

Paper to be presented at the 2008 Berlin Conference on the Human Dimensions of
Global Environmental Change / International Conference of the Social-Ecological
Research
22-23 February 2008

Determining Factors of Long-Term Strategic Governance in Energy Policy

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Table of Contents

Abstract	1
1. Strategy as an Approach of Long-Term Governance	2
1.1. Definition of Long-Term Strategy.....	2
1.2. Long-Term Strategies in Energy Policy	3
2. Energy Strategies - The Case of United Kingdom.....	4
2.1. The British Strategy Process in Energy Policy	4
2.2. Important Contents of the Strategy.....	6
3. Do Strategies Matter? – The Effects of the UK Energy Strategy	8
4. Determining Factors of Long-Term Strategic Governance in the UK Energy Policy Process	10
Conclusion.....	10

Abstract

A fundamental change is necessary for a sustainable development in the energy supply systems. A promising approach in long-term governance in energy policy is the development and implementation of strategic concepts. In this paper, strategy is defined as long-term, success orientated, deliberated calculations of aims, instruments and environmental parameters. Central aspects for these strategies are a long-term orientation, a calculated mix of instruments and goals and the cooperation of key participating groups.

The aim of this paper is to analyse and explain the effects of long-term strategies for a sustainable energy supply. The main question of the papers is, if and how strategies with a long-term-view do influence the day-to-day business of energy policies. Thereby central determining factors of the energy strategies and of the long-term perspective in energy policy shall be identified.

The paper uses Great Britain as case study in the analysis of energy strategies. Great Britain implemented the complex energy strategy “Our Common Future – Creating a Low Carbon Economy” in 2003, which has been further developed in the white paper of 2007 “Meeting the Energy Challenge”.

The paper is part of a PHD-project, where the main method to be used is the conducting of interviews with key members in politics, economics and science who deal with the strategies.

1. Strategy as an Approach of Long-Term Governance

Due to the problems connected with the current energy systems, such as climate change or shortage of resources, a fundamental change is necessary for a sustainable development in the energy supply systems.

Since (centralised) energy technologies typically are long-lasting, financial investments in new energy facilities and infrastructure are very high (and therefore are based on long-term considerations) and environmental impacts of fossil energies often have long reaction times, the transformation of the energy supply needs to be governed with a long-term view.

However, daily politics mostly are not based on long-term considerations, but are characterized by short-term, passive reactions on changing conditions – the so-called “Muddling Through”. The time horizons are often equivalent to the election periods and policy makers are more interested in visible short-term payoffs than in long-term problem solving.

Energy policies therefore need be coordinated and focused on the long-term targets to a sustainable development. An approach for this coordination and long-term orientation could be the development and implementation of strategic concepts (Jänicke/Kunig/Stitzel 2003).

1.1. Definition of Long-Term Strategy

The word strategy is used as a fashionable term very frequently in daily language use for various measures or programmes that are somehow connected with a longer-term orientation. In contrast in his paper, strategy is defined as long-term, success orientated, deliberated calculations of targets, instruments and environmental parameters (Raschke 2002; Tils 2005).

Firstly, it is important that targets and instruments are deliberately coordinated. The strategies have to be composed of both, binding targets and a suitable, thought out instrument mix to reach the targets. Secondly, instruments and goals have to be adapted to the environmental parameters (Jänicke/Kunig/Stitzel 2003: 108). In contrast to planning concepts, strategies thus are flexible to be modified to changing conditions.

However, very important is that unlike tactics strategies contain a long(er)-term orientation. A strategic concept should not be changed radically after a short time, unless changing general conditions necessitate fundamental amendments. Especially the long-term targets in strategies by definition are constant benchmarks. Success orientation implies the policy or problem solving perspective. Strategies should therefore be developed and implemented to solve scientific proven problems, even if it might be necessary to implement unpopular measures to reach the aims.

Given the specified criteria, strategic concepts are ruled by prerequisites. In the following, the paper identifies determining factors of long-term strategic governance in energy policies.

1.2. Long-Term Strategies in Energy Policy

As described above, the transition to a sustainable energy policy needs to be governed by longer-term orientated concepts. Therefore various countries have developed and implemented strategies for a sustainable energy supply.

