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Needs and current situation in Danube context

Budapest, 05.03.2025

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Energy Communities - best practices and lessons learned from ROMANIA

Budapest, 05.03.2025

Leea MIHAILĂ, ABMEE

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Types of EC

1. Citizens' Energy Community (CECs)

It aims to provide environmental, economic or social benefits to its members or local areas. The community may engage in various energy-related activities, including production from renewable sources, energy storage, efficiency services or charging services for electric vehicles.

2. Renewable Energy Community (RECs)

It is open to voluntary participation and effectively controlled by shareholders or members in proximity to renewable energy projects. Its primary objective is to provide community benefits rather than financial returns.

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CONTEXT

In Romania, Energy Communities and community energy actions are still in the early stages of development, but there is a growing interest in increasing local energy resilience and sustainability.

Despite being in its early stages, the Energy Community movement in Romania is marked by a high level of enthusiasm and the presence of numerous innovative ideas.

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CHALLANGES

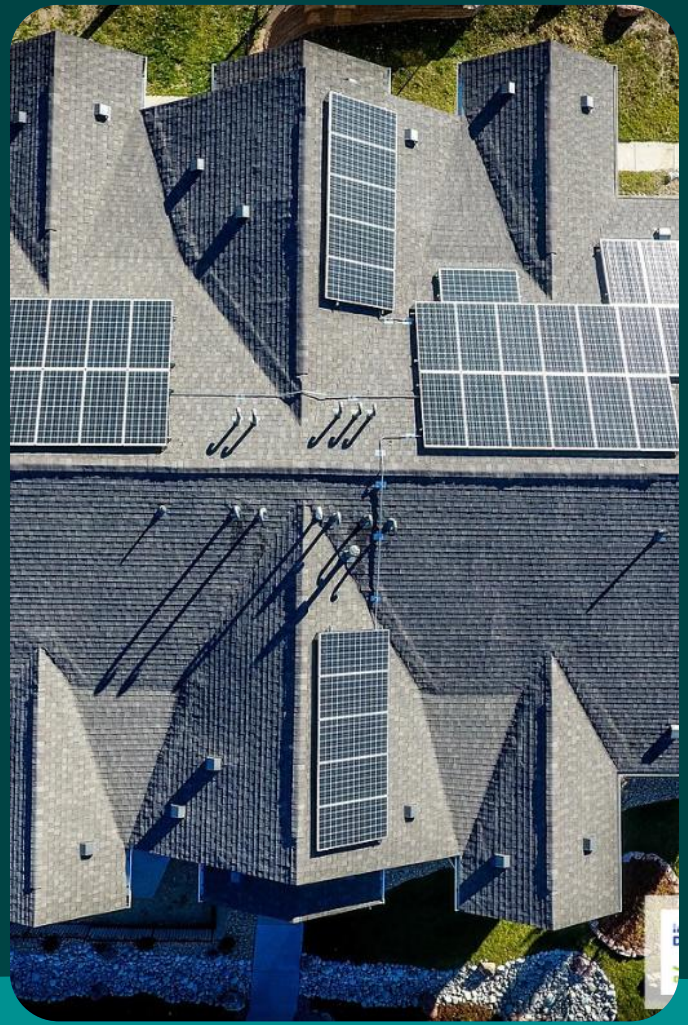
- Financing obstacles;
- Lack of knowledge regarding legal & technical aspects of EC;
- Sociocultural obstacles, with a population and private sector still reluctant to these initiatives and with a limited capacity to understand and accept new concepts;
- Historical baggage, skepticism.

WHY DECA?

- The DECA initiative is highly relevant for Romania, focusing on the development of Energy Communities and the advancement of renewable energy projects.
- DECA aligns with Romania’s need for sustainable energy solutions, driving innovation to overcome challenges such as limited funding and expertise.
- DECA’s approach fosters the development of Energy Communities by promoting innovative models.

