



Midlothian Energy Limited

Annual report 2025



VATTENFALL

Working together for a low carbon Midlothian

Midlothian Energy Limited (MEL) is a joint partnership between Midlothian Council and Vattenfall - one of Europe's leading experts in heat networks, with a legacy spanning over 100 years. It was established to deliver critical energy infrastructure and to lead the transition towards low carbon energy solutions across Midlothian and the surrounding areas. The 50/50 joint venture was officially formed in 2020.

Vattenfall's extensive experience in designing, building and operating heat networks across Europe was a key factor in their selection as a partner. Their proven track record in sustainable energy infrastructure, combined with shared values and a commitment to creating economic and social benefits for communities, underpins the success of this collaboration.

This annual report has been created to provide the public with a transparent overview of Midlothian Energy Limited's progress to date, the positive impact on the local area, and the benefits delivered to the community. It also outlines the company's future direction, as set out in the business plan, and demonstrates how MEL is working to build a sustainable energy future for Midlothian.

This report will be updated and published annually to ensure continued transparency and accountability.



Why was the partnership formed?

Heating is often overlooked but is a crucial part of the energy transition. In Scotland, more than two million of the 2.5 million homes rely on mains gas as their primary heating source. Heating these homes accounts for around 13% of Scotland's total greenhouse gas emissions.

To address this challenge, Scotland has set ambitious targets to increase the share of heat supplied by heat networks from under 2% to 8% by 2030. Decarbonising heat in homes is essential to keeping Scotland on course to reach net zero by 2045.

To support these national objectives, Midlothian Council published its Local Heat and Energy Efficiency Strategy (LHEES), a framework that helps local authorities strategically plan and prioritise the shift towards low carbon heating and improved energy efficiency.

The LHEES delivery plan will lead to the establishment of heat network zones and prioritises partnership with MEL to leverage infrastructure and investment to scale up heat networks.

The delivery plan also sets out plans to engage residents, homeowners, and tenants to help and support them in transitioning to net zero heating. This considers affordability of heat and includes improving building energy efficiency through insulation and upgrades to reduce demand as part of moving to low carbon heating.

Recognising the opportunity to supply low carbon heat from the Millerhill Recycling and Energy Recovery Centre, the Council sought a partner to realise its vision for a jointly owned heat network. This led to the formation of Midlothian Energy Limited (MEL) - a partnership which aims to lead the region's transition to low carbon energy.

How is the partnership structured?

MEL is governed by a board of four directors: two senior officers from Midlothian Council, and two representatives from Vattenfall. This balanced structure ensures that projects reflect local priorities, build trust, and deliver social value.

The joint venture operates under foundational agreements, including a Shareholders Agreement and a Concession Agreement, which define the responsibilities and shared objectives of each partner.

MEL's five-year business plan is reviewed annually, with new projects proposed for shareholder approval. This structured approach ensures that the joint venture remains aligned with its mission to deliver innovative, sustainable energy solutions for the region.

MEL board of directors



Paul Steen
Head of Business Development
VATTENFALL



Eoghan Maguire
Director of Scotland
VATTENFALL



Fiona Clandillon
Head of Development
Midlothian



Gordon Pollock
Project Director
Midlothian



Thanks to this collaborative model, Midlothian is recognised as a leader in low carbon energy and regularly advises the Scottish Government and other local authorities across the UK on innovative delivery models. MEL has become a benchmark for success in this field.

Fiona Clandillon, Midlothian Council

What has MEL achieved so far?

One of the first major projects delivered through the MEL partnership is the design and construction of a low carbon heat network serving both Shawfair and Craighall Village - two significant new communities in Midlothian.



Construction progress at Shawfair where homes are connected to our MEL heat network.

What are the benefits of the partnership?

