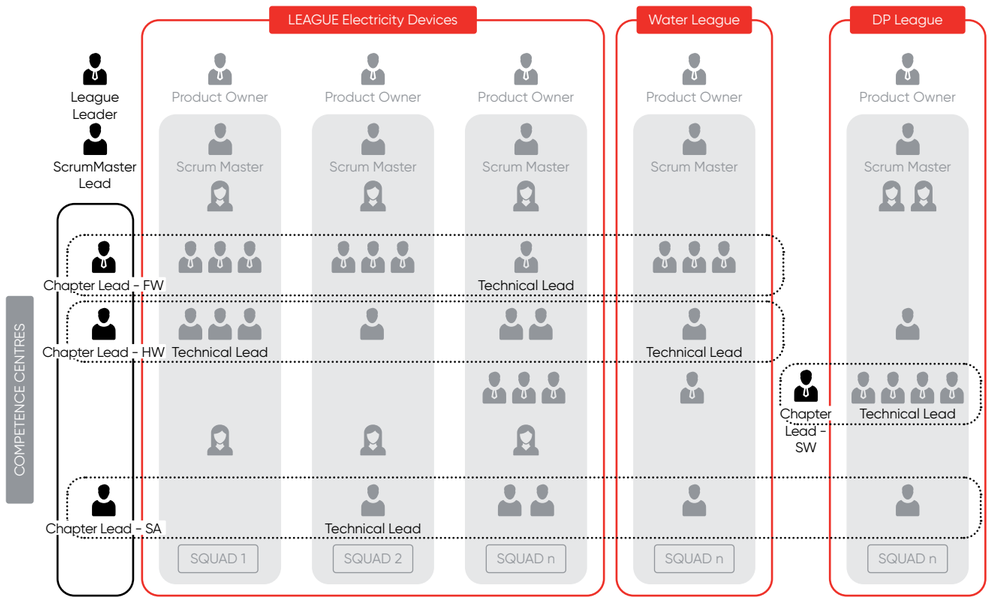
Agile is a philosophy and spirit and is supported by different frameworks and methodologies. Through the initial experimentation stage with the pilots, we will design a framework that we see fit for Iskraemeco where we are running different types of projects, such as development of devices, SW development, complex solutions combined of different devices, SW, integration architecture and services, and innovation projects. We however kicked off the pilots with the terminology deriving from "Scrum" and "Spotify" agile framework as shown in the picture below.

The main unit in Iskraemeco Agile model will be a scrum. A small self-organised group of cross-functional people ideally dedicated to working on a single product/solution. The key roles in a scrum are product owner, scrum master and technical lead representing the development team. All three roles are different to the existing job descriptions we have for a product manager or a project manager. The product owner is responsible to align product/solution vision with business goals, manage product/solution backlog (requirements) based on stakeholder needs and feedback, and prioritize features for maximum customer value.

The scrum master is responsible for conducting effective agile rituals, fosters team collaboration and facilitate the team to make progress visible to stakeholders. The technical lead represents the development team and ensures the technical aspects of the product/solution are well-managed, works closely with the product owner and scrum master and other stakeholders to align technical solutions with business goals. In a scrum we will have several technical experts but one will be nominated to represent technical aspect of a specific product/solution.

More scrums are grouped into a league. Currently we see to have a league for electricity, digital platforms and water, coinciding with our business streams.

The important role of this model is also the role of a chapter lead. Chapters are groups of people with similar competencies responsible for a platform approach with the main responsibility to ensure stable and scalable platform development and prevent branching. Chapters or competency centres are also meant for non-core development teams, such as manufacturing engineering, strategic procurement, component management, quality and other crucial functions playing roles in the interdisciplinary scrums.








### Product Owner

- Align product/solution vision with business goals.
- Manage product/solution backlog based on stakeholder needs.
- Gather stakeholder requirements and feedback.
- Prioritize features for maximum customer value.
- Provide requirements to the development team.
- Review and accept development work.

