

SMART METERING AND GRID DIGITALIZATION

Cooperation between Khmelnytskoblenergo and EDF International Networks

Warsaw, 14 November 2024



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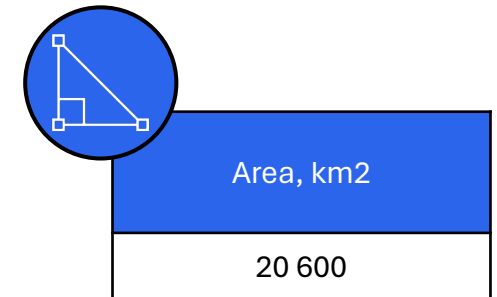
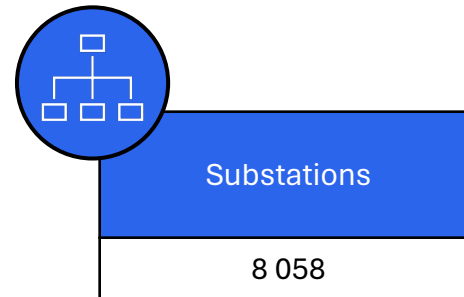
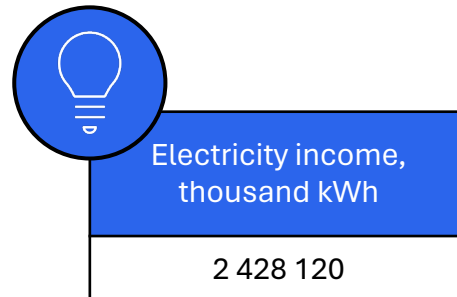
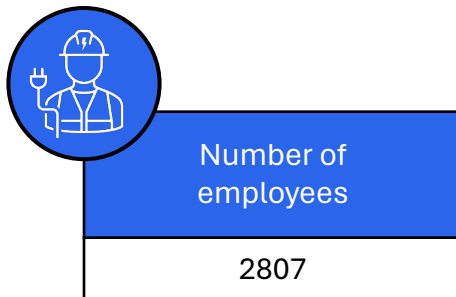
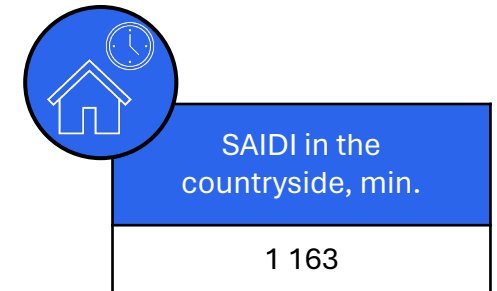
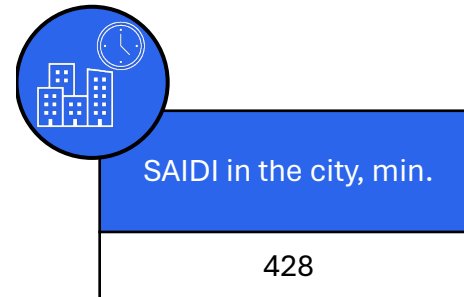
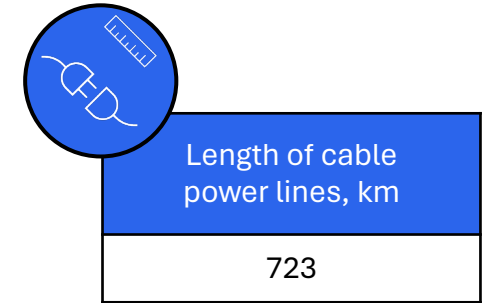
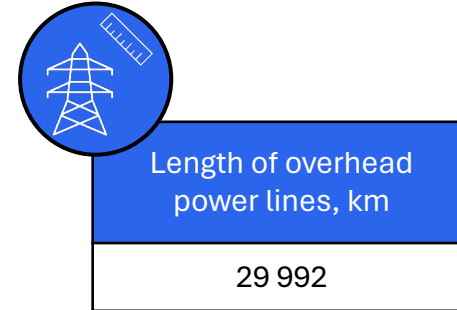
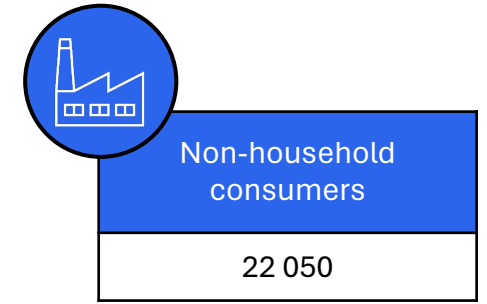
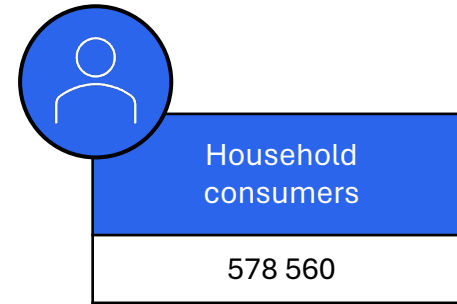
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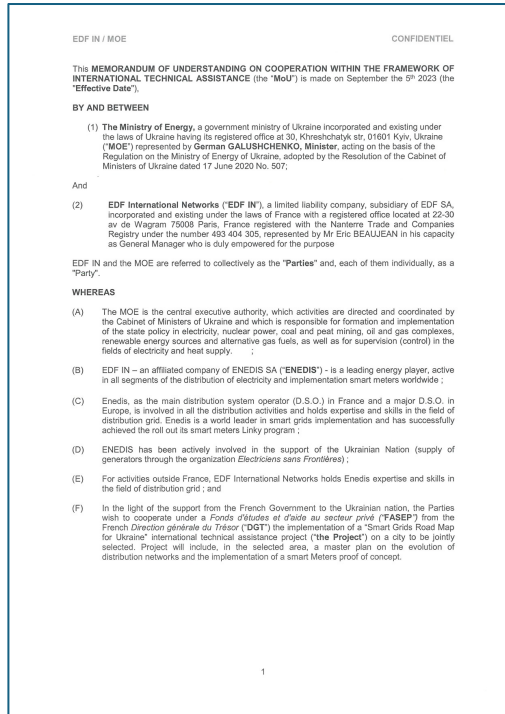
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Khmelnyskoblenergo