MEL is the only fully 50/50 joint venture of its kind in the UK capable of delivering a diverse range of energy projects. The partnership provides Midlothian Council with several key advantages, including:

- Access to significant commercial expertise in energy project development.
- A balanced sharing of risk, reducing the Council's exposure and bringing major project delivery experience.
- The ability to advance multiple projects simultaneously, allowing resources in the Council to be directed to core services.
- Ability to identify and pursue new opportunities quickly, focusing on projects with strong business cases and genuine community benefit.
- It supports LHEES and net zero goals, delivering affordable, sustainable energy for residents.

Shawfair Town, located just 15 minutes by train from Edinburgh city centre, is one of Scotland's largest urban expansion projects. Led by Shawfair LLP, a joint venture between Buccleuch Properties and Mactaggart & Mickel, the development will include over 3,000 homes, three new schools, extensive cycling and walking routes, and generous green space.

Craighall Village, a nearby development by Cala Homes, will deliver over 600 new homes and is also connected to the MEL heat network. By extending the network to serve both sites, MEL has laid the foundation for a more sustainable and integrated energy solution across the region.

Construction of the MEL energy centre - which will supply the MEL heat network 29MWth of heat - began in early 2023 and was completed on time and within budget, with the first customers connected at the end of 2024.



A view into our MEL energy centre upon completion

What impact has the MEL heat network had?

Customers connected to the MEL network benefit from reliable, low carbon heating and hot water at a fair price, with maintenance included as part of an all-inclusive service. The network is monitored continuously to ensure optimal performance.



Our customers benefit beyond low carbon heating and hot water.

The system improves local air quality and reduces carbon emissions. The first phase of the heat network is set to serve 3,600 homes, educational and retail properties, saving over 3,000 tonnes of CO₂ each year - equivalent to removing around 1,400 petrol cars from the road.

The network is powered by surplus heat from the Millerhill Recycling and Energy Recovery Centre, operated by FCC Environment. By using heat that would otherwise go to waste, MEL is building energy resilience and shielding residents from volatile fossil fuel prices.



A drone image of our MEL energy centre and the Millerhill Recycling and Energy Centre where waste heat will soon be captured

The infrastructure is also future-ready. Heat networks can easily integrate new energy sources as technology evolves, allowing MEL to incorporate alternative renewable and low carbon heat sources in the future with minimal disruption to end customers.

Phase one of the partnership will deliver



Heat and hot water supplied to over **3,500 homes equivalent**.



3,000 tonnes of CO₂ saved annually, equivalent to removing **1,400 cars** from the road.



£7.3 million in Scottish Government funding leveraged to attract **£40 million** in private investment.



Stable, low carbon heating for residents, reducing reliance on volatile fossil fuel markets.



Local employment and skills development supported through apprenticeships and partnerships with schools/colleges/universities.

Recent success and milestones

MEL celebrated its fifth anniversary in October 2025. Since formation, **6km +** pipework has been installed, **over 80 homes** connected that can now benefit from low carbon heating and hot water.

Both MEL and the heat network have been recognised for innovation and success, achieving national recognition at three prestigious award events in 2025.

Our social value commitment

From its creation, MEL has been dedicated to delivering community benefits for the people of Midlothian. This includes the development of apprenticeships during both the construction and operational phases, working with our principal contractors, OCS and Thermamech.

We are focused on building strong career pathways for Scotland's growing heat networks sector. To support this, we are partnering with local organisations to deliver educational programmes and have helped establish a dedicated training space for heat network skills in Midlothian. The Heat Network Suite at the Energy Training Academy offers a space for local people to become aware and learn about heat networks - potentially the first step in starting their career in the industry.



The opening of the Heat Network Suite at the Energy Training Academy located in Dalkeith (October 2025).

We also collaborate with Edinburgh Science to fund and deliver engaging STEM workshops through the Science Festival and local schools, inspiring young people to explore careers in science and technology. Additionally, through our partnership with Powering Futures, we support an award-winning programme for senior high school students.



The development and operational timescales of district heating projects present lifelong career opportunities. To attract and build a

resilient workforce, we need to consider the entire journey, from school age through to career development and training while in employment.

