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ENVIRONMENTAL ASSESSMENT

Pragmatics of Policy: The Compliance of Dutch Environmental Policy Instruments to European Union Standards

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Abstract Despite a general decrease in Dutch environmental emission trends, it remains difficult to comply with European Union (EU) environmental policy targets. Furthermore, environmental issues have become increasingly complex and entangled with society. Therefore, Dutch environmental policy follows a pragmatic line by adopting a flexible approach for compliance, rather than aiming at further reduction at the source of emission. This may be politically useful in order to adequately reach EU targets, but restoration of environmental conditions may be delayed. However, due to the complexity of today's environmental issues, the restoration of environmental conditions might not be the only standard for a proper policy approach. Consequently this raises the question how the Dutch pragmatic approach to compliance qualifies in a broader policy assessment. In order to answer this question, we adapt a policy assessment framework, developed by Hemerijck and Hazeu (Bestuurskunde 13(2), 2004), based on the dimensions of legitimacy and policy logic. We apply this framework for three environmental policy assessments: flexible instruments in climate policy, fine-tuning of national and local measures to meet air quality standards, and derogation for the Nitrate Directive. We conclude with general assessment notes on the appliance of flexible instruments in environmental policy, showing that a broad and comprehensive perspective can help to understand the arguments to put such policy instruments into place and to identify trade-offs between assessment criteria.

Keywords Environmental policy · Policy evaluation · Flexible instruments · European Union · Compliance · Implementation

Introduction

For most environmental themes pressure on the environment in the Netherlands has in recent years continued to fall, despite continued economic growth (Fig. 1). This is largely because of increasingly cleaner industrial production (van Wezel and others 2006). Of crucial importance in achieving these reductions is the improvement in industrial eco-efficiency, which is not only associated with the large-scale application of emission-reducing technologies, but also with increasingly cleaner production methods. Consequently, these improvements in eco-efficiency have driven down emissions further while production has risen (MNP 2006). Benchmarking distance-to-target policies with other European countries, the Netherlands is in the middle ranges on greenhouse gas emissions and ozone precursors (mainly NO_x), while doing better than most other countries with respect to emission reduction of acidifying substances (EEA 2005). However, a number of environmental issues remain persistent in the light of environmental pressure and human health, most notably on climate change and biodiversity threats (MNP 2008). Moreover, it proves increasingly difficult to comply with a number of European Union (EU) environmental policy targets, mainly because of the very high population density and high concentration of industrial activities in the Netherlands.

This situation challenges Dutch government to come up with either stricter measures or with a pragmatic approach, in order to be able to comply with EU requirements. This

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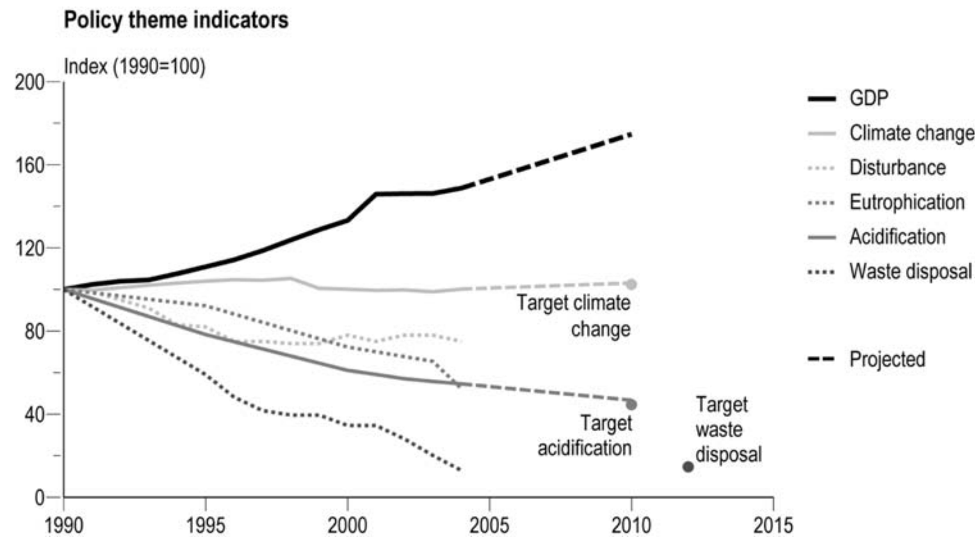

Fig. 1 Environmental indicators for a number of themes in the Netherlands, 1990–2010

policy action may either take the direction of reducing emissions at its source, or it may seek to find more flexible solutions for compliance, making use of the opportunities that are legally available to reach policy targets. While many EU countries focus on reducing emissions at its source, it is interesting to note that the Netherlands takes the pragmatic approach in a number of cases. The high level of economic activity in Europe's main delta, combined with one of the world's highest population densities and a very high level of eco-efficient industrial production, does not always allow for sharp emission reductions at acceptable costs any more. Therefore, on a number of environmental themes, Dutch policy makers seek to find different routes for compliance to EU regulations.

