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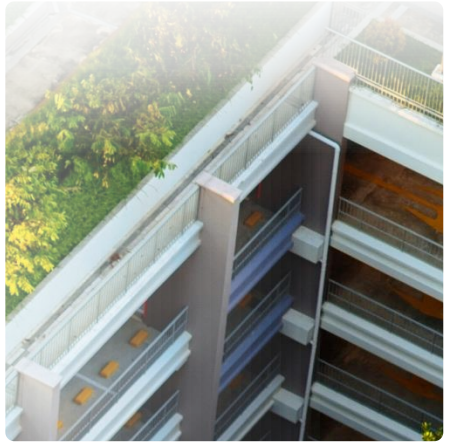


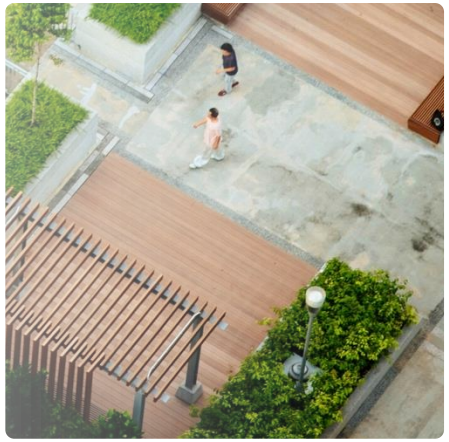

Energy Efficiency in Industry of the States in the Danube Region

Final presentation

20 November 2024
Budapest

GATUM

MINISTRY OF
INDUSTRY AND TRADE

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Agenda

1. Timeline of the Creation of the Study
2. Six Topics for Industrial Energy Efficiency
3. Key Findings and Observations
4. Final Thoughts
5. Q & A





Timeline of the Creation of the Study

June 2024
- Presentation 1: Main results from the analytical part of the Study

July 2024
- Finalisation of the analytical part of the Study

August 2024
- Questionnaire survey aimed at national energy experts

September 2024
- Workshop: Sharing best practices related to relevant topics within industrial energy efficiency

November 2024
- Presentation 3: Final presentation

December 2024
- Final version of the Study

Six Topics for Industrial Energy Efficiency

EU and government-led initiatives

Implementation of the EE1st principle

Enforceability and Efficiency of Energy Audits

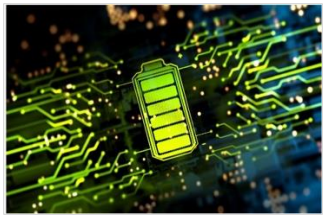
Voluntary Agreements with Industry

Promoting advanced technologies in industrial energy efficiency

Smart Grids and Industry 4.0 Strategy

Use of Waste Heat in Industry

Accumulation, Aggregation and Flexibility



Implementation of the Energy Efficiency First Principle (EE1st)

- EE1st requires a fundamental shift in how we approach energy planning, investment and operations
- EE1st is essential to drive long-term energy savings by adopting energy-efficient technologies, optimising industrial processes, and implementing robust energy management systems

Observations

- Significant implementation gaps among the countries of the DR
- B-W and Austria already implemented robust legal frameworks, while other countries are only now working on the transposition

Good practices

- Bavaria's integration of EE1st principles into industrial projects, public procurement and funding
- Austria's adjustment of support mechanisms to the objectives of the EE1st directive

Enforceability and Efficiency of Energy Audits

- Energy audits are currently mandatory for large enterprises following the EED
- The amended EED adds emphasis on the adoption of certified energy management systems, such as ISO 50001

Observations

- Heterogeneous experience with the quality and enforceability of energy audits and their results
- Energy audits are also an instrument adopted by non-EU countries, such as Moldova

Good practices

- Providing financial incentives to support the voluntary execution of energy audits by SMEs
- Austria's approach to standardising the format and content of Energy Audits, as well as financial consequences resulting from a non-plausible evaluation of the implementation of findings

Conclusion of Voluntary Agreements with Industry

- Voluntary Agreements are viewed as a more flexible and less rigid approach to promoting energy efficiency in the industry
- These agreements are currently explored mainly by EU-member states as they represent a recommended measure of the updated EED

Observations

- The main driver for the successful conclusion lies in the motivation and perception of green initiatives by the companies themselves
- Many countries - e.g., Czechia and Slovakia – struggle to conclude such agreements with SMEs

Good practices

- Bavaria's approach to cultivating a network of signatory companies
- Provision of additional financial incentives supporting the implementation of measures specified in the agreements

