

A Circular Heat Economy for Latvia

Quantifying the industrial
waste heat opportunity

Transforming dissipated industrial energy into a
secure pillar of national infrastructure.

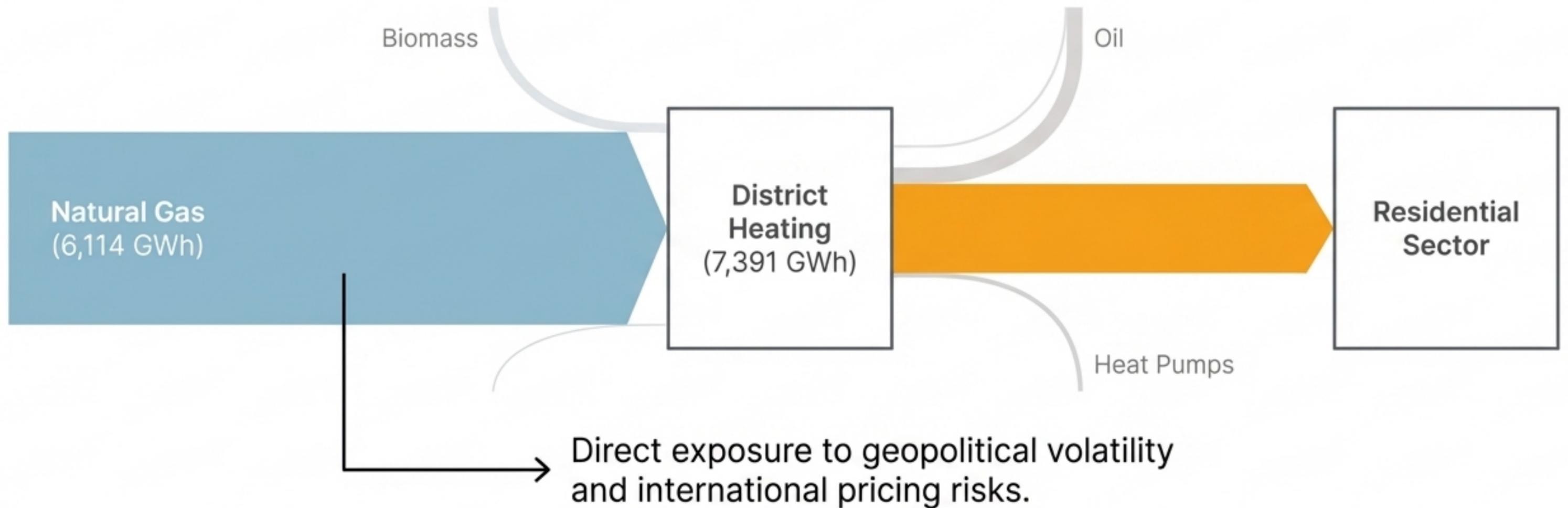




Heating represents our most critical strategic vulnerability

While Latvia has successfully decarbonised its electricity sector, thermal energy generation remains dangerously tethered to imported natural gas and an aging, contracting district network.

Imported natural gas dominates the district heating pathway



The current thermal grid is contracting and aging

**2,639 →
2,254 MW_{th}**

Decline in total installed District Heating capacity (2013–2017).

