Realizing District Cooling – the planning phase

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<table>
<thead>
<tr>
<th>Process Stage</th>
<th>Key Activities</th>
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<tr>
<td>Road-map/pre-FS</td>
<td>System and business concept, Financial key figures, Stakeholder analysis, Risk identification, Ownership models, Decision points</td>
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<tr>
<td>Feasibility Study</td>
<td>Key activities: Technical and economical feasibility study, Stakeholder negotiations, Incorporation of ownership model, Investment memorandum, Decision points</td>
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<tr>
<td>Project Development</td>
<td>Key activities: Project development financing raised, Project development activities to financing closure in terms of design, permits, secured off-take, procurements and insurances</td>
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<td>Construction</td>
<td>Key-activities: Construction financing raised, Construction of district energy system, Operation and Management concept/contract in place</td>
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<td>Operation</td>
<td>Key-activities: Asset and operation company</td>
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3 – make the right decisions – pre-feasibility stage

It starts with a customer demand:

- **Define the market area.**
- **Identify key customers.**
- **Identify customer needs.**
4 – make the right decisions – pre-feasibility stage

- **Stakeholder analysis - Address and align objectives to avoid conflicts of interest**
- **System concept – Available sources and technologies**
- **Indicative economic feasibility**
- **Risk management – Initial risk identification**
- **Business and ownership model – Inviting others?, expectations on return**
- **Define the project/business development process – governance, stages and decision points**
- **Designate a project manager to guarantee smooth operation**
- **Plan for financing of every step**
5 – make the right decisions – feasibility stage

• Define project scope and targets
• Technical and economical feasibility
• Stakeholder negotiations
• Identify, and if required, initiate permitting processes
• Try to find ways to develop the market and project in phases
• Assess customer alternative cost and contracting & price models
• Conduct proper risk assessment and allocate risk accordingly
• Assess procurement strategy
• Establish business entity

Decision point to reach:
Investment direction decision
6 – make the right decisions – Project development phase

- **Implement market and sales approach – secure revenue**
- **Be prepared to implement temporary customer solutions**
- **Take care of any needed permits and permissions**
- **Detailed technical design (in line with permitting requirements and procurement strategy)**
- **Prepare and execute procurement**
- **Secure financial solutions**
- **Apply proper steering model (profitability, performance, time)**

Decision point to reach: Investment decision
Zagreb – possible step-by-step approach

Assumed scenario:
A. Identify key customers.
B. Operate independently or create micro grid.
C. Utilize redundancy if possible.
D. Arrange with temporary production or “to be” peak production locally.
E. Create large scale system when critical mass has been achieved.
Concluding remarks

1. Focus not only on **what** to create but also **how** and with **whom**.

2. **Permits, access to land** and **customer contracting** often on critical timeline.

3. **Small scale** step-by-step approach might be the way to a **large scale** system.

4. Consider **several business and financing models** early on.

5. The **technical solution** is often a **mix** of several technologies and sources.