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DISTRICT HEATING AS A SECURE HEAT SUPPLY—A QUESTION OF REGULATION

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ABSTRACT

The trend in the district heating industry is toward increased privatization and openness to competition, which bring with them other phenomena associated with civil law, such as bankruptcies. Vingåker was one of six Swedish municipalities whose district heating companies went bankrupt in 2004. The bankruptcy caused major disruptions in Vingåker, not least as a result of the unregulated legal framework that has long prevailed in the area of district heating, where there is essentially no consumer protection.

A distinguishing feature of Vingåker, and one that may be assumed to apply to other smaller municipalities as well, is the fact that the municipality was the totally dominant customer in the district heating system. In its negotiations, the municipality was able to exploit this position of strength by refusing to pay the district heating price set by the trustee in bankruptcy while still continuing to have district heat delivered. At the same time, the case of Vingåker also shows that, in their procurement processes, municipalities need to conduct a thorough analysis of the ownership structures of the bidding companies, and determine the extent to which each company is established in the industry. Yet another lesson to be taken from this case is that changes in external factors such as fuel costs and taxes, which are difficult for local actors to influence, create a need to draw up short-term contracts that allow for adjustments in the district heating rates.

1. INTRODUCTION

Efficient and well built-implemented district heating systems are of major societal interest in Sweden. District heating produces and delivers heat for buildings and residences and, given the Swedish climate, heat is an essential commodity in the welfare state. In Sweden, state and municipal governments have traditionally been key actors in the building and operation of major public works systems such as highways, railways, water and sewage systems, electrical systems, and district heating. One recurring argument in favor of this approach has been the idea that the profits from such enterprises should not accrue to private interests, but rather benefit the Swedish citizenry, for example in the form of low rates. On the strength of this argument, the majority of district heating companies were run as municipal services up until the 1980s. Over the last 25 years, most of these services have been converted into

municipal corporations. Although the majority of Swedish district heating corporations are still under municipal ownership, there is a trend toward increased privatization in the district heating industry. Municipal district heating companies and services accounted for 98% of heat deliveries in Sweden in 1990, at which time Sydkraft and Vattenfall were the only non-municipal companies. By 2002, the municipal companies accounted for 65%, with state-owned companies accounting for 12% and privately-owned companies for 22% (STEM, 2005).

In conjunction with Sweden's deregulation of the electricity market in 1996, it was made clear that municipal district heating companies were to be operated commercially and accounted for and reported separately. This means that even municipality-owned companies can set the prices that they believe best favor their businesses, i.e. there is no price regulation. If a municipality wants to preserve such principles in the areas of electricity distribution and district heating distribution, its only option is operation in the form of a municipal service (SOU 1993:105; Gov. bill 1994/95:222; Meyer, 1999).

The district heating system has for long been unregulated in Sweden. Because the systems were built and owned by the municipalities, and also under the control of the local politicians, the state has argued that a regulation was unnecessary. Sweden has had a sort of "soft" regulation with the purpose to stimulate expansion of district heating (STEM, 2005). It was first in the 1970's the state introduced specific rules for district heating. The rules had the purpose to give district heating competitive benefits when competing with other heating forms. In mid 70's the state offered beneficial housing loans to new buildings if they chose to connect to the district heating system. This regulation disappeared in 1992. In 1976 a regulation (SFS 1976:838) made it possible for electricity companies to refuse to deliver electricity for heating purposes in district-heating areas. Though, after the deregulation of the electricity market this regulation became more or less ineffective (STEM, 2005).

The increased prevalence of privately-owned district heating companies has however sheds light on new and different problems in the area of district heating. The need for regulation of the district heating system has become urgent. Although district heating businesses in Sweden are generally perceived as being financially stable and sustainable, with the companies generally enjoying good solvency, a new type of uncertainty has become a reality in district heating systems as a result of a number of bankruptcies that have occurred in several Sweden municipalities, including Vingåker, Trosa, and Söderköping (SOU 2005:63). At the time at which these bankruptcies occurred, the prevailing legal framework, as then constituted, failed to regulate the actions to be taken in the event that a district heating supplier went bankrupt; while the Swedish Electricity Act sets forth clear rules concerning the obligation to deliver electricity, there is no corresponding legislation with regard to district heating (Government Directive 2002:160).