### Scrum Master

- Conducts effective agile rituals.
- Helps remove team impediments.
- Coaches on agile practices.
- Fosters team collaboration.
- Shields team from distractions.
- Makes progress visible to stakeholders.

**Key Agile Roles**

### Technical Lead

- Guiding the development team and ensuring the technical aspects of the project are well-managed.
- Provide direction on technical decisions.
- Work closely with the PO, SM, and other stakeholders to align technical solutions with business goals.
- Address technical challenges and obstacles that arise during development.

### Chapter Lead

**Centre of excellence**

- Ensure stable and scalable platform development.
- Prevents branching.
- Continuously improve and stay current with trends.
- Consolidates chapter backlogs
- Builds knowledge and shares best practices.
- Identifies key competencies of the experts

## Enabling the implementation

As written in the Scrum guide: “The Scrum framework is purposefully incomplete, only defining the parts required to implement Scrum theory. Scrum is built upon the collective intelligence of the people using it.” The role of our management is not to give a recipe exactly defining how the teams should work, but to communicate vision and product strategy, delegate decision-making authority, promote transparent communication and collaboration across teams, advocate for agile practices and principles, establish the working system, drive the process and organizational changes, and allow for mistakes to encourage continuous learning. At this stage, we still need to address several areas to fully support the agile implementation and those will be addressed by the agile transformation core team during the experimentation stage and further on.

## Conclusion

The adoption of Agile methodologies at Iskraemeco represents a significant shift towards a more customer-centric and adaptable approach to project management. The gradual implementation of Agile, starting with pilot projects and continuous improvement, ensures that the organization can adapt and refine its approach to best fit its unique needs and not jeopardising running business operations. The support and active involvement of management are crucial in driving this transformation, promoting transparency, and encouraging a culture of continuous learning and improvement. As Iskraemeco continues to embrace Agile, it will be well-positioned to respond to evolving requirements and deliver better results for our customers.



80 Years

# It’s the people who turn challenges into opportunities.

# The role of ecodesign in Iskraemeco products

*Dalija Delić*

**The Ecodesign for Sustainable Products Regulation (ESPR), in force since 18 July 2024, is a central element of the European Commission's strategy for making products more sustainable and aligned with the principles of the circular economy. It introduces binding requirements for product durability, energy efficiency, recyclability, and responsible use of resources. For manufacturers, this means addressing environmental impacts from the very beginning of the product development process.**

## Ecodesign requirements

1. **Improving product durability, reusability, upgradability and reparability.**
2. **Enhancing the possibility of product maintenance and refurbishment.**
3. **Making products more energy and resource-efficient.**
4. **Addressing the presence of substances that inhibit circularity.**
5. **Increasing recycled content.**
6. **Making products easier to remanufacture and recycle.**
7. **Setting rules on carbon and environmental footprints.**
8. **Limiting the generation of waste.**
9. **Improving the availability of information on product sustainability.**

## What this means for our customers and partners

Our products are designed to have a minimal impact on the environment and climate, and we are committed to improving this with every new generation. This translates into lower carbon footprints, higher energy efficiency, and smarter use of materials—benefits that directly support our customers' and partners' sustainability goals.





At Iskraemeco, ecodesign is built into the way we develop our smart meters. We see it as a necessary response to the increasing importance of addressing the scarcity of raw materials—driven both by regulation and by expectations from customers and markets, particularly in Western and Northern Europe.

The process starts in the earliest design phase. We aim to reduce the amount of material used, choose responsibly sourced raw materials, and design products so that they can be used efficiently and recycled at the end of their life. Our approach is supported by internal frameworks such as our Supplier Code of Conduct, Sustainable Procurement Policy, and Global Supply Agreement. Through our Supplier Portal, we collect and track data on supplier certifications, financial performance, labor practices, and sustainability-related initiatives.

