

Electricity liberalization policies in Norway and Sweden

Political trade offs under cognitive limitations

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Norway has been the second country in Europe to introduce an extensive market reform of its electricity supply. Sweden has followed rather swiftly with a political commitment to a liberal electricity reform, which, however, has taken longer to be implemented. The reform policies imply a dramatic departure from traditional governance regimes. Nevertheless the Norwegian electricity law passed with only limited opposition in Parliament and the radical free trade oriented White Paper was likewise passed in Sweden. This article investigates how the actors' roles, both in the Norwegian and Swedish reform process, were shaped by limitations embedded in their conceptualization of the issue and their expectations of outcomes rather than by rational expectations formed in the light of full information. On this basis the paper argues that cognitive limitations in the policy making process play a major role in explaining the extensive consensus between apparently contradictory interests in both the Norwegian and the Swedish case.

Keywords: Electricity market; Norway; Sweden

Norway has been the second country in Europe to introduce an extensive market reform of its electricity supply. Sweden has followed with a political commitment to a liberal electricity reform, which has taken longer to be implemented. For both countries, the liberal reform policies imply a dramatic departure from previous governance regimes, with serious consequences for vested interests within the electricity industry and for its political owners, as well as for industry and for households. In the hearings and parliamentary negotiations a certain divergence of opinions were voiced. Nevertheless, a radical free trade oriented Norwegian electricity law passed with only limited opposition in the Norwegian Parliament and a radical free trade oriented White Paper was likewise passed in Sweden.

Change of regulatory philosophy

The electricity market reforms in both Norway and Sweden were clearly part of a broader political and professional reorientation. On the political level the scope of this cultural trend illustrates the fact that the market oriented policy in both countries was partially accepted by the Social Democrats and the Conservatives alike. In Sweden, the electricity reform initiative was taken during the tenure of the Social Democratic

Minister of Industry, Rune Molin, and pursued by his Conservative colleague Per Westerberg, while the reform in Norway was launched under the Brundtland Labour government, then again in a more ambitious form by the Syse three party coalition of Conservatives, Centre Party members and Christian Democrats. It was consequently followed up by the Brundtland Labour government.

The broad support for liberal reform across party boundaries was also emphasized in the formal proceedings. In Sweden, the Industrial Committee referred to a statement by the Social Democrats saying that 'The White Paper [Westerberg's energy liberalization paper] mainly follows the course drawn by the previous Social Democratic government' (Riksdagen, 1991–92a). In Norway the opening statement by the representative for the energy law in *Odelstinget*¹ contained the following: 'More market and less regulation is a principle that gains more and more approval in industrialized countries, irrespective of ideological point of departure and political mode of governance' (Odelstingsforhandling No 25, 1990).

¹Parliament is divided into two chambers, *Odelsting* and *Lagting*, when treating law proposals.

The Swedish and Norwegian reforms differ, however, in the degree of ideological politicization. In Sweden, Rune Molin's early bill on industrial policy for economic growth started out by introducing competitive elements in the electricity industry pragmatically. Westerberg's Energy Bill was, however, part of a more explicit liberalist policy. The Conservative Bildt government had a clear party manifesto on liberalization and the Närings- och teknikutvecklingsverket (NUTEK) report (1991) on the power market reforms gave the government good reasons for its liberalization strategy.

The Norwegian reform was consistently kept low key. The Centre Party Minister responsible for the reform under the Conservative/Centre/Christian Democrat coalition government had to take care not to provoke his party colleagues. Political involvement in Norway during Eivind Reiten's period as a Minister of Industry and Energy was therefore characterized by the building of strategic political alliances and a low ideological profile.² Verbal skirmishes during the parliamentary debate were unavoidable but they did not result in fundamental objections to the reform (Odelstingsforhandling No 25, 1990).

The parliamentary debate in Norway and Sweden revealed some scepticism from the Social Democrats about fully fledged liberal market reform. Yet this did not prevent them from supporting the reforms when it came to parliamentary voting. Although intuitively sceptical of liberalism, the Swedish Social Democrats had no alternative model and were under strong pressure to act to stimulate economic growth.³ At the political level the electricity market reforms mirrored a Liberal Anglo-Scandinavian trend, but more because of lack of alternative models than for explicit support by the non-Liberal Parties. Yet, as will be discussed below, there was considerable latent opposition to the reform that could have been voiced more strongly and exploited politically had an alternate strategy been adequately conceptualized. Since the passing of the Norwegian energy law⁴ in 1990 and the Swedish White Paper (Swedish White Paper, Riksdagen, 1991–92) in 1992 there has indeed been redefinition of party positions on electricity liberalization in response to market development and cognitive learning. The Social Democrats in Sweden have taken a more restrictive attitude and have in fact delayed the implementation of the reform by one year after coming into office in the autumn of 1994. The Norwegian Labour Party tried to moderate the reform but failed (Olje- energidepartementet, 1992–93) and the Centre Party in Norway is presently re-defining its position.

On the professional level the reforms were manifestations of an economic paradigm change from a macro-oriented planned economy model, to a more micro-oriented self-regulatory regime. They also redefined boundaries between professions. In both countries, the reform served to redefine the electricity industry from a primarily technical to a primarily economic issue.

The Norwegian reform was indeed very much administratively driven. Central officials within the Ministry of Finance had for some time been dissatisfied with the investments and pricing decisions within the existing electricity regime.⁵ Inspired by the British reform and EEC initiatives to liberalize European electricity markets, the Ministry of Finance, in collaboration with the Ministry of Industry and Energy, in 1988 ordered an investigation of a possible Norwegian market reform from the Norwegian School of Economics and Business Administration (NHH).⁶

The investigation ended up with a recommendation for a decentralized competitive electricity market which was later on adopted as part of the reform (Olje- energidepartementet, 1992–93). The new market orientation implied a 180 degree turn around by the central authorities; they had previously advocated centralized reform aiming at hierarchical integration of the decentralized Norwegian electricity supply into 20 vertically integrated companies. The recommendation also marked a change from macro-oriented planning to micro-oriented market governance.