This article will analyze the evolution of the political process surrounding the establishment of a district heating system in a small Swedish municipality, Vingåker, in which the district heating company later went bankrupt. I will discuss how the actors involved in the municipal policy-making process acted from the time the district heating system was procured until the bankrupt corporation was ultimately purchased. What resources did the customers, (i.e. primarily Vingåker Municipality), the suppliers,

and, later on, the trustee in bankruptcy have at their disposal in their negotiations concerning contract formulations, rate structures, and so on? What lessons for the future can be drawn from the history of the district heating system in Vingåker?

I will start with providing a general review of the development of district heating systems in Sweden. Following this, a discussion comes of district heating as a natural monopoly while, at the same time, it is run on a commercial basis. The consequences of a business going bankrupt will also be addressed. Next, I recount the history of the district heating system Vingåker, from procurement to bankruptcy and, ultimately, to Rindi Energi AB's acquisition of the district heating company. The article ends with a conclusive discussion.

2. DISTRICT HEATING IN SWEDEN

The overarching goal of Swedish energy policy is to create ecologically-sustainable and efficient energy markets that will deliver reliable access to energy at reasonable prices (Gov. bill 2002/03:13). District heating has played an important role in the transition to ecologically-sustainable energy solutions, and the expansion of district heating has contributed to reduced oil dependency and an improved urban environment (Werner, 1989; Summerton, 1992).

The first Swedish district heating plant was municipally-owned; it was built in Karlstad in 1948. District heating is currently in use in 270 out of the 290 municipalities in Sweden. Since 1970, the annual volume of district heat deliveries has risen from 12 TWh to roughly 50 TWh. About half of all heating of residences and buildings in Sweden is based on district heating (Swedish District Heating, 2004; SOU 2005:63).

In following up the evolution of the heat market in the wake of the deregulation of electricity in 1996, the Swedish Energy Administration found that the trend in recent years has been toward higher district heat prices, and that the price differences between different companies in different locations are attributable to the companies' exploitation of their monopoly status. The highest price for district heat is nearly twice as high as the lowest. A study of the price situation in 30 district heating companies showed that the price rose by just over 15% between 2001 and 2004. Earlier studies showed that the municipal companies have somewhat lower prices, due both to lower requirements in terms of financial return and to the fact that the municipal companies ran their operations more efficiently. Heat pumps and pellets are the main competitors of district heating from a financial perspective (STEM 2005).

3. NATURAL MONOPOLY, COMMERCIAL ENTERPRISE, AND THE RAMIFICATIONS OF BANKRUPTCY

While district heating is a commercial enterprise, it is also viewed as a natural monopoly in the context of district heating companies that must be operated on a commercial basis. When an industry is referred to as a natural monopoly it means that an increase in terms of labor and capital does not generate more than a proportional increase in produced volume. What this means in practice is that it is more cost-effective for an existing district heating company to expand its operations than it is for a new company to establish itself in the same area. The entrance of yet another

company into the local market does not have the healthy regulatory effect associated with an optimal competitive situation (Bladh, 1999).

The district heating industry's character as a natural monopoly implies that there is room for only one company within a geographically delimited area. This fact is more obvious in a small rural municipality such as Vingåker than in a major urban area. It is the distribution of hot water *per se* that is considered to constitute a natural monopoly. The production of hot water could, in theory, be open to competition. Customers who choose district heating are referred contractually, technically, and financially to a single seller, so that district heating also exerts a certain "lock-in" effect. Changing heating sources is not a realistic option for many customers; the costs associated with such a switch make it financially infeasible or, in any event, difficult to accomplish.

While district heating can be likened to a natural monopoly with major societal impact, it is also a commercial enterprise involving companies which are operated on a commercial basis. Even though district heating serves an important societal function upon which many people depend, a district heating company can still go bankrupt. The position of the customers in the district heating market became a relevant topic of interest when five district heating companies operating in six different Swedish municipalities went bankrupt. In connection with the bankruptcy in Vingåker, the customers were given an ultimatum: either sign a contract with the bankruptcy estate at a higher rate than in the previous contract, or turn off your district heat. If a district heating company in a district heating system goes bankrupt and there is no other district heating company to turn to, the customers must either accept the contract proposed by the bankruptcy estate or switch to another type of heating. Switching from district heating to some other type of heating often involves major investments that render the customer lost to district heating for a long time to come. If the customer is a major one, his withdrawal from the district heating system may, from a cost perspective, also have an impact on the customers who are still left in the system (SOU 2005:63).