One of our ongoing efforts is to reduce the product's own energy consumption, addressed by our Climate Conscious Products study. We also design products with end-of-life in mind—our meters are almost entirely recyclable.

A key area we are continually investigating is the use of recycled plastics in our meters, which would significantly improve their material footprint. To better understand the full environmental impact of our products, we carry out Life Cycle Assessments (LCAs). These analyses examine all phases of a product's lifecycle—from raw material sourcing through manufacturing, distribution, use, and end-of-life—and are verified by independent experts through Environmental Product Declarations (EPDs). The results help us identify where improvements are needed and can be made already during development.

In 2023, we published our first EPD for the MT880 meter with the help of an external partner. Based on this experience, we have developed internal expertise. The LCA for the IE.X meter family is currently being executed in-house by our environmental specialist, with support from the sustainability team. The EPD is now in the process of being verified and published.

Looking ahead, we plan to expand our LCAs and EPDs to cover all major product families. By the end of 2025 we aim to finalize an LCA for the LEAN product family.

Applying ecodesign principles and investing in lifecycle analysis helps us make informed decisions during development, it gives us a clear understanding of a product's environmental impact and help identify areas for further improvement already during the design phase. It also ensures we are prepared for regulatory changes and aligned with what the market increasingly expects from technology providers.

# People behind progress

*Edisa Avdić Cicek*

While celebrating, we turn the spotlight to the people who made this journey possible—our employees. While technology and strategy have shaped our direction, it is the expertise, commitment, and curiosity of our teams that have driven real change. And at the centre of this collective effort stands our Human Resources team, whose role has evolved far beyond traditional boundaries.

In recent years, HR has become a crucial part of our long-term vision. No longer focused only on hiring or administration, today's HR at Iskraemeco is a key driver of transformation—creating the conditions where people can grow, contribute, and lead. Our HR function acts as a bridge between our company's goals and our people's potential. By focusing on development, inclusion, and adaptability, we are building a workplace ready for the challenges of tomorrow.





## Recognitions that reflect our commitment

Our efforts in this area have been recognized both nationally and internationally. In the past year alone, Iskraemeco received the DPP Certificate for family-friendly practices, signed the Diversity Charter, and was recognized as a Top Investor in Education. Our "Employee of the Year" initiative was nominated for the Best of the Best project by the American Chamber of Commerce, and we were selected as a finalist in the HR&M Project Awards.

These recognitions confirm that we are on the right path—implementing people-first strategies that go hand-in-hand with business excellence. But beyond certificates and awards, what matters most to us is creating a culture where every individual feels their work matters.

## Expertise at the core

At Iskraemeco, we are proud of the deep technical and professional knowledge our people bring. Our employees—whether engineers, researchers, software developers, or business leaders—are experts in their domains. Their know-how, combined with a genuine passion for solving complex challenges, is what keeps our solutions at the forefront of the smart energy world.

It's our responsibility as a company to support and develop this expertise—not just for today's needs, but for the evolving demands of the future.

## A future-ready HR approach

The way we work is changing. Expectations around flexibility, digital fluency, and purpose-driven work are reshaping what people want from their careers. In response, Iskraemeco has made strategic moves to modernize and future-proof our HR practices.

One such step is the digital transformation of our HR processes. From recruitment to development, we are using data-driven tools to better understand and support our people. This includes customized learning paths, transparent career development, and simplified internal mobility. These initiatives are designed not to replace the human element—but to free up more space for meaningful connections and leadership.

Another area of focus is well-being. Through programs like our Employee Assistance Program (EAP), which offers confidential psychological and legal support to employees and their families, we're sending a clear message: we see and support the whole person, not just the role they fill.

We're also embracing new ways of working. Hybrid models, flexible hours, and task-based collaboration are becoming standard, and our HR team is working closely with leadership to make sure these shifts are implemented thoughtfully and sustainably.

