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Why research in energy and environmental law?

An important role for legal research is to analyse the legal preconditions for activities related to a new energy policy, such as installations for extraction of energy from renewable natural resources, installations for energy efficient transports and for deposits of CO₂-gases. To what extent are these promoted by the law?

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Special issue:

Energy and the function of law

A sustainable energy and climate policy needs technical advances, but these are not sufficient. The policy needs a legal system clearly supporting the implementation. This situation does not exist in our countries today.

This newsletter addresses the function of law in connection with energy policy implementation. It reveals that law is often an obstacle, not least as it protects local environmental interests (e.g. the landscape). It indicates that complex licensing procedures and strong municipal powers can not only obstruct important projects but also generally discourage investments important for the policy implementation (e.g. in wind power). The letter also stresses the importance of “path dependency”; Even if an energy policy is supported by new legislation, decision makers sometimes remain in traditional ways of thinking.



Dissertation

Renewable Energy Development and the function of Law

The thesis describes and analyses the function of law with reference to the implementation of renewable energy policy objectives, with focus on the development of wind power.

“A realization of the Swedish wind power planning goal will presumably require changes of the law. The most important issue is perhaps to reduce the implementation deficits

by improving the legal framework governing the planning and installation processes.”

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Path dependency

While the concept of path dependency is well-known in some social sciences, its implications for the development of law and jurisprudential research has not been given a lot of concern. However, if we aspire to make use of the law as a tool for social

change – or more specifically to implement environmental objectives – an increased understanding of the law as part of a wider institutional framework is imperative.

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ENERGY AND THE FUNCTION OF LAW

Are we prepared for a substantial change of the energy system?

A sustainable energy and climate policy needs technical advances, but these are not sufficient. The policy needs a legal system clearly supporting the implementation. This situation does not exist in our countries today.

Social sciences play a crucial role

The energy and climate policy in the EU and in many other states is to phase out the use of fossil fuels. The long term objective is instead energy efficiency, including increased use of renewable energy resources. This policy cannot be obtained without technical advances, but these are not sufficient. Several opposite interests occur, not least impacts on the local environment, and these interests are often supported by legal restrictions. Costs are crucial for successful implementation. And not least important, the policy should be legitimate: Will people accept thousands of new wind mills on and outside our shores? How would you like to see open fields in the European landscape being converted into “green walls” of energy forests?

Policy implementation is a matter for research in social sciences, inter alia economics, political science and – which is the topic in this newsletter – law. Law has basically two functions; to solve conflicts between individuals and, which is most important here, to direct human behaviour so that politically important objectives are obtained. The law plays therefore a crucial role when designing and utilizing pathways to a sustainable energy system.

Why research in environmental and natural resources law?

An important role for research in environmental and natural resources law is to analyse the legal preconditions for activities related to a new energy policy, such as installations for extraction of energy from renewable natural resources, installations for energy efficient transports and for deposits of CO₂-gases. To what extent are these promoted by the law? But also, where are the legal obstacles and uncertainties? And what legislation is needed in the future to implement the policy? These questions are often complicated as the environmental legal system is huge and partly unsystematic. The legal system includes international conventions, EU law, acts adopted by the Member State parliament and regulations instituted by the government, state institutions or municipal parliaments. The rules are often vague and sometimes contradictory.

The overall objective of the Pathways legal project is to study legal preconditions for implementation of an energy policy based upon energy efficiency and sustainability

The legal project in Pathways includes several topics:

- Law and other social sciences play a crucial role in connection with implementation of an energy policy
- Energy efficiency vs landscape and biodiversity – different environmental objectives in conflict
- The planning and licensing process can discourage important investments in wind power and other activities essential for the energy policy
- While the policy is new and the law changes to promote the implementation, traditional understandings among private persons and decision makers influence more or less how the law is applied in practice. Such “path dependency” is an important task for future legal research
- Renewable Energy Development and the Function of Law – dissertation December 2009 in Luleå University of Technology
- Intensive cultivation of different kinds of forests is a future scenario. What are the legal constraints?
- New nuclear reactors in Sweden is again a political option. How does the law respond to that?

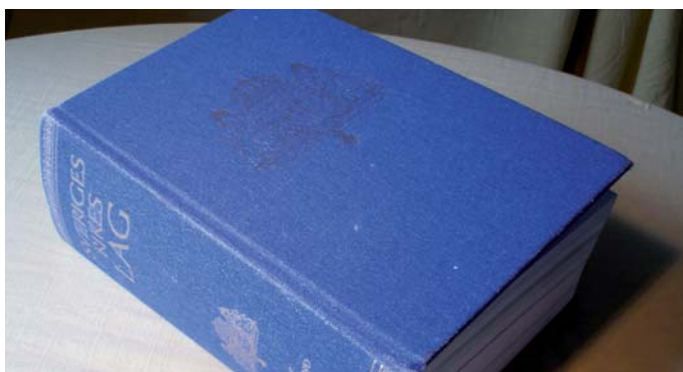


**Prof. Gabriel Michanek,
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Luleå university of
Technology**

THE SWEDISH EXAMPLE

Conflicting environmental objectives

The chief environmental legislation in Sweden – the Environmental Code – aims to promote the use of renewable energy resources and efficient management of energy. However, this is only one of the pathways to the Code's overall objective: "sustainable development". The Code aims to protect also other interests, such as conservation of biodiversity and landscapes, protection of health and the environment against pollution, noise and similar nuisances. Different environmental objectives are often in conflict and have to be balanced in individual cases.



It is an important task for future law makers to provide clear guidance for how to balance contrasting objectives and to give sufficient weight to the *overall collective* and long term benefits of using renewable energy resources; the risk is otherwise that obvious local impacts of e.g. wind power installations is seen as more important than the relatively small and diffuse contribution from that particular wind mill to the implementation of an energy and climate policy. However, local acceptance should not be ignored. Economic compensation or shared ownership to an installation could be means overcome conflicts.

It is also essential how we look upon new occurrences in connections with for instance physical planning and licensing. E.g. the resistance to wind mills from not only neighbours, but also state institutions can partly be explained by traditional ways of thinking and valuations; so called *path dependency*. Is it easier to tolerate tall constructions (e.g. churches) that we since long are used to? Were wind power installations easier to accept in Denmark because the country never stopped using the old wind mills?

The planning and licensing process – time, uncertainty and local conflicts

One obstacle to a fast implementation of a new energy and climate policy is the legal process connected with physical planning and licensing. This is especially problematic as the new energy and climate policy presumes construction of many new installations in different places (e.g. windmills). Not seldom are several licences and planning decisions required, decisions that may be appealed. It takes often more than five years before the final decision is made, which is a period of uncertainty. This may hamper the willingness to invest.

The role of the municipality is crucial. A municipality may hinder new installations by planning for other land uses or simply not planning at all. The plan- and building act assign the planning power to the municipal parliament. The state county board or the government may intervene only occasionally. A wind power investor may ask: Should I plan for a location where the wind conditions are optimal or where the municipality likes my project?

NEW

Nordic environmental law journal

Nordic Environmental Law Journal is electronic. The journal publishes articles of importance for environmental law research and development in the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden). The articles focus on environmental law from a national, EU or international perspective.

The journal's objective is to address environmental legal theoretical issues related to sustainable development. From that perspective the journal may include a wide range of topics including, efficient use of natural resources and energy, the quality of land, water and air (including climate), maintaining biodiversity, control of waste and chemicals, the relation

between trade and the environment and environmental perspectives on human rights.

The journal publishes at least two issues per year. All articles are pre-reviewed. The journal's languages are Danish, Norwegian, Swedish or English.

The first issue of Nordic Environmental Law Journal is planned for 1 November 2009.



NORDISK MILJÖRÄTTSLIG TIDSKRIFT
NORDIC ENVIRONMENTAL LAW JOURNAL

Path Dependency

While the concept of path dependency is well-known in some social sciences, its implications for the development of law and jurisprudential research has not been given a lot of concern. However, if we aspire to make use of the law as a tool for social change – or more specifically to implement environmental objectives – an increased understanding of the law as part of a wider institutional framework is imperative.

Institutions are rules for human interaction. They outline the social order to which we are part, and restrict our conduct by imposing norms and regulations for all sorts of situations, for instance when we enter an agreement or make a transaction. The institutional framework thus encloses all sorts of rules: legal rules, customary rules, norms of behaviour, conventions, self-imposed codes of conduct etc. Institutions are believed to reduce the costs for transactions and increase the overall social utility. However, formal as well as informal constraints may also run counter to what we consider to be efficient or beneficial from a social point of view; while well defined property rights generally are considered to prevent e.g., resource depletion, the ownership structure may well serve only a few, powerful interests. The structure for interaction provided by the institutions is thus generally stable, but not necessarily efficient.

All development is path dependent

The existence of inefficient institutions can in part be explained by the fact that all development (technical as well as social) is *path dependant*. Path dependency implies that development inevitably depends on the status quo, against which the pros and cons of changes are measured. This means that even though some rules, or systems, are poorly functioning in the sense that they do not provide the most efficient solution, the development path is formed by decisions and choices made on the basis of experience, ideology, beliefs etc. From a technological viewpoint, path dependency helps explain why inefficient technical solutions

prevail while others (perhaps better) are abandoned or not further developed. In other words, once the development has headed in a certain direction, the path is somewhat chosen and in any social game, players who have gained their positions a result of the current system will usually want that system to continue.

The Function of Law

As a social phenomenon, the legal system and the development of law is to a large extent constrained of its own accord; on the one hand, the law aims to be stable and systematic, but on the other hand, the law needs also to be flexible enough to adapt to, and initiate, social changes. As for the function of law in relation to the implementation of environmental objectives, the institutional setting is important: the law exists and effects in connection with other standards for conduct. The efficiency of a legal rule, in terms of identity between the rule's purpose and the outcome of its application, will depend on the strength of the rules of enforcement and the proximity to the prevailing norm system in terms of the perceived legitimacy of the legally imposed rules. The correlation between the purpose with a legal rule or policy instrument and the actual outcome of that arrangement will thus depend on how effectively the rule or the policy can be implemented in the existing institutional environment.

Barriers to Change

The development and diffusion of low-carbon and renewable energy technologies will for instance be exposed to a system



in which courts and other permit authorities for ages have been directed to protect traditional environmental values. Although the laws have changed and brought in the sustainability objective – and with that new environmental interests – the authorities in command are much the same. Consequently, the new interests may not be wholly appreciated in the decisions; conventional values like landscape protection may, in the case-to-case assessment, be considered more important than the conversion of the energy system.

Thus, even if the legal rules and contemporary systems are poorly functioning or inefficient in respect of the new reality, in this case represented by the need for pathways to sustainable energy supply, the institutional path dependency may seriously delay or hamper the necessary changes.



Dissertation:

Renewable Energy Development and the function of Law

Maria Pettersson, Department of Social Science, Law Division, Luleå University of Technology

The thesis, published in December 2008, describes and analyses the function of law with reference to the implementation of renewable energy policy objectives, with focus on the development of wind power.

This involves legal rules related to planning, location and operation of windmills. The legal system is evaluated in respect of its capacity to facilitate or impede the development of wind power. The study includes a comparative analysis of the legal functions in Sweden, Denmark, Norway and England. The result of the analysis of Swedish law indicates that the legal system governing the implementation process encompasses barriers to the development of wind power.

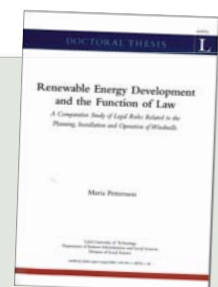
The examination of the corresponding legal functions in Denmark, Norway and the United Kingdom presents important differences with respect to planning control and permit requirements, as well as regarding substantial provisions. Generally, it looks as if there is a correlation between the level of overarching control over the physical planning on the one hand, and the potential to successfully implement renewable energy policy objectives on the other. Time-limits for permit procedures, legal standards for emissions, explicit rules for the balancing of opposite interests and so forth, are other interesting features that may be employed in Sweden. A re-

alization of the Swedish wind power planning goal will thus presumably require changes of the law. The most important issue is perhaps to reduce the implementation deficits by improving the legal framework governing the planning and installation processes. A few of the discussed factors

emerge as crucial in this respect and that is roughly: to remove the general permit requirement, and thus leave the entire trial to the planning system; and to breach the municipal planning monopoly.

“A realization of the Swedish wind power planning goal will thus presumably require changes of the law”

The dissertation *“Renewable Energy Development and the function of Law”* by **Maria Pettersson** is available at: <http://epubl.luth.se/1402-1544/2008/65/LTU-DT-0865-SE.pdf>





Political springtime for nuclear energy? But what about the law?

The political message in 2009 is to rely upon nuclear energy for many years to come. Licences have already been issued to increase the production capacity in existing reactors and it is not unlikely that new reactors will be constructed, foremost to replace outdated existing ones. This policy has several legal implications.

The Nuclear Technology Act of today includes an explicit prohibition to issue a license for a new nuclear reactor. This prohibition has to be removed if new reactors shall be possible to construct. However, increased generation of electricity by modernisation of an existing reactor may be an economically more preferable alternative than to construct a new reactor. It is therefore of interest that the prohibition applies only to the construction of a new “reactor”, defined as the entire nuclear installation, while e.g. replacement of a reactor tank or other components is not covered the prohibition. The law does in fact require the operator to continuously update the installation for safety reasons.

Who should decide? Politicians or nuclear safety experts?

It is disputable if the major decisions on nuclear energy issues (new reactors, deposits of radioactive waste etc.) should be taken by the government, as is the case in Sweden, Finland and most other nuclear energy states. Is the government an impartial body, capable to comply with legal requirements? Will e.g. the government turn down an application for a new, politically desired nuclear plant if legal requirements on environmental protection in e.g. the Environmental Code are not fulfilled? It is noteworthy that

the International Atomic Energy Agency (IAEA) recommends that these decisions should be taken by a nuclear safety expert authority. This system is adopted by USA and Canada.

The municipal power

Another controversial issue is the role of the municipality. The municipality is not only chief responsible for physical planning, but has also a right of “veto”. As in Finland, the municipality must approve, otherwise the government cannot legally permit the installation. There are no exceptions for nuclear reactors. One may ask if the right of veto may lead to locations which are not optimal from safety, environmental or infrastructural point of view. One may also ask why a veto power is vested only in the municipality where the nuclear plant is planned to be located, but not in other municipalities possibly affected by the plant and its risks.

Legal control takes time

A nuclear plant necessitates decisions on plans and permits according to the Plan

and Building act, the Environmental Code (at least three decisions) and the Nuclear Technology act. All decisions can be appealed. Although the Environmental Code to a considerable extent coordinates the processes, the legal decision making process can be expected to take many years, probably more than ten from the first application to the final decision.

In Sweden, the Environmental Court prepares the case and advises the government to approve or disapprove the application. In two rather recent cases concerning increased production capacity in reactors at Ringhals and Oskarshamn, the Court considered the operation at the plant to be non-complying with environmental requirements prescribed in the Code (in one of the cases because of the risk for terror attacks or other kinds of sabotage). The Government accepted the two applications despite the Courts’ recommendations to disapprove. (Miljö- och samhällsbyggnadsdepartementet, 2005-10-20 in case M2005/2913/F/M and 2006-06-08 in case M2006/1541/F/M).

Energy Policy will publish an article by Gabriel Michanek (law) and Patrik Söderholm (economics), presumably in fall 2009. The article discusses legal and economic aspects on the licensing of nuclear reactors, comparing Sweden with other states, especially Finland.

Intensive cultivation of forests

A future scenario in Sweden is a significantly increased intensive cultivation of different kinds of forests. The biomass produce may be used as fuel instead of e.g. oil and coal. What are the legal constraints to such cultivation? Should we relieve existing legal restrictions in order to facilitate implementation of a new energy and climate policy?

The Swedish Ministry of Agriculture has in 2008 assigned to the Swedish University of Agricultural Sciences to carry out a broad survey on the possibilities for intensive cultivation of forests on previous agriculture land or forest land, provided the areas lack high nature conservation values. One part of the commission is to identify legal obstacles and uncertainties. A report is expected in September 2009.

Intensive cultivation of forest varies significantly depending on the crop used. E.g., the circulation period (between harvests) is for Salix ("energy forest") 3–5 years and for Contorta (pine) 25–40 years.

Forestry or agriculture?

A crucial legal issue is if a certain kind of cultivation should be considered to be a form of forestry or agriculture. Different rules apply to these two forms of land use. If the cultivation is a form of forestry, it will have to comply with the Forest Act's special rules on forest management and nature conservation. If instead the cultivation is a form of agriculture, there are no management provisions but other specific provisions apply for the conservation of nature and cultural values. There are also specific restrictions for the use of fertilizers in agriculture (based

on EU law). Also, certain EU subsidies apply to agriculture but not to forestry. A reasonable interpretation of the valid law today leads to the standpoint that cultivation of Salix should be regarded as a form of agriculture while other cultivations are to be seen as kinds of forestry.

Should we accept environmental risks for the sake of the environment?

Should we relieve existing environmental legal restrictions concerning e.g. dewatering of wetland, using foreign tree species, cloning pines and fertilizing, if these legal reliefs facilitate the implementation of a new energy and climate policy? Is this the pathway to sustainable development even if it leads to increased water pollution (nutrients), monocultures instead of forest diversity and altered landscape? This is to some extent a matter of national politics, but Sweden can never compromise with the environmental legal requirements from EU; it is e.g. not possible to allow fertilizing that worsens water quality in contravention with so called environmental quality standards adopted according to the Water Framework Directive. Such standards (e.g. limits for the maximum content of nutrients) may indeed serve a considerable obstacle to intensive cultivation of forests in certain areas.



The legal project in Pathways

The objective of the legal project is to study legal preconditions for implementation of an energy policy based upon energy efficiency and sustainability, in particular the development of renewable energy resources.

The project includes two researchers; Gabriel Michanek, professor in environmental law at the Faculty of Law, Uppsala University and Maria Pettersson, Doctor of Laws, Division of Law, Luleå University of Technology.

The project has so far focused first of all on legal preconditions for wind power in Sweden, Denmark, Norway and United Kingdom, resulting in a doctoral dissertation 2008 by Maria Pettersson (see separate article). An important task for the years 2009 and 2010 is to analyse "path dependency" in relation to the law (see separate article).

Legal issues of importance

Several legal issues of importance for energy policy implementation are discussed within the project. Some of them are mentioned in this newsletter.

- How should we formulate the law so that proper weight is given to the interest of counteracting climate change in the balancing against local environmental impacts?
- Individual balancing is the traditional Swedish idea for environmental control. Made correctly, it promotes environmental cost efficiency with respect to the preconditions in each case. However, balancing necessitates assessments and participation of different stake holders. It is normally connected to a license procedure. Individual balancing does not promote fast policy implementation. Should therefore individual licensing (and balancing) be substituted by general and precise standards? E.g., there is less need for a thorough and time consuming individual site assessment of a windmill, if standards determine limits for noise and shadowing and minimum distances to places where eagles nests typically may occur.
- Should the law enforce development of renewable energy resources in regions where the natural preconditions are good but the local political interest for extracting energy from such resources is politically weak? The Swedish physical planning legislation is based upon municipal planning monopoly, but what can we learn in this respect from planning law in other countries?
- It is an important observation that the law often deals with one development (e.g. one wind mill) and one developer at the time, while the energy system (on municipal, national and international

level) consists of many interconnected activities. What are the legal constructions to promote or even enforce systematic energy solutions, e.g. to combine the assessment of hydro power dams with new wind mills or to force a steel industry to make available hot rest water for heating of houses?

The research method used in the project?

When searching for the legal situation of today (valid law), legal research is far more complicated than to study the legal text (the rule as such). This is often vague or contradicts other rules, especially when the legal system is as huge and complex as in environmental law. It is then necessary to study other legal sources, especially case law and preparatory works and to find reasonable arguments for a certain solution. It is often relevant to find solutions harmonising with the objective of the statute and with the overall legal system. It is always necessary to study relevant EC-law, which is superior to the nationally adopted rules. When discussing pros and cons of a legal construction and to suggest more appropriate legal solutions for the future, it can be useful to compare with the legal situation in other states. Maria Pettersson's doctoral dissertation (see separate article) is based upon such a legal comparative approach.

Pathways to Sustainable European Energy Systems

A five-year project

The European pathways project is a five year project with the overall aim to evaluate and propose robust pathways towards a sustainable energy system with respect to environmental, technical, economic and social issues. The focus is on the stationary energy system (power and heat) in the European setting. Evaluations will be based on a detailed description of the present energy system and will focus on how the present system can be developed into the future under a range of environmental, economic and infrastructural constraints.

Independent results to support decision makers

The Pathways project is a response to the need for a large and long-term research project on European energy pathways, which can produce independent results to support decision makers in industry and in governmental organizations. Stakeholders for this project are: the European utility industry and other energy related industries, the European Commission, EU-Member State governments and their energy related authorities.

