

Governance and democracy in Swedish nuclear power – a deliberative turn?

A normative evaluation analysis of the Swedish nuclear
governing

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Abstract

In this thesis the relationship between democracy and new modes of governance is examined. The empirical overview suggests that these theoretically described modes could be identified within the Swedish nuclear governing. The potential consequences these new forms of governance have for democracy is further examined through a normative evaluation. Democracy is operationalized by the values *participation*, *accountability* and *transparency* and understood through two models of democracy: the deliberative and the competitive elitism. In order for the functional mechanisms of democracy to be productive, they need to be in accordance with the governing arrangements. The evaluation analysis suggests that the development of new modes of governance has to some extent been accompanied by new, more deliberative democratic arrangements. Still the new modes characterized by an increase in actors, internationalization of rule making and more negotiative processes have extensive consequences for the studied democratic values. The normative evaluation is conducted on the basis of a teleological premise.

Key words: Nuclear power, normative evaluation, governance, deliberative democracy, competitive elitism democracy

Words: 9423

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1 Introduction

The development of new arrangements for public policies has been a source for extensive research activity in the past decades. Larsson & Bäck suggest that Sweden has seen a development from a corporatist state, with strong institutionalized involvement of various civil organizations in the governing. As this model gradually has been abolished, a new pluralistic perspective could explain the inclusion of several stakeholders in decision-making. Mostly this has not been formerly institutionalized. Furthermore a change in the mechanisms of decision-processes has been developed. (Larsson & Bäck 2008:106-110) Researchers have created the theoretical concept of *governance*¹ to describe these new modes of governing that have been introduced and implemented since the 1980's. (Björk et al. 23:24f; Larsson & Bäck 2008:110; Gjelstrup & Sørensen 2007:28f). Such changes could also be identified within the governing of the Swedish nuclear power sector. Another reason for selecting this case, is the potential risk and impact that nuclear power has on citizens. One could normatively argue that these circumstances should lead to a strong democratic influence. Nuclear power has been one of the most distinguished political issues in Swedish political debate ever since 1970. The question of its potential role in the energy supply, as well as the organization and implementation of nuclear power has evoked strong sentiments and harsh discussions. In the public debate, citizens have raised serious concerns about risk. Yet others have emphasized the need for energy security, mitigation of CO₂ or the much-needed jobs nuclear industry create. (Kaijser 1992:452-454) New forms of implementation of public policy have introduced the question of how these arrangements affect democratic values. What happens with accountability when a Finnish state-owned company owns a Swedish nuclear power plant? Can the citizens' rights to participation be ensured when foreign private companies deal with nuclear waste management? These questions illustrate the practical symbiosis of democratic values and governing arrangements. This thesis explores this symbiosis through a normative evaluation.

¹ *Governance* will in this study be used to describe new modes of governing, and should thus be understood in light of the theoretical discussion presented in 4.2. *Governing* will be used as a more broad and general term describing the implementation on public policies.

1.1 Research question

In this study the normative relationship between democratic values and governing will be examined through an empirical overview and a critical normative evaluation. First, the governance theories, which serve to analyze the empirical material, will be presented. Secondly, two different democratic models: the deliberative and the competitive elitism are presented. These are used in order to generate a framework from which the values can be understood and discussed. This intention leads to the following research question:

How can the relationship between governance and democratic values be understood in the context of Swedish nuclear power?

1.2 Aim of the study

The aim of this study is to better understand the implications that certain ways of governing could have on democratic values. By evaluating the observed governing structures with the help of democracy models, the aim is to highlight the consequences of new ways of governing. The selected empirical case serves as a pedagogic illustration of the theoretical discussion, as well as a subject for the normative evaluation. The theoretical concepts' role is to help understand and contextualize the empirical findings and the analyzed terms. This means that theories mostly are used and applied, rather than developed. It should however be mentioned that the combination of various theories in order to create comprehensive analytical tools could be viewed as a way of further developing the theories. It is my aim to cumulatively add to the research that already has been conducted, and to contribute with a stronger theoretical and societal view to the academic debate. In this study the symbiosis of governance and democracy theory is based on the assumption that democracy does not exist in a vacuum, and therefore it has to be understood and developed in relationship with the structures of governing. This means that certain constitutional mechanisms of democracy refer to certain mechanisms of governing. This reasoning leads to the acknowledgement that whenever the governing structures are transformed, the mechanisms of democracy also need to be transformed. The aim of the study is in other words to examine the relationship between the idealistic value-based and the functional content of democracy.

1.3 Relevance of the study

Bäckstrand et al. points out that while the link between new modes of governance and development of deliberative democracy has been discussed and highlighted among scholars, the theoretical ground has remained rather untouched (2010:3). This observation shows the study's relevance in the field of research. This is in accordance with the stated aim of cumulatively contribute to the scientific discussion about these questions.

Similarly while the societal implications of nuclear power have been a major issue in the Swedish public debate, the research on the topic seems to be dominated by natural scientists. Even these have pointed out the need for more social science research in this field (SOU 2004:120 p38-43). As a response to this, it is the intent of the study to contribute to this important societal matter, thereby giving the study relevance also outside the specific field of research. One might argue that nuclear power is a dying phenomenon in the Swedish context, given the long since phase-out strategy. However, as the thirty year long legislative bans on new reactors was removed in 2010, and new reactors could be built, the question is of even more current relevance (Sundqvist & Elam 2010:208f).

1.4 Delimitations

Due to the limited extent of this study, certain delimitations are necessary. This is also important since the scientific process actually is about making methodological or theoretical motivated choices. One major demarcation is that only one empirical case is studied. The consequence of this is that the empirical results cannot contribute to any generalization valid for other cases. Depending on how unique the Swedish case is considered, one might however be able to find inspiration to further research concerning other cases. It should also be mentioned that although studying a case, the link between governance and deliberative democracy is primarily examined on a theoretical level. It has not been the intent of this study to measure the experienced accountability, or the actual extent of participation. Rather the purpose of the analysis is to explore the theoretical possibilities for the outcome.

The selection of democratic values is also a significant limitation. A broader selection could have enhanced the validity of the analysis, as the rather narrow selection leads to similarly narrow possibilities for drawing conclusions. However the theoretical model, and the use of ideal types captures the central elements of governing in a comprehensive and manageable way.

1.5 Disposition

The study consists of three main parts: the empirical analysis, the normative discussion of the selected values, and the final evaluation of the empirical findings based on these values. The supporting passages of this study are still essential to carry out the mentioned research. First the methodological approach and considerations related to this are discussed. The description of methodology will provide the basic analytical tools in the study, and thereby enhancing the study's intersubjectivity.

Next, in chapter three, the normative premise is presented and discussed. This constitutes an important feature of the normative part of the study. The normative premise is the logical system that the analysis will be based on.