Like the Norwegian reform, Sweden's was also solidly anchored within the public administration. During the 1990s, officials in the State Energy Board (Statens Energiverk), took the initiative to define and describe a market oriented regime for electricity. Developments in Great Britain and Norway, the expectation that a competitively oriented policy would obtain support within the EEC, and also an increasing leaning among economists towards market based solutions, gave the initial impetus to the reforms. The arguments for a decentralized competitive market are evident in the NUTEK (1991) report: *The Electricity Markets under Change* (the State Energy Board merged into NUTEK). The Energy Bill drew heavily on this report.

The coincidence between the political and the professional paradigm change, had an amplifying effect. Per Westerberg's leadership of the Ministry of Industry created a political framework conducive to the administrative design of the liberalization policies in NUTEK.⁷

Both in Norway and in Sweden the reforms implied a redefinition of the boundaries between technical and economic competencies to the advantage of the latter. The reforms also mirror paradigm changes within the social sciences in general and within the economics profession in

²This was confirmed both by Reiten (30 September 1993), in an interview with the author at Norsk Hydro, Oslo, himself and by his Secretary of State, Kolbjørn Almlid (17 November 1993), in an interview with the author at the Nord Trøndelag County Administration, Norway.

³This point was made clear to me by Peter Åsell (1992), the Social Democratic Energy expert under the Energy Bill, and now chairman of the Association of Electricity Companies (27 November 1992), in an interview with the author at Elverksföreningen, Sweden.

⁴Norwegian energy law Olje- energidepartementet (1988–89; 1989–90a,b,c; 1992–93).

⁵According to Sigurd Tveitereid (1993), Director General in the Ministry of Oil and Energy (5 October 1993), in an interview with the author at the Ministry of Oil and Energy, Oslo, Norway.

⁶According to Einar Hope (4 October 1993), in an interview with the author at Norges Handelshøyskole, Bergen, Norway. See also Bjørndalen *et al* (1989).

⁷P Fritz, in an interview with the author at NUTEK, 27 November 1992.

particular away from macro-oriented planning and towards micro-oriented self-regulation.

How could the reform gain such broad support?

Even given this broad commitment to micro-oriented market governance by key administrators and by influential political elites, the question remains of how strong sectoral interests were persuaded to support the reform or at least prevented from mobilizing heavily against it. These sectoral interests included among others:

- (1) the electricity industry, one of the largest industries in both countries, consisting of production, transmission and distribution;
- (2) electricity consuming industry, consisting of the whole industrial and service sector in both countries;
- (3) regional and local political authorities that have traditionally been heavily engaged in the electricity industry.

This paper seeks to shed light on the question of how these interest groups could be persuaded to support the reform through a cognitively oriented exchange theoretical analysis. The exchange analysis conceptualizes the decision making process as a set of transactions where actors seek to further their interests in the electricity market and in other arenas. The cognitive orientation implies that we assume the actors' roles are shaped by limitations embedded in their conceptualization of the issue and their expectations of outcomes rather than by rational expectations formed in the light of full information.

In this perspective we are, in other words, not only concerned with objective interests, but also with the actors' definitions and understanding of the reform issues. It is possible to conceive of coalitions and implicit alliances in support of the dramatic policy shifts in both Norwegian and Swedish electricity regimes to some extent irrespective of the 'objective' interests of the actors involved, given different understandings of the reform and its implications.

We limit our focus to the policy formulation and do not discuss either the implementation of the reform or its consequences. For Norway, this means that we follow the reform up to the political vote over the Energy Law in Parliament, in June 1990 (Olje- energidepartementet, 1989–90a), and for Sweden up to the political vote over the government White Paper on *An Electricity Market with Competition* in Parliament in June 1992 (Swedish White Paper, Riksdagen, 1991–92).

At this point a methodological reservation has to be made. The paper does not pretend to offer an exhaustive list of possible explanations. Some patterns that we find might clearly, for instance, be explained in organizational terms.

We do, however, explicate one plausible explanatory model in confrontation with the two country cases of electricity liberalization. This does not exclude, however, that elements from the cognitive divergence model could easily be combined with organizational elements, for instance

with a garbage can model. This would, however, entail a detailed analysis of procedural data that lies outside the scope of this paper.

Cognitively oriented exchange theoretical perspective

The market reform in a strategic perspective

Liberalization of the electricity market can be understood as a set of transactions where actors, seek through reform to further their interests both in the electricity market and in other arenas. The outcome is decided by the interests the actors have in issues at stake, and by the control each actor has over these issues (Coleman, 1990; Hernes, 1975).⁸ We are thus led to see the reform as a result of one or more actors seeing their interests served by it, and having had the capacity to create alliances to mobilize sufficient control over the decision making process to have the reform accepted.

In the process of mobilizing interests for reform institutions clearly matter. First, institutional structures and rules specify the range and scope of decisions made in different decision making positions and thus influence the scope for negotiation between actors.

Second, institutions also specify rights of participation. If mobilization for or against reform, for example, takes place within the sector markets or sector organizations, this will limit the participation to sector relevant themes and actors. If exchange takes place at a higher level, for instance in the general political arena, interests attached to the electricity sector may become part of a larger bargain.

Institutional order is by definition inert and usually only undergoes partial transformation. An institutional structure at a given point of time, therefore, reflects not only current configurations but usually consists of 'archaeological layers' of institutional principles and logic of actions that reflect the context and time of origin of different institutions (Olsen, 1992; Broderick, 1970). In this perspective, the market reform becomes a new layer on top of other layers that are still partly active. The new, market oriented institutions and the division of power that they are supposed to cause will therefore be limited by the existence of earlier institutions. We thus have to see the market reform as a struggle over the institutional framework, where earlier, pre-liberal institutional structures are still laying down some of the rules of the game.

Agenda setting and cognitive elements

In strategic analysis we may assume that actors have 'objective' interests and are fully enlightened, much as in neo-classical economics. The cognitively oriented perspective taken in this article, however, has a wider sociological frame of reference where the degree and type of rationality that influences strategic choices varies and is open to empirical investigation.

⁸Generally, the stronger the interests actors have in an issue, the more power those that can satisfy it have. Power consists of control over events that other actors have interests in.