This pragmatic approach will help to realize national environmental targets in the light of European requirements, but could fail in the light of other functional policy evaluation criteria like effectiveness. Policy instruments can also be evaluated on criteria of legitimacy, social or political acceptability, feasibility, costs or efficiency. A key question then is how the Dutch pragmatic approach to comply with policy targets qualifies in a broader policy assessment. In order to answer this question, we adapt a policy assessment framework developed by Hemerijck and Hazeu (2004), based on legitimacy and policy logic. We apply this framework in three environmental policy assessments: to flexible instruments in climate policy, to the fine-tuning of national and local measures to meeting air quality standards and to derogation for the Nitrate Directive. We conclude with some general assessment notes on the pragmatic appliance of instruments in environmental policy, learning how a comprehensive perspective can help to understand the arguments to put such policy instruments into place and to identify trade-offs between assessment criteria.

Theoretical Framework for the Evaluation of Environmental Policy

Any policy is aimed at closing the gap between an actual undesired situation and a future preferred situation. Closing the gap can either be done by adjusting the preferences or by designing a logic cause-event chain to reach the preferred situation. However, adjusting the preferences will not be that easy because these often are underpinned by core values and believes in society that legitimize these preferences (Sabatier 1987). Legitimacy therefore, is a key principle of policy making. Scharpf (1999) makes a difference between two sources of legitimacy, one related to the input of policy making and the other related to the output of policy making. At the input-side of policy making the question of legitimacy concerns the goals that are set. Do these goals reflect the societal core values and believes? At the output-side the question of legitimacy concerns the policy-instruments that are used and the policy effects that result. Do these instruments have the desired effects? Are there any side-effects that collide with core values and believes in society? Note that legitimacy of policy output involves reaching policy targets in the short term, but also involves effects in the long term, which are generally more uncertain and implicit. Moreover, if input-legitimacy is the case, it not necessarily means that there will also be output legitimacy. For example: from an input perspective, nuclear power could be a good strategy to contribute to the legitimate goal of CO_2 reduction, but some side-effects such as persistent nuclear waste may be undesirable, which makes the output-legitimacy very questionable.

Legitimacy, however, is not the only key element. Policy making requires activity to reach targets, which presumes an underlying logic of cause and effects, or as

March and Olsen (1989) refer to: "a logic of consequence." Knowledge of causes and effects is a necessary condition for effective policy, but it is not a guarantee for success. In order to be really effective the logic of consequence will have to match with the institutional environment. Therefore, an effective policy strategy does not only need an underlying logic of consequence, but also an underlying logic of appropriateness (March and Olsen 1989). For example: reducing emissions at its source is often an effective strategy, but requires a suitable system of enforcement. If the latter condition is not met, the effectiveness of the strategy may be severely limited.

We now have legitimacy and logic as the two key elements of policy making, each of which are made up of two dimensions. Hemerijck and Hazeu (2004) combined these dimensions into a four-cell matrix. Within the matrix, each cell represents a different condition for good policy making. Hence we can use this matrix as a framework for policy assessment stating four different questions in Table 1.

In the upper-left of the matrix we find the condition of functionality. The corresponding question is: Does the policy work? Are the underlying assumptions of causes and effects airtight? In the lower-left of the matrix we find the question of feasibility. The corresponding question is: Does the policy fit in? Does it match with institutionally tied up budgets, cultural habits and distribution of power? In the upper-right of the matrix we find the question of lawfulness. The corresponding question is: Is the policy allowed? Does it match with the prevailing legal framework? In the lower-right of the matrix we find the condition of acceptability. The corresponding question is: Is the policy right? Does it resonate with societal core values and beliefs?

In an ideal situation all four conditions for good policy apply, but in daily practice it is often very difficult to meet all the conditions. Conditions might sometimes even be incompatible. Therefore, a comprehensive assessment of policy and policy instruments requires a full evaluation along the lines of all criteria in this framework.

Table 1 Framework for policy assessment along the dimensions of legitimacy and logic of policy making (Hemerijck and Hazeu 2004)

	Output-legitimacy	Input-legitimacy
Logic of consequence	Functionality	Lawfulness
	Does is work?	Is it allowed?
Logic of appropriateness	Feasibility	Acceptability
	Does it fit in?	Is it right?