In order to contextualize and enhance the understanding of the findings, the theoretical framework is outlined together with the analysis it aims to support. This is also done as the theoretical and analytical reasoning are intimately related to each other. Hence, the study's disposition is thematic rather than methodological. This presentation will hopefully make the reader even more capable of construing the analyzed material in the light of the theoretical considerations.

The empirical results, presented in chapter five, are ultimately what will be evaluated and therefore a key part. A theoretical discussion concerning different modes of governance will be presented in order to construct a framework for the empirical analysis. Further, in chapter six, the selected democratic values are made operational through theoretical concepts of democracy. In order to operationalize the concepts two models of democracy are presented, namely the deliberative and the competitive elitism perspective. Following this, the observed governing structures will be critically analyzed and evaluated against the normative concepts defined in chapter six.

Finally, the results of the analysis will be merged and discussed, and an answer to the research question will be suggested.

2 Methodology

In this part of the study the methodological approach will be outlined and discussed. As Björn Badersten points out, the extent of literature concerning normative methodology is relatively limited (2006:11-13). Due to these circumstances, it is necessary to combine that literature with methodological reasoning from other disciplines. In this study, methodological tools from ideological analysis, practical philosophy and public evaluation will constitute a hybrid framework. This is done as a result of the recognition of the argument that the method needs to be shaped after the aim of the study, rather than the other way around. Even though these approaches might have some differences, they all serve the purpose of analyzing abstract objects as norms, goals and values. This will be further elaborated on when the axiological premise is presented.

2.1 Axiological premise

In order to ask a research question and answer it, one must first establish some ontological and epistemological premises (Badersten 2006:56). Does the world objectively exist, or do our thoughts and our language construct it? What kind of knowledge is possible and meaningful to achieve? The answers to these questions create the room to maneuver for the researcher (Ibid.). Brutally simplified the answers could be divided into two positions, the positivistic and the hermeneutic. Whereas the first seeks knowledge through laws and empirical observation, the latter pursues understanding by studying phenomena from the “inside”. While the positivistic side strives for objectivity, the hermeneutic solves its problem with relativism through intersubjectivity. (Hollis 1994:17,40-42) For the reader to be able to follow and hypothetically recreate the analysis, the premises it is based on must be openly accounted for. These premises are of extraordinary importance when it comes to studies with normative elements, considering that they then serve as a prerequisite for intersubjectivity. The simplification of the science-theoretical positions should however not lead to an understanding of these positions as a dichotomy, but rather as a scale. Given this statement, it is possible to find a pragmatic path where observation meets understanding. In this study it is primarily important to establish an understanding of how values are considered, as they in fact are subject for the research. Although values are abstract in one sense, they could still be observed and studied. This does however require an understanding of the importance of the context in which the values exist. This means that the content and understanding of a value is dependent on the normative logical premise held by the observer. Max Weber argues that the

missing objectivity makes it impossible to use values as ground for political systems such as democracy, and that one therefore should focus on the procedures (Held 2006:128). This thesis does however suggest that values and procedures must be considered in relation to each other in order to enhance the understanding of democracy. Therefore, this study will present and critically discuss the selected normative logics applied. This will provide the reader with the “glasses” necessary to understand the foundation for the study.

2.2 Research design

As previously mentioned, the study is conducted in three stages; first with an empirical overview, secondly an analysis of the democratic values chosen, and finally a synthesis of the two previous parts in a normative evaluation analysis. More specifically, the governing of nuclear power will be evaluated from the perspective of the democratic values *transparency*, *accountability* and *participation*. The figure presented below graphically illustrates the research design.

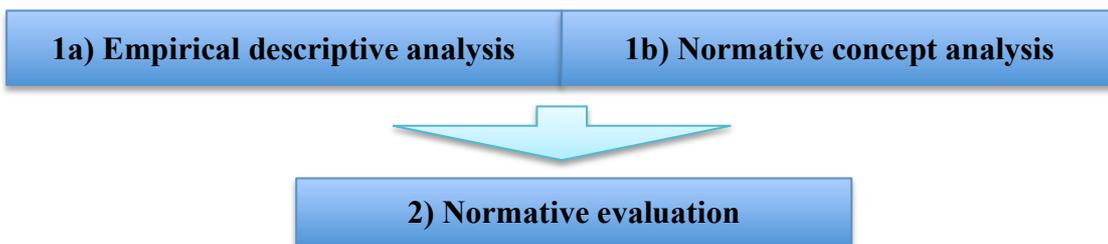


Figure 1. The study’s research design.

2.2.1 Empirical overview

In order to strengthen the relevance of the normative analysis presented in this study, an empirical descriptive overview is first presented. As Torbjörn Tännsjö argues, accounting for the relevant facts is an essential feature in normative analysis (2000:11). Governing arrangements that could be interpreted as part of a shift towards new modes of governance, in accordance with the outlined theoretical concepts, will be the focus of the analysis. Findings that contradict the theoretical assumptions are also presented.

The sources for the analysis will mainly consist of official public documents in the form of studies and reports conducted or ordered by the government. Previous scientific findings are also used as material. Some basic facts about the arrangements are gathered from information published on the nuclear power plant owners’ websites.

The empirical description is organized by a dissection of the nuclear power governance as presented in figure 2. To contextualize the empirical material,

governance theory is applied. These theories offer a contemporary understanding of the relationship between various actors in the process of handling society's tasks. One of the preeminent assets of this framework is the concept describing cooperation between private and public actors and between different private actors in networks. In order to contextualize the theoretical discussions, some examples from the empirical findings will be used

2.2.2 Normative concept analysis

As outlined in the axiological discussion, values will in this study be considered observable objects. Even so, a value expressed with a term is in itself not operational, it has to be clearly defined and limited in order to be a meaningful subject worth analyzing. Ludvig Beckman defines a concept as the idea a word represents (2007:30). It is therefore possible to talk about the concept without using the concrete word, by using more implicit expressions. This will be taken into account in the analysis. The primary aim of the concept analysis is to highlight and analyze what the term refers to and how it is used, in order to make it operational. Another important intention is to clarify the boundaries of the term (Ibid.). As Badersten argues, a stringent definition of the concept is key to avoid conceptual stretching, posing a threat to the thesis' validity and intersubjectivity (2006:73f). While the epistemological premise of this study emphasizes that one concept could have different content and connotations depending on the context, it is crucial to keep these understandings divided. In the context of this study this will essentially mean to clearly define a value from the background of the two selected models of democracy, and then use the terms in relation to these definitions.

The concepts will possess the role of criteria in the forthcoming evaluation. This part of the study is essential since words such as *democracy* in itself could refer to several different understandings, these are sometimes even contradictory. To be able to evaluate the observed empirical material, the normative analysis constitutes a scale between two extremities of representative democracy. This delimitation has consequences for which answers the analysis can produce. As only models of representative democracy are studied, the evaluation will not be able to measure the empirical material against norms for direct democracy or other forms of government. The selection of representative democratic theories mainly reflects the Swedish context, which it serves to understand. The theoretical framework consisting of two opposite understandings will be applied to the values in order to give them content.

