



3DIVERSE

LESSONS FROM A REGION IN TRANSITION

What the 3DIVERSE project taught us about district heating transition and integrated energy planning?

The 3DIVERSE project explored how integrated cross-sector planning, digital tools, and collaboration between stakeholders can support the transition to sustainable energy systems in regions dependent on coal for energy production.

Implemented in Slovenia's Savinjsko-Šaleška Valley, one of Europe's coal phase-out regions, the project brought together researchers,

municipalities, utility providers, and other regional actors to address the transformation of district heating and the wider energy system.

This document summarises the key lessons learned and recommendations from the project and highlights insights that can support other regions planning similar transitions.



Co-funded by
the European Union

Start with stakeholders, not technology

KEY TAKEAWAYS

Energy transition projects are more likely to succeed when all relevant stakeholders are involved from the beginning. Early collaboration between utilities, municipalities and local institutions helps align priorities, build trust and reduce risks during implementation.

- Map stakeholders early and continuously
- Establish a regular working rhythm (e.g., monthly or bi-monthly check-ins) and feedback loops with stakeholders
- Review modelling assumptions and intermediate results together

Use an iterative approach to planning and coordination

KEY TAKEAWAYS

Energy transition planning is not a one-off study. Analytical work and policy priorities must evolve together through continuous feedback loops between technical experts and decision-makers.

- Use modelling results to guide discussions
- Adjust plans as new data or constraints emerge
- Treat planning as a living process

Plan across sectors, not in silos

KEY TAKEAWAYS

District heating, electricity systems, building renovation and mobility electrification are interconnected. Considering these sectors together helps identify synergies and prevents fragmented investments.

- Use shared assumptions across sectors
- Coordinate planning teams
- Develop integrated investment pathways

Don't wait for perfect data

KEY TAKEAWAYS

Many existing energy systems lack detailed datasets. Flexible tools that work with incomplete data can still support decision-making and help identify priority investments.

- Start with a minimum dataset
- Use data-light analytical tools
- Validate results with operational data

Use technical diagnostics to guide investment decisions

KEY TAKEAWAYS

Technical analysis of district heating networks can reveal inefficiencies and structural weaknesses. Understanding heat losses, network conditions and demand helps prioritise upgrades and investments.

- Combine modelling and field measurements
- Identify loss hotspots
- Use diagnostics to inform planning



Prepare early for implementation and investment

KEY TAKEAWAYS

The biggest challenge often comes after the analysis is done. Converting technical results into investment-ready projects requires documentation, approvals, financing discussions and coordination between institutions.

- Prepare implementation documentation early
- Standardise project templates
- Engage procurement and finance teams

Communicate locally and manage expectations

KEY TAKEAWAYS

Effective communication in energy transition projects goes beyond general outreach. Messages should be grounded in the local context and delivered through trusted local actors who understand community concerns. Clearly explaining what the project can and cannot deliver helps avoid misunderstandings and builds long-term trust.

- Work with trusted local actors
- Adapt messages to the local context
- Be transparent about scope and outcomes of the project



RECOMMENDATIONS

The 3DIVERSE project showed that successful energy transition is not just about technology, but about how different actors plan, collaborate, and make decisions together. The recommendations are based on practical experience from the project and highlight some tried and tested activities that can help municipalities, utilities, policymakers, and regions to move from ideas to implementation more effectively.

FOR MUNICIPALITIES AND LOCAL AUTHORITIES



Set up a stable coordination group

Bring together utilities, planners, and key local actors and keep this network active beyond individual projects.

Set up data governance early

Secure early access to key cross-sector data (buildings, heating and electricity) to support planning.

Plan in phases, not all at once

Break investments into steps so you can adjust along the way and reduce risks.

Keep communication ongoing and transparent

Engage stakeholders by continuously using clear and accessible communication.

FOR DISTRICT HEATING OPERATORS AND UTILITIES

Use scenarios before making big decisions

Test different options with modelling tools before committing to investments.

Regularly check how your network performs

Identify heat losses and weak points to prioritise upgrades.

Work closely with municipalities

Align your plans with building renovations to avoid losing customers and efficiency.

Turn data into action

Make sure monitoring results lead to concrete improvements and decisions.

FOR NATIONAL POLICYMAKERS AND REGULATORS

Provide clear and stable rules

Ensure predictable frameworks for tariffs, investments, and responsibilities.

Support early-stage planning and data work

Fund feasibility studies and digitalisation so local actors can prepare projects properly.

Encourage regions to learn from each other

Create platforms for sharing experience and good practices.

Promote integrated planning

Align policies across heating, buildings, and mobility instead of treating them separately.



Energy transition works best when planning, people, and investment are connected and when support is aligned across all levels.

FOR EUROPEAN-LEVEL STAKEHOLDERS

Keep supporting projects that bridge planning and investment

Combine technical assistance with real investment preparation support.

Promote practical digital tools

Encourage tools that help real-world decision-making, not just analysis.

Support exchange between regions

Strengthen networks where cities and regions can learn from each other.