In this perspective, cognitive aspects and elements play a central role in the decision making process (Herandstveit *et al.*, 1977; Herandstveit and Narvesen, 1992; Herandstveit and Bonham, 1981), both collectively, by defining the political agenda and the issues at stake, and individually, as attitudes and opinions held by actors. The cognitive framing may affect which actors engage in the decision making process, and how these actors see their interests. By defining the appropriate institutional channels, the cognitive framing and agenda setting also to some extent delineates arguments and means by which the actors may mobilize to further their interests.

How the market reform is conceptualized thus clearly affects mobilization both for and against it. If, for instance, the reform is thought to bridge existing cleavages and threaten the status quo of actors and interests, the groups and institutions who profit from the established system will normally try to prevent them from getting onto the agenda (Arnestad and Burns, 1981). On the other hand, if the reform is conceptualized as a Pareto improvement,⁹ this helps the mobilization around it.

Implications

The strategic perspective implies that we basically see the reforms as outcomes of mobilization of interests where the mobilization of forces in favour of reform has been stronger than the mobilization against. The cognitive and institutional perspectives lead to several modifications.

First, since institutional and cognitive factors may lead to a selective focus, it is theoretically possible that a reform can be achieved because of a skewed cognitive focus and/or institutional limitations contrary to the 'objective' interests of affected actors. Second, we have argued that the cognitive interpretation of each actor may have provided the participants in the reform process with different interpretative frameworks. The reform could therefore be a product of inconsistent expectations where actors have based their support on incompatible assumptions. As argued above, the dramatic change of several factors simultaneously makes for an unprecedented situation with considerable uncertainty and where deviation from rational pursuit of objective interests is likely.

The following empirical discussion starts with a presentation of the general cognitive and institutional framing of the Norwegian and Swedish reforms. We then present interpretations of the reforms as seen by important actors, showing how the cognitive and institutional framework and individual cognitive models of actors involved may have contributed to building support for the reforms.

The presentation is based on documents and on interviews with actors that were central to the reforms in both countries. The qualitative empirical material on which this article is based and the synthetic uses of this material to exemplify our general argument requires considerable use of judgement and interpretation. Wherever our analysis is di-

rectly empirically based, we shall support the description with references to official documents and to interviews with actors that played a central role in the decision making process or were in a position to observe it closely. In other cases, when we are making more indirect inferences, there are no such references and we generally use 'hypothetical' formulations.

The description of the Norwegian reform is based on available documents from the decision making process and interviews with: Eivind Reiten (30 September 1993), Minister of Oil and Energy under the preparation of the Reform Bill and his Secretary of State Kolbjørn Almlid (17 November 1993); Einar Hope (4 October 1993), Professor at the Norwegian School of Economics and Business Administration in Bergen and responsible for much of the theoretical preparation behind the reform; Sigurd Tveitereid (5 October 1993), Director-General of the Ministry of Oil and Energy and previously in the Ministry of Finance, who was a core 'bureaucratic' actor in staging the reform; Erling Diesen (25 October 1991), Director of the Norwegian Water Sources and Energy Administration, centrally involved in regulating the electricity industry; and Gunnar Vatten, former Director of Statkraft.

The description of the Swedish reform is based on available documents from the decision making process and interviews with Peter Fritz (27 November 1992), NUTEK; Peter Åsell, Director of the Association of the Electricity Companies and energy spokesman for the Social Democrats under the treatment of the electricity market White Paper; Arne Mogren (25 November 1992), councillor on international affairs to Vattenfall; Per Erik Springfeldt, the Federation of Swedish Industries; Per Swensén (24 November 1992), Stockholm Energi and Jane Summerton (24, 25 November 1992), researcher at Linköping University.

I thank them all for their willingness to share their insight on these issues with me. I also thank Marit Kleppa and the library of the Norwegian Parliament for excellent help in unearthing Norwegian and Swedish government and parliamentary proceedings.

The general cognitive framing: agenda setting and the institutional context

Stages in the Norwegian reform process

The new Norwegian energy law, perhaps better characterized as a market-oriented revision of the old law, emerged as result of a swift turnaround operation during late 1988 and 1989. An energy law commission had been working since 1980 to investigate and improve the legal framework for electricity supply. In 1985 this commission presented a draft for a new energy law proposing the centralization of the Norwegian electricity supply into 20 vertically integrated county companies (NOU, 1985). This draft was taken as the basis for a new energy law proposed by the Brundtland government in April 1989 (Olje- energidepartementet, 1988–89). However, as a result of a policy reorientation, the

⁹An improvement for some with no loss for others.

Table 1 Main elements of the cognitive framing of the Norwegian and Swedish electricity market reforms

	Common elements	Specific Norwegian elements	Specific Swedish elements
International	Change of regulation philosophy		
National	Change of regulation philosophy		Nuclear and environmental policy
National economic			Crisis packages and growth policy
Industrial sector	Changes from long-term cost based to short-term market based transactions	Change in distributive justice between light- and medium-sized industry and households	
Local/regional dimension		Concentration policy	Local access to central markets/central access to local markets
Electricity sector		Restructuring of the electricity industry	Competition policy
Company	Reorganization of state		

proposal was withdrawn in May the same year (Innst O No 93, 1988–89).

During autumn 1988, central officials within the Ministries of Finance and Oil and Energy initiated research at the Norwegian School of Economics and Business Administration to look into the shaping of a market-based Norwegian electricity supply. A law with some market elements included was proposed by the Brundtland government in September 1989 (Olje- energidepartementet, 1989–90a).

The Conservative/Centre Party/Christian Democratic Syse government with Eivind Reiten, a former director of the energy division of Norsk Hydro as Energy Minister, thought the reform was too limited and withdrew the energy law proposal for the second time in October (Olje- energidepartementet, 1989–90b). In March 1990 a new and more radical market reform was presented by the Syse government and approved in Parliament in June the same year (Olje- energidepartementet, 1989–90c). The law was implemented under the new Brundtland government (in office from November 1990). This government also undertook the reorganization and division of Statkraft (Olje- energidepartementet, 1990–91).