Paul Steen, Vattenfall

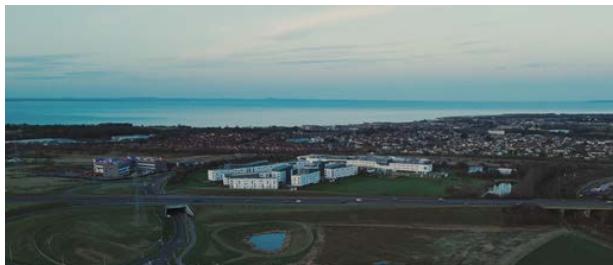
In partnership with Scottish Enterprise, we have quantified the impact of our project on local employment, forecasting the creation of over 130 jobs over a 15-year period across both the construction and operational phase of this heat network project.

Looking ahead

In the year ahead, MEL expects to connect **almost 200** additional homes and expand the network to serve more customers in Shawfair and Craighall Village.

Our latest five-year business plan outlines ambitions to extend the network beyond Shawfair and support new energy initiatives across Midlothian. We are exploring opportunities to expand north into Edinburgh to connect existing buildings and university campuses, as well as NHS Lothian acute hospitals at the BioQuarter - Royal Infirmary of Edinburgh and the Royal Hospital for Children and Young People.

The MEL energy centre has the potential to supply heat to the equivalent of **10,000 homes**.