**> 25
Years**

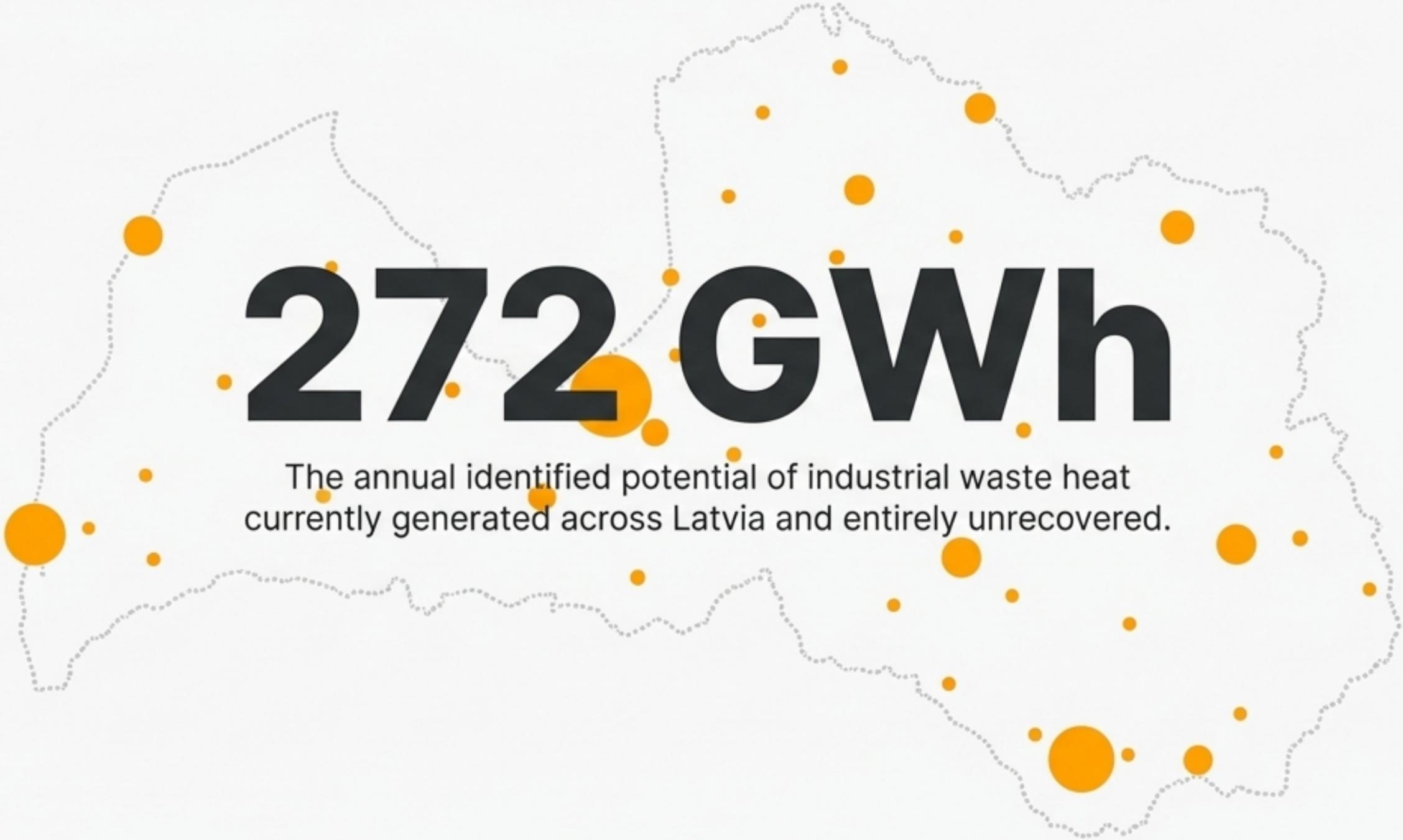
The average age of critical network infrastructure, leading to severe thermal losses.

0

Collective District Cooling networks currently operating in Latvia.

Accelerated by a fully absent national framework for local heat planning.

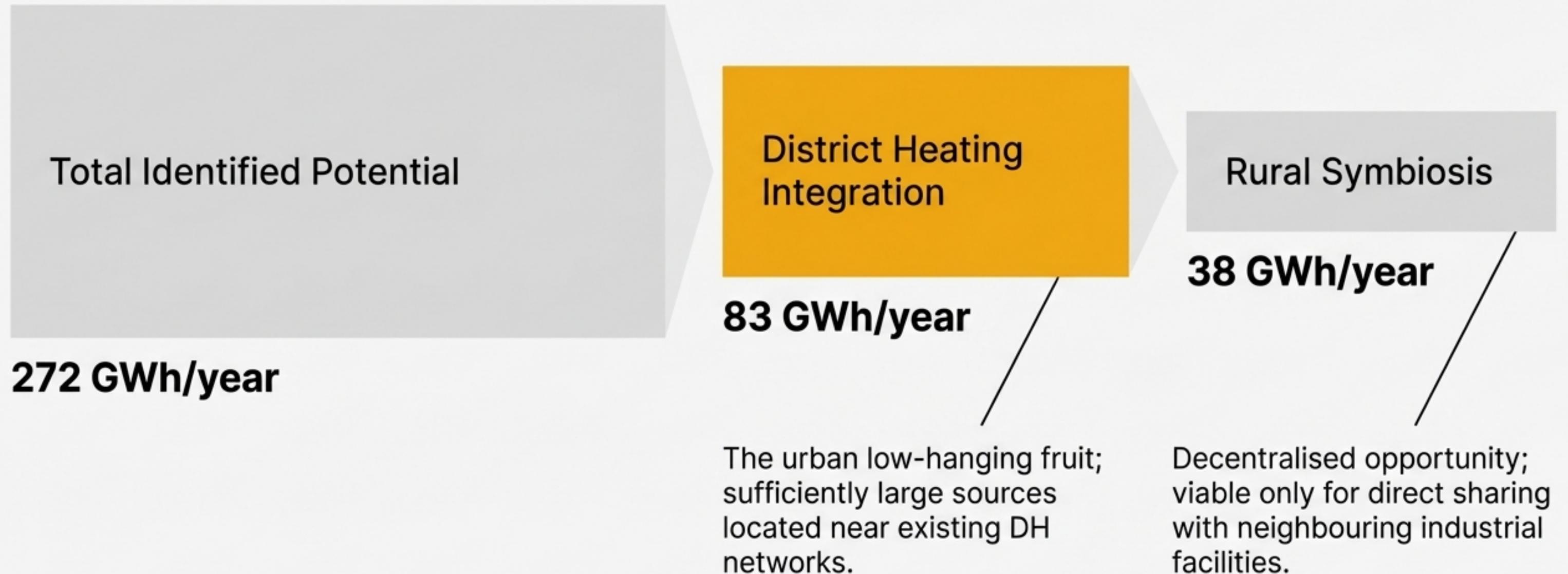
We are venting a massive domestic energy asset into the atmosphere



