Algemene Rekenkamer

Energy policy: towards greater coherence

A review of 10 years of energy policy audits by the Netherlands Court of Audit (2006-2015)

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The original Dutch version of this report (entitled *Energiebeleid: op weg naar samenhang*) was adopted on 8 December 2015. The report was presented to the Dutch House of Representatives on 10 December 2015.

Contents

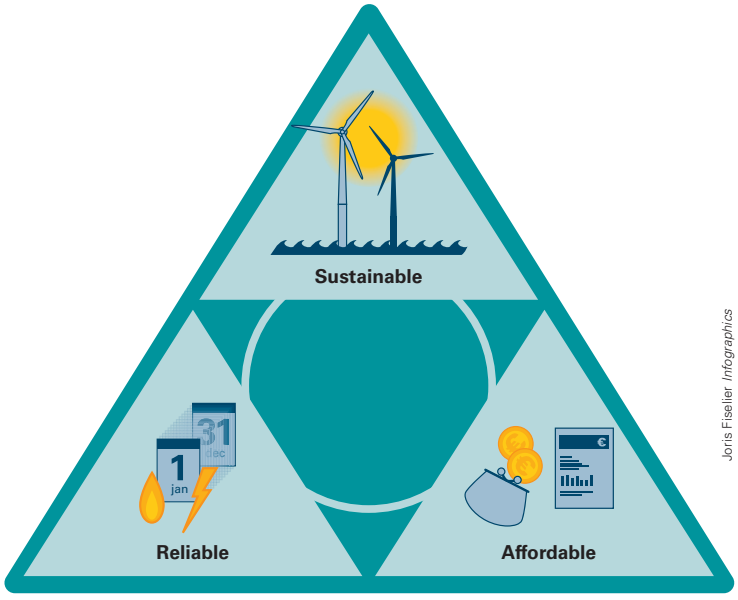
1 Introduction

We have regularly audited Dutch energy policy during the past ten years. This review of ten years of energy policy audits (from 2006 to 2015) has been produced as a means of contributing to the broad public dialogue that the Minister of Economic Affairs[1] wishes to pursue in order to pave the way in good time for a fully renewable energy supply in 2050. Based on the findings of previously published audit reports, this report contains observations and insights for further shaping, implementing and monitoring the national energy policy.

1.1 The importance of Dutch energy policy

Ever since the Second World War and particularly since the oil crisis, the Dutch government has sought to secure an energy supply that is both reliable and affordable in the short and the long term. At the same time, since the 1990s the government has sought to ensure that the country has a renewable energy supply. An important aspect of this policy has been a desire to increase the share of renewable energy in the national energy mix.[2] These elements form the three goals of Dutch energy policy: sustainable, affordable and reliable.

Figure 1 The three goals of Dutch energy policy



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National obligations based on EU agreements are also important aspects of the national energy policy:

- In 2011, the Netherlands committed itself to the EU target of creating a fully renewable energy supply in 2050. In order to meet this target, the EU's greenhouse gas emissions must fall by between 80% and 95% by 2050 compared with the situation in 1990.
- The Netherlands has also reached agreements with its EU partners on the creation of a more renewable energy supply in 2020 and 2030.

At a national level, the Netherlands has formulated additional targets for renewable energy and energy-saving. These are set out inter alia in a national 'Energy Agreement',

1
This report refers consistently to the 'Minister of Economic Affairs'. This term is also taken to refer to the Minister of Economic Affairs, Agriculture and Innovation under the first Rutte government (2010-2012).

2
For the sake of consistency and simplicity, we have decided to stick to the term 'renewable energy' in this report. See the glossary in Appendix 2 for further information.

which lays down a number of goals and measures for the period up to 2020-2023 (Social and Economic Council, 2013).

The overall objective of the government's current energy policy is to create 'an internationally competitive energy supply that is reliable, safe and sustainable'. Direct government spending on 'promoting a sustainable, affordable and reliable energy supply' falls under the Ministry of Economic Affairs' budget and represented a figure of approximately €11 billion in the period between 2006 and 2015.[3] The bulk of this spending consists of policy tools such as grants for the production of renewable energy.

Energy production grants are a form of central government spending and are as such included in the national budget. However, these are not the only form of spending: spending on energy also includes 'tax expenditure'. This should in fact be regarded as 'tax revenue forgone' and is a separate item in the Budget Memorandum. 'Tax expenditure' comprises forms of tax relief that the government affords to citizens, institutions and businesses, with the aim of inducing them to adopt certain kinds of behaviour, such as energy-saving.[4]

Of the current forms of tax expenditure, 13 types (representing a total value of €5.6 billion) have a potentially adverse environmental impact (Netherlands Court of Audit, 2015c). One of them is the excise duty exemption for aircraft: the government estimated the value of this form of tax relief at €2,023 million in 2014 (Netherlands Court of Audit, 2015c). There are also forms of energy tax relief that may have an adverse environmental impact. For example, bulk consumers are among those taxpayers who are exempt from energy tax; the amount of relief involved has been estimated at €119 million. By way of comparison, the government spent €988 million on energy policy in the same year; of this figure, €852 million was spent on 'greening' the energy supply.

International agreements on phasing-out environmentally damaging grants and subsidies

The phasing-out of this form of tax relief is the subject of political debate at both a national and a European level. The G20 countries agreed in September 2009 to gradually abolish these types of environmentally damaging tax measures (G20 Information Centre, 2009). Although not a member of the G20, the Netherlands has nonetheless pledged to stand by the agreements reached by the G20. In 2011, the European Commission presented a plan of action including a series of steps for phasing out environmentally damaging grants and subsidies (Netherlands Court of Audit, 2015c). In June 2015, the Dutch State Secretary for Finance reaffirmed his commitment to the principle of abolishing environmentally damaging grants and subsidies (Ministry of Finance, 2015). The State Secretary said that 'a common European programme is needed in order to catalogue and phase out environmentally damaging grants and subsidies, and thus to create a level playing field. This will safeguard the international competitiveness of Dutch businesses.'

In addition to the policy goals listed above, energy policy also serves a number of major economic and financial interests:

- Petroleum, oil products and natural gas represent by far the largest Dutch trade flows, in terms of both exports and imports.
- Energy-related activities accounted for 6.1% of the country's gross domestic product in 2013 (Schoots & Hammingh, 2015).

3 Including adjustment for inflation in accordance with the price index for material government consumption (known as the IMOC index).

4 The aggregate value of 'tax expenditure' in 2014 was □18.5 billion, which means it accounts for a far larger amount of money than spending on government grants (more than three times as much in 2013). We found that 32 of the 86 forms of tax expenditure had not been subject to any form of review. Of the 54 that had been reviewed, 17 were found to have been 'possibly ineffective' (Netherlands Court of Audit, 2015c).

- Energy-related revenue (i.e. natural gas revenue, energy excise duties and energy tax) accounted for 12% of the aggregate national budget in 2013 (Schoots & Hammingh, 2015).

1.2 Recent developments and agreements

In September 2013, the Dutch government signed a covenant known as the 'Energy Agreement' with civil-society organisations and representatives of Dutch trade and industry. The Energy Agreement lists a number of targets that need to be met in order to create a more renewable energy supply in 2020 and 2023. Although the covenant also contains various agreements about renewable energy and energy-saving, it does not set any targets for reducing CO2 emissions.

Today, at the time that this publication goes to press, energy policy remains a major topic of political and social debate at all sorts of different levels - global, European and national. See Figure 2.

In terms of the *global debate* on energy policy, the UN climate change talks are due to be held in Paris in December 2015. The organisers are hoping that the conference will culminate in an agreement on a new, global treaty setting climate-change targets for 2050 and 2100.