Good practices/successes

As of 2024, out of 21 identified initiatives, the only two that have successfully been established and are operating within the existing legal framework are the Energy Cooperative and ÎntreVecini.



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Good practices/successes

- The Energy Cooperative operates as a consumer community, capable of supplying energy to its members while also selling on the market. This is made possible through the acquisition of a supplier, which was undertaken in order to obtain the necessary supply license.

- The ÎntreVecini initiative provides homeowners' associations with financial support for installing photovoltaic panels and fostering community cohesion. Funding is provided through CSR programs and community initiatives by major multinational companies in Romania, allocated to associations via a competitive process. Several associations have installed their own photovoltaic panels, which cover common area energy consumption and, in some cases, generate a small financial surplus.

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Unlocking the potential of Community Energy

Energy Communities in Croatia: Legal Framework, obstacles & opportunities

DECA Partner meeting:
March 2025. Budapest, Hungary

Presenter:
Luka Cergolj – **OTRA**

SLIDE 2

Introduction – Why Energy Communities matter

- Energy communities (ECs) decentralize energy production and promote citizen participation
- They enable local investment in renewables, energy independence, and cost savings
- The EU supports ECs, but Croatia lags behind in implementation
- This presentation will cover:
  - The legal framework for ECs in Croatia
  - Challenges & barriers to their success
  - Opportunities & necessary reforms

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SLIDE 3

Croatian Legal framework on Energy Communities

- Croatia has transposed EU laws, but implementation is weak
- Two key laws regulate ECs:
  - **Electricity Market Act** (NN 111/21):
    Defines Citizen Energy Communities (EZG)
    but with restrictive ownership rules
  - **Renewable Energy Sources Act** (NN 138/21):
    Defines Renewable Energy Communities (ZOIE),
    but lacks clarity on energy sharing
- Despite these laws, **ECs cannot share energy due to missing regulations**

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SLIDE 4

Who can form Energy Communities & what can they do?

- Who can form an EC?
  - Citizens
  - Local governments
  - Small & medium enterprises (SMEs)
- What can ECs do?
  - Produce & share renewable energy (solar, wind, etc.).
  - Store energy and increase energy efficiency.
  - Operate EV charging stations & local grids.

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SLIDE 5

The current state of Energy Communities in Croatia

- Only three officially registered ECs:
  - Moja Energetska Zajednica (MEC) from Rugvica near Zagreb
  - Energy Community of the Northern Adriatic in P-G County
  - Energy Community Špičkovina from Zabok, Northern Croatia
- Energy sharing is still not operational due to regulatory barriers
- Several pilot initiatives exist / are in making (KLIK, Apsyrtides, ZEZ Sun, ECCres), but none have achieved full functionality

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Key barriers hindering ECs in Croatia

1. Bureaucratic Complexity – Registering an EC takes over 12 months and requires 18 legal documents
2. Lack of Energy Sharing Rules – No legal framework for peer-to-peer trading or net metering
3. Restrictive Ownership Rules – No single entity can own more than 40% of an EC, limiting municipal leadership
4. Capacity Limits – EC projects capped at 500 kW, making them financially unviable
5. Financial Barriers – Requires one full time employed expert, current price of Electricity is subsidized by the Government, no dedicated government funding, forcing ECs to compete with commercial investors

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Why DECA Deliverables matter

- Providing training, knowledge and support to navigate regulations
- Advocating for policy improvements to simplify EC registration
- Showcasing successful EC models, providing tools to encourage adoption in Croatia
- Awareness raising and promoting Community action

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What needs to change? Policy recommendations

- Simplify registration → Reduce bureaucracy
- Clarify energy-sharing rules → Enable peer-to-peer trading & net metering
- Remove ownership restrictions → Allow municipalities greater involvement ECs
- Increase capacity limits → Raise the 500kW cap to 5MW
- Introduce financial incentives → Grants, tax exemptions, low-interest loans & no requirement for a full-time expert employee

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What Can We Learn from Other EU Countries?