272 GWh

The annual identified potential of industrial waste heat currently generated across Latvia and entirely unrecovered.

Isolating the techno-economically viable waste heat



The digital economy is our fastest-growing thermal resource

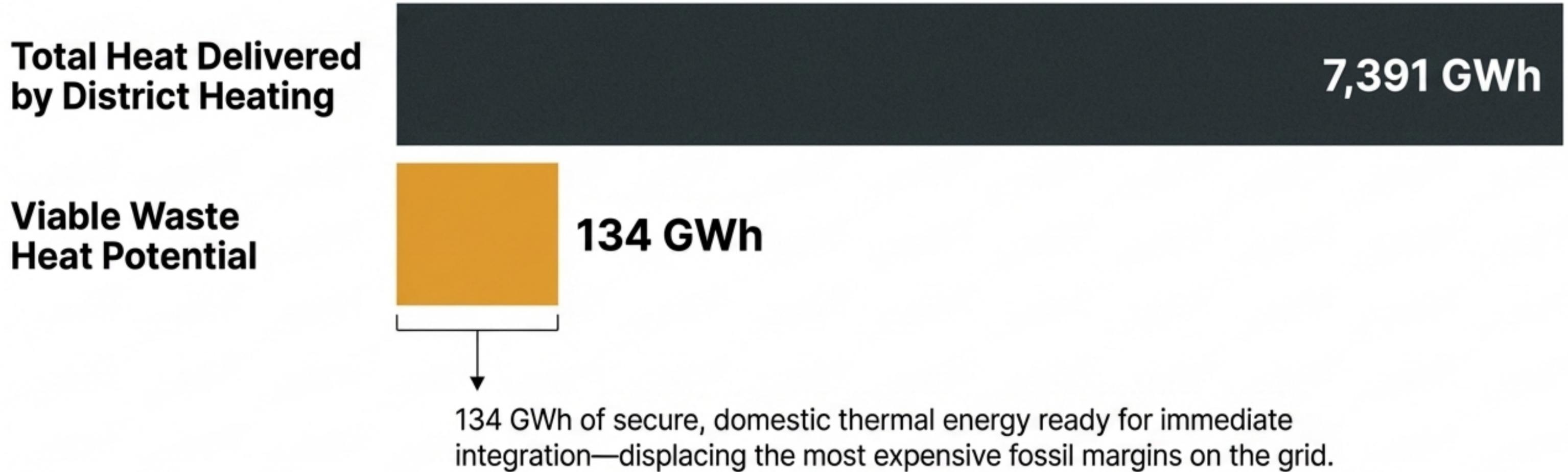
201 GWh
Practically utilizable
potential by 2050