## Learning from global trends

To remain relevant and competitive, we look outward as well as inward. Initiatives like the World Economic Forum's Future of Work and standards such as ISO for HR help shape our approach. These frameworks challenge us to think long-term—about inclusion, lifelong learning, leadership development, and sustainability in workforce planning.

## Empowering people to shape what's next

Our focus is not only on what we've achieved—but on what lies ahead. We believe that the future belongs to organizations that know how to invest in people. That means giving employees not just a place to work, but a platform to grow, lead, and make a difference.

Our HR team plays a central role in this journey—ensuring that our people strategy supports business strategy, and that every employee, regardless of their role, has the opportunity to reach their full potential.

This is how we will continue to build trust—with our partners, our customers, and most importantly, our people. Here's to 80 years of excellence—and to the people who will carry Iskraemeco into the future.

**We believe that the future belongs to organizations that know how to invest in people. That means giving employees not just a place to work, but a platform to grow, lead, and make a difference.**

**Iskraemeco's achievements over the past 80 years are the result of the varied expertise and enduring dedication of its people. Their individual experiences speak to a common purpose, one that has steadily shaped the company's path and defined its character.**

*I am proud to say that I have been associated with Iskraemeco for more than half of my life - 45 years. My journey began in 1980, as a first year student at Iskra Technical High School, when I did my first holiday internship at the then Iskra Števci, and continued as a scholarship holder. Since then, my career has taken me through various departments of the company - from development, design and engineering management, to sales. Belonging to a company means a lot to me. Iskraemeco is more than just a work environment - it is a place where I have grown, developed and made valuable connections. I am proud of all the years of collaboration, the many projects and above all the genuine relationships we have built over time - both within the company and with partners around the world. In a world where tender requirements and technology shape business, people remain a key success factor. Every partnership is built on trust, the result of our commitment to understanding and delivering our customers' needs. It is these relationships and values that are the foundation that enables us to succeed, even in uncertain and rapidly changing times.*

**Ivan Kern**

80 Years

*As we look back on 80 years of Iskraemeco's accomplishments, I am grateful to be part of this remarkable team. Collaborating with brilliant minds to develop cutting-edge solutions, we've transformed ambitious ideas into technologies that are shaping the future of energy management. Our journey has been marked by innovation, dedication, and a relentless pursuit of excellence. Together, we have not only met the challenges of today but have also laid the groundwork for a sustainable and efficient energy landscape for generations to come. The synergy within our team and our shared vision have been the driving forces behind our success, and I am excited to see what the future holds as we continue to push the boundaries of what is possible.*

**Franci Brezar**

*Coordinating logistics for a global company like Iskraemeco is both challenging and rewarding. Ensuring timely deliveries across continents requires meticulous planning, but it's gratifying to know that our efforts contribute to the company's seamless operations.*

**Zdenka Gartner**

*Behind every seamless user experience is a system that's been challenged, refined, and perfected. In the R&D and Embedded Testing department, we make that possible – transforming bold ideas into robust embedded solutions engineered for the future.*

**Primož Cuznar**

*When I think about my 13 years at Iskraemeco, it's just a small part of the 80 years this amazing company has been around. I'm so grateful to be part of such a fantastic team. We've hit some big milestones, tackled tough projects with enthusiasm, and had a lot of fun along the way—like our IT implementations, the IEDC competition, picnics, and New Year's parties, ... As we continue to dive into a new era of technology, I'm excited for the adventures ahead and working even more closely with our global teams. Thanks, Iskraemeco, for this awesome experience and the bright future we're building together.*

**Robi Zorman**

*As we mark 80 years of Iskraemeco's journey, I feel truly honored to have been part of this story since 2008. Over the years, I've had the opportunity to grow through different roles, witness incredible transformation, and work alongside inspiring colleagues who continuously push boundaries and challenge the status quo. This milestone is more than a number—it's a reflection of our resilience, our drive for innovation, and the people who make it all possible. I'm proud of how far we've come and excited about what lies ahead. Here's to the next chapter of growth, collaboration, and continued success—together.*