3.1. Bankruptcy of a District Heating Company

During a bankruptcy, the bankrupt company, i.e. the debtor, does not have control over its assets; these belong to the bankruptcy estate. The bankruptcy estate is represented by a trustee in bankruptcy, who is appointed by the municipal court. It is the job of the trustee in bankruptcy to liquidate the estate in a way that yields the best possible outcome for the creditors; however, he will also determine whether it is possible to sell the enterprise and let a new owner continue to operate all or parts of the business (op. cit., p. 36).

A bankruptcy estate does not have the right to enter into current long-term contracts, such as delivery contracts. This is due firstly to the fact that one of the conditions to which the estate in bankruptcy is subject is that it will continue to be operated for only a limited period of time, and secondly to the fact that the bankruptcy estate lacks the financial means to commit to an extended contract period. The bankruptcy estate can be compelled, for example by financial factors, to refrain from entering into existing contracts, and must in such cases sign short-term contracts in order to continue to operate the business. When a bankruptcy estate is bought, the buyer assumes neither debts nor any disadvantageous contracts that had bound the

bankrupt debtor. A buyer is thus able to negotiate with other parties regarding the assumption of the earlier contracts, and to negotiate new contracts that are more favorable from a market standpoint (op. cit. pp. 41–42).

When a district heating company goes bankrupt, the trustee in bankruptcy must determine how best to administer the bankruptcy estate so that the creditors derive as much as possible from the estate. In doing this, he does not take into consideration any societal interest in the continuation of the operations, which means that the production and distribution of district heat could potentially cease in connection with the bankruptcy. To prevent this from happening in the future, the Swedish government has formed a commission to draft various proposals with a view to ensuring the continued delivery of district heat in the event of bankruptcy (SOU 2005:63).

4. DEVELOPMENT OF THE DISTRICT HEATING SYSTEM IN VINGÅKER MUNICIPALITY

To reconstruct the course of events in Vingåker from the procurement of district heating up until the time the local district heating company went bankrupt and was finally purchased by Rindi Energi AB, I have analyzed newspaper articles and documentation from Vingåker Municipality, and conducted interviews with private and public actors who were involved in the process. The actors involved in the process surrounding the district heating system come from Vingåker Municipality, which was the dominant customer. The elected politicians on the municipal board were involved in areas such as the rate structure and the expansion of the district heating system, while officials from the municipal offices were involved in areas such as procurement and contract formulation. As a major customer of the local district heating company, municipality-owned AB Vingåkershem also played a significant role. The private property owners worked jointly with the municipality, with the CEO of Sofielunds Fastigheter serving as spokesman for the private property owners. The owners of the company NÄRVÄRME in Vingåker AB, which went bankrupt, are also key figures in the process. The focus here is mainly on the later owners, Landshypotek AB, and on the most recent owner, Rindi Energi AB. A total of 12 interviews were conducted with representatives from these groups and organizations.

4.1. District Heating in Vingåker—The Course of Events Leading Up To Bankruptcy

Vingåker is located in Södermanland county and has some 9,200 inhabitants, roughly 25 inhabitants per km². Its local district heating system was the result of a public procurement process (SFS 1992:1528) carried out by the municipality in 1998. The procurement pertained to a total undertaking from the district heating plant supplier, and included biofuel, distribution systems, district heating units in connected properties, and protective tubing for broadband, which was later replaced with fiber cables. Construction of a biofuel-fired heating plant began in the spring of 1999, and the facility was placed into service in 2000. Vingåker NÄRVÄRME AB, as the corporation in Vingåker came to be known, had roughly 115 district heating customers on a distribution system that was about 13 km long. The deliveries totaled 23 GWh, and wood chips were used as fuel. The biggest customers were Vingåker Municipality at

roughly 6.5 GWh, AB Vingåkershem at roughly 2.4 GWh, and Konstbackens Förvaltnings AB at roughly 2 GWh (Gebremedhin *et al.*, 2006).

The local district heating system in Vingåker has had a number of different owners since its inception. In March 2002 Energisystem i Sverige AB (ESS) bought the company. The ESS Group was financed by Landshypotek AB (Katrineholm District Court 20050513); however, it encountered financial problems relatively early on (which resulted in that Landshypotek took over ESS in July 2004). These financial problems were attributable in part to the fact that the company had invested in new technology that did not function as intended. In addition, the company had entered into multi-year customer contracts which, among other things, failed to compensate the company for rising fuel costs.