- Germany → 1,750+ ECs due to strong policy support & funding
- Denmark → 50% of wind power is community-owned, made possible by simple regulations
- Spain → Simplified registration led to rapid EC growth with strong municipal role
- Croatia must adopt, adjust and implement similar, proven policies to enable ECs to operate and share electricity

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Conclusion & call to action

- Energy communities empower citizens & local businesses
- Croatia must remove legal & financial barriers to make ECs viable
- With the right reforms, ECs can drive Croatia’s clean energy transition

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DECA CONFERENCE March 2025

Energy Communities in Serbia

SPEAKER

Marko Nedeljkovic

Center for Sustainable Energy Development

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ABOUT US

Center for Sustainable Energy Development

SCIENCE TECHNOLOGY PARK NIS

CORE

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- LEGAL FRAMEWORK
- TYPES OF ENERGY COMMUNITIES
- ENERGY BALANCE
- PUBLIC & POLITICAL UNDERSTANDING
- COMMUNITY RESISTANCE

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GOOD PRACTICES

MAGDON ENERGY COMUNITY

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GOOD PRACTICES

SOLARNA STARA

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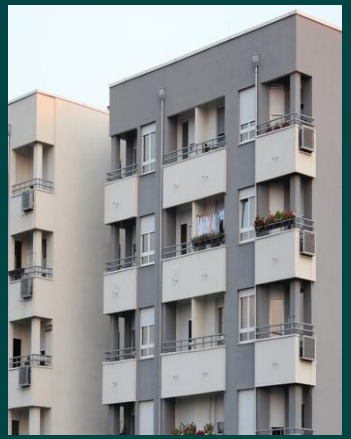
THE CHALLENGES

Administrative Procedures & Technical Issues

Financing Obstacles & Poor Management of Resources



Low Public Awareness of the Possibilities for Joint Investment

Political & Social Factors

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Unlocking the potential of Community Energy

Energy Communities in Hungary

Magyar Természetvédők Szövetsége
Föld Barátai Magyarország

Közösségi Energia Szolgáltató

SHAREs
empowering communities

Közösségi energia Tudástér

DECA Partner meeting:

March 2025. Budapest, Hungary

Presenter:

Bence Kovács - **MTVSZ**

Timeline and legislation and registration of Energy Communities in Hungary

	2020	2021	2022	2023	2024	2025
Transposition in Hungary		CEC and REC definition in Electricity Act			Thermal REC def. In Gas Act	+ activity: Energy efficiency services
Legal forms		Cooperatives, not-for-profit companies				+ legal form associations
Jointly acting self-consumers		Def. In Electricity Act				Condominium „Energy Communities”
Registered ECs (total)				**2**	**9**	
Granted EC projects (aggregate)		**7**	**21**			

Current challenges and future possibilities

- All the registered energy communities are **not-for-profit limited liability companies** (membership can only be extended by bureaucratic means)
+ Association is a possible legal form from this year. (Membership is more flexible)

- Financial investment grant was available too early for pilot energy community initiatives, **without the supporting legal framework** for electricity sharing.
+ New investment grant (Modernisation Fund) will be available this year (?) together **with the new possibilities of electricity sharing and regulatory sandbox.**

- Subsidies for individual household consumers and self-consumers are much higher than the minimal incentives to join an energy community.
+ The possibility of electricity sharing within **multiapartment buildings** (condominiums) will be available from September 2025, it opens new possibilities for millions of citizens to be part of the energy transition.