**Maja Mouaz**

*Celebrating 80 years of Iskraemeco's journey is a moment of pride for all of us. It's inspiring to be part of a company that values both innovation and people. Here is to many more decades of shared success and collaboration.*

**Sherry Shoukry**



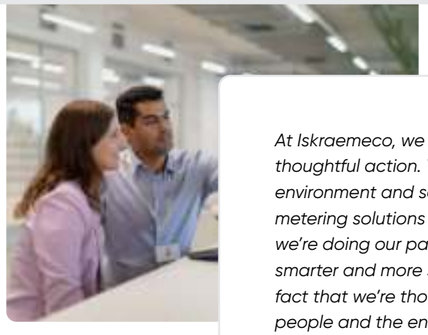


*Our production facilitiy has become industry leader, where reliability and innovation drive our operations. By embracing advanced manufacturing technologies and lean practices, we ensure that every product leaving our lines reflects our commitment to excellence and reinforces our role at the forefront of modern manufacturing. As we continue to set the standard in modern manufacturing, we remain focused on delivering with confidence and earning trust across generations.*

**Miha Kern**

*As an HR professional who has been part of the company for three years, I've truly noticed a positive shift over the past year—especially in how we invest in employee development, well-being, and engagement. It's inspiring to see how these initiatives are being supported by our new leadership. I look forward to the exciting HR projects we've set out to implement, focusing on creating a development-supporting and high-performing work environment.*

**Katja Šuštar**



*At Iskraemeco, we believe real change comes from thoughtful action. We take our responsibility to the environment and society seriously, and our smart metering solutions reflect that. Through innovation, we're doing our part to shape a future that's both smarter and more sustainable. I'm inspired by the fact that we're thoughtful about how our work affects people and the environment, and we put real effort into creating smart solutions that support a greener future. It's about progress, not perfection, and we're proud to be moving in the right direction.*

**Dalija Delić**

*For eight decades, disciplined financial governance has been a cornerstone of our resilience and growth. It is a privilege to contribute to a legacy where strategic insight and integrity shape every decision. As we celebrate this milestone, we remain committed to enabling a sustainable and forward-thinking future.*

**Snežana Gajić**

*Being part of Iskraemeco during its 80th anniversary is truly special. We are not just marking a milestone – we're honoring decades of partnerships, progress and purpose. Working in the marketing department, I've seen how our story connects with customers across the globe. I'm happy to be contributing.*

**Sara Medhat**

# Bridging education and industry through collaboration

*Nina Merše*

**Knowledge transfer between businesses and educational institutions is key to technological progress, raising the skills of employees and the long-term competitiveness of the economy. Iskraemeco has been actively cooperating with the Kranj School Centre, one of the main educational pillars in the Gorenjska region, for several years, which represents an important pillar of our development and human resources future.**

The beginnings of cooperation between business and the school date back to the post-war years, when Iskra, then still under the auspices of the Ministry of Industry, recognized the importance of technical education. In 1951, a school for 300 pupils was built next to the factory, later known as the Iskra Kranj School Centre. This link has deepened over the decades - from pupil exchanges to the apprenticeship system, to the co-creation of curricula and the participation of companies in the construction of modern school infrastructure.

Today, this cooperation is once again taking on new dimensions, as together with the mentors of the Kranj School Centre, we are developing modern educational programs covering a wide range of technical fields. We believe that early involvement in such topics is the key to developing the competences of the future. In doing so, we are not only building on our knowledge and experience, but also actively contributing to shaping the next generation of technical professionals.

From a human resources development perspective, this collaboration is a strategic advantage. Our future employees are already integrated into the company during their training, which means shorter induction times, greater loyalty and a better cultural fit. Collaborative projects that broaden horizons and bring fresh perspectives are an added value.

