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Green electricity policy in the Netherlands

An analysis of policy decisions

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Sammendrag: Det Nederlandske marked for fornybar energi har gjennomgått dyptgripende endringer i de seneste tiår. Nederlandske myndigheter har intervenert ofte, med betydelige skift i både politikk og fremgangsmåte. Målet med denne studien er å analysere utviklingen i politikken overfor fornybar energi. Studien vurderer endringer i virkemiddelbruk og målgrupper, og ser også på ulike gruppers innflytelse og på hva som kan forklare success og fiasko.

Studien trekker følgende konklusjoner om politikken. For det første har målene ofte vært uklare: Selv om myndighetene har vektlagt investering i lokal kraftproduksjon, har politikken (implisitt) latt import være en mulighet for å oppfylle målsetningene. For det andre fokuserte man lenge på å få ned administrative barrierer og investeringskostnader - det er nå i det siste man har sett at et ustabil investeringsklima kan representere en hindring. Det at økonomi-ministeriet har spilt en dominerende rolle i politikk-utformingen for fornybar energi kan ha medvirket til at man ikke har forutsett en negativ markedsreaksjon på enkelte initiativer.

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Abstract: Over the last decades, fundamental changes in both market conditions and the national and international policy framework in the Netherlands can be observed. The Dutch Government has intervened in markets regularly, demonstrating fundamental shifts in policy and approach. This study aims to analyse the developments in renewable energy policy making in the Netherlands. It assesses changes in the choice of policy instruments and target groups, the role of stakeholders and offers explanations behind policy successes and failures. The following conclusions can be drawn on the policy choices: First, the objectives and targets of Dutch renewable energy policy were frequently ambiguous. Although the government emphasised the importance of investments in local capacity, imports were always (implicitly) seen as an alternative option in meeting targets. Second, for a long period the government focused on reducing investment costs and dismantling administrative barriers. Only recently has the lack of a stable investment climate been identified as a potential barrier. Third, although many stakeholders have advocated a mandatory approach, Dutch policies stimulating renewable energy have always been voluntary. Finally, the Ministry of Economic Affairs has always played a very dominant role in renewable energy policy formulation and implementation, which may explain the fact that some unfavourable market reactions to policies have not been foreseen.

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Contents

- 1 Introduction 1
 - 1.1 BACKGROUND AND PROBLEM DEFINITION 1
 - 1.2 METHODOLOGICAL FRAMEWORK 1
- 2 Green electricity policy and markets in the Netherlands: a brief history 2
 - 2.1 LONG-STANDING EXPERIENCE, BUT LIMITED MARKET SHARE..... 2
 - 2.2 THREE PHASES IN POLICY DEVELOPMENT SINCE 1990 3
 - TENDER 6
 - OBLIGATION FOR PRODUCERS 6
 - 2.3 SUMMARY 7
- 3 Actors, their influence and the rules of policy making..... 8
 - 3.1 OVERVIEW OF ACTORS 8
 - 3.2 THE RULES OF POLICY MAKING 8
- 4 Policy discourse and practices..... 9
 - 4.1 PHASE 1: VOLUNTARY AGREEMENTS (1990-1995)..... 9
 - 4.2 PHASE 2: PROMOTION OF DEMAND (1996-2002) 10
 - 4.3 PHASE 3: CHANGE OF POLICY: PROMOTION OF SUPPLY (2003-ONGOING)..... 15
- 5 Conclusions and lessons learned 16
 - 5.1 CONCLUSIONS ON PAST AND CURRENT POLICIES 17
 - 5.2 LESSONS LEARNED 17

1 Introduction

1.1 Background and problem definition

The renewable energy market in the Netherlands started its development in the early 1970s. Over the last decades we have observed changes in both market conditions as well as in the national and international policy framework. The Dutch Government has intervened regularly in markets, demonstrating fundamental shifts in policy and approach; domestic policies have diverged significantly from those of other European Union (EU) countries. Policy success, however, has been limited, and some have even failed. This study attempts to find explanations for these developments and examines the lessons that can be learned.

1.2 Methodological framework

This study aims to analyse the developments in renewable energy policy making in the Netherlands. It assesses changes in the choice of policy instruments and target groups, the (changing) role of stakeholders and offers explanations behind policy successes and failures.

The following methodological approach is used to analyse developments in renewable energy policy making in the Netherlands:

1. The development of domestic green electricity markets and the international policy framework are described
2. Fundamental changes in Dutch policy over recent decades are identified
3. The effectiveness of policy is assessed in terms of its contribution to policy goals
4. Policy decisions are analysed using the policy arrangement concept
5. Recommendations are given for improvements to the policy-making process

Policy arrangement

The policy arrangement concept is a theoretical notion that can help us to analyse policy change in the field of green electricity. The concept is described in “Political Modernisation and Policy Arrangements: A Framework for Modernisation in Environmental Policy,” by Leroy et al. (2001). It refers to the way in which a policy field (in this case renewable energy) is organised in terms of content (policy discourse and programmes) and organisation (actors, coalitions, power, influence and rules) (KUN, 2001). The dimensions of the policy arrangement have also been described as follows by Van der Zouwen and Van den Top (2000). In the next sections, these dimensions are discussed.