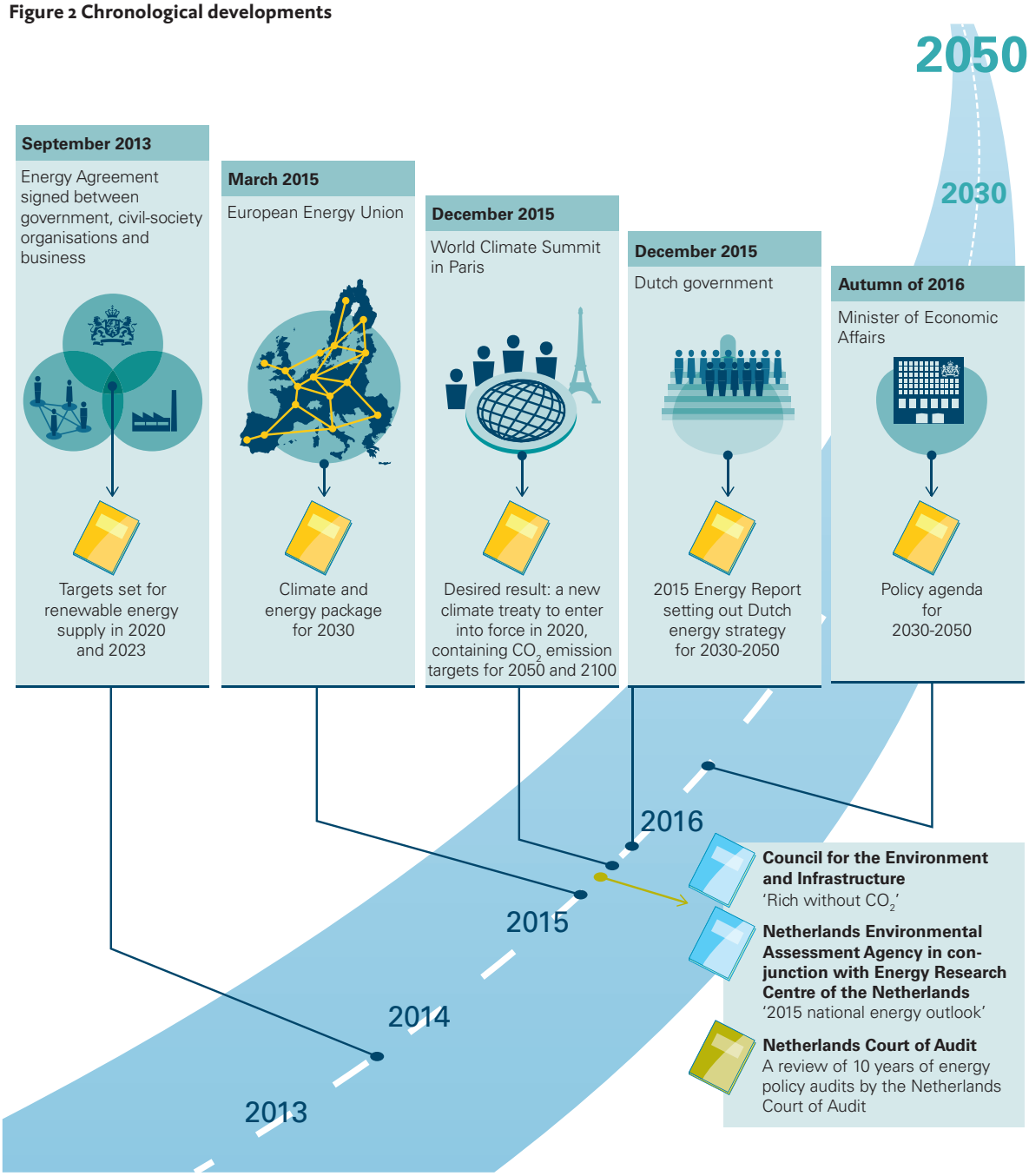
At a *European level*, a European Energy Union has been formed and the details of an EU climate and energy package for 2030 and beyond are currently being fleshed out. The EU has set three sub-targets for the year 2030:

- a 40% reduction in emissions of greenhouse gases[5] compared with 1990, for the EU as a whole;
- renewable energy to account for 27% of the EU's energy consumption;
- 27% energy-saving throughout the EU.

The EU-wide targets for 2030 have yet to be transposed into national targets.

5
The remainder of this report refers only to one specific greenhouse gas, i.e. carbon dioxide (CO2). However, the latter is intended to include the other greenhouse gases, i.e. methane, dinitrogen oxide and the fluorinated gases (F gases). CO2 accounts for by far the largest share of greenhouse gas emissions.

Figure 2 Chronological developments



At a *national level*, a number of research centres and advisory bodies have produced relevant publications, including:

- *Rijk zonder CO2* ('Rich without CO_2'), which is intended to pave the way for parliamentary decision-making (Council for the Environment and Infrastructure, 2015);
- *the Nationale Energieverkenning 2015* ('2015 national energy outlook') by the Netherlands Environmental Assessment Agency in conjunction with the Energy Research Centre of the Netherlands.

A court ruling given in a climate-related case that a civil-society organisation called Urgenda brought against the state of the Netherlands may also prove to have a substantial impact on future Dutch energy policy. The court ordered the Dutch state to reduce its CO2 emissions by 25% compared with 1990 levels.

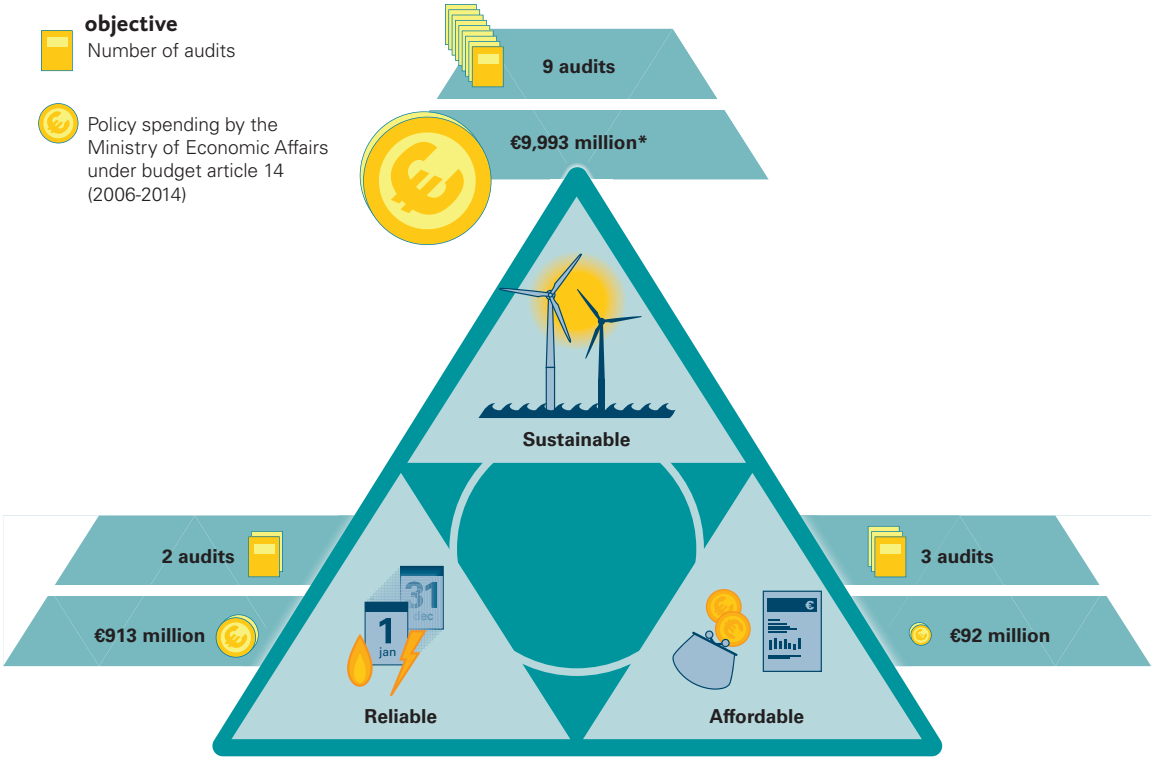
The Dutch government will be publishing the 2015 Energy Report at the end of December, marking the start of a wide-ranging public debate on how to solve the energy problem in both the medium term (i.e. 2030) and the long term (2050). The government plans to translate the results of the lpublic debate into a policy agenda that the Minister of Economic Affairs will be presenting in the autumn of 2016 (Ministry of Economic Affairs, 2015b).

1.3 Scope and method

Our observations are based on an analysis of our own publications on the subject of energy. We have published a total of 12 reports on the subject since 2006 and have also focused on energy policies in two series of annual publications[6] (see Appendix I for a full list). For the purpose of this analysis, we sought to identify whether the reports contained any recurrent findings, with the aim of outlining the strengths of the energy policy pursued by the Minister of Economic Affairs, as well as the opportunities for improvement .

The audits selected for the purpose of this review encompass the full expanse of the budget article relating to energy policy,[7] which means that they cover *all three* energy policy objectives, i.e. affordability, reliability and sustainability. The 'greening' of the country's energy supply forms the main focus of this review, however. This is because we selected our audit topics in accordance with the outcomes of a series of risk analyses. Monetary value is another factor affecting the choice of topics. This is because the vast majority (i.e. 91%) of budget spending on energy (under budget article 14) during the period between 2006 and 2014 was on greening the energy supply; see Figure 3.[8]

Figure 3 Cumulative expenditure on energy policy between 2006 and 2014, and our audit reports on each policy objective



*€1,190 million of this was spent on Energy Investment Tax Credits

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6 Our annual regularity audits and the letters we publish each year commenting on the draft budgets.

7 Budget article 14 ('An efficient and renewable energy supply') of chapter XIII (Ministry of Economic Affairs) of the national budget.

8 Figure 3 does not include the tax revenue forgone as a result of the tax relief provided on electric cars and other forms of energy-related tax expenditure (see section 1.1).