Iskraemeco will continue to support this cooperation in the future - not only as a business opportunity, but as an expression of its long-term commitment to the development of the company, to supporting young talent and to strengthening skills in technical professions. We believe that industry has an important role to play in co-creating an educational environment that fosters innovation, practical knowledge and sustainable solutions.

That is why we are aware of our responsibility - not only to today's market, but also to future generations who will shape tomorrow's world. Through partnerships like the one with the Kranj School Centre, we create a bridge between education and business, while investing in the long-term progress of the whole community.






INTERVIEW

# Jože Drenovec

## Director of the Kranj School Centre

### How does cooperation with Iskraemeco work?

Connecting vocational schools with industry has become almost a necessity today. Our objective is to ensure that cooperation between the school and enterprises is mutually beneficial. The predominant form of collaboration at present is practical training, which our students undertake at your company. In addition, students regularly participate in guided tours of Iskraemeco as part of professional excursions. Your specialists have delivered technical lectures at our institution on multiple occasions, providing students with direct insight into industrial operations. Šolski center Kranj maintains extensive international partnerships, which occasionally necessitate accommodating our foreign partners for internships in Slovenia. Iskraemeco has already contributed to this initiative. Moreover, numerous final theses at our Higher Vocational School have been prepared in conjunction with Iskraemeco. We also wish to express our gratitude for past contributions—whether in the form of financial support or the provision of advanced equipment for educational purposes.

## Can you tell us more about the school's history and the importance of the former Iskra in shaping its programs?

Šolski center Kranj was established in 2013 through the merger of Tehniški šolski center Kranj (Technical School Center Kranj) and Ekonomsko-storitveni izobraževalni center Kranj (Economic-Service Educational Center Kranj), from which the Economic Gymnasium branched off.

This merger resulted in a modern educational institution that continues and consolidates the longstanding tradition of secondary vocational education in Kranj, which dates back to the immediate post-World War II era. Today, it stands as one of the largest educational institutions in Slovenia and the foremost in the region, with over 2,400 students enrolled this academic year.

The roots of the Technical School Center date back to 1945, when, within the then Strojna tovarna Kranj (Machine Factory Kranj), education began in what was called the "Industrial School." A year later, in 1946, the Machine Factory Kranj was renamed Iskra. As Iskra grew, so did the school, and in 1962 it became Šolski center Iskra Kranj. It is worth mentioning that Iskra played a crucial role in the school's development—building the first school building next to the factory, which was completed in 1951. Iskra was also the main investor in constructing the school building we still use today, which opened in 1985. For many years, Iskra provided much of the technical teaching staff and actively participated in designing the educational programs. Finally, the company was for many years the largest employer of the school's graduates. Even today, many still refer to the institution as the "Iskra School" or simply "Iskra."

## How do you see the school's role in collaborating with an industry partner like Iskraemeco?

A contemporary educational institution must proactively engage with industry and assume a significant role in facilitating such engagement. Collaboration between the school and enterprises like Iskraemeco can occur on multiple levels, yielding benefits for all stakeholders. The school can guide students toward acquiring the specific knowledge and skills that a given company requires. By integrating students into mandatory or voluntary practical training at a company like Iskraemeco, we enable them to gain invaluable real-world experience and enhance their employability upon completion of their studies.

Maintaining a close connection with industry ensures that curricula remain current and responsive to evolving trends. Cooperation with Iskraemeco's experts accelerates the adaptation of teaching plans to burgeoning technological developments and fosters a more robust understanding of market demands.

## Which competencies do young technicians need today?

Young technicians today require a broad set of competencies, as technology is evolving rapidly and labour market demands are becoming increasingly complex. The most important competencies can be divided into three categories:

**Professional (technical) competencies**

This includes a solid understanding of the fundamentals of their field, which serves as the foundation for further specialization. Knowledge of programming and automation is becoming increasingly important, as Industry 4.0 systems are highly automated and digitalized. It is also essential for students to have hands-on experience with modern tools and software used in industry. Analytical thinking and problem-solving skills in real-world situations are key, as they support the development of innovative and efficient solutions.