This paper analyzes the energy strategy of Great Britain. Great Britain implemented the complex energy strategy “Our Common Future – Creating a Low Carbon Economy” in 2003, which has been further developed in the white paper of 2007 “Meeting the Energy Challenge”

The paper is part of a PHD-project which compares the energy strategies of Great Britain and Germany. Both countries are pioneers of climate policies in Europe (Breuermann 2002: 18ff.; SRU 2004: 17).

The case of United Kingdom is a good example for a long-term orientation of strategic concepts in energy policy, as the White Papers set up targets for the reduction of CO₂ emissions by 2050.

In the following the process and important contents of the strategy are described.

2. Energy Strategies - The Case of United Kingdom

2.1. The British Strategy Process in Energy Policy

The strategy process in energy policy in the United Kingdom (UK) was mainly initiated by a report of the Royal Commission on Environmental Pollution (RCEP) in 2000: *Energy – The Changing Climate* (RCEP 2000; Interview Open University). The report concluded that the UK should plan for a reduction of 60% by 2050 and 80% by 2100 in the amounts of carbon dioxide emissions it produces by burning fossil fuels. The report explores the consequences for industry and households of the targets and how government policies need to change.

The conclusions of this report were the main trigger for the subsequent Review of the Performance and Innovation Unit (PIU) as government asked PIU to consider implications of the report for energy policy. The review team consisted of the members of PIU (now Strategy Unit), which was based in the Cabinet Office and a couple experts from a variety of backgrounds, with most people being seconded in for periods, but with civil servants from the PIU providing the administrative framework and guidance. PIU conducted a thorough consultation on the basis of a series of briefing notes and around 400 submissions were received. In February PIU published its report *The Energy Review*, setting out the architecture for the path to 60% emission cuts (PIU 2002). Yet, PIU declared that a binding long-term target was too ambitious for that time, particularly when other countries were not committed to emission reduction targets and long-term scenarios were often insecure (Khatri 2007: 578; PIU 2002). However, the final published version still was quite radical. It calls for rapid expansion of renewable energies, suggesting a target of obtaining 20% of UK electricity from renewables by 2020. It also suggested proposals for reducing energy demand by 20% by 2010 and a further 20% by 2020 and expansion of Combined Heat and Power (CHP) (MacKerron 2007; PIU 2002; Elliott 2002).

The review was followed by another major consultation conducted by the government itself and on 24 February 2003 the government finally published the long-awaited Energy White Paper *Our Energy Future – Creating a Low Carbon Economy* (DTI 2003). Very central for the strategy process was that in the governmental consultation significant attention was paid to public, and some stakeholder, views (MacKerron 2007). The contents of the strategy were in agreement to the review

conclusions on the main lines, but it committed to the carbon dioxide emissions reduction target of 60% by 2050 (see 2.2.).

The White Paper was concretized by several different reports and papers which were published in the following years: e.g. *CHP-strategy* (DEFRA 2004), *Indicators of UK energy sector*, *Carbon Abatement Technology Strategy* (DTI 2005) and *UK Biomass Strategy* (DEFRA 2007). Additionally, the progress of the Energy White Paper was reported by the government annually (DTI/DEFRA 2004, 2005, 2006, 2007).

From 2003 to 2005 the government recognised a change of general conditions in energy policy as the energy security situation seemed to intensify by the Iraq War and the UK becoming a net importer of primary energy¹. Other important influences on energy policy were the strong lobbying of the nuclear industry and the ratification of the Kyoto-Protocol.

Citing these reasons (especially security issues) the Prime Minister, to the evident surprise of the Energy Minister Malcolm Wicks, announced that a new energy review would be necessary (MacKerron 2007). The new review report *The Energy Challenge* was published in July 2006 (DTI 2006). It was composed in cooperation by the Department of Trade and Industry (DTI)² and the Department for Environment, Food and Rural Affairs (DEFRA). The review was based on a consultation and announced further ten separate consultations, for example a consultation on the promotion system for renewable energies (Renewables Obligation) and a consultation for new nuclear power plants in the UK (DTI 2006).

As determined in the energy White Paper 2003, building new nuclear power plants should be proceeded by a fullest public consultation (DTI 2003: 12, 61). The consultation for new nuclear facilities which took place in 2006 was judged illegal in the judicial review initiated by Greenpeace UK. The High Court Judge followed the arguments of Greenpeace and called the consultation process "seriously flawed" and "manifestly inadequate and unfair" (CO/8197/2006). The government was sentenced to conduct a new nuclear consultation. On the same day, Prime Minister Tony Blair

¹ Because of the national resources of fossil fuels (especially coal and gas in the North Sea), the import quota of electricity is less than 5 % (total 2% net import in 2006). Until 2005 UK was one of the few net importer of fossil fuels (dena 2004: 99; DTI 2007: 276; IEA 2004: 345f).

² DTI was transformed into the Department for Business, Enterprise and Regulatory Reform (DBERR) at 28th July 2007 (Website DBERR).

announced that there would be more nuclear consultations, but the nuclear policy would remain unchanged.

In October 2006 the so called *Stern Report* was published by the previous Chief Economist and Senior Vice-President of the World Bank and present head of the Government Economic Service, Nicholas Stern, by order of the British government. The Report analyses the economic effects of global warming and concludes that the costs of „doing-nothing“ against climate change would add to 5-20% of global GIP every year whereas the costs to stabilize the emissions on 450-550 ppm would only sum up to 1% of global GIP (Stern 2006). The Stern Report had a big influence on the strategy process in Great Britain as the following 2007 White Paper refers to the Report repeatedly.

In May 2007 the new energy White Paper, based on the results of the review report, was finally published: *Meeting the Energy Challenge* (HM Government/DTI 2007). The future of nuclear policy was left open³, but another 17 consultations were announced in the White Paper.

2.2. Substance of the Strategy

The first White Paper “Our Energy Future” of 2003 named three big challenges of the energy future: Climate change, decline of indigenous energy supplies and the old energy infrastructure. Therefore the strategy sets four central targets (DTI 2003):

- “to put UK on a path to cut the CO₂ emissions by some 60% by about 2050, as recommended by the RCEP, with real progress by 2020;
- to maintain the reliability of energy supplies;
- to promote competitive markets in the UK and beyond, helping to raise the rate of sustainable economic growth and to improve our productivity; and
- to ensure that every home is adequately and affordably heated”.

To reach the targets the 2003 strategy mainly relies on market mechanisms. Energy efficiency and the emission trading systems are in the centre of the strategy instruments.

³ The second nuclear consultation was officially closed in October 2007. The big environmental NGO as Greenpeace and Friends of the Earth withdrew from the second consultation process because of again unfair and flawed information policies during the process. In January 2008 the Government decided as expected in favour of new nuclear power plants (Website Greenpeace UK).

According to the strategy, the energy mix should be diversified and very important for that will be the increased share of renewable energies. As said above, the option of new nuclear power plants were left open in the 2003 White Paper.

In the 2006 review report and in the 2007 White Paper, the targets of the 2003 White Paper are taken over for the most part. Though, now the main focus of the targets was on security of supply issues.

In case of the mechanisms to reach the targets of tackling climate change, the White Paper 2007 very much relies on the Emissions Trading Scheme (ETS), which has to deliver most of the carbon emission reductions by 2020.

In terms of the energy mix the 2007 strategy refers to “low carbon technologies” which covers not only renewable energies but also carbon free coal facilities (Carbon Capture and Sequestration, CCS) and nuclear energy (HM Government/DTI 2007: 40ff.).

Furthermore, important changes of the promotion system of renewable energies Renewables Obligation are announced in the strategy: For example, the obligation level will be raised to up to 20% on a “guaranteed headroom” basis, what means that the Obligation will be extended as necessary to keep it ahead of the actual levels of generation. Secondly, the strategy proposes to divide the obligations into technology specific bands to promote also the non-near-market renewable technologies such as PV, geothermal energy etc. However, the government altogether remains committed to the market based mechanism of the Renewables Obligation and will not consider a fundamental change of the promotion system into e.g. a feed-in-tariff-system as in Germany (HM Government/DTI 2007: 147ff.).

Very important in the 2007 strategy is the international dimension of energy policies – compared to the 2003 White Paper. It points out the tackling climate change and securing energy supply are global challenges and therefore an international cooperation would be necessary (HM Government/DTI 2007: e.g. 6).