Our analysis centres on the Ministry of Economic Affairs and the energy budget article. This means that we take account of the climate policy pursued by the Minister of Infrastructure and the Environment and the policy on the management of state holdings pursued by the Minister of Finance only where this has a direct bearing on the government's energy policy. We are specifically interested in the policy on CO_2 emissions, the tax relief paid on electric cars, and the policy on state shareholdings in relation to Gasunie, Energiebeheer Nederland (EBN) and TenneT. The vast majority of the revenue in the energy budget article in the Ministry of Economic Affairs' budget was in the form of natural gas revenues.[9] In 2006-2014, natural gas revenues accounted for 98% of the €98 billion aggregate energy revenue.
The national energy supply consists of a mix of energy carriers and applications. Petroleum, coal, gas and electricity are not the only energy carriers: heat is, too. For the moment, relatively little use is made of the residual energy from manufacturing plants, and the same applies to the construction of collective (sustainable) thermal power networks.[10] We did not perform any audits of thermal power during the period between 2006 and 2015.

1.4 Format

Chapter 2 sets out our main general observations based on ten years of Court audits, as well as our comments and recommendations for shaping, implementing and monitoring the national energy policy. Chapter 3 contains the response of the Minister of Economic Affairs to our report, and our own afterword.

Chapters 4 to 6 look at our observations in greater depth. The subject of chapter 4 is the way in which energy policy is planned, and the arguments underpinning policy decisions. Chapter 5 discusses the implementation and impact of energy policy, paying special attention to policy tools for 'greening' the energy supply. Chapter 6 concentrates on the supervision of energy policy implementation.

9
Although we also published a report in 2015 on the way in which natural gas revenues are spent, this report was not included in the terms of reference for this study. The report mainly concerned the use made of the revenues and the way in which this was accounted for, and did not address the production of natural gas as part of government policy on the national energy supply.

10
Collective thermal power met 2% of the aggregate demand for heating from households and firms in the Netherlands in 2013 (Schoots & Hamming, 2015).

2 Observations and comments

Looking back at ten years of Dutch energy policy, it is clear that, while the policy itself has remained broadly the same, different governments have chosen to emphasise different aspects. A second conclusion is that, although the results in terms of affordability and reliability are good to reasonably good, the government has not to date proved able to meet the targets set for sustainability. Our audits show that that has been due to a lack of coherence and a failure to prioritise between the three policy goals, which are not always compatible with each other. A decision to focus on one of them can result in less progress being made in relation to the other two. This may be either an unintended consequence or a carefully considered choice. Obviously, it is up to politicians to make this choice, but their reasons for doing so are not always transparent. Transparency is needed, however, in order to ensure that both parliament and the public at large are properly informed about the consequences of the government's choices in relation to energy policy.
There are also positives, though. Successive governments have learned from previous problems in their quest to encourage the generation of renewable energy. Various Dutch governments have also taken a proactive stance in the formulation of an EU energy policy.

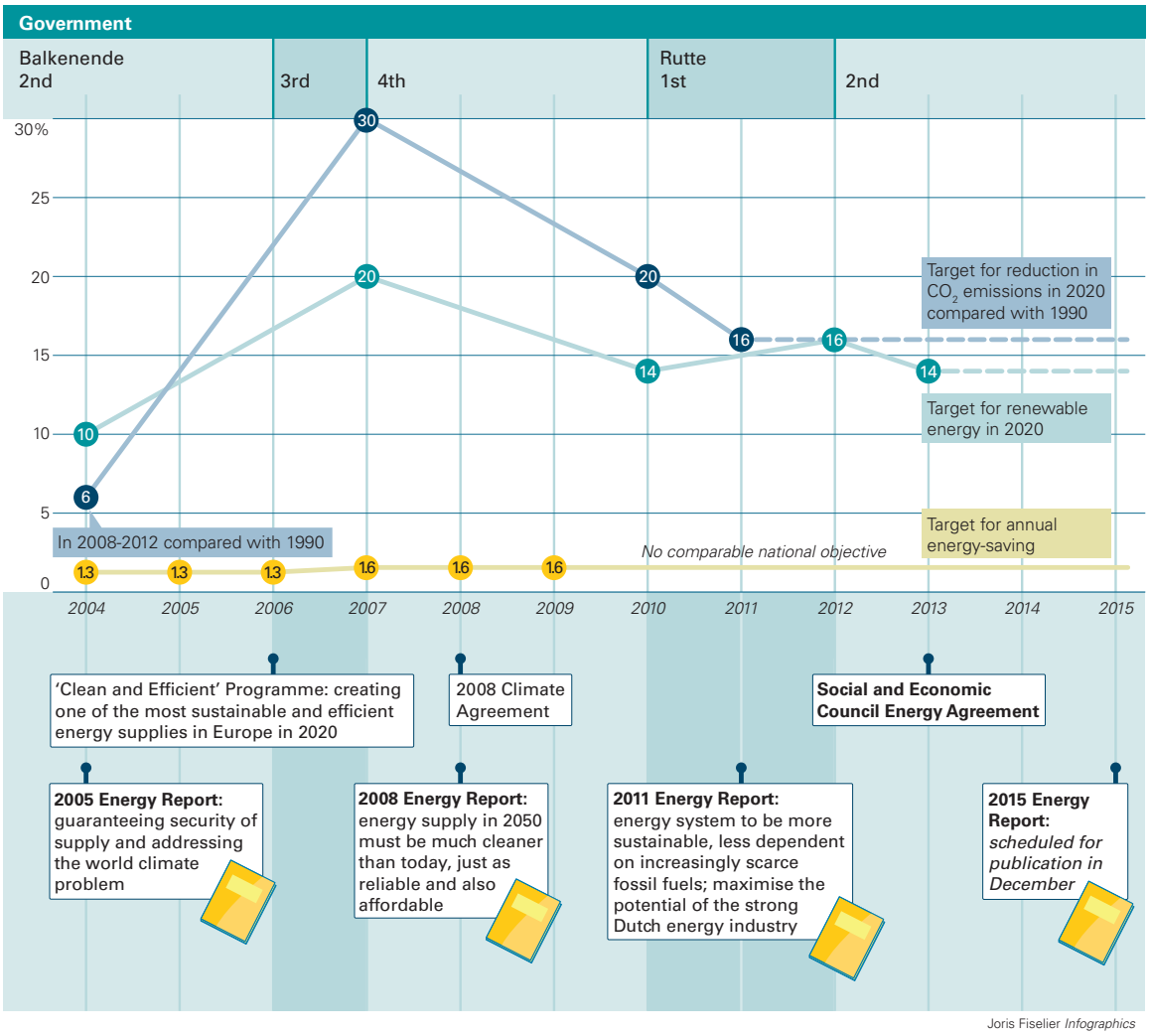
2.1 Different governments emphasise different aspects of energy policy

The government has traditionally been closely involved in the production, transmission and supply of electricity and gas in the Netherlands. One of the main reasons for this is the fact that the first energy companies were fully owned by local and provincial authorities. The current electricity, gas and thermal power networks are the result of a gradual process rather than a carefully thought-out plan. Once the EU member states had embraced the principle of liberalising and privatising the energy sector in the 1980s, the result was a corresponding change in the structure of the energy supply industry (Netherlands Court of Audit, 2015b). This trend was reinforced in the 1990s by the EU policy on liberalisation and privatisation.
When the principle of market forces was introduced during the same period, the focus of government policy lay firmly on creating an affordable energy supply. The thinking was that an open market would foster competition, which in turn would result in greater efficiency and lower energy bills for consumers.[11]
The need for creating a renewable energy supply has become ever more prominent since the 1990s. The government published its first policy document on energy-saving in 1990. During the past decade, a number of governments have set various sustainability targets, including for lower CO_2 emissions, more renewable energy and energy-saving.

Figure 4 shows the milestones and key policy objectives in relation to each government during the period under review.

11
Under EU rules on the single market, electricity and gas transmission is kept separate from the other functions in the energy supply chain, i.e. production, supply and trade.

Figure 4 Successive governments have emphasised different aspects of energy policy



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The Minister of Economic Affairs has published a strategy document known as an 'Energy Report' every three or four years since 2005. The reports that have been published in recent times make clear that, while there has not been any fundamental change in policy, different governments have set different priorities:

- The 2008 Energy Report states that the government wishes to create a much cleaner energy supply system, on the proviso that it is just as affordable and reliable as today's. Energy innovation is a focal point.
- The 2011 Energy Report makes clear that the government is also interested in maximising the potential offered by the strength of the Dutch energy industry. Although renewable energy features prominently in the 2011 Energy Report, the Minister of Economic Affairs is keen to stress that hasty decisions may lead to unnecessarily high social costs (Ministry of Economic Affairs, 2014).

2.2 Gap between energy policy ambitions and progress in practice

The policy objectives defined as 'the affordability' and 'the reliability' of the energy supply have not been translated into specific, measurable indicators. This makes it difficult to measure the results of policy. However, as will become clear from the remainder of this section, the Dutch energy supply seems to be both reliable (in terms of the security of supply) and reasonably affordable by comparison with other EU member

states. Although a number of specific, measurable national and EU-wide targets have been set for sustainability, it is clear that there is still a long way to go in this respect.

Reliability

The reliability of the energy supply consists of two elements: the security of energy supply on the one hand and energy-source security on the other. As far as the security of supply is concerned, the relevant figure for the electricity grid is 99.996%, which means that electricity is available for 99.996% of the time (Movares Nederland B.V., 2015). The Dutch score is high compared with the neighbouring countries.[12] The Dutch also score well in terms of the security of the gas supply, although the average duration of outages has risen in recent years, from 23 seconds in 2008 to three minutes in 2014 (Movares Nederland B.V., 2015).

Energy-source security hinges on the long-term availability of sources of energy (Ministry of Economic Affairs, 2008). This depends, inter alia, on the size of global energy reserves in relation to production capacity, consumption and geographical distribution. Dutch governments have sought to guarantee energy-source security by maximising the distribution of energy sources over a range of energy carriers and countries of origin. We have not audited the effectiveness of this policy.

Affordability

Energy is reasonably affordable in the Netherlands, as is borne out by a European comparison of energy prices (including tax and duties). The average price of electricity for industrial consumers is low - 26% less than the EU average in 2015. Dutch households pay 6% less than the EU average. The price of gas paid by industrial consumers in the Netherlands was in 2015 7% above the EU average. The price paid by Dutch households, on the other hand, is relatively high: 15% higher than the EU average (Eurostat, 2015; own calculations).

The 'average Dutch household'[13] will probably see a rise in the surcharge on its energy bill in the future (Netherlands Court of Audit, 2015e). For example, our audit of the SDE+ scheme for encouraging renewable energy production showed that, if there was no change in the policy as pursued in May 2014, the surcharge on the energy tariff would rapidly rise from €20 a year in 2015 to €123 a year in 2020.[14] If an additional grant was allocated, as we felt was needed in order to ensure that the SDE+ scheme achieved the target set for 2020, this would have the effect of raising the surcharge on the energy tariff to €229 a year (according to the calculations in our audit report). The Minister of Economic Affairs currently assumes that the surcharge will rise to €213 in 2020 in order to achieve the 14% target. The €16 difference with the figure of €229 quoted above is due to the fact that our own calculations assumed that more contracts for offshore wind energy projects would be put out to tender and that this would be done at an earlier stage.[15]

Sustainability

The current position is that three main sustainability objectives have been formulated for energy:

- generating more renewable energy;
- lowering CO_2 emissions;
- saving energy.

12
The average annual duration of electricity power outages in the Netherlands is 20 minutes. The only country to do better is Germany, which has a slightly better five-year average of 17 minutes. In countries such as the UK and France, the average annual duration of power outages is over 70 minutes (Council of European Energy Regulation, 2014).

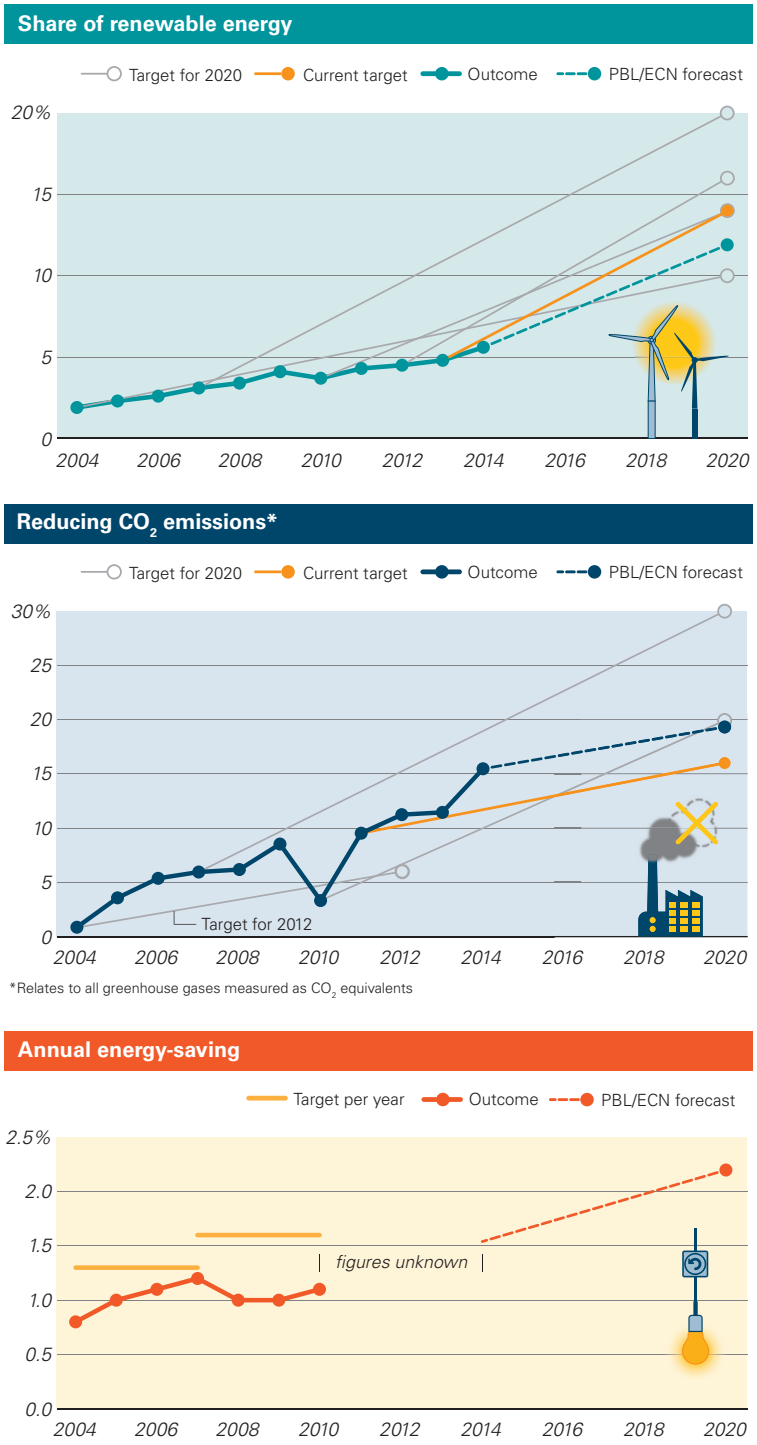
13
The average Dutch household comprises 2.2 members. Its annual gas consumption is 1,600 m3 and its annual electricity consumption is 3,500 kWh.

14
Writing in the 2015 National Energy Outlook, the Energy Research Centre of the Netherlands and the Netherlands Environmental Assessment Agency predicted that the renewable energy surcharge would rise to € 163 per average household in 2020 including VAT (or € 135 excluding VAT). The figures in the 2015 National Energy Outlook also assume that energy-saving by consumers will produce a different annual pattern of electricity and gas consumption.

15
Both figures, i.e. € 229 and € 213, are based on an assumption that there will not be any change in the average annual consumption of gas (i.e. 1,600 m3) and electricity (3,500 kWh) per average household of 2.2 persons.

Figure 5 shows the target figures for each objective set by successive governments (these are the grey and orange lines in the graphs), the actual outcomes and the forecasts for the period up to the end of the year 2020.

Figure 5 Sustainability objectives: aims, outcomes and forecasts for 2004-2020



The figures for energy-saving are based on the national target as measured by the Dutch Protocol for Monitoring Energy-Saving (based on primary energy sources). Although the government has formulated two further targets, these are not suited for comparison. See the glossary in Appendix 2.

Figure 5 makes clear that, in the case of at least two of the sustainability objectives, the results achieved over a ten-year period have not measured up to the targets set by successive governments. Of all the EU member states, the Netherlands is furthest from achieving the national target for renewable energy (Netherlands Court of Audit, 2015e). The picture in relation to the two other objectives is rather more mixed, with the results depending on the nature of the benchmark. The details in relation to each objective are set out below:

- The Netherlands did not meet the interim target of renewable energy accounting for 5% of the country's energy supply in 2010.[16] Although the bar for renewable energy was gradually raised during the first few years (to 20% in 2020), it was later moved back down again a number of times. The last adjustment was done in 2013 and set the target on 14%. A series of studies published during the past five years have shown that government policy will probably not be sufficient to achieve the (changing) target in 2020 (Daniels & Kruitwagen, 2010; Verdonk & Wetzels, 2012; Hekkenberg & Verdonk, 2014; Schoots & Hammingh, 2015). Renewable energy accounted for 5.6% of the aggregate supply of energy in 2014, and the share is expected to rise to 11.9% by 2020.
- The Dutch Kyoto target for CO2 emissions was a reduction of 6% in 2008-2012 compared with the baseline year of 1990. The Netherlands met this target in 2012, when it achieved a 6.4% reduction. This was most likely due in part to the decline in economic activity in the preceding years (Netherlands Environmental Assessment Agency, 2013). The percentage decrease in 2014 compared with 1990 was 15%. Recent calculations suggest that, if government policy continues unchanged, the Netherlands will post a 19% decline in 2020 (Schoots & Hammingh, 2015). If this is indeed the case, it will mean that the Netherlands will achieve the nationally binding target agreed with its partners in the EU.[17]
- The annual figure for energy-saving has remained stuck at more or less the same level. No outcome data has been published yet for 2011 and later years. According to recent estimates, the annual national energy-saving target set as part of the 'Clean and Efficient' programme should be achieved for the first time in 2020, as will be the Dutch energy-saving target (set under the EU Energy Efficiency Directive) of 31.5% for 2014-2020. The government will not meet the additional targets for energy-saving set for 2020 under the Energy Agreement (Schoots & Hammingh, 2015).[18]

2.3 Limited degree of coherence in energy policy

It is clear from the previous section that, while the results for reliability and affordability have been good to reasonably good, the government has not to date managed to achieve its sustainability aims. The audit reports we have published over the years have highlighted various factors that help to explain this.
The first problem is the absence of a coherent approach during the time when government policy is planned and underpinned with arguments, and the chosen policy is adopted. By the term 'coherent strategy' we mean an approach in which all the various facets of the different policy aims are explicitly set against and compared with each other. Apart from failing to undertake a comprehensive analysis of the three main aims of energy policy, the government also failed to make any explicit comparative assessment of secondary aims such as those relating to renewable energy sources and reductions in CO2 emissions. This has had an impact on the effectiveness of government policy. A substantial proportion of the policy tools used for greening

16
This interim target was abandoned in 2007, when the government published its 'Clean and Efficient' policy agenda, which switched the emphasis to a 10% target share of renewable energy by 2020.

17
This figure of 19% is lower than the 25% target for the reduction in emissions compared with 1990 that was imposed on the Netherlands by a court ruling in June 2015, in the light of the globally accepted objective of permitting no more than two degrees of global warming and reducing carbon emissions accordingly.

18
See the glossary in Appendix 2 for more details on the energy-saving targets.

energy policy have proved to be insufficiently efficient and/or effective. At the same time, the government has clearly learned lessons from the experiences with renewable energy grant schemes. Finally, the lack of a coherent strategy would also appear to affect the quality of monitoring activities.
To use the words of the Minister of Economic Affairs in 2008, achieving all three policy aims is a difficult plate-juggling act (Ministry of Economic Affairs, 2008). The problem is that the three aims are not always compatible with each other. If the government decides to go all-out on one of them, this may affect progress in one or both of the others. However, synergies are equally possible. For example, increased production of renewable energy may help to make the Netherlands less dependent on imported fossil fuels. Transparency is a key element in all policy decisions: what costs and benefits will accrue to which parties, and when?

The following three sections discuss our main findings in relation to policy planning, implementation and monitoring. Each section concludes with a list of recommendations for the Minister of Economic Affairs.

2.3.1 Lack of coherence, prioritisation and convincing arguments during policy planning stage

There is not much coherence between the various aspects of government policy and the way in which priorities are set among them. A number of our audit reports found, for example, that no explicit comparative assessment had been made of the various policy aims. As a result, it is often unclear whether the aims are mutually incompatible (i.e. more progress in one aim automatically means less progress in another) or mutually reinforcing, i.e. synergy-creating. No quantitative analysis is made or presented of the consequences for the other policy aims.
The gas-hub strategy is a good example of this. The relevant ministries did not undertake a thorough analysis of the alternative options and the relevant costs and benefits before the government decided to give the go-ahead for a massive programme of investments by Gasunie, a state-owned corporation. This means in fact that no proper comparison was made between the two policy aims of reliability and affordability.
As a further problem, the practical implementation of the policy has at times been inconsistent with other aspects of the government's energy policy. For example, investments in making the country's energy supply more sustainable could lessen its long-term affordability and reliability if the government does not decide in good time to create sufficient reserve capacity or if it fails to create a better balance between supply and demand.

Another problem concerning the policy aim of sustainability is that there has not been a clear prioritisation of the secondary aims for renewable energy and reductions in CO_2 emissions. In the current situation, these secondary aims are not always complementary. Take the European emissions trading system. This has impaired the effectiveness of national grants for sustainably generated electricity and electricity conservation from the viewpoint of reducing CO_2 emissions. For this reason, the government needs to look at the energy problem from a broad perspective, decide how the various policy aims and tools should interact with each other, and decide whether a given energy policy tool should be allowed to restrict the effectiveness or efficiency of another. In this way, the government can prevent a situation from arising in which different policies prove to have been inconsistent with each other at the end of the day,

or which produces certain undesirable side-effects either in another policy field or at a later date. For example, the scheme for encouraging the co-firing of biomass as a secondary fuel was found to have led to a deterioration in the air quality.

We also found that energy policy is not always underpinned by convincing arguments, that proper cost-benefit analyses are not always performed and specific, measurable interim targets are not always set. The absence of interim targets makes it hard to judge whether the resources set aside for the policy tool in question will actually prove adequate for achieving the relevant policy goal. As an example of the above, we have reported for several years in a row that the Minister of Economic Affairs has failed to make clear in his budgets how various forms of spending on energy policy will actually help the government to achieve its target for the proportion of energy production accounted for by sustainably generated energy in 2020. The annual reports published by the Minister of Economic Affairs have also failed to dispel this confusion.

Our audits show that the affordability of the energy supply is in competition with the aims of sustainability and reliability, that these conflicting interests have not been subjected to a clear analysis, and that no clear assessment has been made of the consequences of this analysis. The distribution of emission rights and the decision to exempt large companies from the payment of energy tax are two concrete examples of measures in which full account was taken of the impact on corporate competitiveness (i.e. the affordability aspect) without any clear information being provided about the sustainability and reliability aspects.

However, there are also good points to note in the policy planning process. We found, for example, that successive governments have played an active role in European policy planning. This is important given that Dutch national policy is firmly anchored in the EU's energy policy, which means that there must be policy coherence at a European level, too. Thus, Dutch governments have sought to harmonise the policy on renewable energy grants and to create a more level playing field for manufacturing industry throughout Europe, i.e. the firms with which Dutch manufacturing companies compete.

Chapter 4 discusses the aspect of policy planning in more detail.

Suggestions for ways in which the Minister of Economic Affairs can improve the coherence of policy planning, with a view to the future dialogue and policy agenda:

- Operationalise the policy aims of affordability and reliability by translating them into specific, measurable indicators. Specific, measurable indicators have already been formulated for sustainability as a policy aim.
- Make a transparent assessment of the primary and secondary policy aims that have been operationalised. Before undertaking this assessment, we suggest making a systematic analysis of the various trade-off mechanisms and synergies that are at play in this policy field.
- Set interim targets for the period up to 2050, specify the policy tools to be deployed and estimate the amount of government expenditure that will be required in order to achieve these targets.
- Clearly describe and communicate both the anticipated impact of the policy tools you decide to use for all the policy aims, both primary and secondary, and the uncertainties surrounding these choices.
- Continue to improve the coherence of EU policies.

2.3.2 Policy on sustainability must be both efficient and effective; policy adjustments are not made or take too long

The policy tools used for achieving the government's sustainability policy aims (a substantial number of which we have audited over the past few years) are not sufficiently effective and efficient. In our opinion, these problems are caused by:

- a lack of coherence and motivation before the policy tools are adopted;
- the use of predominantly soft, i.e. non-compulsory, tools for energy-saving;
- a failure to adjust policies that do not produce the desired results.

A number of governments have continued to favour the use of 'soft' policy tools for energy-saving. These have not proved sufficiently effective or efficient in practice, however. The 'benchmarking covenant for energy-intensive manufacturing industries' is a good example of this: the commitments were gradually watered down in a series of side letters issued after the covenant had been signed. The policy proved relatively ineffective in the period between 1995 and 2008, particularly in relation to energy-intensive manufacturing firms, which are responsible for 80% of energy consumption by manufacturing industry.

Five of our audits have shown that critical warnings about failures to achieve targets either did not result in the targets being adjusted or in the allocated budget being raised, for example, or did not do so until a late stage. Successive Ministers of Economic Affairs have insisted on abiding by favourable scenarios, even when policy reviews and audit findings have painted a different picture.

There are also positives, however, with a number of governments clearly demonstrating their learning capacity. The current SDE+ scheme for encouraging renewable energy production has been well thought-out. Improvements have been made in response to failures signalled in relation to financial management and the efficiency of previous schemes.

Chapter 5 discusses the policy on sustainability in greater detail.

Suggestions for ways in which the Minister of Economic Affairs can make policy implementation both more effective and more efficient:

- Ensure that policy is properly reviewed and adjusted in good time where this is needed in response to critical signals (whether one-off or recurrent) from monitoring and evaluation exercises. This may mean lowering targets or raising budgets.
- Be aware of the need to create the right blend of incentives, conditions and more binding policy tools as are required to be reasonably certain that targets will be met within the available time. We recommend making greater use of harder, i.e. more binding, policy tools. This applies particularly to the policy on energy-saving.

2.3.3 Reporting complicated by lack of coherence and prioritisation

Finally, the lack of coherence and prioritisation among the three policy aims in policy planning makes it difficult to supervise the energy industry in this respect. The external regulator, i.e. the Netherlands Authority for Consumers & Markets (ACM),[19] is interested primarily in affordability and reliability. The ACM has found it difficult, however, to discharge its statutory responsibilities for regulation and supervision. For example, the regulatory process ground to a halt on two separate occasions and the current system of 'open standards' has not been able to provide sufficient guidance.

19 This report refers consistently to 'the ACM' even in those cases in which the supervisory body was the Netherlands Competition Authority, i.e. up to 1 April 2013.

When the regulatory process became deadlocked, the Minister of Economic Affairs felt compelled to intervene, but did so without explaining how he had assessed the various interests involved. This has had a (potentially lasting) adverse effect both on the system of tariff regulation and on the tariffs paid by consumers.
As network management is closely bound up with other aspects of energy policy, decisions taken by the ACM as the external regulator often affect all three policy aims. Should network operators be able to pass on to their customers the cost of investments they need to make in order to step up the production of renewable energy? How much pressure may be placed on affordability (in the shape of higher energy bills) in order to safeguard investments in the reliability of the energy supply? Our own finding is that, due to a combination of historical and legislative factors, the ACM's supervisory role is designed primarily with the affordability of the system in mind. Although the ACM also monitors the reliability of the system, this form of supervision is not fully comprehensive. We found that, in supervising investments by network operators, the ACM takes a 'high-trust' approach, relying heavily on the plans and expertise of industry players. Indeed, the Minister of Economic Affairs decided deliberately to formulate 'open standards' for this form of supervision, and this has made the ACM's work more difficult.

Finally, we also found that, where ministries themselves have supervisory responsibilities, they find it difficult in practice to monitor policy coherence or to offer a critical counterweight to plans announced by state-owned corporations.

As we explained in section 2.2, neither the ACM nor any other external regulator has been made responsible for monitoring the implementation of sustainability policy. It is the minister who bears prime responsibility for monitoring the progress made towards the sustainability targets and for keeping check on policy coherence and the prioritisation of the various policy aims. These are matters on which the minister reports to parliament. We have noted on a number of occasions that the policy information provided by the minister has its limitations and is in need of improvement.

Chapter 6 discusses the supervisory activities in greater detail.

Suggestions for ways in which the Minister of Economic Affairs can safeguard coherence in policy implementation and reporting:

- Ensure that the implementation of the various energy policies is coherent and also that reporting on the achievement of policy aims and on their coherence is adequate. This will enable the House of Representatives to discharge its responsibility for scrutinising the government.

3 Response of the Minister of Economic Affairs and Court afterword

The Minister of Economic Affairs responded to our study on 2 December 2015. A summary of his response and of our own afterword follows below.

3.1 Response of the Minister of Economic Affairs

The Minister of Economic Affairs stressed the importance of coherence between the three aims of energy policy, i.e. reliability, affordability and sustainability. He said that, during the process of preparing the Energy Agreement, he had tried to achieve this coherence in partnership with all sorts of societal actors and that this coherence would be one of the focal points of the forthcoming Energy Report and the subsequent 'energy dialogue'.

While the minister was in broad agreement with the picture painted of the state of his energy policy, he said that he was on course to meet the targets agreed with the country's EU partners for reductions in CO_2 emissions and energy-saving. And, thanks to the measures he had recently announced, he said that the target for renewable energy in 2020 was also achievable. He welcomed the priority we gave in our report to sustainability, seeing it as an expression of support for the government's aim of achieving international agreement on a fully renewable energy system in 2050.

The minister said that our report did not take sufficient account of the European context in which energy policy was formulated. He cited as an example the interaction between the subsidisation of renewable electricity and the CO_2 emissions trading system. Although he acknowledged the existence of this interlinkage, he said that he was currently bound by the separate targets set for CO_2 emissions, renewable energy and energy-saving. Despite being the results of EU-wide agreements, these targets were not sufficiently consistent with each other.

Finally, the minister said that our report did not do full justice to the actual situation with regard to energy policy. Although we had looked at the findings of ten years of energy-related audits, he felt that we had not taken sufficient account of the measures taken by successive governments in response to the conclusions and recommendations set out in our reports. He referred by way of example to the adjustments made to the policy on energy-saving and to the supervision of the network operators' investments. These were both examples of action taken in response to Court audits.

3.2 Court of Audit afterword

The main aim of our report is to make recommendations for future policy. These are based on a review of a series of past audits in which we have sought to identify both strengths and opportunities for improvement. The government, parliament and other stakeholders can use the findings of this study for the purpose of the forthcoming public dialogue on the future of the energy supply. In our opinion, the key finding is that there is room for improvement in the coherence of energy policy, in terms of both planning and implementation.

The minister pointed out that many of the suggestions made in our previous audit reports had now been put into practice. Although this is strictly accurate, our review of recent developments shows that the broad thrust of our findings still remains relevant today. This applies for example to the choice of policy tools used for promoting energy-saving. Although the wording of the relevant covenants has now been tightened up, the Minister of Economic Affairs recently wrote in a letter to the House of Representatives that 'due to the financial constraints on private-sector firms, certain measures have not been put in place that could in fact be adopted at a relatively low social cost'.

The minister referred to the EU context framing much of the Dutch national energy policy. It is true that he is bound by this context – and by its shortcomings. At the same time, this need not prevent the government from taking additional measures, where appropriate in conjunction with other countries.

The Minister of Economic Affairs stressed the importance of energy policy coherence, which he said would be one of the focal points of the forthcoming Energy Report and the subsequent 'energy dialogue'. Our own report should help the minister in making the necessary judgements, setting priorities and making clear choices. In doing so, we believe that he should give a clear account for the way in which these choices affect the reliability and affordability, as well as the sustainability, of the energy supply, both now and in the future.

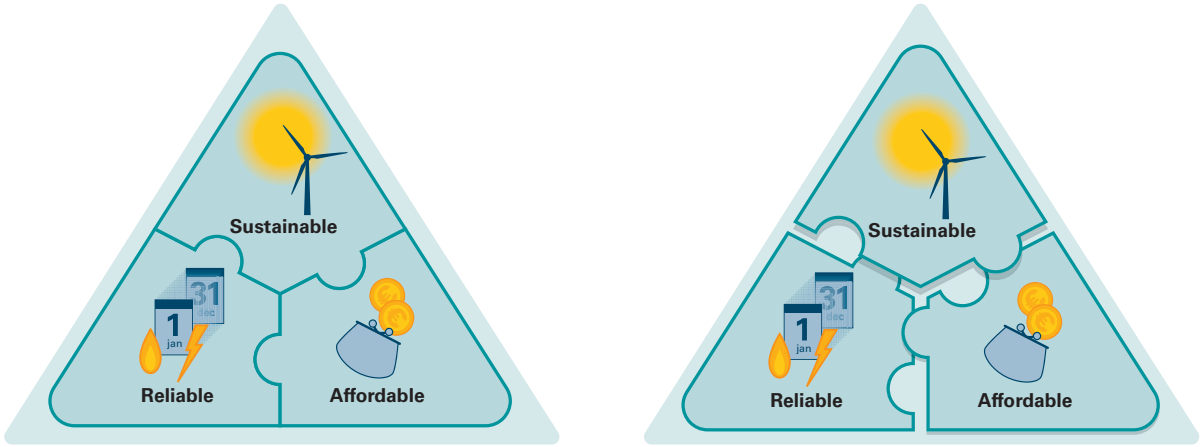
4 Policy planning

We found scope for improving not just the way in which decisions on energy policy are planned, but also the arguments underpinning them, and the way in which such decisions are taken. The ultimate aim is to come as close as possible to achieving the targets for the medium and long term. We found a lack of policy coherence, as a result of which the various policies are not as effective and/or efficient in practice as they could be. In many cases, for example, no explicit assessment is made either of the various policy aims or of the secondary aims pertaining to each primary aim, even though there is a clear need for this. Similarly, the way in which certain policies are enforced in practice is at times inconsistent with other aspects of energy policy. No clear information is given about the reasons for choosing a particular course of action. This choice is a political decision and must be transparent if both parliament and the general public are to be properly informed about the effects of such choices on the country's energy policy.

4.1 More coherence needed in decision-making on energy policy

The three policy aims are not always complementary and indeed are sometimes even incompatible with each other. For example, investments made in improving the sustainability of the energy supply may have the effect of lessening its affordability and reliability. This is because investing in sustainability costs money and the higher peaks and deeper troughs associated with wind and solar energy detract from the reliability of the electricity grid.
Due to the scale and complexity of the energy problem, governments have decided to divide Dutch energy policy into smaller fragments and set targets for separate policy aims (or, pursuing the fragmentation even further, for each secondary policy aim). There is no reason why this should be a problem as long as the individual pieces of the jigsaw puzzle interlock to form a clear, single picture.

Figure 6 Pieces of the jigsaw puzzle need to interlock



For this to succeed, the government has to explain in advance the broad thrust of its thinking on the energy problem, describe how the primary and secondary policy aims interact with each other and state whether the use of a given policy tool may have an adverse impact on the efficiency or effectiveness of other tools. By acting in this way, the government can prevent a situation from arising in which different policies prove

inconsistent or even incompatible with each other in practice, without this being the result of a conscious decision.

Our reports suggest that the issue of policy coherence is precisely the area in which there is scope for improvement. Four of our audits concluded explicitly that policy geared towards one of the policy aims had an unexpectedly adverse impact on the other policy aims or on one of the secondary aims of the policy on sustainability.

For example, we found in 2007 that the scheme for encouraging the production of sustainably generated electricity (known as the MEP Scheme) focused solely on the target for sustainably generated electricity, without paying any attention to its coherence with other policy aims such as a low-carbon energy supply and the quality of the environment. Similarly, an analysis of the entire production chain found that certain types of biomass (such as palm oil) actually produced more CO_2 emissions than fossil fuels. Again, encouraging the co-firing of biomass was found to cause new sustainability problems, such as the deforestation of tropical rain forests, the displacement of food crops and the deterioration of the air quality in the vicinity of biomass power stations (Netherlands Court of Audit, 2007b). In the same year, and again in 2011 and 2015, we also found that, viewed from the perspective of the target for reducing CO_2 emissions, the adoption of the system of CO_2 emissions trading had weakened the effectiveness of policy tools for promoting sustainably generated electricity (see box).[20]

Example: counterproductive interaction between CO_2 emissions trading and the policy on electricity generated from renewable sources (Netherlands Court of Audit, 2007c; 2011 and 2015e)

Before the system of CO_2 emissions trading was launched, the Netherlands already had a number of policy tools for encouraging the production of sustainably generated electricity and for reducing CO_2 emissions. The Environmental Quality of Electricity Production (MEP) Scheme and the Energy Investment Allowance are two examples. After the system of CO_2 emissions trading was launched, the cost-benefit ratio of all the other tools was found to have worsened, at least in terms of their effect on CO_2 emissions. It would have been better, before launching the new scheme, to have examined the cost-benefit ratio of each individual policy tool in the new situation. This was not done. Again in 2015, we found that the CO_2 emissions trading scheme was far from ideal in the way it was working, due to its interaction with EU member states' policies for promoting electricity conservation and the production of sustainably generated electricity. This works as follows. If one company manages to reduce its CO_2 emissions, for example, by using grants to produce a large amount of sustainably generated electricity or to save electricity, other companies, both in the Netherlands and elsewhere in the EU, now have an opportunity to emit larger quantities of CO_2. The problem is that the aggregate volume of emission rights in the market remains the same. The 'waterbed effect' means that there is no change on balance. The solution of this problem would require extra measures such as buying surplus emission rights and taking them off the market.

If a coherent approach had been taken to policy planning in the previous cases, this type of potential side-effect would probably have been identified beforehand. In our report entitled 'Energy saving: ambitions and results' on our audit of the reasons for the disappointing results of energy-saving (see section 5.2), we explicitly urged the government of the day to improve its policy coherence (Netherlands Court of Audit, 2011; see box).

20
The policy tools for promoting sustainably generated electricity may well be effective when viewed purely from the perspective of the target for sustainably generated energy, innovation or reducing energy dependency on foreign suppliers.

Example: More coherent approach to energy-saving needed (Netherlands Court of Audit, 2011)

We found that the energy-saving policy had not been pursued with a great deal of vigour in the past, i.e. during the period up to 2011. Drastic changes needed to be made in order to guarantee that the Netherlands would have a reliable, affordable and renewable energy supply during the coming decades. We urged the government to formulate a comprehensive climate and energy strategy containing clear information on:

1. the economic and social benefits of energy-saving, renewable energy and a low-carbon energy supply, with a view to garnering broad public support;
2. the objectives of the government's policies on climate and energy, the interlinkages between them, the policy tools the government was planning to deploy (including an indication of the aim that each tool was primarily intended to achieve and the route by which the aims were to be achieved).

Due to the conflict between the energy-related and climate-related aims, the government should specify for each policy tool which specific aim it was intended to achieve and what potential impact it could have on other energy-related or climate-related aims. We also suggested that it would be worth assessing the Dutch policies on energy and climate so as to identify any inconsistencies and to adjust them if appropriate. The minister referred to the coalition agreement that formed the basis for Prime Minister Rutte's first government for information on the government's energy strategy. However, this document did not contain sufficient information on the interlinkages between the various aspects of the government's energy policy.

4.2 Vague policy aims and not enough evidence in support of them

Five of our audits also found that policy was not adequately underpinned by arguments and/or that no specific, measurable interim and final targets had been formulated (Netherlands Court of Audit 2007b, 2007c, 2009b, 2012a and 2015a). As a result, it is not possible to make a full analysis of alternative options during the planning stage, or a thorough assessment of the costs and benefits of the proposed policy.

Example: Big investments in Dutch gas infrastructure without adequate analysis of alternatives, costs and benefits (Netherlands Co of Audit, 2012a)

The government has adopted a 'gas-hub strategy' to guarantee the security of the gas supply now and in the future and to promote economic growth. The Minister of Economic Affairs defines the gas hub as a strategy, which means that it does have an owner, a predefined objective or a time horizon. This limits the opportunities available to parliament for calling the minister to account for the results of the policy.

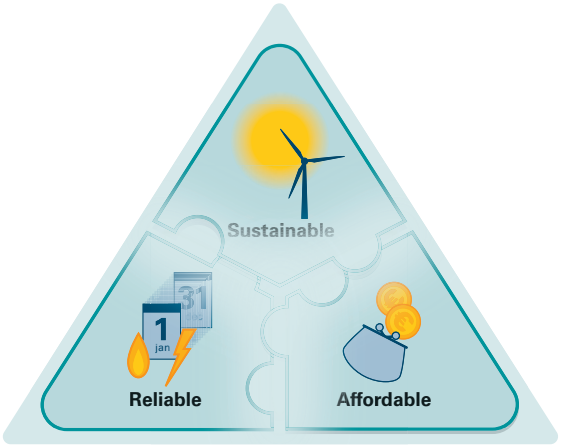
In 2007, the Minister of Economic Affairs took a decision paving the way for investments in the gas hub. One of the findings of our 2012 audit report was that the minister had not sought to ascertain, prior to taking this decision, how the gas hub could contribute to the attainment of his policy aims, what the benefits of the strategy were, whether there was a need for it, and what the cost-benefit ratio was. The minister also paid hardly any attention to the alternatives to the gas hub. In 2010, the minister decided after all to commission a study into the economic impact of the gas hub strategy (this was not intended as a cost-benefit analysis). By that time, however, Gasunie (a state-owned corporation) had already invested € 7.2 billion in the gas hub and the minister had already amended an important aspect of the system of tariff regulation.

As a further point, we pointed out in our letters on the draft budgets in 2013, 2014 and 2015 that the minister did not explain how various items of energy policy expenditure actually contributed to the attainment of the target for renewable energy consumption (as a proportion of aggregate energy consumption) by the year 2020. This was despite the minister's undertaking to publish annual reports on the matter (Netherlands Court of Audit, 2013; 2014b, 2015h). Similarly, for a number of years now, the draft budgets have failed to include a road map showing how the target for 2020 is to be achieved. This makes it difficult to assess if and how certain measures are helping the government to achieve the target for 2020 and whether the resources earmarked for this purpose are indeed sufficient. This, in turn, makes it difficult to report on whether or not progress has been made (Netherlands Court of Audit, 2015h).
The examples given in section 4.1 of the lack of policy coherence also show that a lack of thorough preparation often adversely affects the way in which policies are planned and adopted. This poses a risk of policy aims not being complementary with each other and policy therefore not being efficient.

4.3 No clear assessment of competing policy aims

The three aims of energy policy are potentially inconsistent with each other. Our audits have regularly shown that, when this happens, it is not clear how the various interests were assessed and what the results of this assessment were. For example, governments clearly take account of affordability for both industrial energy consumers and the energy industry itself (and hence for all energy consumers) without making clear how this affects the other policy aims.

Figure 7 No clear assessment



Large industrial consumers

There are a large number of international companies in the Netherlands, which also accommodates an energy-intensive manufacturing sector. In order for these firms to remain internationally competitive, they must have access to affordable energy, which is therefore a vital aspect of their cost price.[21] We found that, when developing their energy policies, Dutch governments therefore take account of the economic interests of Dutch business and seek to protect the affordability of the energy supply (and hence the competitiveness of Dutch business). This is illustrated by the following example.