Smart Grids and the Industry 4.0 Strategy

- Smart Grids represent an important enabler for further implementation of advanced technologies promoting industrial energy efficiency following the vision of the Industry 4.0 strategy
- Without Smart Grids, the use of renewable energy and efficient management of energy consumption remains limited

Observations

- Most countries of the DR are significantly behind the EU's average share of modernized grids
- The lack of infrastructure therefore blocks the advanced use of technologies in the industry and wide applications of AI-powered technologies can be observed outside the DR

Good practices

- B-W approach of annually mapping good practice projects of industrial energy efficiency projects across various sectors
- Czechia's and Slovakia's cross-country collaboration in modernizing and integrating their electricity grids

Use of Waste Heat in Industry

- The use of waste heat in industry involves capturing excess thermal energy produced during industrial processes and repurposing it to improve overall energy efficiency
- According to the CE HEAT project funded by the Interreg Central Europe Programme, around 20 %-50 % of industrial energy consumption is disposed of as waste heat, and 18%-30 % of this could be reused

Observations

- Most countries support the implementation of projects re-utilizing waste heat energy by public funding
- Lack of integration of waste heat utilization in national legislation

Good practices

- B-W's proactive approach of laying the ground for an efficient implementation of projects supporting the re-use of waste heat energy (dedicated strategy, competence centre, and funding schemes)

Accumulation, Aggregation and Flexibility

- Accumulation – storing of excessing energy
- Aggregation – combining of smaller, distributed energy sources into a single operational entity
- Flexibility – adaptability of energy to respond to changing demands and supply conditions
- All three represent critical concepts enhancing industrial energy efficiency

Observations

- A general lack of use of renewable energies in industry was observed in contrast to other domains and sectors (e.g., housing or transportation)
- The need for further improvement is generally perceived by the countries of the DR

Good practices

- Moldova's proactive approach to securing international support and funding for renewable energy projects
- Bavaria's comprehensive approach to supporting renewable energy, storage, and grid flexibility in industry

Key-findings and observations

Key Challenges

- Varying levels of implementation of backbone legislation and instruments promoting industrial energy efficiency
- An insufficiently tailored approach based on the characteristics of a specific region or country
- Limited engagement and information sharing among the countries of the DR

Key Opportunities

- Stronger regional cooperation and knowledge sharing
- Leveraging EU membership and support
- Public awareness and engagement

Positive Aspects

- Proactive approaches in leading countries
- Commitment of non-EU member states
- Emerging opportunities with new technologies

Future Outlook

Strengthening the Interreg Danube Programme Network for Collaboration

- The established network of energy experts and policymakers has untapped potential for promoting energy efficiency.
- Increased collaboration through targeted workshops, panels, and topic-specific working groups can enhance knowledge sharing across the region.

Encouraging Business Participation in the Green Transition

- Companies focused on sustainable development lead in adopting energy-efficient measures, as seen in Austria and Germany.
- Awareness efforts and incentives are needed to engage more businesses from other Danube Region countries in EU low- to zero-carbon goals.

Advancing Energy Efficiency through Smart Grids and Policy Support

- Smart grids offer transformative potential for efficient energy management, requiring national oversight and investment in transmission networks.
- The new EU Directive on CSRS provides a framework to strengthen government-industry cooperation and promote sustainable growth in industry.

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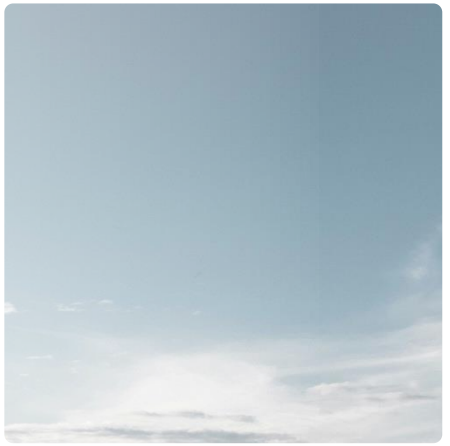
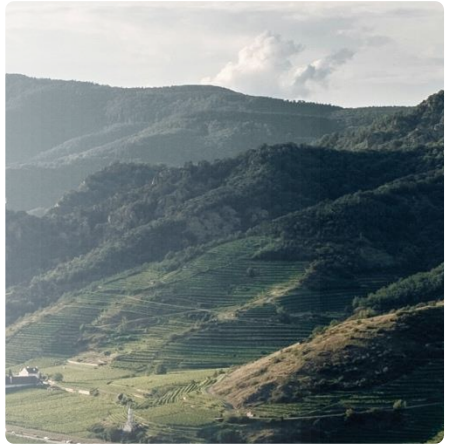
Q&A




Thank you for your attention!

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