Kyoto Instruments in Climate Policy

Description

In climate policy the European Union has a target of 8% greenhouse gas reduction in 2010 as compared to 1990 within the Kyoto Protocol framework. This target has been re-distributed among the countries of the Union (EU15), leaving the Netherlands with a reduction target of 6%. This target may be met through a variety of policy measures:

1. *Domestic measures* deal with the technical improvement of production through increased energy efficiency, renewable energy production and fuel switches. Domestic measures target producers as well as consumers and often take a sectoral approach.
2. *Joint Implementation (JI)* is a construction within the Kyoto Protocol that allows for the reduction of greenhouse gas emissions in other countries that have an emission target under the Protocol. JI is project-based and often takes place through the renewal or restructuration of industrial sites in Eastern Europe. When a country with an emission target funds such projects and the Climate Convention secretariat approves, the credit for avoided emissions will be allocated to the funding country.
3. *Clean Development Mechanism (CDM)* is a mechanism similar to JI, but in countries without an emission target in the framework of the Kyoto Protocol. In practice, this usually involves projects in developing countries.
4. The *Emission Trading Scheme (ETS)* of CO_2 is a system which has been in place in the European Union since 2005, So-called 'emission permits' have been allocated by the European Commission to each country, which further allocates these permits to its domestic industrial producers. Each producer may then sell or buy these permits on the European market, reflecting the need for further emissions on the one hand (buy) or investment for reduction of emissions on the other hand (sell).

CDM, JI and the ETS are often jointly referred to as "Kyoto instruments," for which further provision has been elaborated in the Marrakesh Accords (2001). The Dutch government has decided to make significant use of the Kyoto instruments to account for a substantial contribution to the national reduction target, in order to (1) be able to keep domestic regulatory pressure for emission reduction within acceptable ranges and (2) generate greater efficiency of investment in emission reduction. In addition to policy focused on reducing emission of greenhouse gases, adaptation to climate change is increasingly becoming an accepted policy here, but this is excluded from our present analysis.

For industries, the ETS is an instrument to avoid expensive reduction measures: if the costs of such measures exceed the costs of emission permits, it is economically attractive to buy emission permits rather than to take reduction measures. The permits are bought from industries where reduction measures are cheaper than the price of permits, thus allocating actual measures there where it is cheapest. The emission trading price very much depends on the scarcity on the market, which relates to the amount of initial allocated permits and the reduction of permits in the system through domestic measures or by extraction of permits through JI or CDM. Moreover, the emission trading price is influenced by developments on the fossil energy market. Growing demand for fossil fuels will result in increase of CO_2-emissions. Consequently, scarcity on the CO_2-permit market will increase resulting in high permit prices. New emission permits are being allocated by the European Commission in 2008 with a shortage of 200 Mton, which would justify a price of around 20,- EUR per ton CO_2. From 2008 on the ETS is the primary instrument for the EU to reduce industrial CO_2 emissions for a post-Kyoto climate change framework, extending the number of sectors and the reduction targets within the scheme. A further evaluation of these developments is outside the scope of this paper. Note, however, that an extensive ETS at the EU level limits the scope for additional domestic policy measures, since the participating industries are already committed to stay below the trading cap and additional domestic requirements would quickly erode the market for CO_2-emissions.

As many European countries are projected to fail to meet their Kyoto targets, these countries also allocate funds for JI/CDM-projects, increasing the price of emission reduction (Fig. 2). The Netherlands was among the first countries to be involved in JI/CDM-projects, even though it was questionable for some time whether the allocated funds were sufficient to meet the national target under the Kyoto Protocol, since not all projects had been properly contracted yet (MNP 2006). In addition to increased prices, the number of JI-projects is expected to decrease and shift from Central Europe further east to Russia and the Ukraine. Consequently, the risks of new JI-projects increases, since these countries are not within the present-day EU sanctioning regime. Uncertainty is also due to cancelled projects, resulting in less emission reduction than expected.

Assessment

The appliance of Kyoto instruments contributes to greenhouse gas emission reductions and climate change mitigation, or more specifically to reach a 6% emission reduction. Considering this, we can assess legitimacy and logic of the appliance of the Kyoto instruments in terms of its lawfulness, acceptability, feasibility, and functionality.

Since the application of the Kyoto instruments is elaborated and accepted within the Kyoto framework and aligns well with other international treaties and legal institutions, the *lawfulness* is beyond discussion and its application is fully allowed, even though the allocation of emission permits is often challenged by receiving industries. The *functionality* of the instruments depends on the effectiveness and efficiency of the Kyoto instruments, asking the question: does it work? An important argument to apply CDM and JI relates to the relatively low costs of taking measures abroad, which yields a high output legitimacy. A similar argument accounts for the ETS, which in theory provides a highly efficient framework to allocate CO_2-emission reductions there where it is cheapest. CDM and JI projects are usually financed through a tendering system, which generally is an effective way to articulate good market solutions to apply for financial support. However, with respect to JI and CDM the additionality of the instrument is often questioned: do these mechanism help fund projects that would otherwise not have been carried out, or do they fund projects that were planned anyway, providing high windfall gains rather than additional measures? The effectiveness of the ETS depends highly upon a well functioning market. This requires a strict allocation of emission permits in order to create scarcity and therefore sufficiently high prices for at least some firms to take measures for the actual reduction of CO_2-emissions. Moreover, it would be useful for the market to contract over time, to maintain high prices as greenhouse gas emissions are reduced. In addition to low reduction costs, a second argument for application of the ETS lies in the incentive to innovative measures (European Commission 2005). This effect only accounts if costs of trading exceed the costs of reduction. If innovative measures in one region of Europe lead to CO_2 price drops in the ETS zone, a contracting market will be needed to maintain the incentive for further innovative measures in the long term.