In Vingåker, a 15-year fixed-price contract was signed with customers. Normally a contract to deliver district heat is designed so that the district heating company has the option of unilaterally changing the price of the district heat. The purpose of such an agreement is to ensure that the district heating company can compensate for higher costs deriving from rises in fuel prices, tax increases, or the like (SOU 2005:63). The contract in Vingåker gave the company few means of making such adjustments. Under the contract, rates were set at a fixed price per kWh, which was to be adjusted upward based on the consumer price index, subject to a damping factor. There were, however, no price-adjusting mechanisms in place to enable the company to compensate for higher costs. When the contract was signed in 1998, the rate was set at 0,044 EUR/kWh for Vingåker Municipality, with the earliest price adjustment to occur in 2001. Discussions between Vingåker Municipality and Vingåker Närvärme regarding rate levels and the rate structure also continued, in principle, from halfway through 2000 until Rindi Energi AB purchased the company in December 2005.

The company Vingåker Närvärme experienced increasing financial difficulties and as mentioned above was eventually taken over in July 2004 by its largest creditor, Landshypotek AB. Landshypotek CEO Kjell Stillman has indicated that the reason for Landshypotek's takeover was to protect their claims on the company. Landshypotek's intention was to restructure the group, renegotiate its current customer contracts, and, ultimately, to sell it off (Landshypotek, 050502).

In December 2004 the district heating company wrote a letter to Vingåker Municipality stating that new contracts would have to be signed or the company would go bankrupt. No new contract came about, and the company filed for bankruptcy on 21 December 2004 (Katrineholm District Court, 050513).

4.2. Vingåker Municipality's District Heating Procurement Process

Municipal ownership of the heating company was never truly an issue in Vingåker, as both politicians and officials made it clear that the municipality preferred to buy its heat. The contract that was finally signed with Vingåker Närvärme in 1998 was the end result of a procurement process in competition with other bidders. There were several bidders whose bids were close to one another, and it finally came down to a choice between two companies. What separated the two companies was their approaches to price structuring. The company chosen offered a more favorable price over a longer period of time. Many politicians and officials felt that the fact that the contract was the

result of a competitive public procurement process complicated the process of changing the rate structure, and was the reason why it was not possible to depart from the original contract. They felt that, in principle, a new procurement process would be necessary in connection with any such major contractual changes. However, since it was not possible to procure another district heating system, the municipality's only real option was to switch to another type of heating altogether.

The actors in Vingåker also asserted that the procurement process had been handled properly, and that there was little reason to suspect that the district heating system would not work out. The fact that the bids from a number of bidders were so similar was also taken as an indication that the operations would function at the agreed price level.

There had also been technical problems since the start of the system. While the technical solution looked good on paper, and the system was designed to operate at 97–98% efficiency, this did not prove to be the case in practice. It was necessary to use higher quality wood chips than planned, and to add lime to the incineration process. The boilers also had to be rebuilt several times. The municipality was, at the same time, aware that this was a test installation; the company had set up the installation in Vingåker in order to showcase it.

4.3. Vingåker Närvärme AB in Bankruptcy

Vingåker Närvärme entered bankruptcy on 21 December 2004. The trustee in bankruptcy decided to continue heat deliveries to the company's previous customers, even though he was under no obligation to do so. Continuing its heat deliveries was one way for the bankruptcy estate to maintain the value of the bankrupt company. However, the bankruptcy estate lacked the resources needed to continue operating the business. In order to continue operations, the trustee in bankruptcy obtained a loan from Landshypotek to ensure that heat deliveries would continue. Landshypotek was the biggest creditor, and its intention was to sell off the company as quickly as possible, so that the matter could be wrapped up by the end of 2005. Landshypotek also announced that the heat deliveries would continue as usual until further notice, "although at the rates set by the trustee in bankruptcy" (Landshypotek, 050413).

4.4. Disagreement Regarding the Trustee in Bankruptcy's Contract

The trustee in bankruptcy set out by trying to establish new contracts with the customers, with higher rate levels and a greater fixed portion. On 3 January he consequently sent a letter to all the customers, stating that the bankruptcy estate had not entered into the existing contracts, and that the bankruptcy estate was consequently not bound by the contracts between the now bankrupt local district heating company and its customers. New contracts would have to be entered into between the customers and the bankruptcy estate if the customers were to continue to receive their heat deliveries. Attached to the letter was a written contract that was to apply to the continued heat deliveries. Those customers who wanted to continue receiving heat deliveries were to sign and return the contract by 12 January 2005. The contract was terminable by the customer on three months' notice.