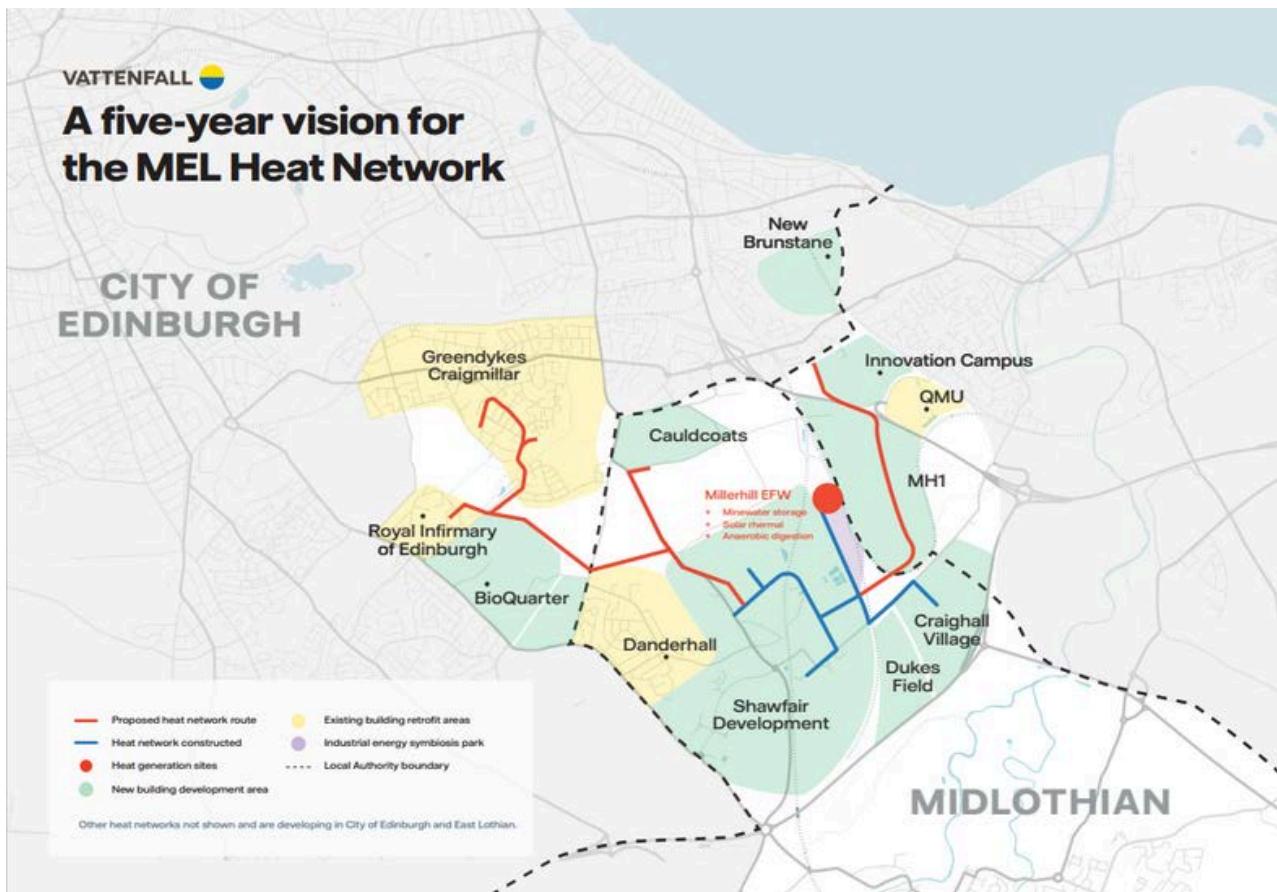


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Beyond heat networks, MEL is working with Midlothian Council to explore other sustainable energy and infrastructure projects, including solar generation and improving energy efficiency in homes and public buildings through better insulation and smart controls.

We continue to engage with public sector partners to expand the network and make low carbon heat accessible to more communities.

At the same time, we are investing in the skills and supply chains needed to build a sustainable, long-term heat network industry that supports Scotland's journey to net zero by 2050.



Future growth and expansion

With the energy centre now operational, MEL's next phase focuses on expansion and densification. Increasing the concentration of heat demand around the existing network will maximise efficiency and deliver greater environmental and economic benefits for the region.

The latest 5-year business plan for MEL outlines investment equivalent to circa £120-150M in the local economy.

The map above illustrates all potential heat customers identified in this business plan. The overarching objective is to connect these customers to the MEL Heat Network, strengthening the system's reach and long-term viability.

Potential heat customers to the west in the Little France area include:

- **NHS Lothian BioQuarter** (42 GWh) – Two major hospital buildings.
- **BioQuarter Development** (40 GWh) – A mixed-use campus combining residential, academic and medical innovation facilities.

- **Dukes Field (1 GWh)** – A new residential development of 300+ homes.
- **Cauldcoats (3 GWh)** – A new residential development of around 550 homes.
- **Greendykes (4 GWh)** – City of Edinburgh Council-owned high-rise and medium-density housing.

To the east of the MEL Energy Centre, the network is also capable of serving three key customers:

- **Old Craighall - 1,027 homes.**
- **Queen Margaret University (QMU).**
- **The QMU Innovation Park.**

These developments represent significant opportunities to increase the number of connected customers, enhance local energy resilience, and extend the benefits of low carbon heat to more homes, institutions and businesses across Midlothian and neighbouring areas.

Highlights from MEL's 2025 Business Plan



£79M additional investment planned for the energy centre and heat network, on top of the £25M already invested.



Heat supply targets: 50 GWh per year by 2030, rising to 90 GWh by 2040 - serving both domestic customers and major sites such as the Royal Infirmary of Edinburgh.



By 2030, the district heating system will deliver **50 MW installed capacity**, including heat offtake from Millerhill RERC, supported by **300 m³ thermal storage** to balance network demand.

Local energy, lasting impact

As MEL moves into its next phase, our focus remains on delivering reliable, fairly-priced, and low carbon heating and hot water to the people of Midlothian. The foundations are now in place for continued expansion, deeper community partnerships, and new investment in sustainable infrastructure.

MEL proves what's possible when councils and technical partners unite around a shared mission, proving how collaboration can turn climate ambition into tangible local benefits. With each new connection helping Midlothian lead the way towards a net zero future.



Interested in learning more about the MEL partnership?

For an in-depth look at its journey, impact, and future watch our case study video and explore other resources by scanning the QR code:



