



District Heating after Coal Phase-Out in Upper Nitra

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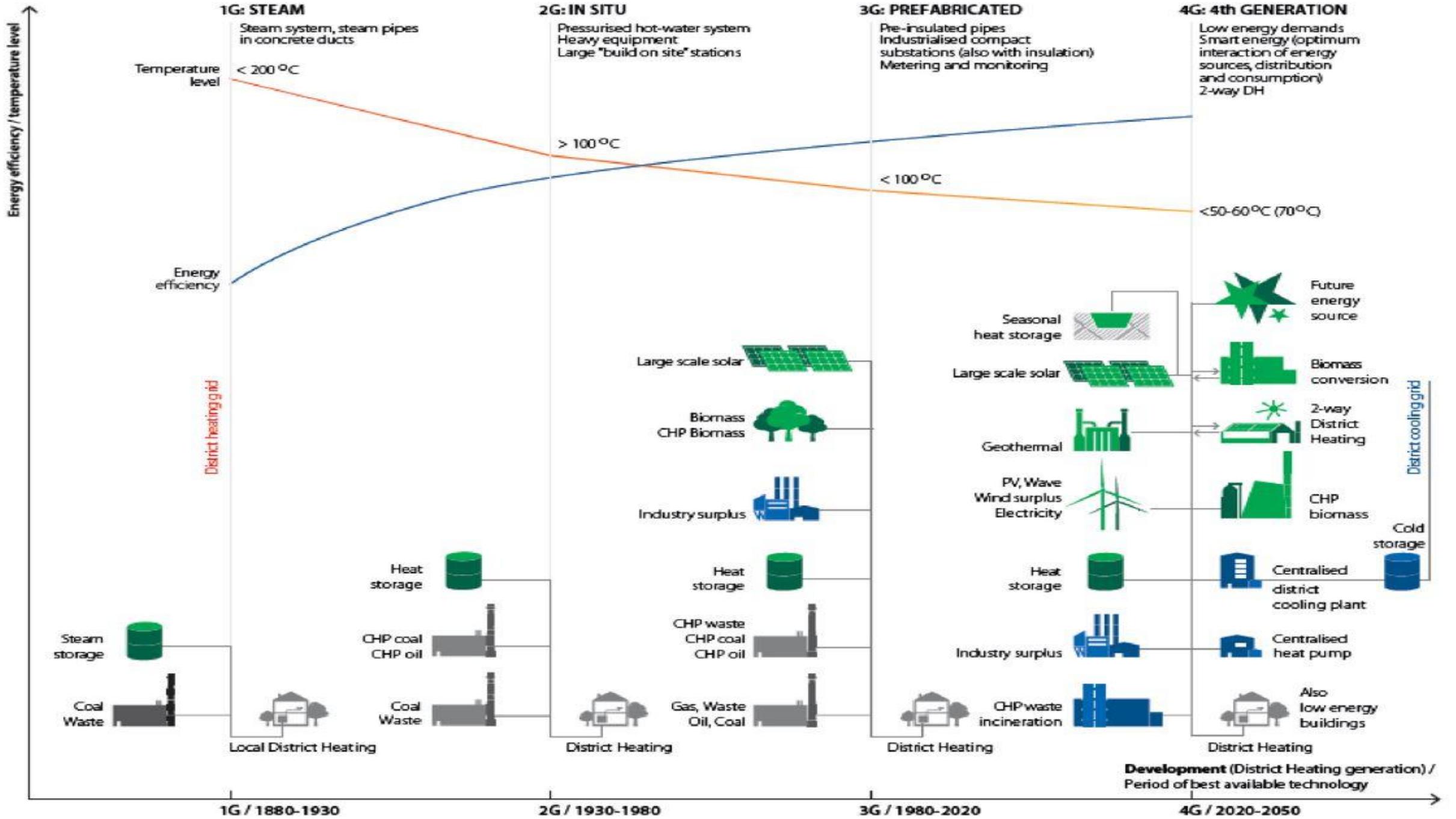
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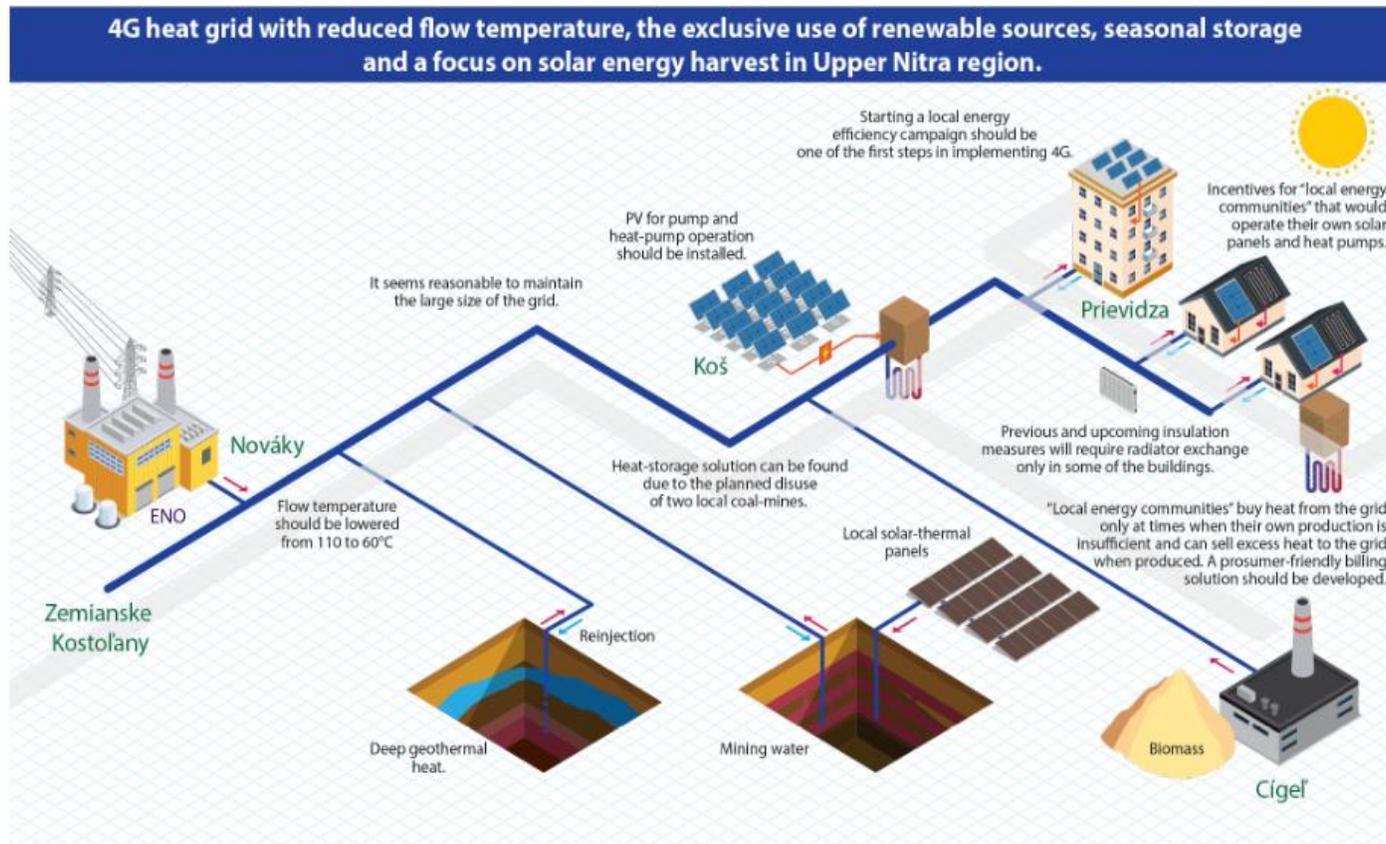
Novaky CHP plant stops operating by the end of 2023

