Financial aspects and business models of DH upgrading

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2 Handbooks:

- *Upgrading the performance of district heating networks*  
  Technical and non-technical approaches  
  A Handbook

- Guideline on business models and financing schemes for retrofitting DH networks
Financial analysis

• A detailed feasibility study required
• Necessary to define all the costs and revenues

Capital costs
- costs for planning, feasibility studies and documentation, technologies and for civil works

Operation costs
- insurances, interest expenses, costs of labour, property taxes, utilities expenses, depreciation of assets, fuel costs

Revenues
- increased sales of heat, reductions of fuel use, additional revenues from the added commodity, etc
Financial KPIs

\[ NPV = \sum_{t=1}^{n} \frac{C_t}{(1 + i)^t} - C_0 [\€] \]

\[ 0 = NPV = \sum_{t=1}^{n} \frac{C_t}{(1 + IRR)^t} - C_0 [\€] \]
**DH upgrading business models**

- Strategic objectives
- Ownership structure
- Investment plan
- Economic aspects: revenues, profit, non-profit
- Contractual and permitting issues
- Involved stakeholders
Ownership

**Fully public**

The risk of investment is covered by the municipality or city and the project is implemented by the public utility.

**Private**

The project is completely developed and implemented by the private investor, which wants to maximize profits.

**Public private partnership**

Merges the benefits of both public and private partner involvement.
Thank you for your attention!


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