**Soft (personal) competencies**

These include communication skills, the ability to clearly and effectively communicate within a team, with clients, and with superiors, as technical projects are almost always the result of collaborative work. Initiative and responsibility are equally important, as employers seek reliable individuals who can think independently and take the lead when needed. Lifelong learning and adaptability are also crucial, since continuous knowledge upgrading is necessary in a constantly evolving technological landscape.

**Digital and language competencies**

Digital literacy is essential today, including a basic understanding of how digital environments work and how to protect information against cyber threats. Foreign language skills are equally important, as they enable participation in international work environments, access to global resources, and easier communication with experts worldwide.

## How does the school adapt its programs to the needs of the modern market?

he school continuously refines its programs to align with the requirements of the modern market. We strive to operate with agility, maintain strong ties to industry, and uphold a clear strategic vision. We systematically gather data regarding current labor market needs and use these insights to inform curriculum development.

We motivate and guide students by organizing practical training sessions and professional excursions, granting them direct exposure to authentic workplace settings. Industry experts are regularly invited to contribute to classes, lectures, and workshops. The curriculum is routinely updated to incorporate cutting-edge topics such as robotics, artificial intelligence, the Internet of Things (IoT), digitalization, and renewable energy sources. In recent years, we have placed significant emphasis on fostering practical skills through project-based learning.

At Šolski center Kranj, the FabLAB provides students with opportunities to execute diverse practical projects—from conception to completion. Additionally, our students gain invaluable experiences through international collaborations. Programs such as Erasmus+ and other international initiatives afford students exposure to new environments, cultures, and advanced technologies.

## What are the advantages of involving students in real industrial projects?

Engaging students in genuine industrial projects offers a multitude of advantages for students, the school, and industry partners. It represents one of the most effective methods for bridging theoretical knowledge with practical application. Students become acquainted with authentic workplace conditions, production workflows, and specific technical challenges. Applying theoretical concepts in a practical setting deepens their comprehension and elevates their motivation to learn.

Furthermore, students develop essential teamwork and communication skills by collaborating with colleagues, thereby easing their transition into the professional sphere by clarifying employer expectations. Participation in real-world projects also enhances their employability, as employers highly regard candidates who have demonstrated competence through practical experience.

## How does cooperation with real-world environments affect students' motivation and knowledge?

Collaboration with real-world environments significantly enhances students' motivation and learning outcomes by demonstrating the practical relevance of theoretical knowledge. Confronted with actual challenges, students gain an appreciation for the utility of their academic studies and, consequently, engage more actively in the learning process. Observing tangible results from their efforts instills a sense of achievement and purpose.

Practical application of theoretical concepts reinforces retention and deepens students' understanding of interconnected subject matter. In a real-world context, students learn to assume responsibility, adhere to deadlines, and maintain precision. Successfully completing concrete tasks fosters self-confidence and reinforces trust in their own capabilities.

Moreover, collaboration with employers cultivates proficiency in communication, teamwork, and adaptability. It also helps students discern their genuine interests, thereby facilitating informed decisions regarding their future career trajectories or academic pursuits.

## What would you like to see improved in school–company cooperation in the future?

Although numerous commendable practices already exist in the realm of school–industry cooperation, there is ample opportunity for enhancement. We aspire to cultivate more long-term, systematic partnerships rather than isolated, short-term projects, thereby facilitating sustained mutual development. On specific fronts, we would value mentorship from industry experts who could guide students through the entirety of project endeavors.

We seek collaboration on smaller-scale research, development, or innovation projects whereby students and your company's specialists jointly address genuine challenges. Additionally, it would be highly beneficial if your organization could facilitate brief, targeted professional development sessions for vocational teachers, ensuring they remain conversant with emerging technologies. Such initiatives would expedite the integration of contemporary knowledge into the classroom, yielding direct advantages for students and the broader educational community.

Innovating
for **Life.**

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