Stages in the Swedish reform process

Elements of a market based reorientation of the Swedish electricity system were presented as part of the Social Democratic government White Paper *On an Industrial Policy for Growth* presented in February 1991 (Riksdagen, 1990–91a). Electricity liberalization was introduced with many other sector policies as part of a solution to Sweden's economic crisis. The reorganization of Vattenfall was the major operational element of the growth policy paper that related directly to electricity. Against the votes of the Left party and the environmental party a majority in Parliament voted for the transformation of Vattenfall into a state owned shareholder company. The operation of the national grid and foreign trade in electricity, however, remained a state enterprise. The 'bourgeois' parties wanted to go further and privatize Vattenfall and suggestions were also made for a regional separation of the company (Riksdagen, 1990–91b).

When the conservative led Bildt coalition government took over in October 1991, the minister of Industry, Per

Westerberg, chose electricity as a target for a liberalist policy reorientation. He was able to draw on extensive work done at NUTEK and summarize his findings in the report *The Electricity Market in Change* (NUTEK, 1991). In March 1992 he presented a government White Paper *On an Electricity Market with Competition* (Swedish White Paper, Riksdagen, 1991–92), which explained a more thorough liberal reform. The goal was through reform of the Swedish electricity market, implying increased competition, 'to reach a more rational exploitation of the production and distribution resources and to secure the customers flexible delivery conditions at the lowest possible prices' (Riksdagen, 1991–92a). This policy was nearly acceptable to the Social Democrats, who stated in the Industrial Committee that the White Paper 'follows the course that was previously drawn by the Social Democrats' (Riksdagen, 1991–92a). The Social Democrats did, however, demand a modification of the reform on the issue of international trade. They wanted to implement a reciprocity principle, whereby Sweden would only open its markets to countries which also opened theirs. In the parliamentary negotiations there was also some disagreement about the formal organization of the national grid company; but all parties agreed that these were minor nuances (Riksdagen, 1991–92b).

The general cognitive framing

The general cognitive framing of the market reform in both Norway and Sweden was a comprehensive and complex issue running the gamut from national growth strategies and international competitiveness to the internal reorganization of power companies, from political conflict resolution to administrative reforms and economic readjustments.

A review of the two reform bills and the interview material gives us the following list of issues/agendas (Table 1). We have sorted the agendas according to institutional level along the vertical axis. Along the horizontal axis we have listed common elements and specific Norwegian and Swedish elements in the first, second and third columns respectively.

We find the most remarkable differences between the Norwegian and Swedish reforms at the national level. In Sweden, economic crisis and growth strategies have played key roles as the contexts for reform. The reform was

Table 2 Outcome matrix as perceived by electricity consuming industries under power surplus conditions

	Reform (with surplus power)	No reforms (with surplus power)
Industry	+	—
Power vendors	—	+

introduced as a crisis package to solve the problems of economic stagnation. In Sweden, nuclear energy also remained a covert element on the reform agenda. The Norwegian agenda, on the other hand, contained little at the national political and economic level.

Apart from this, the similarities between the two countries are striking. In spite of some disagreement over the extent of the market reform, the reforms did not create controversy among the major political blocks. This was the case both with the new Norwegian electricity law and with the more general Swedish liberal electricity policy declaration. In both countries, industrial considerations were key factors; the reforms also comprised a change of regulation philosophy among actors in key positions in the administrative apparatus.

Centre-periphery issues were central in both countries. In Sweden the struggle over local access to central markets versus central access to local markets was a dominant theme. Given the previous centralistic reform attempts in Norway centralization versus decentralization was also important here.

At the industrial policy level, the reforms in both countries, marked a shift from long-term cost based to short-term market based electricity supply to industry. In Norway the distributive justice between light and medium industry on the one hand and heavy industry on the other was also an important industrial policy theme.

At the company level in both countries the reform of the state power company and the separation of the administration of the main grid into a separate company were major themes.

The main questions readdressed

The previous description of the cognitive framing allows us to address the question more precisely of how the dramatic policy change implied in the electricity market reforms could go through with so little effective political opposition, even if supported by key administrators and political elites? The thesis that cognitive and institutional limitations can lead to coalitions and implicit alliances in support of the market reforms irrespective of the 'objective' interests of the actors involved can now be addressed and specified at the level of each agenda/institutional context. Objective common interests will be included in the analysis wherever they are found.

Of the agendas/institutional contexts listed in Table 1, some obviously raise more controversial themes than others and therefore need more careful examination. Among these is the pricing of industrial power, questions related to centre-

periphery relations and the issue of reorganization and division of the state electricity companies.

On other agendas the actors seem to have more unproblematic 'objective' common interests. Among these are electricity policy and economic growth and changes in regulatory philosophy.

Pricing of industrial power: from long-term cost based to short-term market based transactions

As an industrial policy instrument, the reform in both countries focuses on the pricing of electricity for industry. Seen from a simple rational exchange theoretical point of view, the reform leads to a classical zero sum conflict between seller and buyer.

On the one hand, the electricity consuming industry may have perceived the market reform as an opportunity to exploit its bargaining power in a market characterized by electricity surplus to squeeze prices to short-run marginal cost levels (it will have a plus in the cell for reform and industry in Table 2). Such considerations led the Confederation of Industries in Sweden and Norway to lobby actively for reform, although the lobbyists were more aggressive in Norway,¹⁰ than in Sweden, where they kept a lower profile but were persistent.¹¹

In the short- and medium-term perspective, where surplus power was expected, industry also expected to be able to derive benefits from price cuts. This could have made it willing to sacrifice a more long-term cost based pricing strategy for short-term market based solutions.¹²

The electricity industry, on the other hand, clearly stood to lose from free trade in a surplus ridden market (a minus in the cell for reform and power vendors in Table 2). If we accept this scenario, it is difficult to explain how the market reforms received their wide political acceptance. It is hardly conceivable that the electricity industry, with its dominant political ownership both in Norway and Sweden, lacked the necessary channels to voice its claims.

From a cognitively modified transaction perspective, however, it is possible to reconcile the seemingly contradictory interests. If the actors have divergent and incomplete models and expectations they could be agreeing on liberalization while also relating to two irreconcilable outcome matrixes; electricity consuming industry may have envisaged reform under a closed market situation, as discussed above and depicted in Table 2.