1. Actors, coalitions, power and influence

Actors are organisations or institutions that operate in a specific policy domain, such as for the promotion of green electricity. The term 'coalition' is used to indicate the interaction between actors. A coalition is a group of actors that more or less share the same policy goals and programmes, and these common objectives form the basis for their involvement in the policy process. The power and influence controlled by actors is determined by their relation particularly the mutual dependency and the distribution of resources among the actors. Resources can take the form of financial means, knowledge, media access, etc., and their distribution indicates the relative influence of actors at various stages in the policy process.

2. Rules

Rules provide a framework for policies and politics and determine which norms are legitimate. A distinction is often made between formal and informal rules. Formal rules are rules actors have formally agreed upon, while informal rules reflect the dominant political culture.

3. Policy discourse

To give meaning to and to help resolve policy issues, actors use so-called policy discourses. A policy discourse is defined as, "a specific ensemble of ideas, concepts, and categorisations that are produced, reproduced and transformed in a particular set of practices and through which meaning is given to physical and social realities". More concrete, a policy discourse encompasses the content of policy, in terms of norms, values, and the specific content of policy papers and measures.

We will analyse the changes in policies in the Netherlands over the last decades in terms of these three dimensions. We will argue that the history of green electricity policy in the Netherlands shows several fundamental changes in actors, their influence, the policy discourse and the prevailing rules. The resulting analytical model is as follows:

1. Relevant actors and their influence are charted, including their development over time.
2. Within the arrangement of actors, rules are reconstructed. This involves providing answers to the following questions: Who has determined the agenda? Who has been involved in policy making and has given advice? Who has made the decisions?
3. Finally, and most importantly, the policy discourse is analysed by addressing the following: What have been the leading concepts and practices? What have been the starting points and assumptions? How have the actors interpreted these concepts?

The three dimensions of green electricity policy can, subsequently, also serve as an analytical framework, an intervention model for identifying possible improvements to policies.

2 Green electricity policy and markets in the Netherlands: a brief history

2.1 Long-standing experience, but limited market share

The Netherlands has gained considerable experience in the promotion of the green energy market. Directly after the first oil crisis, the government started promoting research and development (R&D). In this period, industrial activities generating wind and solar energy were set up. These activities were often driven by personal idealistic initiatives, which are not based on long-term company strategy. During the 1980s, policy shifted to providing (direct investor) subsidies and financing demonstration projects. The intention was to speed up market growth, leading to a reduction of costs, which would in turn promote further market expansion. In the early 1990s, international agreements on CO₂ stabilisation gave policy a new momentum. Over the last decades, a variety of policy instruments, including direct investment subsidies, fiscal facilities, voluntary agreements, consumer subsidies and R&D programmes, have been implemented. The relative share of renewable energy is, however, still limited. For years the share has amounted to around 1% (ECN, 2002).

Table 1: Share of renewable energy produced in the Netherlands

Year	Peta Joule (primary energy)	% Energy consumption	% Electricity consumption
1990	17	0.6%	0.9%
1995	21	0.7%	1.3%
2000	38	1.2%	2.5%
2001	42	1.3%	2.8%

Source: Novem, 2002

2.2 Three phases in policy development since 1990

Dutch green electricity policy over the last decade has been characterised by three phases (see Figure 1).

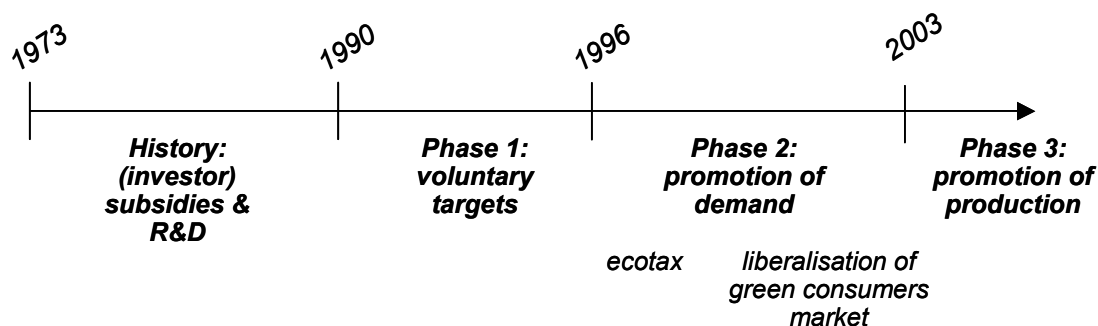


Figure 1: Phases in Dutch green electricity policy

Phase 1: Voluntary targets

In the early 1990s, the government negotiated voluntary agreements with the energy distribution sector. The latter committed itself to voluntary sales targets for renewables amounting to 3.2% of electricity sales and 0.7% of gas sales by the year 2000. These measures were expected to lead to a 2.7Mt reduction in CO₂ emissions over the same period. Investments in green energy were financed by a general environmental levy. The privatisation of the electricity sector, however, forced changes in the fiscal system as it was feared that reallocation of tax revenues to cover the cost of green energy would disturb the market. The voluntary targets were never realised.

