

# Business models and innovative funding structures for LTDH

## 1 What is a business model?

There is no universal definition of a business model (BM), but there are some common features:

- It is the logic of how a company or organisation create, deliver, and capture value.
- It reflects the company's strategies.
- It can create competitive advantage for a company until it is being copied (first mover advantages).

One way to illustrate a BM is that it consists of three parts:

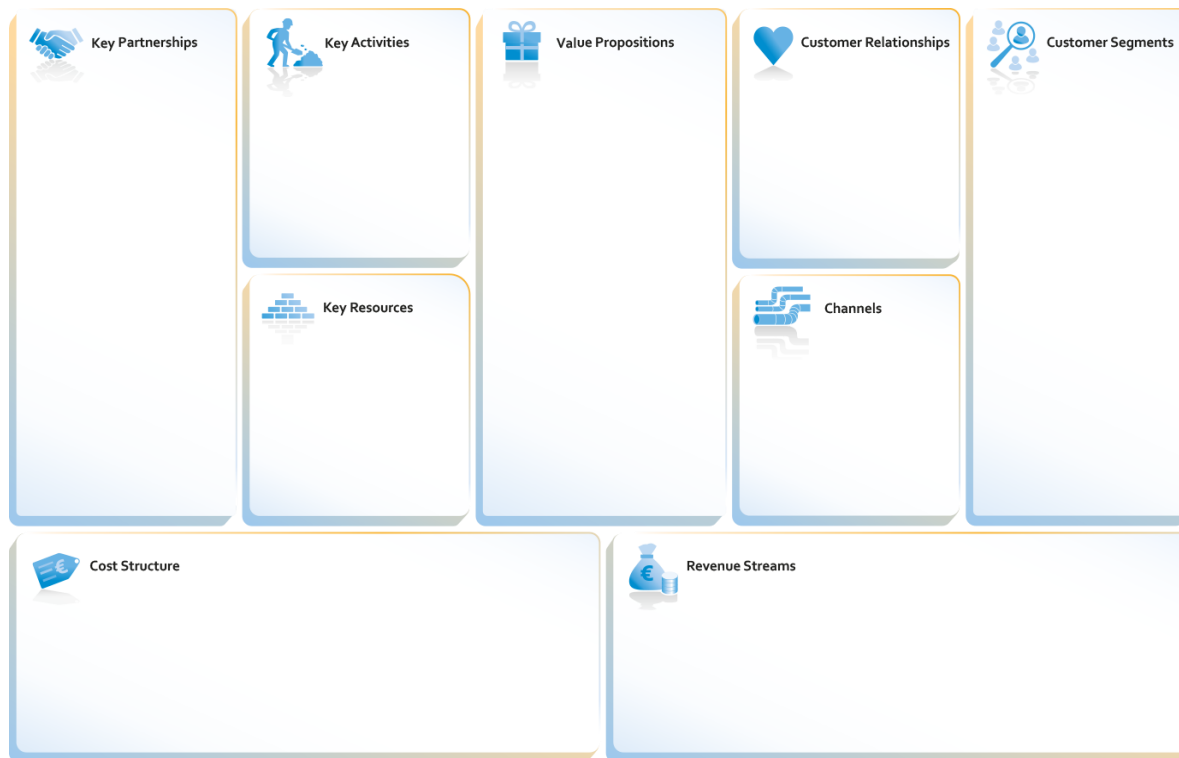
- Customers (value, relationships, segments)
- Resources (infrastructure, activities, partners, logistics)
- Cost/income structure (tariffs, fees, prices models, income, costs)

A second way to illustrate a BM is the relationship between an organization and the market:

- The main part of the BM refers to soft values and strategies and only a small part is the price model or the income structure.
- The price model includes how the company plans to earn money i.e., different types of tariffs, fees etc.
- The soft value and strategy part of the BM could include policies such as keep all competence inhouse, choose fossil free when possible, strategic partnerships etc.