The electricity producing industry may, on the other hand, have conceptualized a reform under freer export conditions that turned the outcome matrix completely upside

¹⁰See the remarks from the Confederation of Norwegian Business and Industry in Ot prp No 43, Chapter 5, Olje- energidepartementet (1989-90c) and numerous articles in *Aftenposten* and *Dagens Næringsliv*.

¹¹See the remarks from the Federation of Swedish Industries to the Energy White Paper (Swedish White Paper, Riksdagen, 1991-92) supplement No 3.

¹²Per Erik Springfeldt (26 November 1992), in an interview with the author at the Industriförbundet, Sweden) and Peter Åsell (1992) in their interviews gave the impression that this was indeed a way of thinking that characterized industry in Sweden.

Table 3 Outcome matrix as perceived by the electricity industry under high export price regimes

	Reform (under high cost export)	No reform (under high cost export)
Industry	---	+/-
Power vendors	+	+/-

down (Table 3). With a high price export option large enough to drain the domestic market, market reform would also imply high prices in the domestic market. The abundant hydropower resources available in Norway and Sweden give the opportunity for attractive peak load export to continental thermic systems. A large peak load export would give a scarcity price for stored water and thereby spill over into the domestic market.

The apparent consensus on liberalization could also be a result of the two actors having had divergent or incompatible models of their mutual bargaining power under different structural market conditions. Electricity consuming industry may have assumed that it would have the bargaining power to push prices down to variable unit costs in a surplus-ridden domestic market (column 2, Table 4), whereas electricity producing industry may have assumed that old collaborative networks and information biases might allow them to secure a higher domestic price level (column 1, Table 4).

Discriminatory pricing in Norway

In Norway the question of industrial power pricing also had a further dimension. Norwegian pricing strategies had traditionally been two-pronged. Electricity intensive industries secured low prices through a politically designed special contract market. Households and small- and medium-sized industries had prices decided by the local municipal authorities based on average local prices (Midttun, 1987). In this market segment the political responsiveness to the local electorate often led to higher prices to industry than to households.

The reform would allow industrial customers to opt out of local monopolies and to operate freely on wholesale markets and thus would effectively curtail this type of political price discrimination. It would fulfil the demands of light- and medium-sized industries throughout the late 1980s for less discriminatory industrial electricity pricing. The reform did not, however, abolish the special contract market for electricity intensive industry that remained shielded from market competition and where electricity prices were set by politicized negotiations.

In contrast to the Norwegian process, Swedish reform was not motivated by a general dissatisfaction with the existing tariffs. According to the Federation of Swedish Industries (interview with Springfieldt, 1992), Vattenfall had pursued relatively correct pricing strategies by following marginal cost pricing methods in almost textbook fashion.

Centre-periphery dimension

The centre-periphery dimension played a major role both in Norway and Sweden, although differently in each coun-

Table 4 Outcome matrix for electricity consuming industry and electricity vendors under free trade competition under collaborative networks

	1: reform (under collaborative networks)	2: reform (under free trade competition)
Electricity consuming industry	-	+
Power vendors	+	-

try. In Sweden the centre-periphery dimension came up as an agenda for both the municipal distribution companies and the large producers. The municipal companies expected that the reform would create general access to the wholesale market. For the large central producers, on the other hand, the opening of local networks to freer trade was the focal issue.

In Norway the centre-periphery issue has had several dimensions including opposition to the previous hierarchical centralistic reform, competitive exposure of the central producers, and full decentralized competition also of the end user markets. In both countries the centre-periphery issues apparently caused conflicts of 'objective' interests that seem difficult to reconcile with broad political support for the reform. Again, some apparent 'objective' conflicts can be reconciled if we attribute different cognitive perspectives to the actors involved.

Centralization or local solutions in Sweden?

In Sweden, municipal distributors and large producers have both supported reform, but on seemingly incompatible grounds. On the one hand, municipal power companies have for a long time wanted access to the short-term wholesale markets for electricity. They have thus supported liberalization as a tool to pry open the cartels of large power companies that have dominated the short-term wholesale trade.¹³ On the other hand, the large regional and national power companies have seen the reform as a way to gain access to the customers of the municipal electricity companies thereby breaking up the local monopolies.¹⁴

We are faced with a conflict of interest where on the one hand liberalization of central wholesale trading favours the municipal power companies and disfavours the central producers. On the other hand, liberalization of regional and local transmission favours the central producers and disfavours the local and regional distributors.

This apparent conflict could, however, be resolved if we assumed that the actors had divergent interpretations of the situation. If the central producers assumed that liberalization would primarily involve access to local networks they would have an incentive to support the reform. Municipal

¹³Based on talks with researcher Jane Summerton (1992) at Linköping University, who is presently conducting a project on the strategic adaptation of municipal companies to the changing electricity market.

¹⁴This is clearly stated in the third supplement to the Energy White Paper (Regeringens prop 133, 1991-92) in the statement by Vattenfall and the ombudsman for freedom of enterprise, and was also emphasized by Arne Mogren, Vattenfall in our interview.

Table 5 Alternatives facing the Swedish actors under the centre-periphery dimension

	Liberalization of central wholesale markets	Liberalization of municipal/regional electricity supply
Free trade	1	2
Central collusion	3	4
Mergers and takeovers	5	6

electricity companies would also have incentives to support the reform if they believed that it would primarily imply an opening of central wholesale markets.

The municipal electricity companies could have found support for this interpretation by looking at the Norwegian electricity market reform where no strict organizational division was made between the grid management and electricity sales at the regional and local levels. As already mentioned in the introduction, the Norwegian reform was implemented before the formulation of the Swedish reform White Paper.

The large producers, on the other hand, might have assumed that the Central Grid Agreement (*Stamnätsavtalet*) would effectively block a *de facto* liberalization of the centralized wholesale market. This agreement between the large producers regulates the operation of the central grid until the year 2004.

A further possibility for cognitive divergence lies in different evaluations of the ownership structure and of the possibility for collusive market behaviour. Clearly an opening up of the wholesale market looks very different in the following two situations:

- (1) The development of a collusive regime with extensive vertical and horizontal mergers.
- (2) The development of a free trade regime without collusion and without mergers.