Phase 2: The first change in discourse: promotion of demand

Regulatory energy tax

In 1996, the government introduced a regulatory energy tax – also known as the “ecotax” – for small and medium scale energy users. This new tax system was also used to stimulate green electricity consumption (and partly production). Consumers of green electricity were exempted from the energy tax. In addition, production support was given to green suppliers. A breakdown of the fiscal support is presented in the table below. In 2002, total support to green electricity amounted to eight Euro Cents per kilowatt-hour (kWh) (comprised of six Euro Cents for consumer support and two Euro Cents for production support). In terms of avoided tons of CO₂, support for renewables amounted to a maximum of €150 per ton of CO₂

if one would relate the financial support for renewables to the avoided GHG emission in the central electricity production (Ministry of Spatial Planning and Environment, 1999).

Table 2: Fiscal support green electricity 1996-2002 (€/kWh)

kWh)	1996	1997	1998	1999	2000	2001	2002
Article 36i (consumption)							
0-800	0	0	0	0	0	0.0583	0.0601
800-10,000	0.0134	0.0134	0.0134	0.0225	0.0372	0.0583	0.0601
10-50,000	0.0134	0.0134	0.0134	0.0147	0.0161	0.0194	0.0200
50,000-10m	0	0	0	0.0010	0.0022	0.0059	0.0061
> 10m	0	0	0	0	0	0	0
Article 36o (production)	0.0134	0.0134	0.0134	0.0147	0.0161	0.0194	0.0200

Source: P. Kroon, 2002

Liberalisation of the green consumer market

The next important phase of Dutch green electricity policy was the liberalisation of the green consumer market in July 2001. At the same time, the government transformed the informal, voluntary green label system, implemented by the energy sector in 1998, into a formal green certificates system managed by the government.

Since 1996, the number of green consumers has increased from 16,000 to 1.4 million (Kroon, 2002; van Sambeek, 2003). This sharp increase in demand is the result of the financial support measures (for consumers, the price difference between green and conventional grey electricity was in effect zero), combined with market liberalisation. Anticipating future full liberalisation, electricity companies have used green electricity as a market tool to attract new customers and keep existing ones.

Table 3: Total demand green electricity (GWh)

	Households	Non-residential	Total
1996	49		60
1997	131	21	95
1998	239	45	172
1999	250	82	350
2000	439	128	600
2001	750	250	1000
1/2002	2100		2100
4/2002	2400		2400
7/2002	3000		3000

Source: P. Kroon, 2002. The data on non-residential green electricity consumption are uncertain. The overall demand in the years 1996, and 2002 are estimated using data on the energy tax revenues. The main conclusion, however, can be drawn that the drastic increase in demand in 2001/2002 mainly occurred in the residential sector.

The steep increase in demand for renewable electricity could not, however, be met by national production alone. As the subsidy also applied to electricity generated abroad, imports of green electricity increased rapidly. The policy, therefore, resulted in the unintentional mass 'export' of national support to renewable energy. Criticism increased rapidly, because the majority of the Dutch taxpayers' money was spent on green electricity generated in other countries. The policy did not even result in substantial new capacity abroad.

Table 4: Production and import green electricity (GWhe)

Year	Import	Production
1991	N/A	857.49
1992	N/A	922.84
1993	N/A	932.99
1994	N/A	1 054.57
1995	N/A	1 142.11
1996	N/A	1 569.30
1997	N/A	1 699.39
1998	N/A	1 981.90
1999	N/A	2 116.26
2000	1 500	2 579.75
2001	7 645	2 937.36 ¹
2002	10 350	3 626.70

Source: CBS

Table 5: Dutch production of green electricity by source (GWh)

	1999	2000
Hydro	90	142
Wind	645	829
Solar (PV)	5.3	7.7
Bio-energy	1372	1585
(incineration)	(909)	(923)
(landfills)	(132)	(117)
Total	2112	2564

Source: P. Kroon, 2002

Between 1995 and 2002, Dutch green electricity policy instruments focused on the stimulation of demand by means of price incentives, while all other EU countries introduced other incentive schemes (see Figure 2). Following growing criticism, the Dutch government proposed a new policy with fundamental differences, at the end of 2002.

¹ Equivalent to 2.8% of electricity consumption (see Table 1).

Supply	Feed-in tariff/green prices (Germany, Austria, Spain, France, Greece, Portugal, Finland)	Tender (Ireland) Obligation for producers (Italy)
Demand	Price support for demand (Netherlands)	Obligation (%) for consumers or suppliers (Denmark, UK, Belgium, Austria (small hydro), Sweden)
	Price	Quantity

Figure 2: EU member incentive schemes 2002

Source: ECN, 2002

Phase 3: A new discourse: promoting production

A new policy, called the “environmental quality of electricity production” (MEP), was implemented in July 2003. The two main objectives of the MEP are to reduce investment risk and to improve the cost-effectiveness of renewable electricity. Support is provided by means of a feed-in tariff, combined with a partial exemption from the ecotax (see Table 6 below). The tariff is financed through a €34 annual levy on the electricity connections of every household (van Sambeek et al., 2003).

The ecotax exemption will be phased out over two years. By July 2004, it will amount to 1.5 Euro Cents per kWh, falling to zero in 2005. By this time, the stimulation of the Dutch green electricity market will be fully supply driven. The removal of the leakage abroad is expected to lead to a benefit of €120m to the Treasury (Stromen, 2003).