The 2007 strategy refers to the energy targets of the European Union. In March 2007 the EU agreed on binding targets in energy and climate policy: To reduce carbon emissions of 20% by 2020, to reduce energy consumption of 20% by 2020 and to increase the share of renewable energies up to 20% in 2020. The target of renewable energies is relating to the total share of renewable energies. The singular shares of renewables in the electricity, heat and transport sector therefore are higher,

especially the share of renewable electricity has to fulfil most of the 20%-goal as the targets of renewable energies in heat and transport are much more difficult to reach. In the Renewable Energy Roadmap of the European Commission in January 2007 the target of renewable energies in the electricity sector is to increase the share to 34% of total electricity consumption of the EU by 2020 (IPCC 2007; Rat der Europäischen Union 2007; Europäische Kommission 2007: 12). The White Paper does not include any mechanisms to reach the EU-targets, since it was almost finished when the targets were agreed on. It states: "Projections indicate that, on the basis of existing policies in the UK and the EU, by 2020, renewables would contribute around 5% of the UK's consumption and are unlikely to exceed 10% of the EU's." (HM Government/DTI 2007: 183). A new strategy with mechanisms to reach the targets is expected to come up in 2008 or 2009 (Interview DBERR).

3. Do Strategies Matter? – The Effects of the UK Energy Strategy

The most important element of the 2003 strategy of the UK was the target of 60% emission cut by 2050. The UK was one of the first countries to set such a long-term target battling climate change in a central governmental document and so the strategy had an important national and international influence on energy policies (Interview University of Sussex).

However, the 2003 White Paper mainly consists of targets and of descriptions of the Status Quo of energy policies. To reach the targets of strategy, only very limited new detailed policies are announced.

For implementation of the strategy a network was formally launched by the Secretary of State for Trade and Industry: The Sustainable Energy Policy Network (SEPN). Though, the network was not very influential and SEPN activity was "wound up" following publication of the 2007 White Paper (Interview University of Sussex; Website DBERR). Besides SEPN, the strategy was concretised by several detailed strategies and paper in the following years.

The government very much relies on market-based instruments in the 2003 strategy, what is a general attitude of policies in the UK (Sohre 2008). Thus the White Paper confirms the role of the market-based Renewables Obligation as the main promotion mechanism for renewable energies in electricity market and tries to avoid any kind of direct regulation or intervention in the market (DTI 2003; Interview Open University).

Concerning renewable energies the 2003 strategy caused further uncertainty in the British renewable energy market as the government did not set the widely expected binding target for renewables of 20% of electricity in 2020. The White Paper only refers to an “aspiration” of 20% (DTI 2003: 46; Interview Open University).

In total, the White Paper stands for a huge change in energy policy, due to the direction, ambition and apparent commitment. The battle against climate change and the reduction of carbon emissions now were in the heart of energy policy. Because of that, the strategy was an important factor in energy policy in Great Britain (MacKerron 2007).

The main reason to develop and implement a new energy strategy in 2007 was the revival of nuclear energy, which was not included in the 2003 strategy. The explanation that security issues mandated a fundamental new policy review was implausible. Already in 2005 the government gave signals that the most important change in energy policies would be the nuclear revival. As a consequence, the public credibility of the new strategy process was reasonably low (MacKerron 2007; Interview SDC; Interview Open University).

Additionally, the 2006/2007 energy process was based on a hurried and poor consultation. A genuine public consultation did not take place. Instead, a large number of narrow and technocratic stakeholder-based consultations were announced and conducted. What’s more, the consultations often substituted concrete measures to reach the goals (eg on microgeneration, Carbon Capture and Storage) (MacKerron 2007; Interview University of Sussex).

Another problem of the strategy process was that the responsibility of the government organisations for climate change issues remained split: DBERR (former DTI) and DEFRA are both responsible and have to coordinate the strategy with other departments as the Treasury, the Department for Transport, Department for Regional Development etc. However, in the strategy process 2006/07 mostly DBERR prevailed (Interview SDC).

Concerning the contents, the 2007 White Paper as the 2003 strategy is an accumulation of detailed policy measures, but there is a lack of coordination of the instruments and the consideration of their interaction, especially in energy efficiency policy (MacKerron 2007). The largest emission reductions are planned to be

delivered through the EU Emission Trading Scheme, which is designed and controlled not on the British but on the European level and so is mostly “out of control” of the British government (HM Government/DTI 2007).

In the renewable energy sector, the targets (15% renewable energy of electricity consumption by 2015) will not be fulfilled by the present instruments (Interview DBERR). The 20% target of the European Union also will not be reached with existing mechanisms (HM Government/DTI 2007: 183).

However, as said above, both strategies excessively rely in the market to deliver policy change. They avoid regulation policies that may ‘hurt’ anyone (MacKerron 2007).

To conclude it can be stated, that both strategies had a clear influence on the energy market and on energy “day-to-day-business”. But the 2006/07 strategy process and the substance of the strategies are not sustainable: The strategy is not guiding to a sustainable energy supply with reduced emissions. On the contrary, carbon emissions increased recently.