2.2.3 Normative evaluation

In the normative evaluation, the governing of Swedish nuclear power will be critically assessed. Evert Vedung defines evaluation as the activity of "...careful

retrospective assessment of the merit worth, and value of administration, output, and outcome of government interventions, which is intended to play a role in future, practical action situations” (1997:3). Vedung’s definition describes the aim of the normative evaluation in this study: to critically assess the governing of nuclear power in relation to certain important values. These values should in the context of the evaluation be viewed as goals in relation to the outcome. The intent is thereby to evaluate how well the governing is coherent to these certain goals. As the ideal types used to define the values hardly can be directly operationalized, they rather constitute a scale against which the discussion is held.

As Vedung argues, these goals could be chosen externally, unattached from the goals set up by those conducting the governing. This approach requires that the evaluator bases the selection of goals and the further analyze on a value theory (Ibib:248). In this study the premise for the normative evaluation is a teleological logic, which is presented and discussed in chapter three, and the goals selected are the democratic values *participation, transparency and accountability*. To avoid the risk of facing intersubjectivity-problems, the criteria and the value theory need to be relevant for the case studied. In the context of this study the selection of democratic values should be understood stemming from principles that are of fundamental importance for the Swedish state. Such values are expressed both in the constitution, international treaties and in the legislative documents concerning the specific case.²

The evaluation could also be understood in relation to Tännsjö’s model of applied ethics. He states that this method should be used to resolve practical difficulties with the help of moral principals. Tännsjö argues that one could draw conclusions on how to practically act, by taking relevant facts (empirics) and moral principals (normative concepts) into account (2000:13). Another source of inspiration is Max Weber who by describing societal phenomenon assessed their feasibility in relation to various political options (Held 2006:126).

² See Regeringsformen 1:1-2; Miljöbalken 6:4; Charter of fundamental rights of the European Union: the Preamble, article 41:2a.

3 The normative logical premise

In a normative analysis the researcher's aim is ultimately to justify something, or to seek understanding about how something can be justified. In order to be able to conduct these kinds of analyses, the researcher needs a logical premise. Badersten argues that the researcher can use one or more logical systems, and with the help of them conduct normative evaluation (2006:46). As the aim of this study is to examine the relationship between the functional and the value-based aspect of democracy, the normative logic will steer which parts of this relationship that will be analyzed.

How does one then choose which normative logic to apply? It is after all this choice that ultimately determines the answer to the normative questions. It lies in the nature of the different normative logics that while one can argue that all could be true, they cannot be true at the same time as they might contradict each other (Tännsjö 2000:16). Tännsjö claims that analyzing the practical implications of each logical teaching is the most comprehensive way of finding which has the most plausibility (Ibid.). It might however seem strange to start with the implications, and not a more theoretical discussion. While this objection could be true, it could also be argued that in order to apply the normative logic on an operational level, its evidences need to come from the operational level. This reasoning resembles the scientific process of abstracting conclusions from one empirical case, through theoretical reasoning and to generalizations valid for other cases (Teorell & Svensson 2007:44).

Normative logics could in more than one sense seem rather theoretical, and it may therefore not be obvious how this is applied on an operational level. In order to make this transformation, from a model of thought and reason to a practical mechanism for decision-making, some points need to be made out. Firstly the operationalization of the analyzed values needs to be comprehensive. Secondly the process of moving from a theoretical to an operational definition of *accountability*, *transparency* and *participation* has to be stringent, and will thus be done with the help of a relevant theoretical framework.

3.1 A teleological approach

The different normative logics can sometimes lead to fundamentally different recommendations on how to act. In doing so they have the function of answering the question of *what* should be done. (Tännsjö 2000:17) At the same time, different logical premises can lead to the same conclusion as of recommended action, but for different reasons. For instance, the question of whether a nuclear

power plant should be stopped after a minor accident could be answered both from a teleological and a deontological starting point. Yes, it should be stopped due to the consequences based on the potentially increased risk for human and material damage, the teleological representative would say. In the latter case the reason for recommending full stop would be that the law actually requires this. As the simplified example illustrates, the normative logic is also capable of responding to the question of *why* something should be done in a certain way. (Ibid.)

While a great variety of different logical approaches are available, these two classical can be singled out. On one hand the consequentialist, teleological logic, also known as the fundament for utilitarianism. On the other hand, the deontological, duty focused ethic developed by Kant (Badersten 2006:32f). In this thesis the consequences of the governing of nuclear power will be emphasized, as the aim is to understand the governing's effects on democratic values. Badersten argues that the teleological focal point is to question which consequences of actions or arrangements that can contribute to justify a given value's precedence (2006:32-34). Thus will the approach be teleological. The evaluation will examine which effects certain ways of governing have on democratic and economical values. This selection could also be seen as a delimitation, given that the analyze will not focus on factors that other logical approaches would have done.

The consequentialist approach raises the question of the preferred subject for the consequences. Should certain actions be considered good if they have positive ends for the state, nature, citizens, animals or future generations? This study's pragmatic take will be to incorporate the state and the citizens by using the term society. This selection also reflects that democracy is a construction mainly refereeing to the citizens and the state. This leads to the analytical question of whether a given action will lead to the best consequences for society, and in this case the Swedish society.

4 The Swedish nuclear governing

In this part of the study, the Swedish governing of nuclear power will be described and analyzed with the help of governance theory. The aim of this part is to contextualize the forthcoming normative discussion, in which the here-described arrangements will be evaluated. In order to simplify and systematize the material, the governing is divided in *permission*, *production*, *waste management* and *termination/demolition*. This subdivision reflects the main parts of a nuclear power plant's lifecycle. The graphic model below displays the industry-wide time plan, and the time perspective of permission and waste management.

The empirical overview will be conducted with Lennart Lundqvist's model of privatization as a starting point. Even though privatization as such is not the core theme of this thesis, Lundqvist's model emphasizes the most important dimensions of governing. As all questions might not be directly applicable on every stage, it should be seen as a guiding rather than a rigorous structure. The questions asked in relation to the mentioned stages of governing are thus: *who owns, who regulates, who produces, and who finances?* (Lundqvist 2010:219-224) Another dimension: *who monitors*, is added in order to better operationalize the concepts of governance. As these guiding questions imply, this analysis will have a significant actor-focus. The aim of the empirical overview is descriptive rather than explanatory, thus the study will not be exhaustive. This of course has the consequence that empirical generalizations hardly can be made.