## 2 Description of Business Model Canvas

The Business Model Canvas is the most common way to illustrate a BM. It is based upon a strategic process that by means of using a template to document existing business models. It is a visual chart with elements describing a nine-component business model in an organized way to lay out assumptions about key resources, key partners and key activities of your value chain, and also value proposition, customer relationships, channels, customer segments, cost structures, and revenue streams.



Modified from Business Model Canvas at Strategyzer.com

Figure 1 Business model canvas (Based on Strategyzer.com)

## 2.1 Business Model Canvas for conventional district heating

When using the business model canvas tool on conventional district heating classic business model for district heating, it is a conventional production and business logic is economies of scale. And the business model is rather straight forward. The customer segments of the DH business model, the largest customer segment is professional customers e.g., large building owners.

The key resources are production units and distribution networks. Key partnerships are fuel providers. And the key activities are production, distribution, and maintenance. The value proposition for the conventional district heating is heat and hot water. The customer relationship is that the company is provider of heat to the consumer. And the channel for communication are invoices and campaigns. The cost structure is based on large fixed costs on the other hand and the revenue streams are also rather fixed and large.

## 2.2 Business Model Canvas adapted to low temperature district heating

Low temperature district heating will in most cases require a different business model than conventional district heating. The exact business model needs to be designed from local conditions, heat sources and customers.

Some of the factors that are predicted to change includes:

Key collaboration	More key partnerships, including third party producers of heat.
Key activities	Shift from being “only” a producer of district heating to offering more services to customers.
Cost structure	Larger diversity in costs, heat production units of different sizes and an increased purchase of heat from third parties including surplus heat.
Revenue streams	More types of customers, but smaller volumes sold. Owners of near zero energy buildings could also be potential customers.
Customer relations	More frequent relations, introduction of LTDH might require designing for other installations in buildings and the margins for error is less.

## 3 Examples of other business model tools

In the LowTEMP project, other business model tools are described in the Study on Business Models and Innovative funding structures, which can be downloaded from [lowtemp.eu](http://lowtemp.eu). They include:

- The Helicopter Model (developed in LowTEMP), a model to help investigate the conditions in the regional landscape and surroundings.
- The Ladder of Value (developed in LowTEMP), a tool which helps define a company’s value propositions today and in the future:
- The Bridge Method, helps mapping different stakeholders interest and motivation in a venture, including the establishment of LowTEMP district heating.

## 4 Innovative funding structures

### 4.1 Introduction to funding structures

There are several factors to have in mind when identifying a suitable funding structure for a low temperature district heating investment:

- Characteristics of different countries, including commonly used funding structures.
- Size and ownership of DH systems and companies.

- Conditions and limits for funding
  - Ownership structures (Public vs Private).
  - Legal framework.
  - Will it be a new systems or upgrade of an existing system.
- Innovative aspects
  - What are the differences between the proposed LTDH and DH?
  - Often higher risk of newer technologies.
  - If it is innovative, it might enable access to external/EU funding.

The national conditions will have a direct effect on the availability of funding. Some common structures for funding currently used are:

- Loans from national banks or financial institutions.
- International financial institutions (capital funds, international banks).
- National grants (in connection with CO<sub>2</sub> and NO<sub>x</sub> emissions).
- City level subsidies (to provide cheap heat to social housing).
- Loan guarantee from a national bank or public institution.
- European Investment Bank.
- EU funds/programmes (EU Structural and Cohesion funds or European Regional Development Fund).

## 4.2 Examples of alternative funding structures

When investigating innovative funding structures, looking beyond national borders can be a good method. Some countries have long used types of funding, which has been rare in other countries as a result of the ownership structure of district heating. Examples of new innovative funding structures includes;

- Crowdfunding
- Cooperative funding
- Energy service contracts (ESCo)

## 4.3 Further reading

To get a more in-depth introduction to the topic, the report *Study on business models and innovative funding structures* can be downloaded from [lowtemp.eu](http://lowtemp.eu).