The first situation would motivate support from municipal companies and provoke opposition from central producers, while the opposite is true for the second situation. It is quite conceivable that the municipal electricity companies had the first situation in mind, while the central producers implicitly assumed that they would find themselves in the second situation.

To sum up, the centre-periphery dimension in Sweden faces the actors with the options and outcomes listed in Table 5.

One is clearly the implication of the reform that is most attractive to the municipal electricity companies. A reform concentrated on the second situation, on the other hand, is clearly attractive to the central producers. Under collusion by central actors the liberalization of the central wholesale market 3 turns out to be an empty threat. Liberalization on both central and municipal levels is also acceptable to central producers if they are allowed to orchestrate mergers and takeovers, which serve to consolidate centralized vertically integrated structures and neutralize *de facto* liberalization (5 and 6). The central producers are likely to get an upper hand in the merger process because of their size and resources.

The centre-periphery issue in Norway

The Norwegian market reform succeeded and reversed a previous hierarchical reform. Some support for the market reform can therefore be seen as a reaction to previous attempts at introducing hierarchical integration through centralization.

The previous reform had proposed a centralization of Norway's approximately 320 electricity companies into 20 vertically integrated county companies. This culminated a development dating back to the early 1970s when national authorities had championed the need cause greater centralization of the power supply system. The centralization attempts were motivated by the ambition to introduce a nationally coordinated price and investment policy based on marginalist economic principles (Olje- energidepartementet, 1979–80; 1984–85) and by a desire to attain economies of scale and technical benefits (NOU No 9, 1985).

The new centralization policy ran contrary to the traditional structure of the electricity industry where companies, within the jurisdiction of their municipalities and regional monopolies, pursued independent local and regional policies.¹⁵ Many municipalities and the local electricity companies therefore opposed this centralistic intervention and sought to maintain their independence and autonomy and the right to enter into cooperative arrangements based on local conditions.¹⁶

One way of explaining the broad acceptance of the liberal electricity market reform in Norway is therefore the famous common enemy thesis. It seemed a better option for all than the forced centralization policy. When liberal impulses from Great Britain and the EEC Commission were adopted by Norwegian economists and bureaucrats, they found good political alliance partners in many municipal and regional companies and also in the Centre Party. This party is traditionally far from liberal minded, but its strong commitment to municipal self-governance led it to support a reform that undermined the previous centralization policy.¹⁷

Some tension between a liberalization of the centre and the periphery that characterized the Swedish reform discussion can also be found in Norway. Formally the reform was extensively modified at the local level to appease local interests opposed to fully fledged liberalism. Contrary to the reform's design at the national level and a strict application of liberalist regulatory theory, there was no separation of local and regional networks into autonomous transport companies. Nor were demands made to split local and regional vertically integrated companies. Instead, a much weaker principle of separate accounts for monopolistic and competitive functions was introduced (Olje- energidepartementet, 1989–90c).

¹⁵For a closer descriptions see Midttun, 1987.

¹⁶For a closer description of municipal and regional company attitudes, see Midttun (1994), based on interviews with about 20 electricity companies.

¹⁷This was confirmed in the talks with Kolbjørn Almlid, previous secretary to Eivind Reiten, the Energy Minister during the passing of the energy law in Parliament.

Table 6 Alternatives facing Norwegian actors under the centre-periphery dimension

		Implications for local distribution	Implications for central production
Perceived choice	Centralization	1: Negative	2: Negative
	Decentralization as expected	3: Decentralized freedom	4: More flexible wholesale trade
Possible unperceived implication	Decentralization as it might turn out	5: Customer flight	6: Ruinous competition

Had the reform been pursued without compromise, and strictly in line with liberal regulation theory, the government would have run the risk of polarizing rural and central actors. This would have antagonized Norway's rural regions and probably have led to a vote against the reform in Parliament.

Yet the formal right of end users to trade directly in the wholesale market would – if it were put into practice – have served to undermine these modifications of the reform. If the end users were allowed to freely shop around for power and had a *de facto* third-party access to their local network, then the limitations of the reform, introduced to appease the local electricity supply and local authorities, would hardly be of any value.

Like the municipal companies and political authorities, the large producers may have supported the market reform based on unrealistic assumptions concerning its consequences. Like the local electricity supply, many large electricity producers probably disliked the previous centralistic electricity reform. Beyond this, many producers also wanted a more flexible wholesale trade because of an accumulation of surplus production (Midttun, 1987). These two motivations make the fact that the reform could achieve broad producer support understandable.

Yet the dynamics of the reform produced results which exceeded the producers' imagination and opened for a regular price war in the wholesale market. With severe restrictions on electricity export and a domestic oversupply, the stage was set for ruinous producer competition. Extreme capital intensity and low variable unit costs served to aggravate this problem. With the wisdom of hindsight it is difficult to understand how the producers could support the reform. Our interviews with leading 'architects' of the reform (Reiten, 1993; Almlid, 1993) and later reactions from both producers and local distribution companies reveal that few if any foresaw the full consequences of the reform.¹⁸

The analysis of the Norwegian centre-periphery issue thus leaves us with a dual explanation of the support for the electricity reform. First, the common enemy explanation: most of local distributors and large producers were opposed to state-induced centralization and vertical integration (Table 6, cells 1 and 2). The market reform here stood out as an attractive alternative, allowing the local distribution companies to retain their independence and the producers a more flexible wholesale trade (Table 6, cells 3 and 4).

Second, as for the industrial pricing agenda, the centre-periphery context also provides configurations of actors

and alliances that are probably better understood under cognitive limitations than in purely 'objectively rational' transaction terms. The rational 'common enemy' explanation therefore has to be supplemented with cognitive divergence/limitation explanations.

The extensive local support could hardly have been mobilized had the local electricity supply and local politicians been aware that third-party access and freedom of customer choice would undermine the formal modifications of the reform at the local level (cell 5). It is also unlikely that the producers and their political owners would have massively supported the electricity supply if they had known that they were facing ruinous competition (cell 6).