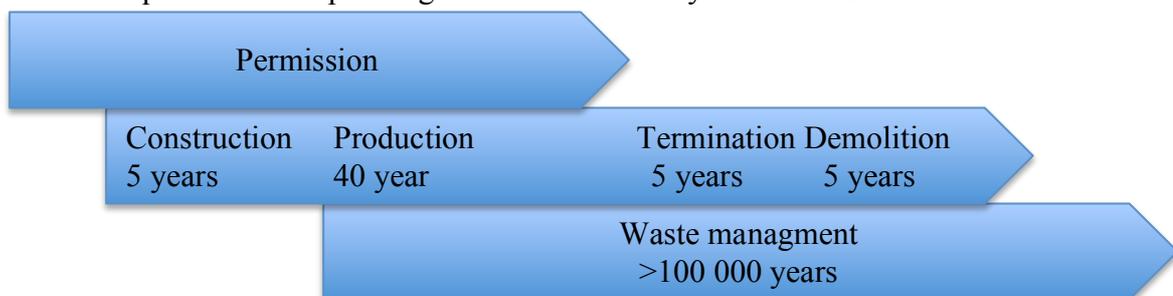


Figure 2. The life cycle of a nuclear power plant (Barsebäck's website)

4.1 From governing to governance

Albert Weale argues that the changes in public policy described by the concept of governance is constituted by three features:

- An increase in interested parts (actors).
- An internationalization of the rule making.

- A change towards negotiative processes rather than hierarchical commanding. (2009:58-62)

An initial note should be made that in the governance theory literature, the ambition level, stretching from theoretical concepts to normative imperatives, is important to identify (Björk et al. 2003:126f). In other words: is it descriptive or prescriptive? In this context, however, the aim of the selected theoretical concepts is to apply them to the empirical case in the analytical part. This distinction is of particular importance when linking deliberative democracy and governance, as the modes of governance could be seen as a tool for achieving more deliberative functions. These outlined problems will be further discussed in the concluding discussing on results.

The concept of governance describes a change in the way of governing the state's matters. One transformation moves towards a more diverse fold of actors that form networks from which they implement the public policies (Larsson & Bäck, 2008:110). The state as a sovereign actor is according to some contemporary scholars no longer describing the empirical reality, and thus these theories try to explain and understand the radical transition of the way of governing (Gjelstrup & Sørensen 2007:28). Such transformations could, as will be shown in the empirical part of this study, be identified in a Swedish context. The theoretical framework presented here constitutes the ground for comparison with the empirical observation.

One of the indicators of a changed governing structure is the constellation of actors. *Who* decides, implements, funds and monitors? The change in actors could be described as vertical, with international organizations and multilateral agreements on one side and municipalities, regional and local actors on the other (Bulkeley & Newell 2010:54ff). By reviewing the Swedish nuclear sector, one will come to recognize that the range of actors: from municipals holding shares in a power plant, to the Finnish state and further to the international agreements through the International Atom Energy Agency (IAEA). These structures could according to Björk et al. be described as multi-level governance. In addition to addressing the vertical diversity this concept also stresses a fluid network relationship rather than a hierarchical between these actors (2003:123f). Within the concept of multi-level governance the internationalization of rule making could be seen, and it also illustrates the change towards more negotiative processes. Another complementary view is the horizontal. Has there been marketization, privatization and deregulation, or has the change occurred in the other direction: towards stronger administrative delegation, bureaucratic control and regulations? (Bulkeley & Newell 2010:54ff). This dimension can be seen in the governing of nuclear waste, where temporary waste management has been privatized. There has however also evidently accrued increasing legislation. A different concept describing the changes from governing to governance focuses on state-centric versus society-centric views. These perspectives have respectively the public government and the civil society as starting point for analyses (Khagram & Ali 2010:133-136).

Although the market liberal paradigm often describes a distribution of capacities from public to private sector, the actor perspective also entitles new forms of hybrid arrangement involving both sectors. Type II arrangements, and Public Private Partnerships, which describe cooperation between the state and private actors or organized interests, are examples of such hybrid arrangements. Such partnership occurs in situations where possibilities exist for both private and public actors to benefit financially at the same time by cooperation. But more important, it occurs when the public organizations can make use of the private organization's knowledge, contacts and tools. The business interest could beside profit lie in the possibility of building long-term relations with governments, or in Corporate Social Responsibility (CSR) and public relation (Kooiman 2003:102f).

Voluntary policy networks with internal sanctions are another form of governance, often used in order to frame and legitimize enterprise organizations (Bulkeley & Newell 2010:62-66). Björk et al argues that such cooperation could be seen as a way of dodging public governing, by being independent and thereby not accountable to the state (2003:122f). These networks could take the form of industry wide standardization-agreements. The owners of the Swedish nuclear power plants have together agreed on a standard schedule for termination and demolition of the reactors. Both policy networks and hybrid forms of cooperation involve possibility for the initially presented three main changes: more actors, internationalization, and negotiative processes.

4.2 Empirical overview

4.2.1 Permission

The nuclear energy sector is regulated through extensive governmental regulations. The main concern of these laws seems to be the distribution of competences and responsibilities between the government and the private actors, called permission *holders*. This does in addition implicate the state's role as permission *giver* (SFS 1984:3; SFS 2000:334). In order to build and operate nuclear reactors, permission and concession must be granted by the Swedish court system. The legal process involves reviewing the permissibility based on several juridical requirements. Changes in the permission process were implemented with the new environmental legislation in Miljöbalken [the Swedish Environmental Code] in 1998. One of the most significant changes was that the government would now need the municipal proposed as host for a power plant to partake and agree upon the plans. This has given the municipalities a functional veto against nuclear establishment (MB 1998:808 17:6). According to the authors of an analysis concerning Swedish permission process, these changes have also lead to extended possibilities for participation and transparency for the citizens. While the former legislation required information-meetings and gathering of remittance, the current decrees stakeholder consultations (Elforsk report 11:06 p92-95). The consultations should provide a broad public specter with realistic possibilities for

influencing the decision-making. In the process of finding a municipality to host the nuclear waste facilities, opinion-groups were offered economical support to be able to spread their information to the citizens (Johansson 2004:105).