Table 6: Support for renewable electricity (Euro Cents/kWh)

Technology-energy source	MEP feed-in tariff	Ecotax exemption	Total support
Landfill gas and digestion	0	2.9	2.9
Pure biomass	4.8	2.9	7.7
Mixed streams	2.9	0	2.9
Onshore wind	4.9	2.9	7.8
Offshore wind	6.8	2.9	9.7
Stand-alone bio-energy installations < 50MWe	6.8	2.9	9.7
Solar photovoltaic	6.8	2.9	9.7
Wave energy, tidal energy	6.8	2.9	9.7
Hydropower	6.8	0	6.8

Source: van Sambeek et al., 2003

2.3 Summary

The table below summarises the main developments in renewable energy policy in the Netherlands over the last 30 years. Substantial changes have occurred in the economic and market conditions for renewable energy during this period. Also, the international policy framework has significantly changed, while the Dutch Government has given renewable energy an increasingly higher priority. At the same time, however, several significant changes can be witnessed in the approach used to promote renewable energy, reflected in the choice of policy instruments and main target groups.

Table 7: Policy characteristics

1970-1989	1990-1995	1996-2002	2003-ongoing
History	Phase 1: voluntary agreements	Phase 2: promotion of demand	Phase 3: promotion of supply
Immature policy Driven by scarcity of resources Dominated by (investor) subsidies and R&D	Further professionalisation New driver: CO ₂ emissions Voluntary agreements introduced Targets not met	Introduction of tax exemption for renewable electricity consumption Steep increase in demand for green electricity Increased budgets Huge outflow of resources	Professional policy environment New policy: emphasis on stimulation of production instead of consumption Increased compatibility with other EU MS schemes

3 Actors, their influence and the rules of policy making

3.1 Overview of actors

Many different actors have played a role in the development of green electricity policies in the Netherlands. Figure 3 provides an overview of the relative influence of the different actors in policy decision-making during the last decades.

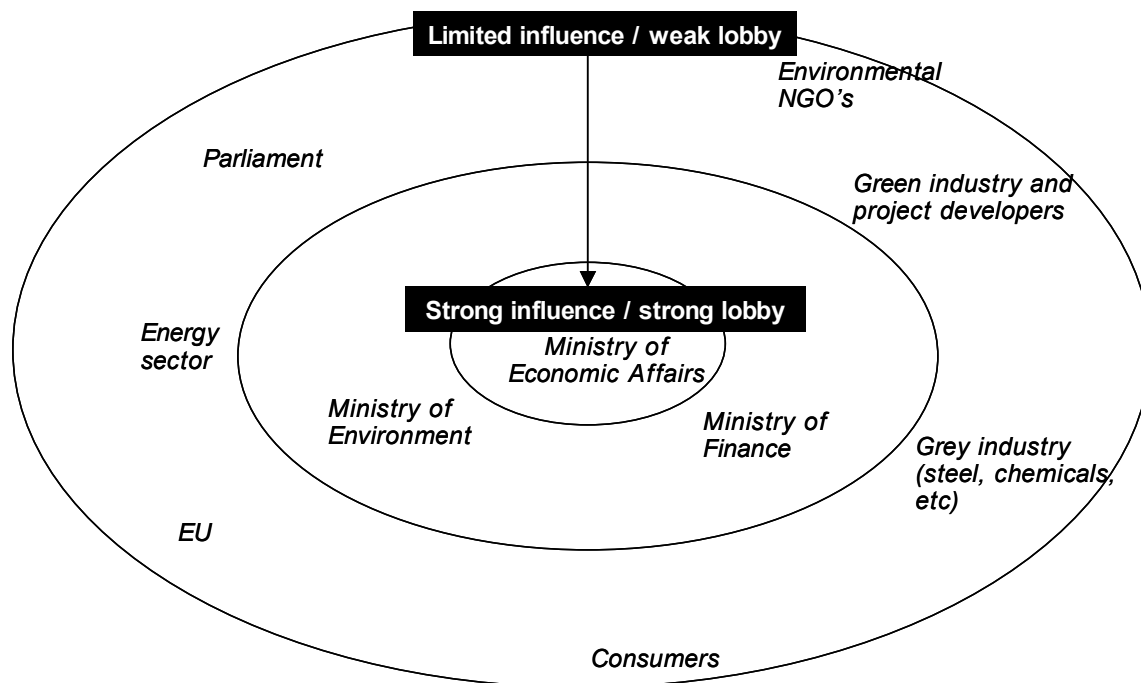


Figure 3: Actors and their influence

The Ministry of Economic Affairs has been the dominant player in policy development. It has formal authority for energy policy development and is responsible for a large part of the budget for policy implementation. At the beginning of the 1990s, the picture was somewhat simpler than the situation presented above. The Ministry of Economic Affairs dominated the scene along with the energy sector. Other stakeholders played a minor role. Since the mid-1990s, the role of other stakeholders, such as the Ministry of Environment and the Ministry of Finance, has gained some importance. The latter was involved in the implementation of fiscal instruments and performed a control function in the green certificates system. In addition, green and grey industrial parties influenced the policy process through lobbying. The grey industry and the energy sector have always successfully opposed the introduction of taxes on energy or the introduction of a compulsory share of renewable electricity. The role of environmental NGOs and consumers in policy making has been relatively limited.

