

Overview of DHC Legislative Framework

Country

Denmark

Legislative Framework

The legislative framework of district heating is and has been defined by the general energy policy, which earlier was very much influenced by the economic situation in Denmark and the economic policies, but in later years mainly by the environmental concerns arising from energy consumption.

Background

Before the energy crisis of the 70'ties, energy was not subject to any sector specific regulation. Denmark was at the time almost entirely dependant on imported oil for its energy consumption. The oil crisis of 1973 revealed a total lack of security of supply and the later price increases on oil resulted in huge balance of payment problems, unemployment and general economic crisis.

The first response, outlined in a government report from 1976 and later reinforced in an Energy Plan from 1981, consisted of measures to reduce energy consumption, a push from oil to coal as fuel in the thermal electricity production and a heating policy aiming at utilising the huge amount of surplus heat available from electricity production. Furthermore, initiatives were taken to develop national resources of oil and gas in the North Sea and the construction and expansion of transmission and distribution networks for district heating and natural gas, followed by intervention in the heat market to ensure sale of both.

As a more secure supply of energy has been achieved and as the environmental effects of energy consumption have become apparent, political emphasis has shifted accordingly. A variety of instruments has been used throughout the period. One of the most important was the heat supply act of 1979.

Heat market intervention

The market for energy for space heating and warm water preparation was unregulated until 1979, where a heat supply act was introduced. It was introduced as part of a national response to the energy crisis of the 70'ties, but it has proven to be an adequate instrument in the national response to the later climate challenge.

The heat supply act was based on a number of recommendations from various committees and organisations, most importantly the National Energy Plan from 1976, and was a great extent a law on heat planning. It came into force in 1979. It was amended several times and completely updated/replaced) by a new act from 1990, which however kept many of the elements of the original act, but in a simpler form. A copy of an unofficial translation from year 2000 into English is provided as attachment. Please note that the translation is not particularly precise, and that changes to the law since year 2000 are not included.

It is by far the most important legislative measure regarding district heating. Its objective is "*§1 (..) to promote the most socio-economic and environmentally friendly utilization of energy for heating buildings, supplying them with hot water and reduce the dependency of the energy system on oil.*" And this shall be organized "*...with a view to promoting the highest possible degree of cogeneration of heat and power.*"

The act regulates:

"*§2 (..) collective heat-supply plant means any undertaking that*

operates the below-mentioned plants with the object of supplying energy for heating buildings and supplying them with hot water:

- 1) plants producing and transmitting other inflammable gasses than natural gas;*
- 2) plants for transmitting heated water or steam from combined heat and power plants, waste incineration plants, industrial enterprises, geothermal installations, etc.;*

3) district heating supply plants, solar heating plants, waste-incineration plants, etc. , including combined heat and power plants with an electric effect not greater than 25 MW;

4) block heating stations with heat generating capacity exceeding 0.25 MW, including combined heat and power plants with an electricity output not greater than 25 MW.”

Collective heat supply systems are regulated on areas such as:

- General purpose (as described above)
- Heat planning (also natural gas)
- Expropriations (also natural gas)
- Prices
- Regulatory oversight (prices)
- Mergers and separations of assets, consumers influence
- Technical oversight
- Consumer complaints (consumer protection)
- Public service Obligations
- Penalty clauses etc.

The Heat supply act defines district heating and natural gas for individual/domestic use as “collective heat supply”. Electricity theoretically could have been included, but was banned as source of heat in areas defined as suitable for collective heat supply, since electricity mainly was a product of inefficient thermal production.

The heat supply act has been supported by a range of measures and has itself supported a number of other policies.

Taxation

Energy taxation was introduced in 1977 to increase the incentives to conserve energy. In order to maintain the competitiveness of industries and enterprises, these were exempted from taxation. The taxation only covered oil, electricity and coal, and contributed to making investments in energy conservation and in networks for district heating and natural gas economically feasible. Energy taxes were increased considerably in 1986, when oil prices fell. This was done to maintain energy prices for households at a stable, high level, which would ensure continued focus on reductions in energy demand and the continued development of district heating and natural gas. A secondary aim was to increase tax revenue for government.

Subsidies

Subsidies have been an important element in the regulation and development of the Danish energy sector, since the first was introduced in 1977. It was a subsidy for energy saving measures, but it was part of a general stimulus package aimed at countering the increasing unemployment in the construction sector, brought on by the economic crisis following the energy crisis.

Subsidies for the development of the district sector has mainly been to support development of network, increase the number of connected buildings in district heating areas or to facilitate the introduction of new heat production technologies or fuels in district heating.

Waste regulation

When designing the response to the early energy crisis it was quickly realised, that waste was available as a fuel. Waste incineration had begun even before the energy crisis, as waste dumps were filling up and new ones proved impossible to locate (NIMBY). Municipalities were responsible for ensuring collection and treatment of waste. Incineration facilities were mainly owned by municipalities, either by one large municipality or by a number of smaller ones. Since municipalities also have responsibility for local heat planning, and also often operated local district heating systems, coordination of waste and heat policies was relatively easily achieved.

General framework

The focus of this report is legislation and support aimed at district heating and cooling. But parts of the general framework (the context) also play, or played, a role. The not-for profit principle that applies to the district heating sector also plays a role in the development of the sector.

The principle was introduced in the operation of municipal utilities in the 1950'ties, when the ministry of interior affairs stated, that it was to rule the relation between a municipally owned and run utility and other municipal activities such as schools etc. It prevents municipalities from transferring funds from utilities to other activities and/or to use tax revenue to support utilities. This is contrary to the "stadtwerke" model seen elsewhere, where profit from utilities can play an important role in financing the general activities of municipalities.

Cooperatives

District heating utilities not established by municipalities were mostly set up as consumer cooperatives. A traditional form of organisation in Denmark, where cooperative supermarkets, savings associations, cable networks, electricity and water distributors etc. still provides services to many people. These cooperatives were and are not run for profit, but to supply services at lowest possible prices.

Introducing the not-for-profit principle, with the heat supply act, to govern the running of district heating utilities, was therefore relatively uncontroversial. It already governed municipal utilities and the electricity sector, and turned out to be a viable solution to the problems associated with the natural monopoly inherent in district heating networks, and the dominant position of district heating in the heat market created by the heat planning system.

It is unlikely that the heat planning had been accepted, if the monopoly and dominance it created, had been in the hands of a commercial company.

Purpose of the Legislation

Target groups

The main target for the Heat supply act was regional authorities and municipalities, as they were given responsibility for local and/or regional heat mapping and planning, with the aim of meeting the objectives of the act, as mentioned above. The act also for the first time subjected district heating utilities to price regulation on sale of heat. It also set up a regulatory authority responsible for handling consumer complaints (regarding issues regulated by the heat supply act) and oversight of prices, terms of delivery and issues regarding the effect on heat planning on individuals.

The act was part of a policy aiming at developing an energy sector with multiple sources and fuels, to counter the problems encountered with the oil-only supply until the energy crisis. It was to shift the heating sector away from individual oil and electrical heating, and to provide security for the heavy investments needed in expansion of district heating and the new natural gas networks. Natural gas was being introduced in the 80'ties, with the first gas from the Danish North Sea sector coming ashore in 1984.

Results

The objectives of the Heat supply act were almost to the full extent achieved, with high penetration of district heating in the heat supply and with the high share of CHP (50-60 %) in the thermal electricity production. This was achieved with some minor adjustments to the law during the first 15-20 years and also some supplementary support schemes.