+ Successful crowdfunding cases, but no cases for crowd investment

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Kazán and Jurányi

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Combination of state grant and crowdfunding

MagNet | Customer ID [redacted] | Help / Contact

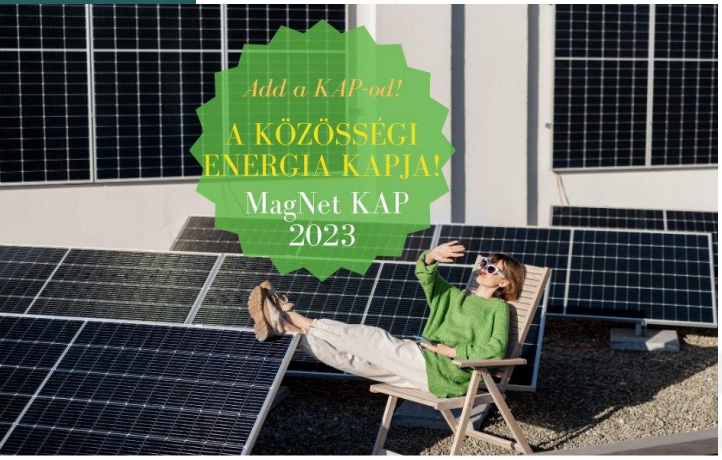
Community Donations | Supporting Bank card | Community deposit | Honesty box

Donate from the bank profits!

- Community Donations Program (KAP) -

We care about civil society. Year after year, we provide an easy way for our customers to become involved and support important causes from the bank's profits through our initiative to support social organisations - the Community Giving Programme (GSP). Each, year MagNet Bank donates 10% of its profits to this cause.

KAP 2024



Magyar Természetvédő Szövetsége
Föld Barátai Magyarország

Közösségi Energia Szolgáltató

PRODUKCIÓS KÖZÖSSÉGI INKUBÁTORHÁZ

KAP 2023
Közösségi Adományozási Program

Perspective of Community Energy Initiative in Slovakia 2024-2025

Slovakia stands at the forefront of an energy transformation as communities embrace sustainable power solutions. Looking ahead to 2024-2025, we focus on three key pillars: strengthening legislative support, expanding technical infrastructure, and fostering community engagement. .

by Peter Ťapák from TUKE team

Comparison with Czech Republic: Energy Communities Progress

The development of energy communities in Slovakia and the Czech Republic presents a striking contrast in their evolution and effectiveness. By examining their parallel journeys toward sustainable energy transformation, we can identify critical success factors and opportunities for cross-border learning. The following comparison illuminates the key differences in policy approach, community engagement, and implementation success:

Key Aspect	Slovakia	Czech Republic
Legislative Framework	2022 framework eenbaling multi- sector partcipation and flexibility	2023 framework enabling multi-sector participation and flexibility
Active Communities	15 operational projects, urban-centric deployment	27 communities with broad regional representation
Stakeholder Distribution	Municipal authorities (60%), SMEs (30%), Residential (10%)	Municipal (45%), Public institutions (40%), Cooperatives (15%)

The Czech Republic's implementation model offers three crucial lessons for Slovakia's developing energy community sector. First, their balanced geographical distribution demonstrates the value of targeted regional incentives. Second, their diverse stakeholder engagement, particularly the strong presence of public institutions, suggests the importance of cross-sector partnerships. Finally, their higher growth rate indicates that a more flexible legislative framework may accelerate adoption. By adopting these insights, Slovakia can potentially accelerate its transition while avoiding common implementation challenges.

Current State and Progress

1

First Pioneering Projects (2003)

Prešov united 12 buildings in a solar project. It started with 50kW capacity and quadrupled to 200kW. Energy costs decreased 40%.

2

Municipal Leadership (2020-2023)

25+ municipalities embraced solutions via Energetické dátové centrum (EDC). Pilot projects combined solar with smart metering. Buildings achieved 30-35% savings.

3

Legislative Framework Development

The 2023 launch of EDC revolutionized management. The system handles over 1,000 daily transactions. It's improving based on user feedback.

The Role of the Energy Data Center

Data Collection

Continuously captures granular energy data through a network of smart meters, tracking production, consumption, and grid interactions in real-time.

Analysis

Employs AI-driven algorithms to predict demand patterns, optimize energy distribution, and identify opportunities for efficiency improvements across the community.

Distribution

Manages dynamic energy routing to ensure optimal matching between local producers and consumers, maximizing the use of renewable resources while maintaining grid stability.