3.2 The rules of policy making

As indicated in Section 1, the rules of the policy-making process can be classified as formal or informal. The first category refers to formally agreed regulations, mostly laid down in policy documents and laws. Informal rules are “rules of the game” reflecting norms, values and cultural habits. Rules provide a framework for policies and politics and determine which norms are legitimate. The main questions we seek to answer are: Who determines the agenda? Who is involved in policy making? Who decides?

Formal rules of policy making are few in the Netherlands. The Ministry of Economic Affairs has formal responsibility for this policy field. Obviously, the Ministry of Finance has a formal role in the establishing and approving the budgets. No fixed procedures for consulting stakeholders exist.

Regarding informal rules, the Ministry of Economic Affairs has predominately shaped the process of renewable energy policy making as well as its key content. Both the Minister as well as the responsible departments have played a dominant role. Other ministries have not played a significant role in policy preparation and implementation. On more than occasion, the Ministry has readily overruled initiatives from other departments.

Despite the apparent openness of the Dutch policy-making process in general, the participation of stakeholders and their influence on renewable energy policy has been limited. Most of the new policies have been prepared within the Ministry itself with limited external cooperation. Over the years, the dominant position of the Ministry has even increased; for example, the fact that the latest major shift in policy was fully prepared within the Ministry (2002) is a case in point. Only at a very late stage were other stakeholders consulted and asked to comment on almost finalised drafts.

The European Union's role in determining policy making in the Netherlands has been preliminarily in competition issues and in relation with the EU Directive on Renewable Electricity.

4 Policy discourse and practices

4.1 Phase 1: Voluntary agreements (1990-1995)

As mentioned above, the voluntary agreements of 1990 were made between the government and the energy sector. This conformed to the Dutch culture of "gentlemen's agreements". Although this arrangement was still in place in 1995, the policy environment soon fell under the influence of new developments. The Ministry of Economic Affairs published a leading policy document in December 1995, containing the first officially approved renewable energy target. The document - the government's Third White Paper on Energy - stated that 10% of energy consumption, amounting to 17% of total electricity output, should come from renewable sources by 2020 (Ministry of Economic Affairs, 1995). The table below presents a breakdown of this target by energy source.

Table 8: Breakdown of renewable energy targets

Energy source	Contribution in 2020 (PJ of primary energy)
Wind energy	45
Photovoltaic solar energy	10
Thermal solar energy	10
Geothermal energy	2
Thermal energy storage in aquifers	15
Ambient heat	65
Hydropower	3
Energy from biomass and waste	120
Total	270
Imported Norwegian hydropower	18
Total	288

The Third White Paper on Energy, together with further liberalisation of the energy market, signified a new phase in Dutch renewable energy policy. The period of voluntary agreements had, however, been important; it was the first time that the government had intervened in the market by setting targets. At the same time, targets had not been compulsory; the compliance regime was poor, and targets were never met. Furthermore, neither Parliament nor NGOs raised questions about the evident failure of policy objectives.

4.2 Phase 2: Promotion of demand (1996-2002)

Since the mid-1990s, renewable energy policy has matured. Various policy documents have been released and more stakeholders have become involved in the policy-making process.

Alongside the introduction of the ecotax exemption in 1996, the government has actively promoted demand for renewable electricity. For years, however, there has been discussion over whether the voluntary approach should be replaced by a consumer obligation to buy green energy. The Ministry of Economic Affairs has been consistently reluctant towards introducing obligatory measures, while other stakeholders have advocated this policy option.

Since 1995 different key policy documents on renewable energy policy were published, starting with the White Paper in 1995. Table 9 gives an overview of the main publications. These documents and the related policies are discussed below.

Table 9: Key (advisory) policy documents

Year	Publication	Key characteristics
1995	Third White Paper	Target: 10% renewables by 2020
March 1997	Renewable Energy Action Programme 1997-2000	Implementation of Third White Paper
March 1999	Renewable Energy Policy Advice by AER (Energy Council)	Current policy not sufficient to meet 10% target; adjustments needed: more stringent, less complex, more generic; consumer obligation should be considered
June 1999	Climate Policy Implementation Plan	Target: 5% renewable by 2010 Discussion on obligation
November 1999	First Energy Report	Warning: slow growth of the market Current policies intensified, focus on supply conditions No obligation
June 2002	Second Energy Report	Warning: supply lags behind

The Third White Paper

The Third White Paper addressed the conflict between the liberalisation of the electricity market on the one hand, and compulsory renewable energy targets on the other. It claimed that attaining a minimum compulsory share of renewable electricity consumption would no longer be feasible under free-market conditions. Liberalisation had restructured the energy market, and therefore required a shift in focus from supply-side instruments (i.e. compulsory targets) to demand-side measures, particularly in the fiscal regime (i.e. the ecotax). The White Paper suggests that if targets are not met, a purchase obligation could be imposed on the remaining captive customers.

Furthermore, since the adoption of the 10% renewable energy target in 1995, a debate has emerged over the role of imports to help meet objectives. The discussion has been influenced by the results of various studies, which show that the Dutch target was relatively difficult to meet and that it would be costly to achieve within the borders of the country exclusively. The Dutch government, therefore, has always kept the option of meeting part of the target by means of import open.