4.2.2 Production

Nuclear power requires enormous long-term investments; this makes the need for private capital substantial. At the same the private actor cannot possibly bear up the liability in case of an accident. (SOU 2009:88 p28; SOU 2006:43 p17ff). Therefore the production is both publicly and privately owned, and the state shares some of the economical liability with the private power plant owners (Kåberger 2002:203). Today Sweden has four nuclear power plants for the purpose of producing nuclear energy, of which Ringhals, Forsmark and Oskarshamn are operational, the fourth Barsebäck is closed and awaits demolition. The three operational plants have both private and public owners.³ Ringhals and Forsmark are mainly public owned, respectively 70,42 % and 90,1 %. Oskarshamn's largest owner is the German and Norwegian private-owned energy company E.ON that holds 54,5 % of the shares. E.ON also has significant interests in Ringhals (29,58 %) and Forsmark (9,9 %), and could therefore be seen as the most important private actor in the nuclear power production in Sweden. E.ON became an important actor in the Swedish nuclear sector when buying *Sydskraft AB*, owned by Swedish municipalities, in 2001 (Energimarknadsinspektionen 2006:22). When it comes to the public owners, this group's main actor is the major Swedish energy company Vattenfall AB, who owns 90,1 % of Forsmark and 70,42 % of Ringhals. Other public owners are the Finnish state-owned company Fortum, and two municipal owned energy companies (SOU 2006:43 p216). This picture of shared ownership of the production that flippantly has been characterized as a roller coaster of selling and buying, is in contrast to the 1980's referendum where the alternative vouching for state ownership won (SOU 2004:99 p120; Kajiser 1992:454).

4.2.3 Waste-management

How to handle the nuclear waste left after energy production, has been one of the most important questions within the nuclear power debate. Depending on the level of nuclear contamination material from the plants, the waste will need to be stored far away from all living organisms in up to 100 000 years. The risk of accidents, nature disasters and a potential threat from terrorists in the future, makes it a very difficult challenge. The decision will also bind future generations, making it even more complex. Consequences for future generations are hard to assess, when

³ For a graphical presentation of the owner structure see appendix §1.

neither the future nor the coming generations can be known. (SOU 1993:18 p10, 22-26) Svensk Kärnbränslehantering AB (SKB), owned by the nuclear power plants, is responsible for the research and development of waste management facilities. In this mandate some real decision-making capacity has been transferred from the government. For instance, SKB decides which municipalities would be subject for research and testing, indirectly determining, or at least limiting the government's ultimate decision of placement (SOU 2004:99 p 10-11, 13). Westinghouse Sweden, one of the companies delivering waste management services is one example of a largely state owned company privatized in modern time.⁴

In Sweden a process of deciding placement for the waste management facilities was finalized in 2009. This process has according to Sundqvist & Elam been internationally recognized for its public involvement. Extensive public consultations with the local citizens as well as stakeholders were held in the candidate municipalities upon the decision. When SKB decided to propose Östhammar to the government, it was with the support of the municipality's citizens (Sundqvist & Elam 2010:205f). It should be mentioned that another, slightly less successful process, preceded the decision concluding on Östhammar. SKB received some critique for lack of transparency through the whole political process (Johansson 2004:108).

4.2.4 Termination and demolition

At the end of a nuclear reactor's lifetime, specific regulations come into the picture. These are a combination of official legislation and voluntary industry wide standards. Barsebäck was the first productive and operational reactor to be closed down in since Ångesta was closed in 1970 (Kåberger 2002:196-198). Private investors through the German company E.ON today own Barsebäck. Upon termination and demolition the same questions that inflicts waste management are raised, as parts of the facilities are contained with nuclear radiation. The financing of these procedures is partly covered by the funds collected through taxes paid by the power plant owners. The owners of the Barsebäck reactors did however receive extensive compensation from the government in a settlement that lead to the termination of the reactors (Ibid.). In the case of Barsebäck it is apparent that the industry wide standardized time schedule has not been followed, as the demolition cannot start before nuclear waste management facilities are built. The demolition process is monitored by the public organization *Strålsäkerhetsmyndigheten*, that reports to IAEA regarding the fulfillment of the international nuclear agreements (Elforsk report 11:06 p107; Barsebäcks website).

⁴ Westinghouse was fully privatized in 1982 (Kaijser 1992:460).

5 Concepts of democracy

5.1 Normative concept analysis

Transparency, accountability and participation are the three democratic values selected for this study. These concepts will be defined and operationalized with the help of the deliberative and competitive elitism democracy models. In the normative evaluation these values will serve as goals against which the empirical findings are assessed. The selection of these three values is based on Bäckstrand et al's statement that these three values are of importance for the deliberative turn with new modes of governance (2010:3). The three values are important in order to legitimize these new modes that has been discussed in the previous chapter. The choice of these analytical objects will affect the possibilities of drawing conclusions from the material. In a potential further larger study more values should be considered. As Badersten argues, the content of the concepts as well as their internal relationship to each other needs to be examined and problematized (2006:43).

5.2 Models of democracy

In order to operationalize the selected values, two ideal models for democracy will be described and discussed. It should be mentioned that both of these models describe variations of representative democracies. As previously noted, this choice is taken in order to best apprehend the Swedish context. These concepts enlighten what is meant by the term *democracy*. This is done by pointing out which features each value should be broken down to, and thereby making them operational. The two concepts selected for this study is *deliberative democracy* and *competitive elitism democracy*. Even though the two concepts have some points in common, the intention is to understand them as opposites. Whereas the deliberative democracy ideal describes inclusion of all parts of the society in the decision-making, competitive elitism democracy emphasizes a more narrow participation from individuals or groups with special competences or capabilities. This understanding places each model in either end of a scale. This constructed scale serves as a point for comparison with the observed material. As the discussion of the models is based on previous research, this comparison is cumulatively connected to previous research (Beckman 2007:52f). Vedung points out that such points of normative references, in his work labeled *optimum*, could

answer the question of how well the evaluated objects correspond to the theoretical optimal state (1998:260).

5.2.1 Deliberative democracy

Jürgen Habermas argues that uncertainty, and the process of handling this uncertainty, constitutes a society. In this process, which he terms communicative rationality, citizens critically assess each other's arguments. This interplay should lead to a shared understanding of the needed action, rather than an objective certainty or truth (Habermas 1987:*passim*; SOU 1993:18 p30). As previously mentioned, uncertainty is a significant feature of nuclear governing, and it is therefore interesting to consider the governing of this. Habermas' idealistic portrayal illustrates the core idea of deliberative democracy. David Held presents a somewhat more pragmatic view, by arguing that institutions have to be renewed and adapted to further deepening the participation in the democratic processes (2006:231). Held further gives a rather pessimistic description of the present state of citizens' preferences and capacities when it comes to participation today. This portrayal resembles the ideal of competitive elitism democracy, but is in a deliberative context subject for criticism instead. The quality of participation should be made the point of focus by addressing new institutions and new ways of arranging the participation (Ibid:234). This critique emphasizes that the traditional channels of participation such as parties, demonstrations and focus groups in fact enhance the power accumulated by a few, elite actors. Hence, new channels are needed. The role of the citizen in the deliberative democracy is dynamic, and must be adapted to the processes of governing. The deliberative discussion raises the question of whether democracy is an intrinsic or extrinsic construction; is it a mean or an end? (Badersten 2006:24f) The teleological answer, which is the premise of this study, accentuate the consequences of a given state or action. It would therefore be difficult to justify democracy if it did not lead to the better consequences for society than any other arrangement. Given this principle, the democratic process and its design are of greater importance than the actual output.