Reporting

Delivers actionable insights through customized dashboards and reports, enabling communities to make data-driven decisions about energy investments and usage patterns.

Electricity Sharing Methods

Dynamic Method

This intelligent system continuously optimizes energy distribution by analyzing real-time consumption patterns through smart meters, adjusting power flow every 15 minutes to match demand.

Particularly effective for diverse communities like mixed residential-commercial zones, where energy needs fluctuate significantly between day and night. This method can reduce energy costs by up to 30% through precise allocation.

Static Method

Operating on pre-determined allocation rules, this system distributes energy based on carefully analyzed historical consumption data or mutually agreed sharing percentages among community members.

Best suited for stable residential communities or industrial parks with consistent energy usage patterns. This approach simplifies billing, reduces administrative overhead, and provides members with predictable monthly energy allocations.

Challenges and Barriers

Regulatory Complexity

Municipalities face extensive 6-12 month approval delays due to complicated licensing procedures and inconsistent regulatory interpretations across different jurisdictions. This significantly impacts project timelines and community motivation.

Financial Barriers

Substantial upfront investment costs create hesitation among communities, while limited financing options persist - with only 20% of financial institutions currently offering specialized green energy funding solutions or preferential rates.

Knowledge Gap

Local communities often struggle to navigate complex technical requirements and administrative procedures, with awareness and understanding rates significantly lagging behind the EU average of 65% public energy literacy.

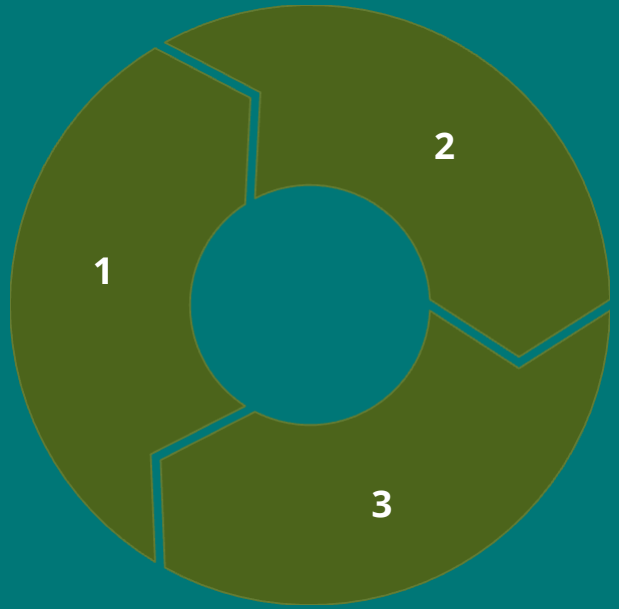
Infrastructure Limitations

Aging grid infrastructure creates significant bottlenecks for new renewable projects, while incomplete smart meter deployment (currently at 45% coverage) hinders efficient energy monitoring and distribution capabilities.

Social and Awareness Barriers

Limited Public Understanding

Only 23% of citizens understand energy communities, compared to the EU average of 45%. Most people lack awareness of the benefits and participation methods.



Policy Inertia

85% of municipalities remain locked in traditional energy partnerships, reluctant to adopt new community-based models despite proven cost benefits.

Community Resistance

Initial skepticism affects 70% of new energy community proposals, mainly due to concerns about implementation costs and technical complexity.

Technical and Infrastructure Challenges

1

Grid Integration Limitations

The power grid faces capacity constraints. Voltage fluctuations and instability are common.