The Renewable Energy Action Programme

The targets of the Third White Paper on Energy were developed further by the Renewable Energy Action Programme 1997-2000, which was published in early 1997. Three main policy objectives were advocated: (1) the development of technologies via research, development and demonstration programmes; (2) the promotion of market penetration through a broad range of (fiscal) instruments; and (3) the reduction of administrative bottlenecks by better integration of different policies (Ministry of Economic Affairs, 1997). The main objective was to stimulate investment in renewable energy and its related infrastructure (Ministry of Economic Affairs, 1995).

Renewable Energy Policy Advice by the Energy Council

In December 1998, the Minister of Economic Affairs sent a request for policy advice to the Energy Council (AER). The AER was requested to advise on the mix of policy instruments

for renewable energy presented by the Action Programme of 1997. At the beginning of 1999, the AER published its advice. It concluded that current policy would not be sufficient to meet the 2020 targets, and that policy revisions were needed. According to the AER, this process would provide the opportunity for reconsideration of the entire policy mix, which it claimed was 'diverse but also complex'. The AER advocated the introduction of generic and simplified instruments, and felt that targets would only be obtainable if a legally binding minimum share of renewable energy was introduced (AER, 1999).

The Climate Policy Implementation Plan

In June 1999, the Ministry of Environment published a policy document on the implementation of the Kyoto target on climate change. An intermediate target for renewable energy consumption of 5% by the year 2010 was introduced (Ministry of VROM, 1999). Policy instruments to meet the 5% objective were not worked out in detail. Essentially, the instruments would be voluntary, but provision was made for the introduction of compulsory measures if it seemed that the objectives of the climate action plan would not be met. According to the document, the new electricity law of 1998 had created the possibility for the government to impose a consumer obligation to buy renewables. For details on policy instruments and the issue of consumer obligation the Climate Policy Implementation Plan referred to the Energy Report, which was due to be published at the close of the year.

Table 10: Overview of binding renewable energy targets

Targets	2010	2020
Energy consumption	5% ¹	10% ²
Electricity consumption	9%	17% ³

¹ Climate Policy Implementation Plan, 1999

² Third White Paper on Energy, 1995

³ Third White Paper on Energy, 1995 (estimation, derived from 10% target energy consumption)

The first Energy Report

In November 1999, the Ministry of Economic Affairs published its first Energy Report. The document discussed the issue of consumer obligation in great detail. According to the Ministry, introducing compulsory measures was not the right method to combat the slow growth of renewable energy; the main bottleneck was not believed to be demand, but supply. The obstructions identified included administrative problems, restrictive environmental legislation and high costs. It was decided that existing policy should be intensified. The focal areas would continue to be promoting demand by fiscal stimulation, encouraging supply by removing administrative barriers and developing a system of green certificates.

Despite government policy to stimulate growth in renewable energy, expansion of the sector was limited. Fiscal support resulted in a steep increase in consumer demand, but the relative share of renewables remained small in terms of the total demand for energy. Moreover, domestic supply barely increased. Over the years, discussions were held on whether demand or supply should be targeted, and whether instruments should be voluntary or compulsory. On three occasions in 1999, it was proposed that voluntary policies be replaced with obligatory measures in order to improve performance against targets. The first was in March, when the Parliament passed a motion in favour of the introduction of a renewable energy quota, combined with the introduction of a system of green certificates (Motion MP Crone, 1998/1999). In the debate on the Climate Policy Implementation Plan obligatory instruments were advocated for a second time. Finally, the Energy Council (AER) also spoke out in favour of compulsory methods in its advisory publication on renewable energy, as detailed above (Ministry of Economic Affairs, 1999).

The Ministry of Economic Affairs, however, decided not to change its policy. In its first Energy Report it argued that an obligation would not be the answer to slow growth in renewable energy, and would not bring the target of 5% by 2010 and 10% by 2020 any closer. The report concluded that preference should be given to improving the conditions determining supply, for example, by resolving administrative problems. In addition, efforts would need to be considerably stepped up.

Obligation or no obligation?

The introduction of an obligation to buy renewable energy is attractively simple. It would seem to be easy to achieve and to offer a guarantee that the targets will be met. This is, however, illusory.

- A compulsory share of renewable energy is focused on the demand. Research has shown that this is not where the main problem lies. The real problem is in the supply: administrative problems (locations) are hindering the growth of wind energy; unclear and probably excessively strict environmental legislation on biomass emissions and lack of clarity about what should and should not be classified as waste could hamper the growth of biomass; high costs are an obstacle to rapid growth of photovoltaic conversion of solar energy (solar PV). An obligation will not solve these problems.
- Higher demand with supply lagging behind will only result in higher prices.
- In principle, European legal stipulations limit the possibility of providing support (subsidies and preferential tax treatment) to renewable energy.
- While support for eco-power is considerable within the context of the existing voluntary approach, an obligation will not enhance motivation. Certainly not if it results in an increase in the cost of eco-power to users.
- Finally, in order to be able to create an obligation, an effectively functioning system of green certificates would be necessary. The introduction of green certificates is unique in Europe and in the world. This means that we cannot learn from the experience and mistakes of others. It therefore does not make sense to link an obligation to such a new system from the outset.