Reorganization of state companies

The issue of reorganizing state companies in both Norway and Sweden involved fairly overt bargaining over company freedom *vis-à-vis* political authorities against control over the national grid. The desire for a freer status *vis-à-vis* political authorities had been a longstanding interest of the state power companies. Both the Norwegian Statkraft and the Swedish Vattenfall saw the reform as an opportunity to loosen their political ties.¹⁹

In Norway the reorganization of Statkraft into a public company with special prerogatives followed a long series of organizational reforms where Statkraft was gradually decoupled from the Watercourse and Electricity Agency and given a more autonomous status (Midttun, 1987). The reorganization of Vattenfall was already achieved in the early phases of the reform and formulated in the government White Paper *On Policies for industrial Growth*.

From the reformers' point of view, developing a more politically independent state electricity company was only one part of the reorganization issue. Securing common access to the national grid was perhaps even more important to a successful implementation of free trade (Bjørndalen *et al.*, 1989). The most obvious way to achieve this was through a separation of national transmission into independent transmission companies. This policy was of course motivated by the classical problem of regulating natural monopolies (Samuelson, 1954).

The organizational independence from direct public control was therefore only attained at the expense of the loss of the transmission function, which in both countries was separated into independent transmission companies.

¹⁸For a closer description of municipal and regional company attitudes, see Midttun (1994).

¹⁹Both companies have persistently strived for looser ties to their political superiors in recent years. This was also underlined in interviews with A Mogren (1992) of Vattenfall and G Vatten (1992) of Statkraft.

Table 7 Strategies and outcomes in growth oriented policies^a

		Sweden	
		Passive liberalism	Active growth strategy
Rest of the world	Active growth strategy	++/-	+/+
	Passive liberalism	0/0	-/+

^aThe symbols ++, +, 0, -- represent stylized estimations of gains and losses. The score for 'the rest of the world' occurs before the slash and the score for Sweden occurs after the slash. ++/-, for instance, implies a large gain for 'the rest of the world' and a large loss for Sweden.

Both Statkraft and Vattenfall attempted as much as possible to fight the separation but lost.²⁰ There was broad political commitment to follow the professional advice from the regulatory studies and separate the transmission function – with its character of natural monopoly – from the potentially competitive production function (interview with Hope, 1992; NUTEK, 1991; Riksdagen, 1990–91a; 1990–91b).

By supporting organizational change in a liberal direction, the state power companies were to some extent caught by their own net. When the reform agencies on solid theoretical grounds proposed to take the next logical step – to develop separate grid companies – this was hard to argue against and it was probably too late to reverse the reform process.

In Sweden, the loss of control over the main grid was probably less dramatic than in Norway as some of the effective control over the operation of the central transmission was retained through the Grid Treaty, a long-term agreement among the large producers for the operation of the grid.

Growth policies during crisis: a key to the breakthrough of the Swedish reform

Both the industrial policy and centre–periphery issues raised 'objective' controversies that were most likely solved only by cognitive divergence and/or limited knowledge of the full implications of the reform. The reorganization of state companies was probably an issue that provoked a more straightforward conflict of interest. Some issues were, however, less controversial. Among those were the definitions of the Swedish reform as part of a growth policy during crisis. In an early phase of the reform process this was indeed a dominant issue. The first formal political initiative to introduce liberal elements into the electricity sector originated in the government's White Paper *An Industrial Policy for Economic Growth*. As evident from the title, the liberalization policy was a part of the larger 'crisis package' aimed at increasing industrial growth. The emphasis on economic growth policy served to anchor the reform at a national level where national rather than sectoral interests were in focus.

The growth policy emerged as a response to Sweden's currency crisis and the loss of confidence in the Social

Democrats. Electricity liberalization was introduced with educational policies, research and development policies, communication and infrastructure policies. Efficiency increases in the public sector and general competition policy were seen as a solution to Sweden's economic crisis (Riksdagen, 1990–91c). Growth policies were also strongly emphasized in the bill's energy sections.

The definition of the Swedish electricity liberalization policy as part of an industrial growth strategy in a crisis situation conceptualizes the electricity reform as a zero sum game between Sweden and the rest of the world. Mutual interests in increasing Sweden's competitiveness serve to overshadow conflicts of interest between and within domestic sectors.

The growth strategy perspective opens two basic options to both Sweden and the rest of the world: to go for an active economic growth policy or remain content with passive liberalism (Table 7). This gives both actors a dominant strategy: to promote active growth. We here assume that neither Sweden nor the rest of the world will resort to protectionism, and in line with implicit assumptions in the White Paper, that growth policies, even when pursued bilaterally, benefit both parties.

When liberal electricity market reform is formulated in this manner, the common interests are emphasized and the potential conflicts are underplayed by staging a scene of almost all Swedish actors allied against 'the rest of the world'. The emphasis on the common interests of Sweden is also reflected in the institutional framework of the decision making process, with a weight on national and industrial policy. This conceptualization is probably a key to understanding the breakthrough of Swedish electricity liberalization at an early stage also to understanding how the reform could gain broad Social Democratic support.

The Swedish reform as nuclear and environmental policy

The issue of nuclear energy is linked to the market reform and to Sweden's growth and industrial policies through both covert and overt agendas. The overt agenda refers to the referendum in 1980 where a majority of the Swedish population decided to phase out nuclear energy. However, on the covert agenda, the referendum is regarded by a large part of the country's technical and economic elite and the power industry as irrational. There have been attempts to sidestep it. The design of the electricity market reform as industrial policy and growth policy to most actors involved the underlying assumption that a swift dismantling of nuclear energy as spelled out in the official Swedish policy would not take place. Thus, implicitly, the controversy over nuclear power also had to be solved as part of the market reform.

The nuclear issue differed from the centre–periphery issue in so far as the conflict did not run between actors within the electricity sector. It also differed from the industrial electricity pricing issue, because it did not create a con-

²⁰This was underlined in our interviews by G Vatten (1992) of Statkraft and A Mogren of Vattenfall (1992).

conflict of interest between energy consuming and energy producing industry. Instead it united most of the industrial sectors, including electricity industry against the 'irrational' nuclear opposition that nevertheless was a political majority in the 1980 referendum. The question was here to find a *de facto* policy that undermined the intentions of the proclaimed policy without making the discrepancy too open. The pro nuclear establishment was, in other words, consciously concerned with developing and maintaining a different understanding of the nuclear issue from the public at large and with developing strategies to implement this view.²¹ The Chernobyl accident, which renewed fears of nuclear energy, set the formal decision to phase out nuclear reactors back on the agenda and led to a confirmed decision in 1987 to accelerate the dismantling of several reactors. The Social Democratic Minister Birgitta Dahl in fact attempted to implement the overt agenda. However, she was soon out of office and the covert agenda gained momentum again under her more technocratic successor, Rune Molin.