The logic of appropriateness evaluates the normative acceptability and practical feasibility of the instruments. Feasibility requires legitimacy of the instruments used, assessing whether the application fits in with the general institutional framework and whether this contributes to the desired effects. In terms of *feasibility*, the ETS aligns well with policy controlled markets, which are common in environmental policy practice. Such markets function like any other market with price setting according to supply and demand, but they are capped by governmental interference, which determines scarcity at the market. ‘Institutional fit’ has been argued to be decisive for the level of compliance with EU law (Knill and Lenschow 2000), explaining why

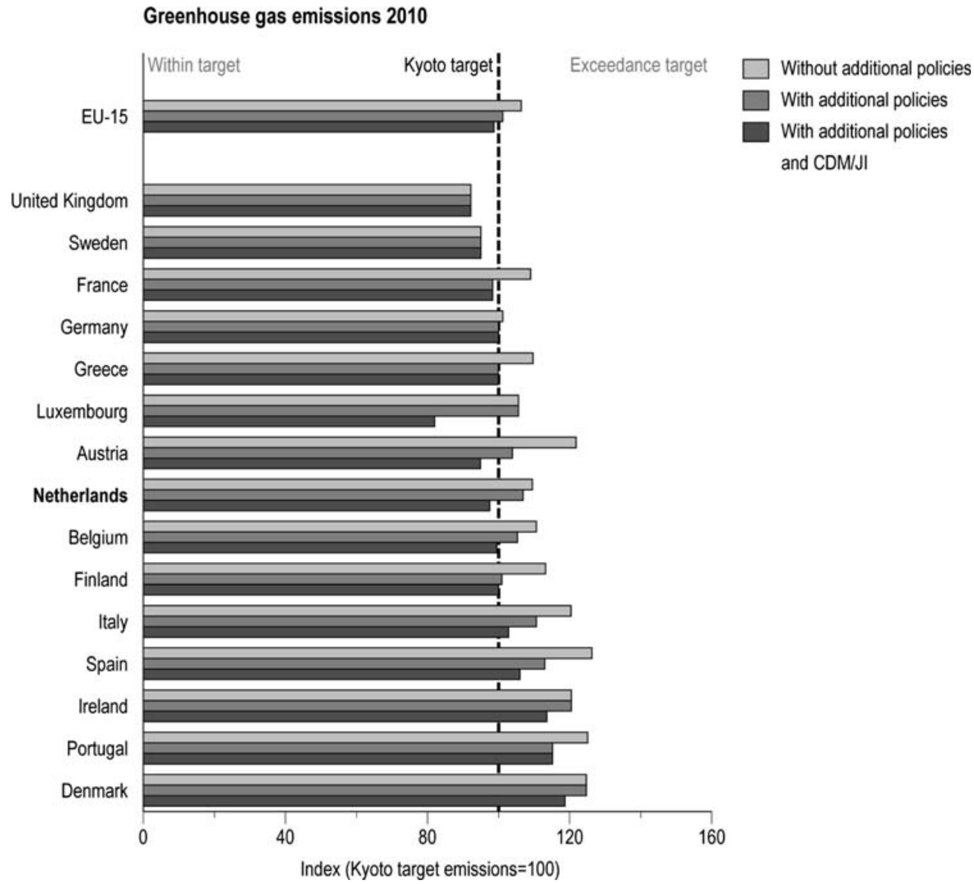

Fig. 2 Relative differences between the Kyoto targets for the EU member states and estimated greenhouse gas emissions for 2010, based on expected reductions from measures under current policies, from measures under current and additional domestic policies, and from domestic measures plus reduction credits (purchase of emission credits abroad under the JI and CDM)

implementation of the ETS has not always been equally easy for all European countries. In the United Kingdom, the ETS aligned fairly well with experience with former domestic trading systems, while in Germany the ETS showed a significant institutional misfit and a threat to the balance of power between industry and government, which depended largely on voluntary agreements (Skjaerseth and Wettestad 2008). Unlike Germany the Netherlands already introduced greenhouse gas emission targets for economic sectors like industry, refineries and power stations. Consequently the Dutch ETS implementation did not require significant systemic changes, other than setting up a supervising authority for emission trading.

JI and CDM are generally considered to be good practice, since the receiving country gains foreign aid profits, while the donor country has the benefit of administrating additional GHG emission reductions. Feasibility for CDM and JI relates largely to the level of control of the bureaucratic burden involved, which could at best smoothen the transfer of technologies to developing countries, but at worst hamper the cost effectiveness and acceptability of the measures. Practical feasibility has sometimes been hampered by the difficulty to establish a baseline to which the effectiveness of a project should be assessed, which could lead to an overestimation of the net GHG abatement effect of CDM project activities (Möllersten and Grönkvist 2007).