Source: Ministry of Economic Affairs, 1999b

The second Energy Report

In 2002, the second Energy Report was published. It concluded that development of renewable energy in the Netherlands was lagging behind the government target. Although demand had grown significantly, growth in supply had been limited. Two reasons behind this were said to be problems with spatial planning and the absence of a stable investment climate. The report therefore proposed that the policy agenda for the coming years would focus on stimulating and developing the domestic supply of renewable energy. Despite this intention, it was stated that the Netherlands would probably need to depend in part on imports to meet its target for renewable energy. It was, however, questioned whether the country would be able to import renewable energy indefinitely, as the European market may also eventually reach saturation point. According to the Energy Report, it was therefore necessary to utilise national potential as effectively as possible (Ministry of Economic Affairs, 2002).

In 2002, the slow growth of the renewable energy market, together with huge outflows of subsidies to non-additional foreign capacity, caused concerns. Although development lagged behind national targets, the government decided not to make the purchase of renewable energy obligatory (Ministry of Economic Affairs, 2002). Again, it stated that market problems stemmed from the supply side, but for the first time, a new argument was introduced. According to the second Energy Report, the renewable energy market suffered from a lack of a stable investment climate. This argument was in line with the findings of Dinica (2002). In her Ph.D. thesis on investments in renewable energy, she argued that countries such as Spain and the United Kingdom were more successful at stimulating investment because they offered investors a more stable policy environment. The renewable energy market in the Netherlands, however, was too unstable and fragmented to attract long-term financial support, where risk and long-term profitability are less certain. Dinica concluded that as political uncertainty is a powerful deterrent to investors, policy change was necessary, and without it, compliance with Kyoto commitments was in danger.

In addition, the second Energy Report argued that the Netherlands would remain dependent on renewable energy imports to meet its targets. Although the Report does not propose any

changes in policy, it at least draws the attention to this issue and the related market uncertainties for the first time..

Looking back at the 2nd phase policies: flexible but mostly ineffective

Looking back, it is interesting to assess whether the policy of the second phase has been effective in terms of its objectives. This question is complicated as policy objectives have not been clearly defined. Should supply or demand be stimulated? What should the role of imports be? This resulted in a strange policy outcome. On the one hand, targets were mainly supply-driven (i.e. to stimulate investments in renewable energy), although the door has always been kept open to meet the target via imports. On the other hand, instruments were mainly used for the promotion of demand. Thus it seems that the government preferred not to make explicit choices or to set an ultimatum to make voluntary instruments compulsory in case targets were not be met. If, for example, the government had openly agreed that a large part of the target could be imported, arrangements could be made to account for double counting. This was never done. The approach gave much flexibility. The drawback is, however, that as a result, policy was relatively ineffective. After more than six years, domestic supply hardly increased, while the steep increase in demand from small-scale consumers was mainly met by non-additional capacity from abroad. In addition, in non-residential sectors, the demand for renewable electricity barely increased.

Addressing the right barriers

Between 1996 and 2002, the government identified immature and costly technologies, the price gap between green and grey energy, and administrative procedures as the most urgent barriers hindering the development of the renewable energy market.

Various R&D programmes addressed the first barrier, and with the help of fiscal instruments and additional subsidies, the price difference for consumers disappeared. Furthermore, with much effort and cooperation from, for example, local governments the lengthy procedures and other administrative barriers were also reduced over time. Barrier removal can therefore be considered a success. As investment in renewable energy hardly increased, however, you could question whether the right barriers were actually addressed. Did the government overlook barriers?

At a very late stage (Energy Report 2002), the government mentioned the fact that the slow growth in the renewable energy market was caused by an unstable investment climate and uncertainty. One could say that over the years the government did not succeed in creating a stable investment climate for investors in renewable energy. Policies were diverse and complex. Some, such as subsidy conditions, exclusion of technologies from support, and the level of support, changed over time. According to Dinica (2002), the Dutch government, compared to those of other countries, did not create the right supporting conditions to reduce the barriers that hamper the development of renewable electricity generation. He argued that economic instruments only support the short-term introduction of renewable technologies. In the longer term, however, perceptions of risk and potential profit determine the investment decision to a far larger extent (Dinica, 2002).

Positive impacts and negative effects

Although the effectiveness of Dutch green electricity policy between 1996 and 2002 has been limited, government strategy has produced some positive effects. First of all, consumer awareness has increased and renewable energy use has become part of the lifestyle of many households. Secondly, the liberalisation of the green electricity market has paved the way for the broader liberalisation of the energy market. The energy sector grew accustomed to the new market conditions and became used to launching marketing campaigns to attract new

customers. Finally, as an environmental front-runner, the Netherlands got much attention from abroad.

At the same time, the government's approach had several weaknesses. First, only a few actors were seriously involved in the policy-making, for example, NGOs made little contribution to the process. A broader involvement of stakeholders in the design of policies may have prevented some of the unforeseen undesirable impacts of policy, particularly the large outflow of financial resources to non-additional capacity abroad. On the other hand, the lack of stakeholder involvement made swift changes in policy possible, particularly the recent change from demand promotion through tax exemption to supply promotion. Furthermore, criticism about the slow growth of the green energy sector was almost absent. One would have expected Parliament to be more concerned with overall policy objectives – such as whether or not targets could be reached – and less preoccupied with details, such as measurement and monitoring issues, which would only have a small impact.