The district heating customers were faced with an ultimatum: sign the contract with the bankruptcy estate at higher rates than had previously been in effect, or go without

heat in January. The result of the letter was that essentially all the subscribers with low heat usage accepted the trustee's contract proposal. On the other hand, neither Vingåker Municipality nor the major property owners in Vingåker were willing to accept the contract proposal. The price offered by the trustee in bankruptcy was 0,065 EUR/kWh, as compared to the price of 0,049 EUR/kWh in the previous contract (SOU 2005:63, p 46; Gebremedhin *et al.*, p36).

The trustee in bankruptcy and Vingåker's municipal leaders met on 13 January 2005 to discuss the situation. The result of this meeting was that the municipality proposed a contract price of 0,052 EUR/kWh. To this, the bankruptcy estate responded by stating that there was no contract in place with Vingåker Municipality, and that if Vingåker Municipality did not accept the contract offered by the bankruptcy estate, it would be consuming district heating to which it had no contractual rights. If the municipality wanted to continue getting heat, it would have to sign and return the contract immediately, its other option being to shut off its heat supply immediately. If the municipality did not shut off its heat supply, the bankruptcy estate itself would do so, effective 4 February 2005. But even if Vingåker Municipality neither shut off its heat nor sent back a signed contract, the interpretation would be that the municipality had reached agreement with the bankruptcy estate, subject to the terms and conditions set forth in the bankruptcy estate's contract proposal.

Politicians and officials in Vingåker claimed that the original contract had never been broken, since the trustee in bankruptcy had never interrupted the heat deliveries. For his part, the trustee in bankruptcy believed the legal situation to be "crystal clear," and that the contract had been broken. The trustee in bankruptcy meant:

"It follows from the bankruptcy. Bankruptcy is a means by which an enterprise is halted. All contracts are broken, and the trustee in bankruptcy can then sell off the assets."

The trustee in bankruptcy indicated that it was not uncommon for bankruptcy to be used as a means of breaking contracts that had been entered into.

4.5. Threat of Shutdown

The bankruptcy estate wrote to Vingåker Municipality again in February, informing them that personnel would be sent to Vingåker on February 14 to confirm that the heat supply had been shut off, or alternatively to shut it off themselves. The bankruptcy estate also informed the municipality of the potential risks of damage that could arise if the heat were to be disconnected, and stated that the municipality was obliged to undertake reasonable measures to limit the risk of such damage. Examples of such damage included the freezing and rupturing of water pipes, which could result in water damage. In response Vingåker Municipality again claimed that the municipality had signed no new contract, and that heat was to be delivered under unchanged terms and conditions, i.e. as per the original contract.

On 14 February 2005, Vingåker Municipality was visited by representatives from the bankruptcy estate, whose intention it was to shut off the heat supply to those

properties that were, in the view of the trustee in bankruptcy, without contracts. According to the trustee in bankruptcy, Vingåker Municipality refused to allow the personnel engaged by the bankruptcy estate to shut off the heat supply, nor did Vingåker Municipality itself shut off the heat. For its part, Vingåker Municipality claimed that the visit on 14 February took place for no other reason than to take readings at the heating plant. The personnel had asked to be admitted to take heating readings, and for no other purpose. The personnel were admitted by an official from the municipal public works department, took a reading and then left (Gebremehdin *et al.*, 2006, p. 40).

On Tuesday, 15 February, the day after the heat was to have been shut off, the trustee in bankruptcy announced that the heat would continue to be delivered, even though no contracts had been signed. But the subscribers would be billed at the rates specified in the trustee in bankruptcy's contract proposal. The trustee in bankruptcy claimed that a real contract did exist, i.e. a contract which was contractually binding in principle because the object of the contract had been transferred.

Vingåker Municipality perceived this more of a threat than an intention. There was at the same time a degree of uneasiness within the municipality, since they could not know for certain what would happen. The trustee in bankruptcy was himself extremely reluctant to shut off the heat, and strove to find other solutions. He believed that it would be possible to avoid shutting off the heat by having the case heard in court, i.e. by filing a complaint (see below). He did, however, indicate that a shutdown could very well have been carried out, and could even have become obligatory had not Landshypotek stepped in and financed continued operations. He also claimed that a shutdown could have been necessary since he in turn had obligations to the creditors, and failure to discharge those obligations could have put him at risk of going bankrupt as well (Interview with trustee in bankruptcy).