Acceptability of appliance of the Kyoto instruments requires legitimacy of the goals that are set, including the reflection of social core values and beliefs. For ET, it can be argued that the appliance of market-based instruments has become well-accepted practice in environmental policy, which makes it an appropriate and effective tool for reaching policy targets, contributing to its acceptability. From a different perspective it may also be argued that a (rich) polluter will buy out from taking measures for emission reduction, thus aligning with the polluter-pays concept, but violating the concept that a polluter should take domestic responsibility for emission reductions. Market-based instruments have therefore traditionally been opposed by environmentalists as they were considered to allow polluters a licence to pollute (Weale 1992), but presently such instruments are well accepted as the most cost-effective way to reach environmental goals, to leave room for a flexible response by society and to put an economic penalty on the act of polluting (Dietz and Vollebergh 1999). However, it has been argued that JI and CDM are more effective, efficient and politically acceptable than the ETS because of lower transaction costs, competitive advantages, lower costs for actual emission reduction, focus on ‘real’ emission abatements, rather than on excess CO_2-emission permits and avoiding interference with the supposed level playing field on the market when emission permits are introduced (Woerdman 2000). Several of these arguments have been challenged, as the effectiveness of JI has also been doubted in the light of excess CO_2-emission permits in Eastern Europe (Metz and others 2001) and JI/CDM prices have increased considerably in recent years as more countries apply for projects (MNP 2006). For JI and CDM, acceptability increases in the light of favorable co-benefits due to investments in developing countries or countries in transition, as well as to the transfer of sustainable technologies. In some specific cases this may yield adverse side-effects, for example when a project is assessed favorable in relation to a more polluting but not yet existing reference situation. In a more general sense, acceptability of JI and CDM may be questioned concerning the transfer of emission reduction responsibility from rich polluting countries to poor countries.

Summarizing, the flexible instruments in climate change policy are lawful and seem to work well in terms of functionality. With respect to feasibility, all instruments fit in well with the general Dutch institutional framework, including policy controlled markets. The bureaucratic burden of control for CDM and JI is low enough to smooth the transfer of technologies to developing countries, although an overestimation of abatement effects due to low baseline settings may be a threat. The acceptability of the instruments relates much to social core values and it could be argued that JI/CDM are designed to transfer clean-up activities to developing countries and that ETS provides polluters with a license to pollute. However, while the application of Kyoto instruments may seem to violate arguments of acceptability because of a transfer of responsibility, this argument is largely offset by the high level of functionality through efficiency and effectiveness.

Fine-Tuning National and Local Measures to Meeting Air Quality Standards

Description

Regional concentrations of Particulate Matter (PM), and NO_x (an ozone precursor) are relatively high in the Netherlands. More than half the concentration of particulate matter originates from natural sources such as soil and sea, but the other half attributes to anthropogenic sources such as industry and transport, abroad (about 30%) as well as domestic (about 20%). NO_x largely originates from road traffic. Even though regional background concentrations of NO_x are relatively high in the Netherlands, urban concentrations are very much comparable to those in other European cities. In addition to air quality standards, the EU also sets up National Emission Ceilings (NEC). Emission reductions made in the past and expected further reductions to 2010, are not bringing down emissions of SO_2 and NO_x quickly enough to meet the NEC targets for 2010. As in many other EU states, the Netherlands find it difficult to meet the national emissions ceilings.

Currently, in the Netherlands air quality standards are not met everywhere. Exceeding occurs mainly along motorways, along busy roads in city centers and at locations close to industrial parks. Moreover, in addition to EU legislation for air quality according to Dutch law, spatial developments have to comply with air quality standards, restricting project developments. This hampers local governments in realizing housing programs and other building schemes.

Now, in order to meet the NEC targets and to reduce the bottlenecks in spatial development as a result of the Dutch link between spatial planning and air quality, additional policy is formulated along three tracks. First, traffic-related emissions are further reduced by technological measures like black carbon filters and cleaner vehicles. In addition the government introduced a no-claim bonus system to stimulate the purchase of cleaner vehicles. Also speed limits are introduced at highways close to residential areas. Second, Dutch government advocates additional EU point source pollution policy, since this is most cost-effective for the Netherlands. In addition the Netherlands has requested to postpone the year of compliance to EU targets. Third, a ‘National Co-operation Program Air Quality’ (NSL from Dutch) is introduced. This program includes national, regional, and local measures to meet air quality targets at locations where exceeding of this target (now or in the future) might hamper building activities. In fact the program fine-tunes the future effects on air quality of new building activities (for example a road) with compensating measures to reduce the additional emissions resulting from new building activities. In this way the program provides a flexible link between spatial planning and air quality, and offers a way out to local governments for realizing building schemes. While without this national program about 10–20% of the building projects would have been cancelled in the light of the air quality standards, with this program all building plans can be put into effect. Compensating measures include, among others, road-pricing and emission reduction measures in industry and refinery. It is also decided that not all building activities have to be tested on their effect on air quality. Small building activities may take place anyway. Only substantial projects are included in NSL.