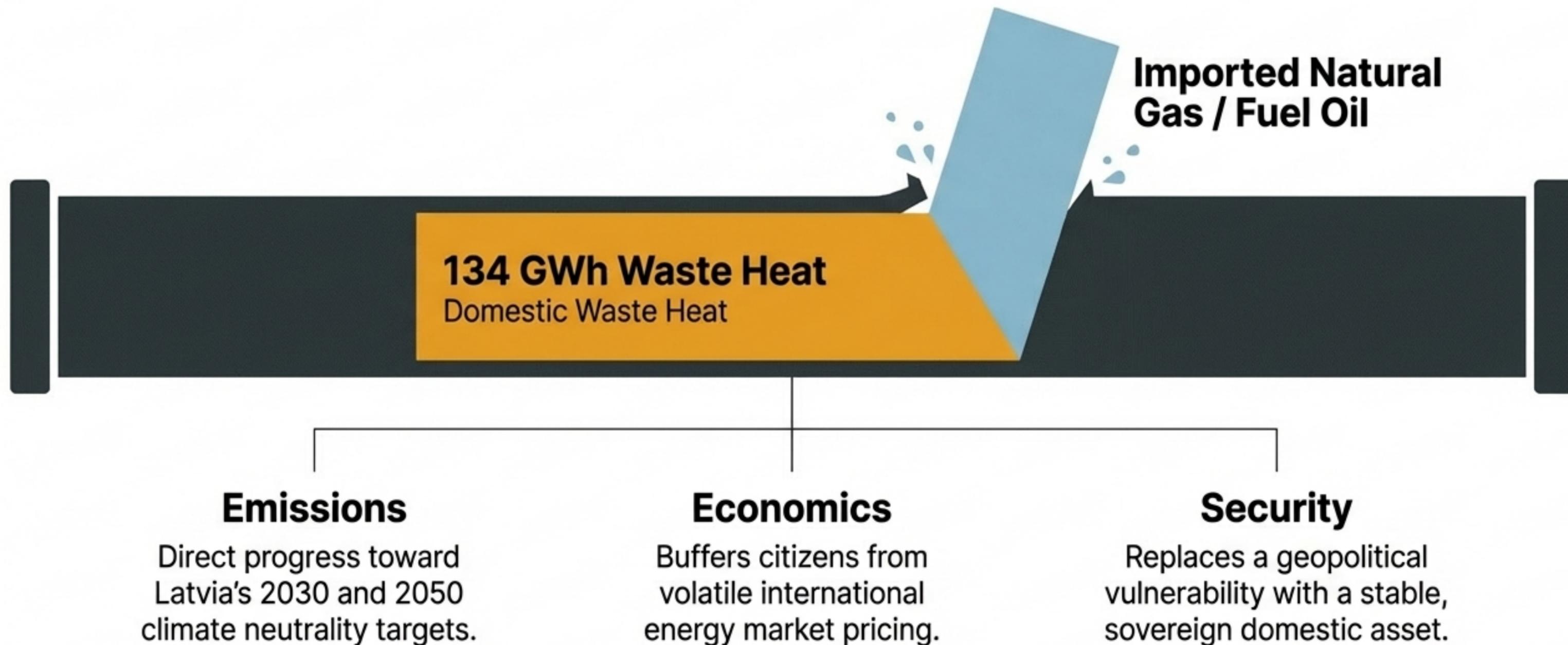
51.37 GWh
Data centre waste heat
generation, 2022

As the digital economy scales, server cooling will **generate high-quality, low-temperature heat rivalling all traditional heavy industry** + traditional heavy industry combined.

Immediately viable waste heat can supply a substantial portion of our demand



Displacing imported gas secures prices and slashes emissions



Transitioning from linear vulnerability to a circular heat economy

The Status Quo

Primary Fuel	Imported natural gas & biomass
Infrastructure	Aging, high-temperature (high loss) grids
Cooling	Inefficient, standalone individual A/C units
Governance	Fully absent planning framework

4th Generation District Heating (4GDHC)

Domestic, continuous waste heat streams

Modern, low-temperature (highly efficient) networks

Integrated district cooling grids bypassing individual energy lock-in

Mandated, strategic local energy zoning

September 2025 is the hard deadline for a national governance framework



September 2025

The Mandate

Article 25.6 of the EU Recast Energy Efficiency Directive (EED).

The Requirement

Member States must ensure municipalities with populations over 45,000 prepare comprehensive local heating and cooling plans.

The Reality

Latvia's current legal framework for local heat planning is rated as 'fully absent'. Immediate legislative transposition is required.

Three pillars required to unlock private and municipal capital

01

Governance

Establish a national competence centre to provide municipalities with technical guidance and standardized methodologies for mandated local plans.

02

Finance

De-risk investment through capital grants for pipeline connections, revise feed-in-feed-in-tariffs to include waste heat, and implement uniform carbon pricing.

03

Modernisation

Launch a national upgrade programme to transition existing networks to waste-heat-ready, low-temperature 4GDHC systems.

A phased roadmap to a resilient national thermal grid

2024

2025

2026

2027

2028

2029

2030

Phase 1 (2024–2025): Legislative Action

Full transposition of the EED into Latvian law and formal approval of financial support schemes.

