

Now / New / Next

Urban Energy Transition Insight Series

How **City-DSO collaboration** is evolving to meet the demands of the local energy transition

The move to decentralised renewable energy systems means cities must become more involved in local energy planning. To date, cities have relied on their Distribution System Operators (DSOs) to ensure a stable and sufficient flow of electricity into cities. But as rapid electrification becomes essential to binding city climate targets, cities can no longer assume the grid can handle their requests by default. Instead, municipalities will need to take a proactive role in integrating capacity and flexibility into all urban planning. This requires an increasing proactive and formalised collaboration between cities and DSOs. This insight report looks at the current and future trends in city-DSO partnerships.

About Now New Next

The **Now-New-Next** series highlights innovative concepts and trends within the Urban Energy Transition, covering the Political, Economic, Societal, and Technological advances that will be central to local energy transition.



Challenge

- While cities are developing sustainability, climate, and energy plans to achieve climate neutrality by 2030, 2040, or 2050, they often lack control over the urban energy systems that are key to enabling a clean, affordable energy transition.
- Historically, **cities and DSOs have planned in silos**, a legacy of centralized fossil-fuel-based energy systems.
- With the shift toward decentralized, renewable energy systems rooted in urban areas, **the absence of defined cooperation frameworks between European cities and their DSOs has become a critical barrier to climate neutrality.**
- Without this collaboration, the path to a sustainable energy future remains fragmented and inefficient.



NOW : Informal networking and Cooperation

- Currently, most city-DSO collaboration in Europe remains in its early stages, with many characterized by **informal networking at political and strategic levels.**
- While some structured programs exist, such as Iberdrola's Smart Cities Programme in Spain, **programmes are generally fragmented**, focussing on specific themes and lack a city-wide approach.
- **Day-to-day operational collaboration is even more limited**, often involving ad-hoc information exchanges and occasional meetings triggered by specific requests or issues.
- In contrast, **collaboration in the heating sector is more advanced**, with cities and DSOs establishing structured partnerships and co-developing collective heat transition plans.



NEW : Formal City-DSO Energy Planning

- As the energy transition becomes central to urban development, **cities are demanding more detailed and location-specific grid data**, as well as stronger commitments from their DSOs.
- Leading cities across Europe—such as Ghent, Antwerp, Dordrecht, Bremen, Fredericia, and Varberg—are pioneering a new phase of collaboration with DSOs.
- These frontrunners are formalizing joint initiatives with their DSOs, often starting with a Letter of Intent (LoI) that focuses on a single scope and operational working group.
- This collaboration is strengthened by regular alignment meetings and shared development programmes, especially for specific districts.
- Politically, a broader buy-in is emerging, with cities and DSOs beginning to craft shared ambitions, often formalized in a coalition phase that results in an initial **Local Energy Action Plan (LEAP)**.
- This phase also marks the creation of multi-party working groups that cut across different city departments to drive this cooperation forward.



CASE STUDY

Varberg's public ownership model for its DSO

Varberg, a Swedish city with 35,000 inhabitants, holds a special position as the main shareholder in its local DSO, Varberg Energi, which manages both the electricity grid and the district heating network.

This public ownership model fosters close collaboration between Varberg's local authorities and Varberg Energi, aligning their efforts to create a green, flexible energy system. Together, they are working towards the shared goal of becoming a climate-neutral city by 2040.



CASE STUDY

Strategic data Exchange in Fredericia

Fredericia, a Danish city with 40,000 inhabitants, is strategically positioned as a hub for large-scale energy infrastructure, often referred to as Denmark's "Energy Silicon Valley" due to projects like Power-to-X plants. In collaboration with Center Denmark (Digital Data Solutions in the energy sector), the city has implemented advanced digital energy data solutions and models. Grid data from the local DSO, TREFOR, spanning high-, medium-, and low- voltage levels, is integrated into Center Denmark's Digital Dataplatform.

Unlike many European DSOs that are hesitant to share confidential grid data, TREFOR has a commercial incentive to share this information. By doing so, they aim to unlock energy flexibility among grid stakeholders, which helps avoid costly grid reinforcements and allows for more strategic investments in new grid developments.



centerdenmark
intelligent energy

Fredericia
Kommune





NEXT : City-DSO Integrated Investment Partnerships

• The next phase will see **city-DSO collaboration evolve into fully integrated partnerships centered on joint investment programmes**, anchored by a comprehensive Local Energy Action Plan (LEAP).

• In this model, both parties will share resources, risks, commitments, and responsibilities, creating a more seamless and strategic collaboration.

• Looking ahead, **cities and DSOs will achieve full integration of systems, formats, and planning tools**, allowing for efficient implementation and monitoring of long-term urban energy plans.

• Additionally, data exchange will become frictionless, **enabling the real-time sharing of energy data and the development of flexible, resilient energy systems** that can respond dynamically to future challenges.

Now New Next – City-DSO Collaboration

NEXT

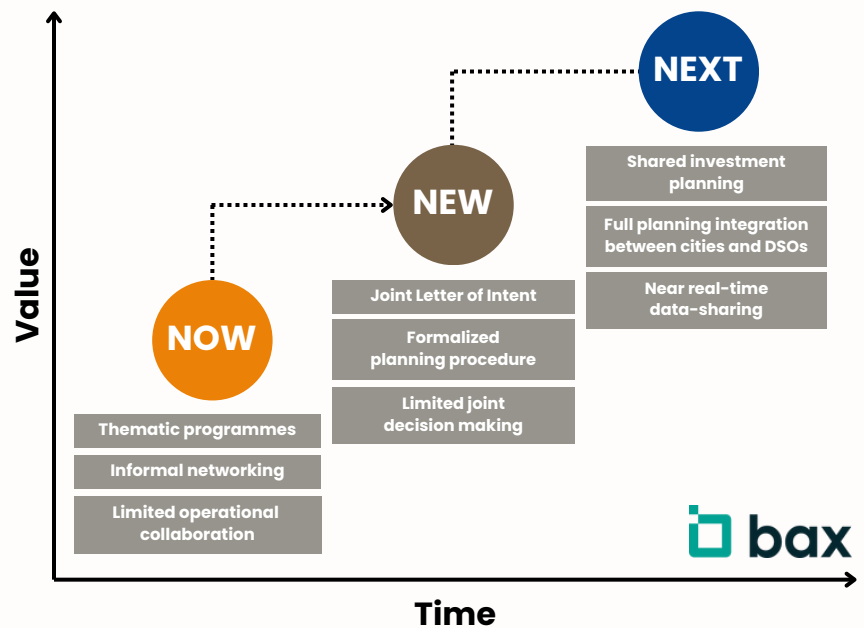
City-DSO have formal working relationships formalised through Local Energy Action Planning

NEW

City-DSO relationships formalised through joint planning processes

NOW

City-DSO relationships are characterised by informal agreements



About Now New Next

The *Now New Next* series is developed by the COPPER partnership, an initiative in which six cities and representatives from DSOs, academia and business are building Europe's first wave of Local Energy Action Plans.

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Learn more: interregnorthsea.eu/copper
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