Assessment

Introducing the NSL offered a way out in a major public dilemma between “economy” and “environment.” As the Dutch practice to comply with air quality standards turned out to be very restrictive for spatial developments, the NSL reduced the restrictions for building substantially. EU law only requires meeting air quality standards and does not include requirements for spatial planning. The NSL is firmly rooted in Dutch law system and hence beyond discussion of *lawfulness*, but funding and administrative implementation of the NSL measures has not been established yet. With respect to *functionality* the evaluation of NSL shows mixed results. NSL now makes building activities possible that would otherwise have been cancelled, which is argued to be much more expensive than the emission reduction measures that are included in NSL (Folkert and Wieringa 2006). A difficulty, however, is that NSL requires detailed model calculations on air quality in the future, for specific locations. Consequently the implementation of building activities taking into account the NSL are complex and expensive. Complexity also increases due to inevitable scientific uncertainty in air quality modeling including meteorological uncertainty, and due to uncertainty in the effect of measures. Therefore, it is impossible to indicate with thorough scientific confidence whether the intended NSL measures will meet air quality standards at all bottlenecks locations. However, policymakers require such unambiguous information on meeting air quality standards in order to approve or disapprove of a building project. This uncertainty hampers the *functionality* and the *feasibility* of the NSL. Feasibility is under pressure because decision makers hardly take into account the feature of uncertainty. Clear decision rules are lacking for those cases where it is unclear whether or not the limit values are exceeded. In these cases public interest and health risk due to a possible exceedance of air quality standards will have to be balanced. However, local decisions how to deal with these situations are not very transparent. Consequently is it also not clear whether health effects play a major role in the local decision making (Diederen and Koelemeijer 2008). The challenge is therefore to reduce the mismatch between the needs of policy and the provision of scientific knowledge. Finally, the question rises whether NSL-policy is *acceptable*. Advocates of the NSL stress the opportunities that NSL provides for future developments. These developments—for example building new roads—are important to reduce congestion problems that are also a serious problem in the Netherlands, according to the advocates. Opponents, however, stress the argument of feasibility pointing at the difficulties due to uncertainties that hamper proper decision making.

Summarizing this assessment, a trade-off between functionality versus acceptability can be identified in the Dutch NSL approach. To avoid the uncertainty features of NSL the flexible link between spatial planning and air quality could be replaced by a tighter one. However, this replacement is at odds with the acceptability since this tightening will hamper new building activities.

Derogation for the Nitrate Directive

Description

In comparison with other countries, Dutch nitrogen surpluses on agricultural land fell sharply between 1998 and 2002, mainly due to the introduction of the Dutch system of minerals accounting. This trend came to an end in 2003, because of a standstill in tightening the legal standards for nitrogen surplus. Since 2002 also the decrease in average nitrate concentration in shallow groundwater seems to come to a standstill.

In order to meet the requirements of the EU Nitrate Directive, the Netherlands had to abandon the system of minerals accounting and in 2006 introduced a system of more rigid manure and fertilizer use standards instead. As the intensity of production in the Dutch dairy sector is very high, the Netherlands successfully applied for a so-called derogation of the use standards set by the European Union: instead of 170 kg N/ha, the Netherlands is now allowed to put 250 kg N/ha of manure on grasslands. This derogation provides a major cost savings for the dairy sector, since less manure has to be disposed off the farm (usually at high cost) and less fertilizer is needed. In 2009 the Netherlands have to demonstrate that the environmental target for nitrate can still be reached with this derogation.

Ex-ante evaluations of the use standards indicates that in 2010–2015 the average nitrate concentrations in shallow groundwater in agricultural areas are expected to be around 35 mg/l (MNP 2007). However, in region with sandy soils the average concentrations are expected to exceed the EU-target (60 mg/l instead of 50 mg/l). Due to time-lag effects the overall nitrate concentrations in groundwater across regions with sandy soils will fall to 55 mg/l between 2025 and 2030, but large regional differences remain (Fig. 3). Particularly on the drier sandy soils and in the southern parts of the country, concentrations will probably be well above the limit (exceeding the target with about 30 mg/l). Consequently, this will be in contradiction with the Groundwater Directive, which is expected to include regional reporting.