The concept of deliberation should be problematized. The idealistic approach, which stresses that decisions ought to emerge from an exchange of opinions between as many actors as possible, might seem utopian. Those involved in the deliberation could maybe be viewed as some kind of elite either way. This opinion is based on the fact that asymmetry in knowledge, information, and access to the process, will strongly influence who participates. Although this description might be true, the deliberative approach is about enhancing the possibility for participation, by new creating spaces for developing and testing political arguments (Johansson 2004:25). The deliberative process could be interpreted as a learning procedure, developing the individuals' knowledge and information and thereby reducing the asymmetry. The process-perspective is also in coherence with this study's aim of evaluating governing. As it will focus on the way the

structures are composed, the study deals with the possibility rather than the actual outcome – which would demand another study.

5.2.2 Competitive elitism democracy

At its inception, democracy seems to have been imbued with elitism. Plato, Aristotle and Socrates, the three classical philosophers living in the democracy of Athens, all advocated experts as society's rightful leaders. John Stuart Mill wanted to grade the votes depending on knowledge and cultivation. (Held 2006:231). Both Schumpeter's and Weber's conceptions of democracy were based on the idea that as the society developed into a more industrialized, technologically and economically complex system, the citizens should be left with less responsibility. Given this context an unavoidable asymmetry of information and capacity will emerge between citizens and expert bureaucrats. As this leads to an increased bureaucratization, the people thereby become even more passive. This self-reinforcing process leaves all people, except the governing elite, without any in participation beyond voting in elections. (Ibid:132-134) The bureaucratization involves that politicians delegate capacities to experts, whose power is legitimized through their knowledge (Johansson 2004:27). Rather than the leaders' actions, the legal institutionalized mechanisms for selecting political leaders is the source of their legitimacy. These institutions' aim is furthermore to avoid strong organized interests to gain illegitimate influence and power over the voters. The elitist-protagonists' rather pessimistic view of individuals' intellectual and political capacity makes this threat highly valid. (Ibid:133) While this concern might be relevant, it seems paradoxical that the passive and incompetent citizen would even be capable of making a deliberate choice between competing elites. And even though Schumpeter states that no adequate participation could take place without involvement and responsibility, he discards both enhancing these factors and the possibility of education. (Ibid:144f) Frank Fischer does also point towards expert involvement's potentially negative consequences for public participation (2009:17). Schumpeter rejects the conception of a "common good", since the people neither share goals nor the means needed to achieve them. These formations cannot be transformed or bridged into one shared belief, as people's core values do not respond to rational logical arguments. (Held 2006:146-148) However, given such a premise the previous mentioned fear of organized interests' power to influence the individuals' way of thinking and reasoning, could hardly be comprehended.

It should be mentioned again that elitist model here is presented in a quite drastic terms, because it is considered the deliberative democracy's opposite end point on a constructed scale. Therefore, it is important to recognize that more modern pluralistic versions could be more in coherence with the contemporary empirical reality. Such pluralistic approaches emphasize participation and influence in political processes through organized interest and corporate groups. (Ibid:173)

5.3 Analysis

In this part of the study the content of the selected values will be defined and discussed. The concepts will be operationalized by pointing out key features of the concepts, and thereby further developing the scale between the ideal types against which the empirical findings are evaluated. In the following normative evaluation their potential problematic connections will be discussed.

5.3.1 Accountability

Deliberative

Accountability should from a deliberative perspective be directly tied to the governing process. The ability to hold actors responsible is a part of the deliberation, as it is in this interaction decisions are made. Acting out the accountability would then mean questioning and testing the reasoning leading to a given decision. Since it is a premise to reduce the asymmetric distribution of knowledge, deliberative accountability could be understood as a potential mechanism in a democratic process. The deliberative approach leads to a dynamic understanding of the accountability where it is in action parallel with the decision making, in contrast to the elitist perspective where it takes place before and after a decision is made. It should also be mentioned that the citizens themselves hold each other responsible for the collaboratively made decisions.

Competitive elitism

From the elite democratic perspective, accountability in its most basic form is what takes place every fourth year with elections. The citizens' task is simply to elect and remove leaders on regular basis (Held 2006:137). Between this static input, checks and balances and control mechanisms in the governmental system provide accountability on the citizens' behalf. These mechanisms are however limited to the formal institutions. Hence, no tool exists for holding actors playing through informal channels accountable. The aim of accountability within the elitism democratic context is to provide legitimacy for the elected representatives. The nuclear debate has previously proven how citizens can use the electoral instruments to hold their representatives accountable. Torbjörn Fälldin representing *Centerpartiet* [the Centre party] was the Swedish prime minister between 1976 and 1978. When elected he had promised his voters that he would not allow any new nuclear power plants to be constructed as long as he was in office. When the coalition forced new power plants, he as a consequence resigned (Kajiser 1992:457). This incident illustrates the classical elitist accountability, with an imaginary contract between the voters and their elected representatives.

5.3.2 Participation

Deliberative

The deliberative participation is all about creating new democratic institutions for public involvement (Held 2008:234). As citizens' involvement in decision processes constitutes these processes, the deliberative approach argues that the participation needs to be dynamic. It has to emphasize all parts of the decision process. What provides legitimacy is rather the public debate in which the will is developed than the fixed will expressed through elections (Ibid:233). The sum of this is that the focus should be both increasing the extent and the quality of participation. The civil stakeholder consultations described in the empirical analysis could possibly be viewed as one potential deliberative mechanism. The seminars arranged by the nuclear authorities could also be seen as deliberative to a degree, although not yet institutionalized.

Competitive elitism

Participation could according to Larsson & Bäck's model for involvement in politics be divided between the participation that is institutionalized and that which is not (2008:106-110). What follows from this is that only the involvement through constitutional mechanisms could be democratic. Other ways to influence are categorized after how close to the decision makers it happens, and ranges from direct lobbying to indirect opinion and media contacts (Ibid.). This constitutes a static form of democratic participation, which also could be described as selecting between elites every four years. The other more informal and non-institutionalized channels are only open for those representing someone's or something's interests. In 1980 a grand example of the static elitist democratic participation took place in Sweden. This took shape as a referendum, where the voters' choice was limited to three rather detailed propositions on the development of the nuclear sector, was carried out. (Kajiser 1992:454)

5.3.3 Transparency

Deliberative

Transparency is an important prerequisite for establishing deliberative processes, as it is crucial to reduce the asymmetry in information and knowledge between citizens and experts. Citizens should develop their skills through participating in the democratic processes. Derived from this reasoning transparency could be viewed as a mechanism for deliberation. It is also important that the transparency follows the whole decision process. The critique Johansson refers from the process of finding a location for waste management facilities emphasizes that even though media spread information and protocol, the political decision process was not as transparent as it could have been (2004:108).

