Aurora Fission Oy (in formation)

Clean Heat Project Development for Finland's Energy Transition

Concept Note | October 2025

Aurora Fission Oy (in formation) is a Finnish clean energy development company focused on small modular reactor (SMR) applications for district heating and industrial heat. Our mission is to help Finnish municipalities replace retiring peat and coal based heat capacity with carbon free, safe, and locally owned nuclear heat—developed through partnerships between technology vendors, universities, and investors. Aurora's role is project developer and financier, not reactor manufacturer. We identify viable sites, coordinate feasibility studies, secure regulatory guidance, and structure financing—so that utilities and technology providers can focus on design and construction.

Problem

Finland plans to phase out peat by 2030 and achieve carbon neutrality by 2035. Cities such as Oulu, Tampere, and Lahti must soon replace hundreds of megawatts of base load heat capacity currently supplied by fossil fuels. Existing renewable sources (biomass, heat pumps) cannot fully meet this demand economically or reliably in northern climates. District heating operators need a stable, zero carbon replacement—one that complements renewables rather than competes with them.

Solution

Aurora Fission proposes to develop SMR based district heat projects in collaboration with:

Partner	Contribution
Steady Energy Oy	Heat only SMR technology (LDR 50) and regulatory expertise
LUT University & VTT	Heat demand modeling, safety research, and Business Finland R&D eligibility
Municipal Utilities (Oulun Energia)	Heat offtake agreements, land access, local stakeholder coordination

Initial Pilot — Oulu Heat One

Aurora's first feasibility target is Oulu, where peat based capacity at the Toppila site will retire before 2030. The project will assess the potential of one 50 MWth SMR to supply up to 30 % of Oulu's district heat demand with zero emissions. Phase 1 (2025–2026) includes: Heat demand and site screening study (with LUT University) Pre EIA scoping and stakeholder engagement (with Oulun Energia) Preparation of Business Finland grant for 2026 feasibility phase

Capital Light Model

Aurora's approach minimizes founder capital and maximizes leverage:

Stage		Duration
Phase 1– Concept & Partnerships		0-6 months
Phase 2 – Feasibility Studies		6 -18 months
Phase 3 – EIA & Investment Structuring		18 - 30 months

Next Steps Formalize MoU with LUT University for heat demand modeling. Engage Oulun Energia and City of Oulu for pilot site cooperation. Submit Business Finland grant for 2026 feasibility phase. Initiate pre licensing dialogue with STUK through Steady Energy.

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