District Heating in Finland – Policy-Technical Overview (Case: Vaasa)

General Policy Context

- Finland has one of the world's most extensive district heating (DH) systems; policy is shifting from fossil-based CHP toward **renewables, waste heat, and sector integration**.
- National energy and climate strategies encourage:
  - **Carbon-neutral district heating** by the 2030s.
  - **Market-based heat production**, allowing third-party renewable and waste-heat suppliers to feed into networks.
  - **Electrification of heating** via heat pumps, power-to-heat, and flexibility services.

Ownership and Governance

- DH networks in Finland are typically owned by:
  - **Municipal energy companies** (most common).
  - **Regional or city-owned utilities**.
  - Occasionally, private energy firms.

Case Vaasa

- **Vaasan Sähkö Oy** (city-owned energy company) owns and operates the DH network.
- **EPV** (Energy-company) is **43 % owned by Vaasan Sähkö + other publicly owned national energy companies**, and through its fully owned subsidiary **Vaasan Voima Oy**, it produces majority **of Vaasa's district heating** via its CHP (combined heat and power) plant in Vaskiluoto, as well as operating a large thermal energy storage facility.
- Strategic direction shaped by:
  - **City of Vaasa (majority owner)**.
  - Regulatory oversight from national bodies (Energy Authority, Ministry of Economic Affairs and Employment).
- Governance priorities in Vaasa:
  - Transition from peat/biomass towards **waste heat, industrial symbiosis**, and **large-scale heat pumps**.
  - Strengthening Vaasa's role as an **energy technology cluster** and testbed.

Technical–Policy Considerations

Connection of Buildings

- **Existing buildings**:
  - Can be connected to DH if located near the network.
  - Policy incentives support conversion from oil heating to DH.
  - Connection costs and need for internal heat system upgrades vary.
- **New buildings**:
  - Many municipalities (including Vaasa in certain zones) **recommend or require** connection to DH for energy-efficiency and climate reasons.
  - Zoning plans can define "district heating priority areas."

Network Expansion and Integration

- DH networks in Finland—including Vaasa—are **flexible multi-source platforms**:

    - Compatible with CHP, biomass, geothermal, waste heat, industrial heat, and heat pumps.
- Policy drivers promote:
    - **Open heat networks** where external producers (e.g., data centers, industry, supermarkets) can supply heat.
    - Digitalisation and smart metering (demand response, optimized flows).
    - Integration with electricity markets (power-to-heat as flexibility).