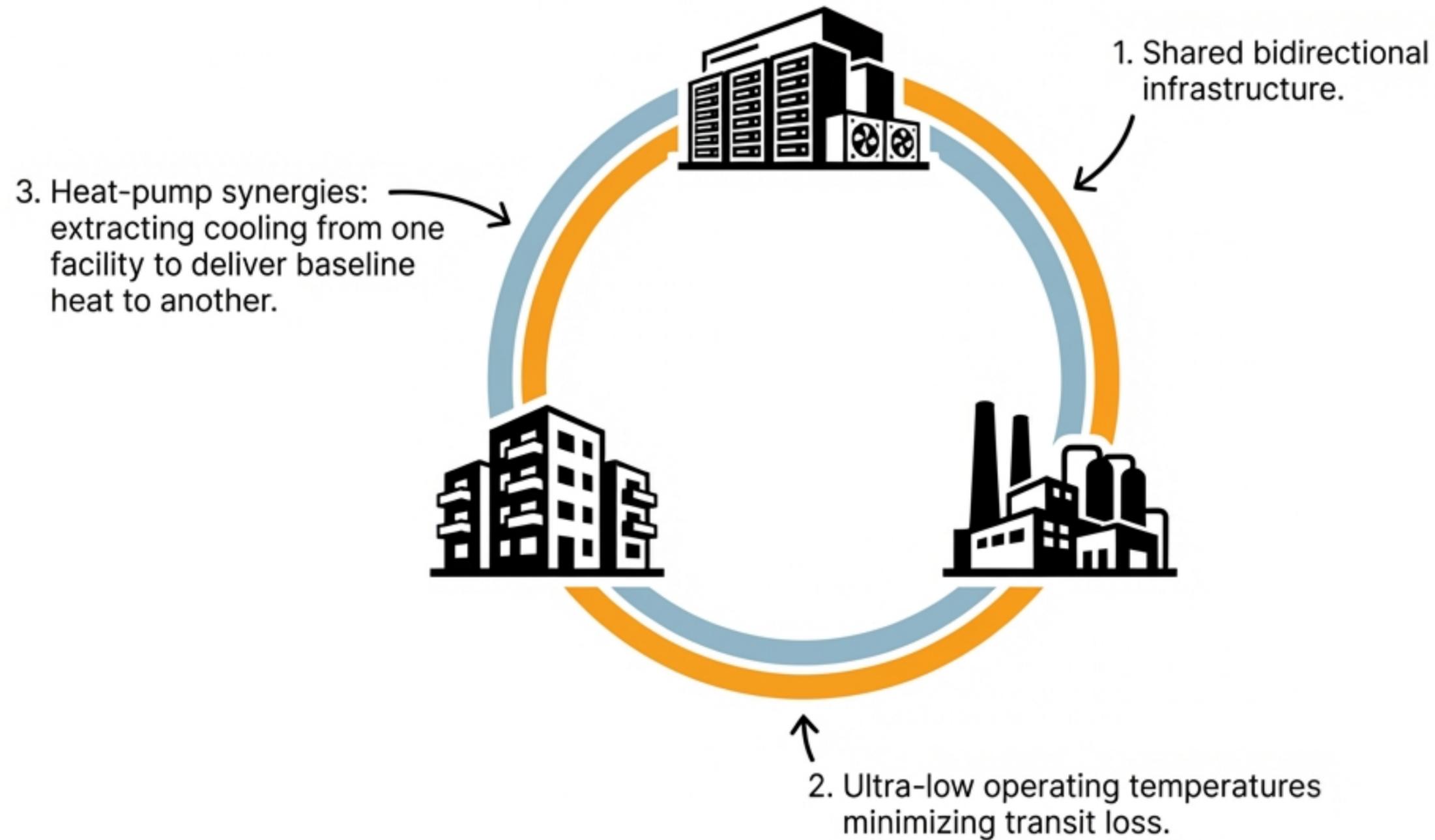
Phase 2 (2025–2027): Planning & Pilots

Municipalities finalize mandated local plans. Government deploys high-visibility pilot projects in key industrial clusters to prove economic viability.

Phase 3 (2027–2030): National Rollout

Systematic connection of all techno-economically viable waste heat sources to modernized grids, delivering tangible 2030 climate target contributions.

4th Generation networks enable total thermal synergy



Wasted thermal energy must become a heavily leveraged national asset

The transition to a circular heat economy is not just an environmental imperative. It is the definitive pathway to securing Latvia's energy sovereignty, stabilising consumer costs, and future-proofing our infrastructure for the digital age.