4.6. Complaint in Katrineholm District Court

In March 2005, the trustee in bankruptcy and the biggest creditor Landshypotek decided to sue the municipality and, potentially, the private property owners who had not signed the new contract. The difference between the municipality's offer of 0,052 EUR/kWh and the trustee in bankruptcy's or bank's offer amounted to 0,016 EUR/kWh, plus VAT. The complaint argued that a bankruptcy estate is not bound by the bankrupt debtor's contracts, since the bankruptcy estate is a separate legal person independent from the bankrupt debtor. The complaint also asserted that disagreement had arisen concerning a number of issues pertaining to the contractual situation, i.e. 1) whether a contract had been entered into, 2) the terms and conditions that were in effect between the bankruptcy estate and the customer in such case, 3) whether Vingåker Municipality believed that terms and conditions other than those offered by the bankruptcy estate were in effect and how, in such case, the bankruptcy estate had, from the standpoint of contract law, become bound by such other terms and conditions, and 4) by what right Vingåker Municipality was currently using heat from the heating company. The other major matter at issue concerned the question of what was to be considered a reasonable price for district heating (Katrineholm District Court, 050513).

The municipality, the municipality-owned residential property company AB Vingåkershem, and the major private property owners¹ decided to make common cause and engage an attorney to deal with the complaint that the trustee filed in district court. The municipality and Vingåkershem had also started working on finding alternative heating sources for residential and municipal properties. The chairman of the municipal board asserted that a departure from environmentally-friendly district heating did not offer a favorable solution, but neither did he see that it was possible to continue the negotiations with the trustee in bankruptcy or Landshypotek. Lydahl, the second-largest private property owner in the municipality, stated that the private property owners and the municipality were of one mind, and should act collectively so that “the trustee in bankruptcy can’t play us off against one another” (Bäck, 050331).

4.7. ESS Buys Back the Bankruptcy Estate

As noted above, the trustee in bankruptcy had intended to sell the bankrupt business. Following a bidding process in accordance with the Swedish Bankruptcy Act, Landshypotek and their subsidiary ESS bought back the facilities in Vingåker on 29 April 2005. Landshypotek declared that it was their intention to find another long-term owner of the business, since being the owner of a district heating system was not consistent with the normal activities of a credit institution (Landshypotek, 050502).

In a letter to Vingåker, Landshypotek’s attorney indicated that Landshypotek had, via the purchase, also assumed the bankruptcy estate’s contracts with Vingåker Municipality, which meant that the dispute as to what constituted a reasonable kWh price was still ongoing. In the letter, the attorney stated that the company would proceed with its complaint and file suit against the municipality.

4.8. Decision Regarding Procurement of an Alternative to District Heating

In August, the *Katrineholms-Kuriren* reported that the municipality-owned residential property company Vingåkershem was about to install pellet boilers in three rental properties, comprising a total of 50 apartments. The reason why the pellet boilers were to be installed was that the area had been left out of the district heating network, even though the original contract had included also these rental housing. Instead these buildings used direct electric heating. During the six years in which district heating had been in Vingåker, the heating company had been making up the difference between the cost of district heating and the cost of direct electric heating, due to the fact that no connection had ever been made to the system. This difference had amounted to some EUR 33,000 per year, which the heating company had been compelled to pay. However, following the bankruptcy, Vingåkershem had had to bear the cost of providing the electric heating, and this led to the procurement of pellet systems for the three buildings. Vingåkershem also received the consent of the municipal board to procure alternative heating in the form of an additional central boiler. The area in which pellet heating was intended to be installed accounted for 20% of the total volume of district heating purchased by the municipality and Vingåkershem. It was estimated that the cost

¹Sofielunds fastigheter, Karlssons fastigheter, K S förvaltning and Konstbacken förvaltning joined with Vingåker Municipality and engaged Peter Bredelius from the Lindahl Law Firm in Örebro.

for pellet heating, including investment costs, would be 0,055 EUR, including VAT, as compared to the price in the trustee in bankruptcy's contract, which was 0,065 EUR plus VAT (Bäck, 050923; Gebremedhin et. al., 2006).

4.9. Rindi Energi AB Takes Over District Heating in Vingåker

Throughout this entire period, attempts were being made to find new ownership for the district heating plant in Vingåker. A solution was found during the fall, and on 1 December 2005 the local district heating business in Vingåker was taken over by Rindi Energi AB, a company which operates similar businesses in twelve locations in Sweden and two in Poland.