Competitive elitism

Due to the division between formal and informal actors in the elitist-democratic context, important parts of the decision-making processes are outside the scope of transparency. Swedish legislation ensures citizens insight into documents of public organizations. What goes on in the non-institutionalized interplay between private actors and elected representative bodies might therefore not be open for public review. Another dimension of transparency is what the accessibility includes. In a competitive elitism democratic context, the subject for public review would be protocols mentioning the decisions, rather than the process leading up to them. From the elitist perspective one could argue that experts' access to secrets is a necessary feature, further deepening the asymmetry of information between citizens and bureaucrats. This circumstance could actually be seen as a way of justifying the bureaucratization. (Held 2006:132f)

6 Normative evaluation

This normative evaluation is conducted based on the assumption that Sweden ought to fulfill certain goals through its implementation of public policies. As previously argued, the democratic values *accountability*, *participation* and *transparency* constitute these goals in the context of this study. These could be argued to be stemming from normative sources such as the Swedish constitution or the European charter of fundamental rights. They should also be understood from the consequentialist normative logical premise. From this starting point the selected values should be viewed as the operationalization of democratic consequences of how the governing is organized.

Nuclear governing raises questions about the transboundary consequences it could inflict. Practically, this means that people living in Finland near Sweden could be in danger of potential accidents while not being able to participate in the decision-making. Likewise, when the Finnish publicly owned company Fortum holds large shares in one of the Swedish reactors, there are consequences for the democratic values. How can the Swedish citizens hold these actors accountable, and how can they participate in the democratic processes? One might, from the competitive elitism democratic perspective, argue that Finland is a legitimate actor in relation to the Swedish government, to which they are held accountable. Even so, a problem with the scope of the democratic mechanisms seems to arise. Through emerging interconnectivity, parts of the nuclear rule-making is internationalized. The IAEA- rules about monitoring could be seen as an example of this. The question is how (if even possible) mechanisms for formal accountability can be used to hold informal actors accountable? This issue is relevant for the other values as well. However, accountability is somewhat particular in the sense that it traditionally requires an institutionalized relationship between the actor and the citizen. Deriving from this argument, it could be argued that new institutional mechanisms should be created to cover this deficiency.

Björk et al. argues that autonomous policy networks could be seen as not accountable to anyone, dodging steering and regulation. Their closed processes are not included in the legislation ensuring openness, and thereby transparency could become a problem. However one could also see these networks as complementary channels for information and communication, existing in addition to, rather than instead of official formal public structures. (Björk et al. 2003:122f) In the Swedish context, the industry wide standardization through cooperative organizations seems to be an example of the latter description, as extensive regulations also are in place. As Björk et al. points out, the state is still the dominating actor, even though policy network, and public-private cooperation become more important (2003:100f). This could be recognized in the Swedish

nuclear context where the state owned Vattenfall AB still is the key actor. From the elitist democracy perspective one could argue that this could provide the citizens with more accountability, participation and transparency through the representative system and the legal conditions that applies to public organizations. The deliberative approach however, would argue that public ownership will not in itself lead to more deliberative processes, but the possibilities for these might be better. The contemporary mechanisms ensuring the fulfillment of the democratic values often refer to governing taking place within the scope of the public sector. Björk et al. argues that the economical interdependence between private and public actors is an important premise for the creation of policy networks (2003:98-102). This mutual dependence could be seen in the nuclear context with needs for both long-term investments and liability guarantees.

One of the most distinguished examples of recent deliberative development seems to be the stakeholder consultations that are used in the preparatory stages of permission-processes for nuclear waste management. This mechanism has clearly deliberative qualities as it emphasizes rational argumentation rather than the kind of one-way communication that has been common in previous processes. It should however be considered whether such arrangements actually lead to greater qualitative or quantitative participation. This study has nevertheless focused on the possibilities, and hence should the implementation of required public stakeholder consultations be considered a “deliberative turn”.

From an elitism democracy-perspective it could be argued that a technically advanced society deterministically requires a strong bureaucracy. Deliberative protagonists who argue that democracy could be a process of learning contest this assumption. This process has been recognized as “Socio-technologisation” by some researchers (Sundqvist & Elam 2010:205). The empirical overview shows that the Swedish nuclear debate often comes down to defining the issue either as political or technical, and thereby implying whether citizens or experts should participate in the decision-making (SOU 1993:88 p177-178; Johansson 2004:16f). Before the 1980 referendum the decision on an application from Vattenfall AB to start a new reactor at the Ringhals plant had been delegated to geological experts. However, after the Harrisburg-accident the question was handed over to the citizens (SOU 1993:88 p176-178). This example does distinctly illustrate the power that lies in defining a question as either political or technical. Sundqvist & Elam claims that the importance of scientific knowledge often is overstated, and champion a broader understanding of the expert-concept, involving relevant experience or local knowledge (2010:210f). Fischer suggests what could be viewed as a potential golden mean, that deliberation also could be understood as the possibility for the citizens to decide which decisions should be subject for deliberative processes, and which that should be “sent to the experts” (Fischer 2009:44-46). Some might derive from this that arrangements characterized by compromises between the two opposing democracy models could be implemented. Even so, one should remember the rather pessimistic elitist perception of citizens as unable to learn or make responsible decisions.

7 Results and conclusions

In this concluding part the findings from the thesis' analytical parts will be discussed in relation to the theoretical framework. The aim of this part is to suggest some answers to the research questions that have formed this study. It is important to interpret this answer as a comparison to the relationship between the ideal types, rather than as factual account for the observed material. It should also be noted that the following discussion is meant to resemble a scale with the ideal types as end points rather than a dichotomy. The discussion's aim is therefore not to establish a static answer, but rather to point in the direction of the changes observed and suggest possible placements on the scale. A significant difference in the possibility of generalization between the theoretical and the empirical level should thus be mentioned.

In this study the aim has been to enhance the understanding of the relationship between the functional side of democracy and the values which democracy rests on. From the observed material, one could draw the conclusion that the modes of governing need to be compatible with the conception of how democracy should be understood. The core conclusion of this study is therefore that the observed change towards governance modes has not been fully accompanied by mechanisms for a more adaptable deliberative democracy. This could further lead to a democratic deficit, since the citizens hardly can participate in, have transparent access to, or hold accountable the processes of governance conducted outside the traditional framework of governing to which the current democratic mechanisms are adapted. This observation can first and foremost be observed on the theoretical level, but tendencies are also present in the empirical analysis. The development has however been radical on the end stages of the nuclear governing process, with the processes of permission review and placement of waste management sites. The process of framing technical issues as subjects for public debate and participation seems limited to the question of placement of plants and facilities. One potential explanation to this could be that it is these stages of the governing that are actualized in the contemporary debate. Organized interests in more or less institutionalized cooperation with government could be seen as a result of the democratic deficiency (SOU 1993:88 180f). However one could easily disregard this attempt to such a causal explanation as rather being a part of the Swedish pluralistic corporatist heritage than a new reaction to the proposed deficit. Even so it could of course be argued that such arrangements could in fact contribute to bridge the deficit, and function as a symbiosis of the two ideal democracy models.