COOPERATION WITH



Memorandum of understanding on cooperation within the framework of international technical assistance between the Ministry of Energy of Ukraine and EDF International Networks dated 5th September 2023.

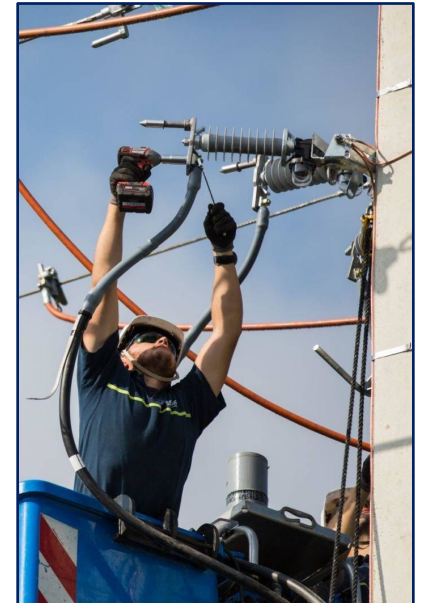


COOPERATION WITH



Main areas of cooperation

- Digital substations
- Smart Metering
- Grid automation
- ...



Strategic Challenges for Khmelnyskoblenergo's Distribution Network

Improve Reliability in Rural and Urban Areas

- Current SAIDI values are high, with 1,163 minutes in rural areas and 428 minutes in urban areas, indicating a critical need to reduce downtime and enhance reliability.

Achieve European Standards for Grid Quality

- Align the network's service quality and reliability with EU standards.

Enable energy transition and distributed generation connections

- Increase the network's capacity to host decentralized and renewable energy sources, supporting sustainability and energy independence.

Reduce Technical Losses and Improve Efficiency

- Target energy loss reduction within the grid, lowering operational costs and improving efficiency.

Enhance Social and Economic Impact

- Provide a more reliable power supply to support local communities and businesses.

Our Planned Actions to Address Key Challenges

Comprehensive Data Analysis and Network Assessment

- Conduct an in-depth technical assessment of the network to identify priority areas for improvement.

Infrastructure Modernization for European standard voltage (20 kV)

- Implement infrastructure upgrades to operate parts of the network at 20 kV, addressing flexibility and efficiency.

Substation Modernization and Network Redesign

- Upgrade 4 main MV/HV substations and redesign the network with smart grid principles in mind.

Deployment of a Smart Meter Pilot

- Launch a Proof of Concept for smart meters in a district of Khmelnytsky, enhancing monitoring and customer engagement.

Digitalization and Automation of Distribution Equipment

- Equip the network with advanced digital and automated solutions to improve real-time management and resilience.

Overview of Pilot Projects and Resources for Future Scaling

Project 1: Smart Grid Roadmap

- **Budget:** €800,000
- **Duration:** 26 months (started in September 2024)
- **Scope:**
 - Technical assessment and development of an investment strategy.
 - Smart grid roadmap implementation for Khmelnytskoblenergo.
 - Smart Meter POC in a district of Khmelnytsky.
 - Knowledge transfer and training sessions.

Project 2: Modernizing Substations and Modifying Network Voltage

- **Budget:** €13 million (pending validation)
- **Duration:** 24 months
- **Scope:**
 - Selection and upgrade of networks to operate at 20 kV.
 - Modernization of 4 primary substations (HV/MV).
 - Provision of HV/MV transformers, Digital Command and Control (DCC) systems, and other key equipment.
 - Licenses and training for a custom-built electrical network analysis tool based on PowerFactory.
 - Knowledge transfer and training for local teams.



A Scalable Model for Ukraine: These two projects serve as small-scale demonstrators, showcasing modernized, digitalized solutions that can be replicated and expanded across other regions in Ukraine. This pilot approach aims to establish a framework that enhances the resilience and efficiency of distribution networks nationwide, supporting long-term energy security and alignment with European standards.

Thank you!