Following the takeover, Rindi Energi signed a new contract with essentially all the customers. Vingåker Municipality and AB Vingåkershem signed four-year contracts with the company. Rindi Energi did not continue to pursue the suit against the municipality, and in return, the municipality ceased its efforts to procure alternative heating for the area noted above. Rindi Energi also decided to start with a clean slate and sign new contracts with the customers who desired them, thereby obviating the previous conflict regarding the rates. Vingåker Municipality thus did not have to pay more than the 0,052 EUR/kWh it had been paying up until 1 December. The manager for the eastern region at Rindi Energi has indicated that the conditions and assumptions for district heating in Vingåker are favorable. The company plans to further expand the district heating network, and to replace the entire plant in the summer of 2006.

4.10. The Actors' Experiences During the Process

Politicians and officials in Vingåker Municipality believe the private ownership and operation of district heating to be a good option, despite their experiences in connection with the bankruptcy. A small municipalities such as Vingåker lack the resources in terms of finances and expertise needed to operate a district heating system.

Some actors noted that it had been taxing to constantly have to negotiate with the private owners, and that the long, drawn-out process had made the independent ownership of, e.g. pellet boilers, more and more attractive. But overall, the actors in Vingåker had a relatively positive attitude toward the private ownership of district heating systems. There was a degree of confidence that new legislation would be enacted in response to experience gained from Vingåker Municipality. For instance, they hoped that it would not be possible in future to shut off the heat supply on short notice.

One lesson that the actors in Vingåker learned was that it is better to enter into contracts that run for less than 5 years, since so many different factors can affect district heat deliveries, such as taxes and fuel prices. It is better to have shorter contracts that give both parties the option of renegotiating at regular intervals, so that it is possible to come to terms with changes in the operating conditions and assumptions.

The trustee in bankruptcy felt that municipalities had to be particularly aware of the types of companies they were dealing with when making procurements of this type. He indicated that municipalities should choose established actors who have previously demonstrated that they understand and can run local district heating companies. At the same time, a number of actors noted that major and well-known owners such as

Lantmännen and The Federation of Swedish Farmers (LRF) had been behind the company from the start, thereby contributing to the municipality's perception of the company as being professional and in earnest right from the beginning.

5. CONCLUDING DISCUSSION

It is clear that the district heating industry in Sweden operates within a relatively unregulated legal framework, and where the basic consumer protections that are in place in the case of, e.g. electricity distribution and tenancy rights are entirely absent. Legislation has not kept pace with developments, as more and more municipal enterprises are coming under private ownership.

Vingåker is distinguished in part by the fact that the municipality is the wholly dominant customer, thereby warranting discussion of the district heating market in Vingåker in terms of being a monopsony rather than a natural monopoly. A monopsony is characterized by the fact that the market comprises only one customer, for whose business the sellers must compete (Jonsson, 1999). The municipality's dominant role is borne out by the fact that the seller's financial situation is dependent upon retaining the municipality as a purchaser of district heating. Losing the municipality as a customer would result in the company losing 80% of its customer base in Vingåker. The company's and trustee in bankruptcy's bargaining chip in this context was their power to shut off the supply of district heating to the municipality. However, once the choice was made to continue to operate the district heating business, the company was dependent on keeping the municipality as a customer, and the threat of shutting off the heat became an idle one, rather than a likely future scenario. The municipality was able to exploit its dominant position by refusing to pay the price set by the trustee in bankruptcy while still having heat delivered. This was an option that other customers, for instance the individual homeowners, did not have. The consequences of the municipality's actions also contributed to the bankruptcy becoming a reality.

Vingåker Municipality was able to further bolster its bargaining position by cooperating with the major property owners, so that all the major customers could act collectively. Acting collectively also enabled the property owners and the municipality to pool their resources and for example pay for the attorney they engaged. Additionally, it provided a way for the municipality to allocate resources to strengthen its bargaining position versus the trustee in bankruptcy and the company, and a way to cope with any impending legal dispute.