The direction of the potential causality in the relationship between new modes of governance and deliberative democracy should be discussed. Bäckstrand et al. claim that these forms of governance should be taken into use in order to enhance the deliberative quality of democracy (2008:4f). In this study, however, the ambition has been to examine this relationship in coherence with the development of governance modes within the nuclear sector. In this specific case it seems more plausible that the governance modes need to be accompanied by stronger deliberative mechanisms, than that these modes as such would provide deepened deliberation. What one could derive from this discussion is that while these new governance modes could be seen as a prerequisite for deliberative democracy, this development needs to come in companionship with more direct development of the democratic institutions. The change in owner structures from state-owned power plants to private public-shared ownership illustrates this. The change in itself does rather complicate the democratic participation, given that few constitutional mechanisms for public involvement has been constructed.

Giving some suggestions for further research will conclude this thesis. Seeking explanations to the suggested results would be a possible path further on from this study. The potential causal relationship between new modes of governance and democracy-values could for instance be measured in a more extensive study. The analytical framework combining democracy models and governance theory could also be applied to other cases, other country's nuclear sectors or even other issues than nuclear power. These suggestions would, as this study hopefully has done, contribute to the cumulative research process.

8 References

- Ahlbäck Öberg, Shirin & Rothstein, Bo, 2010. *Politik som organisation: förvaltningspolitikens grundproblem*. 4. ed. Stockholm: SNS förlag.
- Badersten, Björn, 2006. *Normativ metod: att studera det önskvärda*. Lund: Studentlitteratur.
- Barsebäck nuclear power plants website, *Avveckling och rivning*,
<http://www.barsebackkraft.se/> Date accessed: 2012-05-17.
- Beckman, Ludvig, 2007. *Grundbok i idéanalys: det kritiska studiet av politiska texter och idéer*. Stockholm: Santérus.
- Björk, Peder - Bostedt, Göran & Johansson, Hans, 2003. *Governance*. Lund: Studentlitteratur.
- Bäckstrand, Karin – Khan, Jamil – Kronsell, Annica & Lövbrand, Eva, "The promise of new modes of environmental governance" i Bäckstrand, Karin (red.), 2010. *Environmental politics and deliberative democracy: examining the promise of new modes of governance*. Cheltenham: Edward Elgar.
- Charter of fundamental rights of the European union, (2010/C 83/02)
<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:0389:0403:EN:PDF> - Date accessed: 2012-05-13.
- Energimarknadsinspektionen, 2006. *Ägarstrukturen på elmarknaden*.
- Fischer, Frank, 2009. *Democracy & Expertise: reorienting the policy inquiry*. Oxford: Oxford University Press
- Gjelstrup, Gunnar & Sørensen, Eva "Introduction" in
Gjelstrup, Gunnar & Sørensen, Eva (red.), 2007. *Public administration in transition: theory, practice, methodology*. Copenhagen: DJØF. p 21-34
- Gåhlin, Emil - Nilsson, Isabelle & Söderholm, Patrik, 2011. *Tillståndsprövning för kärnkraft*. Elforsk rapport 11:06.
- Habermas, Jürgen, 1987. *The theory of communicative action. Vol. 2, Lifeworld and system : a critique of functionalist reason*. Cambridge: Polity.
- Held, David, 2006. *Models of democracy*. 3. ed. Cambridge: Polity.
- Hollis, Martin, 1994. *The philosophy of social science: an introduction*. Cambridge: Cambridge Univ. Press.
- Johansson, Hanna Sofia, 2004. *Samtal om kärnavfallsfrågan och demokratins gränser: förstudien i Tierp 1998-2001*. Göteborg: Avd. för teknik- och vetenskapsstudier, Göteborgs universitet.
- Kaijser, Arne, 1992. "Redirecting power: Swedish Nuclear Power Policies in Historical Perspective", *Annual Review of Energy and the Environment*, 17:437-62.
- Statens råd för kärnavfallsfrågor (KASAM), SOU 1993:18, *Acceptans Tolerans Delaktighet*.

- Statens råd för kärnavfallsfrågor (KASAM), SOU 2004:99, *Kärnavfall – demokrati och vetenskap*.
- Statens råd för kärnavfallsfrågor (KASAM), SOU 2004:120, *Tillbakablick och framtidsperspektiv i KASAM:s verksamhet*.
- Statens råd för kärnavfallsfrågor (KASAM), SOU 2008:70, *Slutförvaring av kärnavfall*.
- Kooiman, Jan, 2003. *Governing as governance*. London: SAGE.
- Kåberger, Tomas, 2002. "Swedish nuclear power and economic rationalities", *Energy & Environment*, 13:2:191-206.
- Larsson, Torbjörn & Bäck, Henry, 2008. *Governing and governance in Sweden*. 1. ed. Lund: Studentlitteratur.
- Lag om kärnteknisk verksamhet, 1984. SFS 1984:3.
- Lag om särskilda skattebestämmelser vid kärnkraftsveckling, 2000. SFS 2000:334.
- Lundqvist, Lennart, "Privatisering" i Rothstein, Bo, 2010. *Politik som organisation: förvaltningspolitikens grundproblem*. 4. uppl. Stockholm: SNS förlag s.216-244
- Miljöbalken, 1998. (SFS 1998:808)
- Miljödepartementet, Atomansvarsutredningen, SOU 2006:43 *Översyn av atomansvaret*.
- Miljödepartementet, SOU 2009:88 *Kärnkraft - nya reaktorer och ökat skadeståndsansvar*.
- Newell, Peter & Bulkeley, Harriet, 2010. *Governing climate change*. New York: Routledge.
- Sundqvist, Göran & Elam, Mark, 2010. "Public Involvement Designed to Circumvent Public Concern? The "Participatory Turn" in European Nuclear Activities", *Risk, Hazards & Crisis in Public Policy*, 1:4:203-229.
- Teorell, Jan & Svensson, Torsten, 2007. *Att fråga och att svara: samhällsvetenskaplig metod*. 1. uppl. Stockholm: Liber.
- Tännsjö, Torbjörn, 2000. *Grundbok i normativ etik*. 1. ed. Stockholm: Thales.
- Vedung, Evert, 1997. *Public policy and program evaluation*. New Brunswick, N.J.: Transaction Publishers.
- Weale, Albert "Governance, government and the pursuit of sustainability" in Adger, Neil W. & Jordan, Andrew, *Governing Sustainability*, New York: Cambridge University Press. p. 55-75.

9 Appendix

9.1 Owner structures of the Swedish nuclear power plants