2

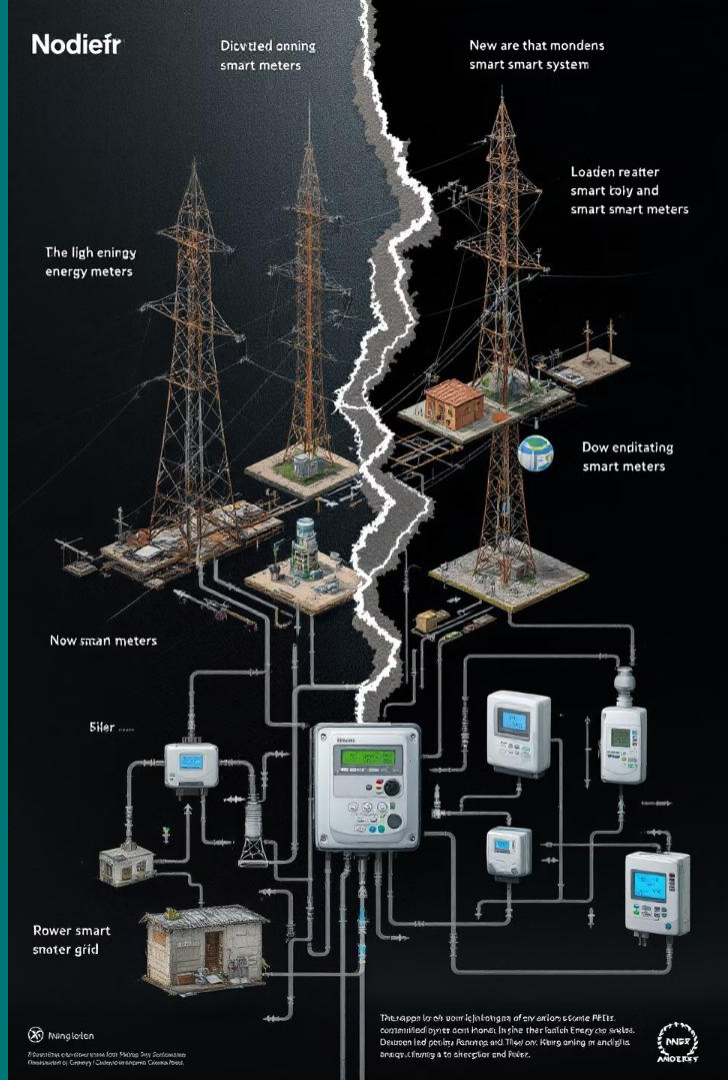
Smart Metering Gaps

Potential communities rely on outdated meters. Upgrade costs pose a daunting investment barrier.

3

Workforce Shortage

A shortage of technicians presents a bottleneck. Communities face delays in implementation.



Economic Aspects of Energy Communities

Initial Investment

Starting a community energy project requires €75,000 on average, but communities can access up to 40% funding through EU and national subsidies. Green financing options from local banks offer competitive 3.5% interest rates, making projects more accessible.

Operational Expenses

Communities benefit from declining maintenance costs. annually. Smart automation and optimized operations reduce these expenses by 30% after the first two years, improving long-term sustainability.

Energy Savings

Community members enjoy immediate 25-35% reductions in electricity bills throughout the year. Solar production peaks from May to September, delivering an additional 15% in summer savings through optimized generation.

Potential Revenue

Communities earn €0.12/kWh through feed-in tariffs, creating steady income streams. Projects typically achieve complete ROI within 7-9 years, followed by robust 8-12% annual returns that benefit the entire community.

Stakeholder Perspectives

Municipalities

Leading the energy transformation with 85% of successful municipal projects exceeding savings targets. Local governments are achieving 35-45% reductions in energy costs through smart grid integration and bulk purchasing power. Notable examples include Bratislava's district heating optimization, which saved €2.8M in its first year while reducing carbon emissions by 12,000 tons.

Residential Communities

Transforming from passive consumers to active energy producers, operating shared solar installations. Average household savings have reached €680 annually through combined solar and smart meter adoption. Community satisfaction rates exceed 92%, with participants reporting enhanced neighborhood cohesion and environmental awareness.

Small Businesses

Leveraging energy communities to boost competitiveness, with participating businesses reporting 22-28% reductions in operating costs. Through peer-to-peer trading networks, local enterprises save an average of €12,000 annually while strengthening regional supply chains.

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THANK YOU FOR YOUR ATTENTION!

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