Assessment

Derogation of the use standard of 250 kg N/ha has been accepted by the European Commission and is therefore a

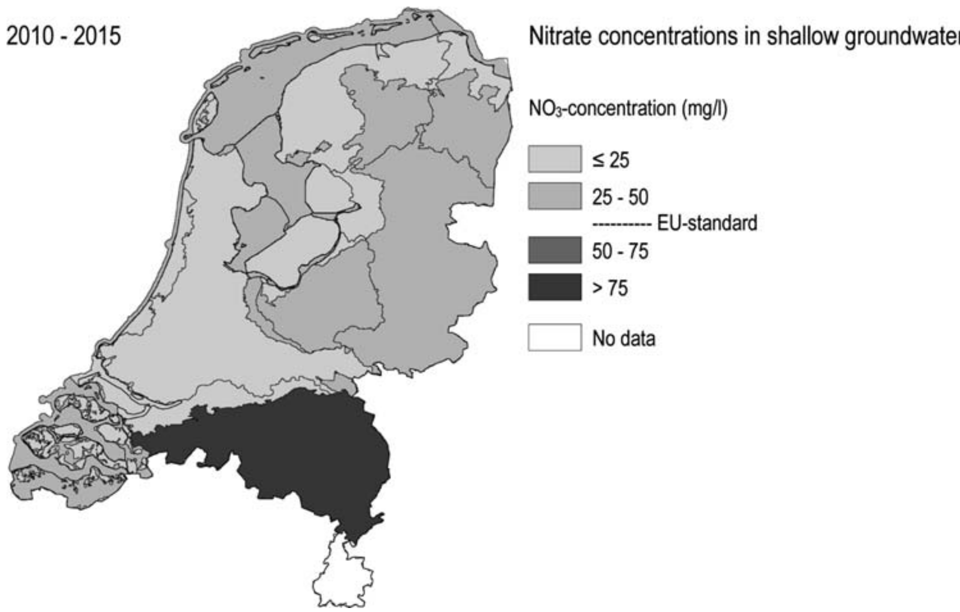

Fig. 3 Average nitrate concentrations in shallow groundwater in agricultural areas per groundwater body (2010–2015). Calculations exclude nature reserves and protected areas

lawful policy measure, although environmental quality standards will be reached later in time (between 2010 and 2015 instead of 2009) than would have been the case with strict reduction measures at the source of emission. The question wether derogation is lawful from a Dutch perspective is not at stake since derogation is a EU matter (unlike the air quality case where Dutch law was at stake). Ex-ante evaluation of the manure policy including derogation shows that compliance to the Nitrate Directive is expected for most areas, but not for the sandy soils in the southern part of the country. Therefore, with respect to *functionality* it can be concluded that the derogation is profitable for dairy farmers in all regions except the southern part of the Netherlands, not exceeding environmental targets. This clearly enhances the *acceptability* of the derogation for these farmers, but if non-compliance in some areas in 2009 would result in measures for the whole country, acceptability may quickly decrease. With respect to the *feasibility* it can be noticed that the administration demand for use standards do not really depend on the level of the standard. A positive side-benefit is that the derogation reduces the national manure surplus since more manure can be distributed on grasslands. On the other hand, tight use standards may increase the risk of fraud, since the use of fertilizer is more difficult to monitor than manure. Generally, the EU approval of the derogation can be regarded as a win-win situation. In fact the allowed derogation recognizes production in de Dutch dairy sector exceeding the average intensity of dairy production in the EU. However, since the derogation is not regionally differentiated the functionality could come under pressure if it turns out that the derogation hampers reaching the EU concentration target.

Conclusions

Dutch environmental policy makes use of opportunities for flexible interpretation of the targets by adopting a more pragmatic approach, rather than taking strict sectoral measures as required in many EU directives. It may be politically useful to adequately comply with EU targets avoiding costly emission reduction measures, but from a functional perspective this may delay restoration of environmental conditions. The question is how this pragmatic approach qualifies in a broader policy assessment. We considered a range of flexible policy instruments in recent Dutch environmental policy to assess whether this is a proper way to go from a functional perspective.

In order to understand the use of pragmatic policy instruments in Dutch environmental policy, we have adapted a framework for policy assessment, based on the dimensions of legitimacy and policy logic. The combination of these two dimensions introduces four questions of policy assessment: Is it right? Does it work? Is it allowed? Does it fit in? These four questions relate to four criteria of assessment, respectively on lawfulness, functionality, acceptability and feasibility. Within the framework, the criterion of acceptability is not always easy to evaluate, since it depends on the level of social controversy or consensus: in a polarized setting, the application of a policy instrument may be acceptable to one group in society, but unacceptable to others.

We applied these criteria to several pragmatic policy strategies in Dutch environmental policy in order to understand the arguments of putting such policy instruments into place. For two of the three studied cases a trade-off in evaluation criteria can be identified, but the directions in which the trade-offs crystallize are not the same. The Dutch approach in fine tuning national and local measures to meeting air quality standards is accepted, but the functionality is doubted. For the application of Kyoto instruments the acceptability seems to be violated because of a transfer of responsibility, but this argument is largely offset by the high level of functionality through efficiency and effectiveness. In the evaluation of the derogation for the Nitrate Directive no trade-off in assessment criteria is found.