Phasing out of coal in district heating divided into 2 phases

- **1st phase**
 - two project proposals
 - selected solution (of PTH company) is better within:
 - lower lock-in effect,
 - municipality ownership (51%)
 - more ambitious in deployment of RES technologies
 - winning project is still based mostly on fossil gas and biomass -> **2nd phase**
 - FoE – CEPA managed to sign a memorandum with PTH
 - Slovak Action Plan - Ministries will report annually progress in DH:
 - Reducing energy demand
 - Increasing the share of RES replacing fossil gas technologies (fully in 2034)
 - Increasing the use of energy facilities owned by energy communities (prosumer concept)



2nd phase – 4th generation district heating



- low flow temperature (~60 °C)
- reduced energy demand
- several sources based on renewables
- seasonal and day-to-day storage (mines)
- power-to-heat (HP - mining water)
- 2-way systems (prosumers, surplus heat)
- smart energy system
- future energy sources
- future centralized DC plant

Reduction of heat demand

Heat consumption in buildings

- Published study – potential of **62%** heat consumption reduction
- Domestic hot water and heating piping system in buildings – up to **40%** of heat loss reduction

Heat loss reduction in DH grid

- 1st phase – backbone stops operating (DN300, 12 km) – **12 %** of reduction
- Piping system in Priedvidza – up to **14%** (according JASPERS analysis)
- Our own study in progress (problems with data gathering)

Potential of renewables

Geothermal potential

- Direct and indirect (via HP)
- Mining water use (via HP)
- Storage systems (old mines)
- Study in progress (almost finished)

Solar harvest and other RES potential

- Projects in progress in 1st phase by PTH company
- Study in progress

First stage of 4G DH system in Upper Nitra region (NOT 1ST PHASE OF TRANSFORMATION)

- Summary of lessons learned – preliminary quantification and design

Future milestones

- **Lowering of heat demand in buildings** – creating a roadmap of building refurbishment
- **Reduction of heat loss of pipes** – base of future heat transport plan (focus on piping system in buildings)
- **Geothermal energy** – continuation of work (analysis of potential, permits, other stakeholders – spa...)
- **Mining water use** (competence of HBP) – supervision of the project
- **Other RES technologies** – comprehensive studies
- **Zoning plan** - finding possible areas for solar fields, alternatively storages
- **Heat supply, smart heat management and storage plan** – more specific data needed
- **Dynamic heat production and demand development plan**