The breakthrough for an open formulation of the covert agenda emerged through a coupling of nuclear, environmental and electricity issues. The ambitious CO₂ policy that had been actively advocated by the moderates and implemented by law in January 1991 (Riksdagen, 1990–91c), restricted uses of fossil fuels, including large-scale use of competitive natural gas, so that Sweden had no realistic alternatives to nuclear energy. The green light for a *de facto* continuation of nuclear energy was politically consolidated by the so-called tripartite reconciliation between the Social Democrats, the Liberal People's Party and the Centre Party, 15 January 1991 (Riksdagen, 1990–91c). The reconciliation *de facto* implied a consensus that the phasing out of nuclear energy was to wait until one had realistic alternatives that were both environmentally friendly and economically viable.²² The Centre Party, which had to moderate a nuclear dismantling stand, was only persuaded after achieving a considerable peat-based electricity and heating programme that was exempted from the CO₂ tax to satisfy its farmer-constituency, against the technical advice of electricity companies, while the environmental taxation was modified to further the competitiveness of Swedish industry.²³

The continuation of nuclear electricity production obviously facilitated the introduction of a market reform, but the reform would probably also secure the nuclear industry from future political dismantling. Liberalization not only assumes that the phasing out of nuclear energy will be rescinded, but also lays down the conditions for such a rescission. By decentralizing decisions to the electricity companies and by compelling them to operate under commercial conditions, politicians deprive themselves of the responsibility for the firm's choice of technology, and thus may undermine the possibility of ever politically implementing the nuclear phase out. The electricity companies and dominant political elites have apparently regarded market liberaliza-

tion as a key instrument to freezing the political phasing out of nuclear energy, leaving it up to technology and market forces.

Political trade offs under cognitive limitations: concluding comments

How could dramatic policy change like the electricity market's reform gather broad political acceptance? Clearly many factors from the previous analysis could be listed to explain why important actors would support the reform:

- (1) support for economic growth;
- (2) central access to local markets;
- (3) local access to central markets;
- (4) lower prices for light- and medium-sized industry;
- (5) greater freedom for state companies;
- (6) more flexible electricity trade in the wholesale market.

Yet, as we have seen, many of these factors presuppose mutually incompatible understandings of the reform. A major focus of this article has been to show how the cognitive framing may support a common acceptance of the reform by transcending 'objective' incompatibilities given that strong political and administrative forces pushed for reform.

First, it has been argued that by phrasing the reform within a given cognitive framework the reform may be presented in a particularly favourable perspective. Factors that obviously belong to the relevant issues but were not clearly focused on in the reform bills include:

- (i) ruinous competition under free trade in capital intensive industries;
- (ii) problems of technical coordination;
- (iii) problems of international trade under one-sided liberalization among regional and national monopolists.

Second, divergent cognitive models among participating actors may also create a basis for consensus in spite of 'objective' conflict of interest. Two actors A and B involved in exchange may act on the basis of two interpretations of the same situation. When these interpretations differ to give both actors a conceived positive gain from a situation even if they are objectively incompatible, then the 'objective' conflict of interest may be transcended.

We have seen several cases where cognitive divergence is likely to have contributed extensively to establish the broad political support for the reform. Examples are:

- (1) industrial electricity pricing, where actors may have had divergent expectations based on different conceptions of export and collusive action scenarios;
- (2) centre-periphery issues, where central and peripheral actors may have had divergent expectations of the reform's implications;
- (3) the reorganizations of state company issue, where the state companies may not, at an early stage, have foreseen the wider ramifications of the electricity market reform for the grid control.

²¹For further discussion see Flam, 1994.

²²This reconciliation was described in several interviews, including A Mogren, P Åsell and P Fritz.

²³The Westerberg White Paper in 1992.

For all these examples it is arguable that divergent cognitive interpretations gave room for implicit or explicit coalitions based on inconsistent 'objective' expectations.

Dramatic policy changes like the electricity market reforms may lend themselves particularly well to divergent interpretations. Such policy changes create new situations, where actors have little experience. The selection of the general framing may be casual or idiosyncratic and the actor's interpretations may be particularly divergent because there is little experience to back up critical alternatives.

Repeated exchange with stable actors usually implies a learning process where cognitive models converge, expanding the room for intersubjectivity. Learning as a consequence from repeated exchange is also likely to lead to a development where the general cognitive and institutional framing often begins to reflect an objectively rational selection from the involved actor's points of view. Thus, for routine decisions, cognitive divergence remains less of a problem but 'objective' conflicts of interest of course become all the more transparent.

A comparison of the Norwegian and Swedish reform processes serves to illustrate this point and also to support the thesis that cognitive limitation is a major factor behind the successful reform proposals.

This article has focused on the policy formulation stage and shown many similarities between the two countries. Looking further ahead to the implementation stage, however, their strategies differ widely. Norway's policy formulation and implementation were in a single step. Sweden, on the other hand, moved more gradually and has spent the past one and a half years developing an implementation strategy. The Swedish strategy, of course, allows time for learning and for reformulation of cognitive models and perceived interest. Learning is enhanced, of course, by what the Swedish call the Norwegian Experiment, which gives a real-life demonstration of a market in operation.

Swedish policy statements by the Social Democrats and reports from the implementing commissions have for some time signalled a much more restrictive attitude than that signalled by, the Westerberg White Paper in 1992. The liberalization of the Swedish electricity market in January 1996 is far more careful than the Norwegian. Through the extended learning process, 'objective' conflicts of interest have probably become ever more transparent. As concrete experience replaces vague expectation, there is probably less room for cognitive selection and divergence and the actors are faced with the reality of some real trade offs they will be forced to make.

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