The criterion of lawfulness seems to function as some kind of bottom-line, which is not violated in any of the case studies. Moreover, in the case of air quality, where the policy was not at odds with the law, the law is amended. However, this adjustment may result in new dilemmas among the criteria of functionality, feasibility and acceptability. It would be interesting to further study the limits of the trade-offs within the framework: can the criteria be stretched to zero as long as they are compensated by the other criteria, or is there a bottom-line? And do the policy instruments have to score as high as possible on any of the criteria, or is it limited by trade-offs on the other criteria?

It should explicitly be noted that we used this framework for an *ex post* policy assessment; from an *ex ante* policy makers' point-of-view the criteria may not all have been taken into account when outlining the policy instrument. This is, however, not for lack of possibility. We would argue that ex ante assessments along the lines of the framework criteria could make a significant contribution to the consideration of applying policy instruments. Neglecting any one of the criteria allows opposition groups in society to deploy a lobby strategy to debate legitimacy along the lines of the poorly addressed criterion. A broad ex ante policy assessment on all criteria could greatly help increase the legitimacy of policy instruments from a wide range of perspectives.

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References

Diederen HSMA, Koelemeijer RBA (2008) Onzekerheid en complexiteit van de Nederlandse regelgeving voor Luchtkwaliteit; een discussienotitie (in Dutch). PBL rapport 500144001/2008. Available online at http://www.mnp.nl/nl/publicaties/2008/Een-discussienotitie-over-onzekerheden-en-complexiteit-van-de-Nederlandse-regelgeving-voor-luchtkwaliteit.html

Dietz F, Vollebergh H (1999) Explaining instrument choice in environmental policy. In: van den Bergh JCJM (ed) Handbook of environmental and resource economics. Edward Elgar, Cheltenham, pp 339–351

EEA (European Environment Agency) (2005) The European environment, state and outlook 2005. European Assessment Agency, Copenhagen

European Commission (2005) EU action against climate change, EU emissions trading, an open scheme promoting global innovation. European Commission, Brussels. Available online at http://ec.europa.eu/environment/climat/pdf/emission_trading3_en.pdf

Folkert RJM, Wieringa K (2006) Assessment of the national cooperation program air quality (in Dutch). MNP rapport 500095003, Bilthoven. Available online at http://www.mnp.nl/nl/publicaties/2006/BeoordelingvanhetNationaalSamenwerkingsprogrammaLuchtkwaliteit.html

Hemerijck AC, Hazeu CA (2004) Werkt het, past het, mag het, en hoort het? (in Dutch). Bestuurskunde 13(2). Available online at http://www.bestuurskunde.nl/publicaties/bestuurskunde.php?artikel=2004,3,13,2,2

Knill C, Lenschow A (2000) On deficient implementation and deficient theories: the need for an institutional perspective in implementation research. In: Knill C, Lenchow A (eds) Implementing EU environmental policy: new directions and old problems. Manchester University Press, Manchester, pp 9–38

March J, Olsen J (1989) Rediscovering institutions: the organizational basis of politics. Free Press, New York

Metz B, Berk M, Kok MTJ, van Minnen JG, de Moor A, Faber A (2001) How can the European Union contribute to a COP6 agreement? An overview for policy makers. International Environmental Agreements 1(2):167–185

MNP (Netherlands Environmental Assessment Agency) (2006) Milieubalans 2006. MNP, Bilthoven (in Dutch). English summary available online at http://www.mnp.nl/en/publications/2006/EnvironmentalBalance2006-Summary.html

MNP (Netherlands Environmental Assessment Agency) (2007) Werking van de meststoffenwet. MNP, Bilthoven (in Dutch)

MNP (Netherlands Environmental Assessment Agency) (2008) The Netherlands in a sustainable world, 2nd sustainability outlook. MNP, Bilthoven. English summary available online at http://www.mnp.nl/en/publications/2008/TheNetherlandsinasustainableworld-summary.html

Möllersten K, Grönkvist S (2007) All CO_2 is equal in the atmosphere—a comment on CDM GHG accounting standards for methane recovery and oxidation projects. Energy Policy 35(7):3675–3680

Sabatier PA (1987) Knowledge, policy-oriented learning and policy change: an advocacy coalition framework. Science Communication 8(4):649–692

Scharpf F (1999) Governing in Europe: effective and democratic?. Oxford University Press, Oxford

Skjaerseth JB, Wettestad J (2008) Implementing EU emissions trading: success or failure? International Environmental Agreements 8:275–290

van Wezel A, Kruitwagen S, Maas R (2006) Policy profile: how Dutch Environmental Policy contributes to meet European Environmental Standards; Dutch Environmental Balance. European Environment 16:45–52

Weale A (1992) The new politics of pollution. Manchester University Press, Manchester

Woerdman E (2000) Implementing the Kyoto protocol: why JI and CDM show more promise than international emissions trading. Energy Policy 28(1):29–38