



Original research article

Who brings the heat? – From municipal to diversified ownership in the Swedish district heating market post-liberalization



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ARTICLE INFO

Article history:

Received 3 October 2015

Received in revised form 20 August 2016

Accepted 7 October 2016

Available online 17 October 2016

Keywords:

District heating

Sweden

Mergers & acquisitions

Sociotechnical change

ABSTRACT

District heating in Sweden has undergone changes in recent decades. Parallel with transition towards sustainability, a considerable ownership restructuring has occurred, due to liberalization of energy markets. The aim of this paper is to describe and analyze trends of mergers and acquisitions in the Swedish district heating market. A systematic review of ownership in 290 municipalities has been performed through annual reports, press releases, websites, municipal minutes, newspaper articles and personal contacts. The paper shows a transformation from municipal to diverse ownership, decreased municipal ownership and increased internationalization. The window of opportunity provided by liberalization was used especially by the “big three” (E.ON, Fortum and Vattenfall) in order to strengthen market position early in the wave of acquisitions. The time period 1996–2005 was especially hectic, showing strategies of cherry picking hot spots for acquisitions, with the “big three” being responsible for a large proportion of these. The period after 2006 showed trends of companies selling several district heating businesses at once, through large-scale disinvestment. The paper shows a transformation of the district heating regime, first as a reaction to changes on the electricity market and later in its own right, raising concerns regarding the weak position of customers.

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1. Introduction

District heating (DH) and combined heat and power (CHP) are seen as important bricks in the transition towards efficient fossil-free energy systems in the EU through the Cogeneration Directive and the Energy Efficiency Directive [11,12], and in Sweden through e.g. the Climate and Energy bill [27]. DH in Sweden is often referred to as an important climate measure, as a fuel substitution from essentially 100% oil to a fuel mix of less than 10% of annual production has taken place in recent years [10].

In regards to GHG emissions the DH development and fuel substitution have been important, but equally important are processes of liberalization and privatization, especially in relation to local power, governance structures and from a user perspective. As identified by Sovacool [61], governance structures are crucial for handling energy problems and how sociopolitical configurations and transformations influence energy decisions and broadening of roles for non-state, and additionally non-public, actors to becoming involved in decisions on energy. This paper focuses on ownership changes in the district heating sector in Sweden, arguably a system

to a large extent taken for granted until around 2000, as effects of the changed political economy started to emerge, and thus a broadening of governance structures as a shift from public, municipal ownership towards a diversified structure involving private, state, international and public-private actors along the municipal.

The electricity market was deregulated in 1996 [56], as competition was introduced in production and sale. The DH market was commercialized (cf. [28]), as DH companies were to be run on market principles and pricing rather than previous self-cost price, but without competitive elements. Put bluntly, market pricing in natural monopolies was introduced, and increased prices in Stockholm and Uppsala led to protests and subsequent national investigations [53,55]. Westin and Lagergre [67] argue that: “The lack of comprehensive discussions about the impacts on district heating prior to the reformation of the electricity markets in 1996 is astonishing.” Their conclusion was that DH at that point had never been treated in its own right, and was always secondary to the far more interesting, for policy-making economists, electricity market.

Studies have previously focused on ownership changes in the electricity market [5], but the total DH market has not been scrutinized previously. A significant difference between the two markets is the customers' weak position through lock-in effects in the DH market. There is a need to understand how the market changed through the transformative mergers and acquisitions (M&As) that

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took place from the mid-1990s and on, forming a new regime for DH.

As most studies on liberalizations, Swedish or international, have focused on electricity [42,46,58,59], on liberalization of infrastructure in general [51] or on water services [48,50], DH has not been studied to the same extent. By studying the movements from municipal ownership to diverse ownership with substantial private actors on a macro level there are opportunities to unpack trends and patterns in strategies.

This paper does bring additional light to the success story that Swedish DH is often perceived as, especially considering the low-carbon transition that has taken place in recent decades. Di Lucia and Ericsson [10] showed how the oil-regime in DH collapsed after the oil crises in the 1970's and how policies and initiatives from private and public actors lead to starting a new regime, based on biomass. Silveira and Johnson [57] showed how integration of energy systems with different systems, such as forestry and waste management, was important for the energy transition in Sweden, as well was attention from important interest groups. They further emphasize coordination between national and local levels, and as this paper will show, the ownership has under the same time period changed from predominantly municipal to a diversified ownership.