4. Determining Factors of Long-Term Strategic Governance in the UK Energy Policy Process

In the conclusion, the strategies introduce a long-term orientation of British energy policy, especially for the reduction of carbon emission targets (2050). To reach these targets, the government set different goals and instruments in the strategies.

The targets and parts especially of the 2003 strategy measures are based on scientific findings.

Problematically is that there is not a real authority to control if the targets are reached or not. Especially concerning the targets for renewable energies no mechanisms to guarantee the obligation quotas are implemented with the strategies.

The change of the strategy in 2007, with the new focus on “low carbon technologies”, energy security and the international dimension of energy policies, on the one hand could be interpreted as necessary flexibility to changing contexts (Interview DBERR). On the other hand, this “flexibility” gives the impression of arbitrariness, thus the strategy might not be able to give the required security for investors for long-term decisions (Interview University of Sussex).

The biggest determining factor of both strategies concerning the contents is the lack of concrete, coordinated measures to reach the long-term targets.

Additionally, both strategies are strongly market orientated and therefore often do not guarantee security for investments. Connected with the market orientation the strategies are based on the rational choice theory. Especially concerning energy efficiency, the energy consumption is determined by various factors and not only and in the first place by rational considerations as e.g. saving money (Fischer/Sohre 2008). Because of the lack of regulating instruments and of a coordination of a proper instrument mix the measures proposed in the strategies will not be able to reach the energy saving and renewable targets.

The 2003 the strategy rated high because of the personal support by Tony Blair and the responsibility for the energy review of the important Cabinet Office as the strategic centre. The 2006/07 strategy still has been rated high in the public perception, but it was developed and implemented by DBERR and partly by DEFRA. Furthermore the main direction of the strategy is supported by the different parties in Great Britain, so that continuity could be ensured even in the case of a change of government.

Whilst the 2003 White Paper was developed in a consensual process with a thorough participation of all different actor groups, the 2007 strategy was very much influenced by singular actors, especially the nuclear industry and the big energy companies. NGO like Greenpeace and Friends of the Earth and advisors like the Sustainable Development Commission (SDC) were not very influential in the 2006/07 process.

A big influential factor on the strategies is the European Union. Especially the binding targets the EU agreed on in March 2007 question the national strategic approach in the UK as the 2007 White Paper did not integrate these targets and adequate instruments to reach these. Afterwards the UK tried to influence the European Commission to set less ambitious binding targets for Great Britain, especially for renewable energies.

This lobbying is in contrast with the national climate change targets which are set by the British government in the Draft Climate Change Bill: The Bill creates a strong legal framework to reach the 60% reduction target for carbon dioxide emissions by 2050 with real progress by 2020 (26-32%). The Climate Change Bill will be based on

a new system of “carbon budgets” set at least fifteen years ahead and with progress reported annually to Parliament (HM Government 2007).

To reach the statutory goals of the Climate Change Bill and of the European Union the UK again will need to adapt the strategy and will have to integrate concrete and regulating instruments in their strategy.

Conclusion

National strategies can be an important instrument to govern long-term transformations of energy supply towards sustainability. As seen in the British case the White Paper does integrate a long-term perspective and did/does influence the British energy market and policy very much.

The most important element to govern long-term transformation is to set binding long-term targets and to implement mechanisms to control the goal attainment.

Connected with binding targets and time-tables with interim goals, is the development and implementation of concrete instruments to put the strategy into action. The instruments have to be deliberately coordinated in an instrument-mix.

To support long-term effects of the strategy (and thereby security) all important actor groups have to be integrated in a thorough participation process. As seen in the process of the 2007 White Paper in the UK, the credibility of the strategy is missing if the participation process does not aim to thoroughly integrate the different positions.

Compared to Germany the main difference of the energy strategies is the reliance of the British government on market based approaches whilst Germany implemented a lot of intervening instruments as the Feed-in-Tariff-System or the “Ecotax” (Ökologische Steuerreform). At least in the case of renewable energies the “regulation” instrument is more successful than the market-based approach: The deployment rates of renewable energies are much higher in Germany than in Great Britain, because of the bigger security of investment of the market actors (Bechberger, Mez, Sohre 2008). A well-balanced instrument-mix with regulating instruments and “voluntary” market mechanisms therefore might be an important element to govern long-term transformation in the energy market.

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