The events in Vingåker elucidate new problems that may arise as a result of the trend toward the increased privatization and commercialization of formerly publicly-run district heating companies. It is not unreasonable to assume that phenomena associated with civil law, such as bankruptcies, will become an increasingly common feature. The municipal politicians and officials in Vingåker were faced with an unfamiliar situation in which the consequences of turning the district heating system over to private ownership resulted in a bankruptcy in which the municipality played a key role. The ticklish legal situation encountered by the municipality when the Swedish Public Procurement Act was set against the principles of bankruptcy law also resulted in the municipality finding that it did not have much freedom of action in terms of deviating from or abandoning the original contract.

In Vingåker's case, a public procurement process was where the municipality went out and requested bids from interested actors, and then selected the actor that offered the best terms and conditions. One learning from Vingåker is to highlight the importance of conducting a thorough analysis of the ownership structures of the bidding companies, and of determining the extent to which each company is established in the industry in question. In Vingåker it was, however, difficult to foresee the future problems because the company that emerged as the winner of the procurement process had major and well-known ownership behind it, and because the bids were relatively similar from a rate-structure standpoint.

District heating is similar in many ways to a natural monopoly, which means that such procurements are made on a relatively long-term basis. This entails that the municipality commit to a given heating solution; although it is possible to change heating systems, this can be costly and time-consuming. This imposes major demands on municipalities to conduct a risk assessment of various future scenarios, and to formulate strategies for coping with possible future trends and developments. Greater awareness and discussion are necessary at the municipal level concerning the consequences of privatizing previously publicly-run enterprises such as a private corporation may go bankrupt. Municipalities need to develop strategies for coping with such an eventuality. At the same time, the actors in Vingåker indicated that uncertainties in terms of external factors such as fuel prices and taxes could be managed by opting for shorter contract periods than was the case in Vingåker. Shorter contract periods give both parties the option of regularly reassessing both their ongoing business relationship and any other alternatives that may be relevant.

REFERENCES

- Bladh, M., *Posten, Staten och informationssamhället*, KFB-rapport 1999:10, Stockholm, 1999.
- Bäck, K-G., Nu gör de gemensam sak i kampen om fjärrvärmen, *Katrineholms-Kuriren*, 20050331.
- Bäck, K-G, Klartecken för pelletsanläggning, *Katrineholms-Kuriren*, 20050923.
- Gebremedhin, A., Henning, D. och Palm, J., *Energianalys Vingåker*, Rapport ER 07:2006, Energimyndigheten, Eskilstuna, 2006.
- Government Bill 1994/95:222, *Ny ellagstiftning*.
- Government Bill 2002/03:143, *Samverkan för trygg, effektiv och miljövänlig energiförsörjning*.
- Jonsson, B., *Elements of the Asia Pacific gas market : market power and efficiency*, Lic. avhandling 1999:11, Luleå Tekniska Högskola, Luleå, 1999.
- Katrineholms Tingsrätt, akt T508, 05, *Energisystem i Vingåker AB, "Ansökan om stämning"*, Katrineholm, 050513.
- Landshypotek, *Fjärrvärmeverk i konkurs*, Nyheter 050413, www.landshypotek.se, access 050504.
- Landshypotek, *Pressmeddelande*, 050502, access 050504.
- Meyer, L., *Att hantera kommunala bolag-ägarroll & styrelsefunktion*, Komrev, Stockholm, 1999.

Regeringens direktiv 2002:160, *Fjärrvärme på värmemarknaden*.

SFS 1976:838, *Lag om allmänna fjärrvärmeanläggningar*.

SFS 1992:1528, *Lagen om offentlig upphandling*.

SOU 2005:63, *Tryggare leveranser. Fjärrvärme efter konkurs*.

STEM, Swedish Energy Agency, *Värme i Sverige år 2005*, [http://www.stem.se/WEB/STEMFe01.nsf/V_Media00/463B063B77C55E70C12570300020E437/\\$file/Värme%20i%20Sverige%202005.pdf](http://www.stem.se/WEB/STEMFe01.nsf/V_Media00/463B063B77C55E70C12570300020E437/$file/Värme%20i%20Sverige%202005.pdf), access 051107.

Summerton, J., *District heating comes to town. The social shaping of an energy system*, Linköping Studies in Arts and Science 80, Linköpings universitet, 1992.

Svensk Fjärrvärme, *Fjärrvärme och kraftvärme i framtiden, rapport februari 2004*, Svensk Fjärrvärme AB, Stockholm, 2004.

Werner, S., *Fjärrvärmens utveckling och utbredning*, Stockholm: Värmeverksföreningen, Stockholm, 1989.

www.scb.se, SCB, *kommunala energibalanser*, access 060131.