4.3 Phase 3: Change of policy: Promotion of supply (2003-ongoing)

In the development of the latest policy instrument, the MEP, the Ministry of Economic Affairs again played a dominant role. The Ministry developed most of the policy itself. Only at a late stage were other stakeholders consulted. As in the past, the Ministry of Economic Affairs did not choose to introduce a consumer obligation. For similar reasons as given previously, a 'voluntary' market, stimulated by fiscal support, would remain the basis for the renewable energy policy framework. Initially the Ministry preferred a system in which both demand and supply could be stimulated. This would be more flexible, which would be advantageous if the EU changes its policy, for example. The emphasis, however, changed from stimulation of demand to stimulation of supply. In December 2002, MP Crone submitted a motion to abolish the stimulation of demand (via an ecotax exemption). He proposed to abolish consumer support in favour of higher support of national production. In September 2003, the Minister of Economic Affairs stated that the partial exemption of the ecotax would be abolished by the year 2005.

5 Conclusions and lessons learned

The characteristics and effectiveness of the policy of the three phases is summarised in the table below.

Table 11: Effectiveness of policy

Phase	Period	Name	Key characteristics	Policy Targets	Developments	Realisation targets	Explaining factors	Effectiveness of policy
1	1990-1995	Voluntary agreements	Voluntary agreements government and energy distribution sector	- 3.2% electricity sales and - 0.7% gas sales by the year 2000	- Market became more mature - Leading policy document published in 1995	No	- Lack of enforcement - Lack of urgency/interest - New policies introduced - Further liberalisation of market	Limited
2	1996-2002	Promotion of demand	- Exemption from ecotax - Liberalisation of green consumer market - Introduction of green certificates system	- 5% of energy consumption to come from renewable sources by 2010 - 10% by 2020 - Increased consumer demand - Increased capacity	- Growth in demand by small consumers - No additional capacity - Large imports	Most likely difficult to meet	Insufficient incentives for investors	- High with respect to small consumers demand - Limited with respect to supply
3	2003-ongoing	Promotion of supply	Support for renewable electricity by feed-in-tariff (and ecotax exemption)	- 5% of energy consumption to come from renewable sources by 2010 - 10% by 2020 - Reduced investment risk - Improved cost-effectiveness		Too early to assess		Too early to assess

5.1 Conclusions on past and current policies

The following conclusions can be drawn:

- **Objectives and targets** The objectives and targets of Dutch renewable energy policy were frequently ambiguous. For example, the role of imports, the contribution of domestic production or consumption, and the role of sanctions were rather vague and imprecise. As a result of this, stakeholders didn't expect the Dutch government to be seriously committed to pursuing targets.
- **Voluntary versus compulsory green energy consumption** Since the mid-1990s, there has been ongoing debate over whether goals can best be met by means of a voluntary or a mandatory approach. Although many stakeholders advocated the latter, Dutch policies stimulating renewable energy have always been voluntary.
- **Local production versus imported renewable energy** Another point of discussion was the role of imports in meeting targets. Although the government emphasised the importance of investments in local capacity, imports were always (implicitly) seen as an alternative option.
- **Dominance of the Ministry of Economic Affairs** The Ministry has always played a very dominant role in renewable energy policy formulation and implementation. On more than one occasion, policy advice from others has been rejected, in particular, suggestions to simplify the policy instrument mix and to introduce consumer obligations.
- **Late intervention to rescue failing policies** The growth of the renewable energy market in the Netherlands has been limited and targets have not been met. This did not, however, prompt a swift policy response to address this failure to meet key policy objectives.
- **Lack of participation of stakeholders** Although over time more stakeholders became involved in the policy-making process, the Ministry of Economic Affairs has remained the dominant actor. All in all, the influence of stakeholders in renewable energy policy making has been small.
- **Barriers** Different obstacles hampered the development of the renewable energy market in the Netherlands. For a long period the government focused on reducing investment costs and dismantling administrative barriers. Only recently was the lack of a stable investment climate identified as a potential barrier.

5.2 Lessons learned

This section addresses the general lessons which can be learned from the Dutch renewable energy policy-making process.

1. *Reduce market uncertainties and build confidence through stable policy.* In general terms, the effectiveness of policies to stimulate renewable energy is best guaranteed if governments create confidence among stakeholders. Uncertainties need to be minimised and actors should feel secure about future developments in policy. This means that governments should adopt clear and stable policy objectives and instruments. Any uncertainty on goals, vision and future direction will reduce the effectiveness. Also, frequent shifts in policy have negative impacts, as they lead to discontinuation of policy development. The Dutch government also failed to reduce market uncertainty. A stable climate for a growing renewable energy market is yet to

be established. The lack of clear and consistent policy objectives, instruments and enforcement procedures have hindered substantial investments in new capacity over recent decades. In the past, the government has not always been seen as a reliable partner.

2. *Ensure stakeholder participation at an early stage.* Policy making in the Netherlands has lacked serious stakeholder participation in the past. On the one hand, this speeds up the policy-making process; on the other, without a strong input from participants and actors likely to be affected by policy, policy makers run a higher risk of misjudging the impact of their policies.

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