As DH is considered a viable option for heating in Europe, the European Commission mentions it in the visions and goals for the recent EU strategy on heating and cooling [13], and studies have identified the European potential for DH to be substantial through e.g. surplus use from industry, power plants and waste incineration. Understanding the analysis from a Swedish perspective is thus interesting in order to understand an historical development, and to learn from the paths taken. Energy markets in the EU have also become interconnected physically through e.g. the NordPool market, but also through ownership. As Kungl [40] has shown, Swedish Vattenfall expanded in Europe by acquiring energy companies and DH systems, while German E.ON did the same thing in Sweden. Understandings of the effects of liberalization and internationalization of ownership is thus relevant across national borders.

The aim of this paper is to describe and analyze the trends of M&As in the Swedish DH market. The paper thus does have a descriptive aim, in order to establish the changes and current structure of the market, but behind these results several trends are identified, which point to deeper analyses and further studies. Research questions are the following:

How has the ownership structure changed on the Swedish DH market?

What trends in ownership changes can be identified?

How can these trends and changes be understood in relation to sociotechnical change?

1.2. Methods and material

In order to examine past and present ownership of Swedish DH companies, all municipalities (290 in total) have been analyzed through a systematic review. The following aspects have been mapped: ownership in May 2014, time of eventual ownership changes, time of eventual remunicipalisation (i.e., return to municipal ownership) as well as political governance at the time. Materials used for this have been annual reports, press releases, websites from municipalities and energy companies, municipal minutes and newspaper articles. On some occasions contacts have been made with municipalities and energy companies for clarification.

This paper is based on a previously published report. Due to space concerns, for full reference list covering all ownership changes, see Magnusson [44]. The quantity of material read is as follows: 56 annual reports, 12 personal contacts, 154 websites for energy companies and municipalities, 75 newspaper articles, 17 municipal documents (minutes or plans) and 21 press releases. In

these totals, websites and other sources confirming that energy companies remain municipally owned are not included.

1.3. District heating in Sweden

DH holds a strong position on the Swedish heating market, producing 58% of the total energy use in dwellings and non-residential premises and more than 80% of the total area in the multi-dwelling market [65]. This started in the late 1940s and had a strong development due to a number of factors: initial municipal focus on building distribution systems in order to obtain heat sinks for future CHP; a national public housing program from 1965 to 1974 with the aim to build one million dwelling units where DH was installed to a large extent; a national energy policy program to reduce oil dependency during the 1980s; and national policy program to reduce GHG emissions starting in the 1990s [66]. In comparison with e.g. the UK, a country with small share of DH although with increasing interest, the strength for Scandinavian countries has been solid local organization and an integrated approach to infrastructure establishment and development [6,33]. DH in Sweden developed under principles of self-cost price and public ownership, and energy and DH in particular were to a large extent arguably seen as a common good.

2. Previous studies

In this section I will present previous studies used in order to understand the ownership changes in the Swedish DH sector.

2.1. Liberalization on the energy market

Liberalization of energy markets and infrastructures has been done with aims of lower prices and higher efficiency, but studies have shown some unwanted effects. Liberalization of the electricity market in the US (see [59]) did not show the expected effects, as misguided market designs, inattentive implementation or political resistance led to the need for substantial subsequent adjustments and fine-tuning of the regulations. Fuel prices have increased in parallel with liberalization and Sioshansi [59] argued that "Restructuring did not make matters worse, nor did it result in significantly lower prices as were often promised." He further argued that many states showed rate shocks when original price freezes were lifted, exposing customers to higher prices. California's electricity crisis in 2000–2001 is stated to be a direct effect of the liberalization process [7]. Graham and Marvin [28] (cf. [30]) found traces of changed business logics post-liberalization among British infrastructure service providers, with focus on profit orientation, cherry picking of lucrative customers and demand-side management. Monstadt [47] studied how governance in Berlin changed after privatization of the public utility and found that the main tasks of urban and regional policy have changed, as have the ways public responsibility for energy supply is exercised. Urban policy or public duties have not lost significance but the main challenges concerned inter-policy coordination, regional cooperation and private sector participation in policy planning and reconfiguration of institutional arrangements.

2.2. Logics of mergers and acquisitions

The strategies and logics behind M&As vary from sector to sector. In their review article Halebian et al. [31] studied the research in accounting, economics, finance, management and sociology in order to understand the antecedents of acquisitions, internal and external factors that moderate acquisition performance and other acquisition outcomes. The logics behind acquisitions fall into four categories: value creation, managerial self-interest, environmental factors and firm characteristics. Value creation concerns e.g. market

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