21
The situation in 2013 was that energy-intensive manufacturing firms in the Netherlands were liable to 1.52% tax on the aggregate price of electricity. The neighbouring countries taxed their bulk consumers at reasonably similar rates. The comparative tax rate was 3.4% in Germany, 3.2% in Belgium and 1.7% in France. The UK tax rate for bulk consumers was much higher, viz. 17.1% (PWC, 2014).

Example: Dutch governments take account of economic interests of Dutch business (Netherlands Court of Audit, 2007c; 2011)

Distribution of emission rights

We found in 2007 that the government's proposals for the distribution of emission rights had been drawn up in a context in which economic interests played a role alongside the Kyoto Protocol.[22] The government took a keen interest in the plans of other member states and their potential impact on the competitiveness of Dutch trade and industry. Under the first version of the plan for the distribution of emission rights in the Netherlands, the Netherlands was at serious risk of not meeting the 6% target set for the reduction in greenhouse gas emissions.

Large corporates exempted from energy tax

We found in 2011 that most energy-intensive companies had enjoyed a 13-year exemption from energy tax on their electricity consumption in the top tax bracket. The government had decided to exempt these companies on the grounds that they had signed up to the first multiyear agreement on energy efficiency targets, and had subsequently signed the benchmarking covenant for energy-saving. In practice, small firms were excluded from the covenant, which meant that only large corporates benefited from the tax relief. As we shall see in section 5.2.2, these energy-saving measures proved neither effective nor efficient.

In the two cases described above, the effects on other policy aims (such as slower progress in reaching the sustainability targets) had not been made clear. Any lack of clarity about the effects of the thinking behind government decisions creates opportunities for surreptitiously giving priority to certain interests over others.

Energy industry: production, distribution and supply

In planning their policies, successive governments have also taken clear account of the interests of the energy industry itself. The energy industry has traditionally comprised a number of deeply vested interests. Thanks to the process of market concentration among energy companies and the introduction of market forces in the energy market, the energy network operators have become increasingly powerful players since the 1990s (Netherlands Court of Audit, 2009a). They refused to accept the results of the revaluation of their networks and regularly appealed against the ACM's tariff decisions.

Our audit of the MEP (Environmental Quality of Electricity Production) scheme found that the energy-producing companies successfully pressurised the government to raise the grants paid for the co-firing of biomass as a secondary fuel in coal-fired power plants. We wrote that there were grounds to conclude that the grants were on the high side, in any event in relation to one particular form of biomass. The scheme was funded from levies charged on the electricity connections themselves, thus lessening the system's affordability (Netherlands Court of Audit, 2007b).

Our audit of the distribution of CO_2 emission rights also found that the government had granted the coal-fired power stations additional emission rights as compensation for the discontinuation of the MEP scheme. We concluded, therefore, that the government had distributed some of the emission rights on improper grounds (Netherlands Court of Audit, 2007c). Although this decision was conducive to the affordability of energy, it had an adverse effect on the sustainability target. The thinking behind this particular decision was not transparent.

22
The Kyoto Protocol is an international treaty signed in 1997. The treaty committed the Netherlands to lowering emissions of greenhouse gases by 6% during the period between 2008 and 2012 as compared with the situation in 1990.

The minister is the person who bears prime responsibility for weighing up all the various interests involved and deciding on their order of precedence. However, his or her decision needs to be transparent if both parliament and the general public are to be properly informed about the consequences of decisions affecting the government's energy policy. As we shall see in chapter 6, transparency in decisions to prioritise certain policy aims over others also helps regulators to discharge their own responsibilities.

4.4 A proactive stance on European energy policy

A coherent energy policy is not simply a matter of national interest. Given that Dutch energy policy is firmly rooted in EU energy policy and in the legislation on the single market, the policies pursued by the EU as a whole also need to be coherent. The EU's energy policy sets high, but realistic, standards for all member states to meet. As the EU harmonises its energy policy, so it creates a more level playing field for Dutch businesses to compete on the European market. Moreover, it is more efficient to regulate the reliability of the energy supply at a European level instead of having a situation in which all the member states form their own petroleum and/or natural gas reserves or create their own backup systems for power outages.

We have noted in a number of our audit reports that governments are aware of the European context and take a proactive stance in the policy-making process in Brussels, so as to ensure that EU policy converges as closely as possible with Dutch national interests. For example, the government has done its best to ensure that the regulations on CO_2 emissions trading are adjusted (Netherlands Court of Audit, 2009b).[23] Similarly, the auction system used for distributing grants for the generation of renewable energy under the current SDE+ scheme for encouraging renewable energy production is in line with the trend that the EU wishes to follow. The European Commission has now decided that all member states should adopt similar mechanism for promoting the production of renewable energy in 2017 (Netherlands Court of Audit, 2015e).

It remains essential for the government to contribute to the debate on energy policy, whether within the EU or in bilateral or multilateral negotiations, in order to preserve or improve policy coherence at all of these levels. For example, the counterproductive interaction between CO_2 emissions trading and the policy to encourage the generation of electricity from renewable sources (see section 4.1) is partly the result of EU policy. Transparency about the effects of decisions to prioritise certain primary or secondary energy policy aims over others is also of vital importance at EU level and in operationalising EU policy.

23
European talks are currently ongoing on the review of the CO_2 emissions trading system post-2020.

5 Policy implementation, with a special emphasis on sustainability

The measures taken by the government to implement its sustainability policy (and we have audited a large number of these in recent years) have not been sufficiently effective and efficient. There are a number of reasons for this:

- a lack of coherence between - and rationale for - policy decisions;
- the non-compulsory nature of certain policy tools;
- a lack of readiness to review policies in the face of disappointing results.

At the same time, we have also seen a readiness to learn and to improve practices. For example, the current SDE+ scheme for encouraging the cost-effective production of renewable energy has been improved with the aid of lessons learned from experiences with previous schemes.

5.1 Not possible to reach firm conclusions on the impact of the policy on reliability and affordability

This chapter is concerned with policy tools that have been employed to achieve the three aims of the government's sustainability policy. We have chosen to disregard the measures taken to foster a reliable and affordable energy supply as their impact is difficult to measure. For this reason, previous audit reports have not contained any firm judgements on the policy aims of reliability and affordability.
A policy review of 2007-2012 commissioned by the Minister of Economic Affairs also showed that the operational aims of affordability and reliability had generated the least opinions on the efficiency of the tools in question (Ministry of Economic Affairs, 2014). This was because the majority of the policy tools did not result in spending charged to the Economic Affairs budget. The auditors also claimed that it was not possible to conclude, on the basis of 'soft evidence', whether other policy tools would have cost less or produced fewer adverse side-effects.

5.2 Three explanations for low levels of efficiency and effectiveness

Our audits paint a fairly discouraging picture of the effectiveness and efficiency of the various policy tools used by the government for greening the energy supply. In most cases, our auditors found that the tools in question[24] proved to have been of limited effectiveness and efficiency and that the government could have achieved more by making smarter, i.e. more efficient, use of the same tools. We found three explanations for this.

5.2.1 Lack of coherence between - and rationale for - policy decisions

The first reason for the limited efficiency of the policy tools is the fact that, in many cases, government policy was not supported by coherent and carefully thought-out planning (see chapter 4). For example, the EU system of trading in CO_2 emission rights has had an adverse impact on the effectiveness of domestic policy tools for promoting renewable energy production, such as grants, covenants and tax relief on energy-efficient and electric cars.

24
These were the MEP (Environmental Quality of Electricity Production) scheme, and other schemes for encouraging the production of renewable energy (i.e. the 'SDE' and the 'SDE+' schemes), various forms of tax relief granted for energy-saving, the CO_2 emission rights trading system, and the tax relief paid on electric cars.

This policy has proved fairly inefficient from the viewpoint of CO_2 emissions.[25] For example, the cost (per reduced tonne of CO_2) of the tax relief on energy-efficient cars was relatively high, and no attempt was made to calculate the effect of alternative means of encouraging sales of electric and semi-electric cars (Netherlands Court of Audit, 2014a, 2015f; see box).

Example: Measures for encouraging sales of energy-efficient and electric cars were not efficient (Netherlands Court of Audit, 2014a; 2015f)

Energy-efficient cars

The measures taken to step up the demand for energy-efficient cars and hence to reduce CO_2 emissions were relatively expensive. The Ministry of Finance estimated the cost at € 1,000 per reduced tonne of CO_2. Moreover, the test results painted far too rosy a picture of the levels of CO_2 emitted by new cars. In practice, emissions were actually up to 35% higher than those recorded in the tests. This put the cost per reduced tonne of CO_2 even higher than € 1,000.

Electric cars

After the interim target set for 2015 had already been easily achieved in 2014, the government's target of 200,000 sales of electric and semi-electric cars in 2020 looked to be realistic. However, a study into sales of electric and semi-electric cars performed the following year found that the bulk of the sales were accounted for by sales of plug-in hybrid vehicles on the corporate market. The experience was that these cars were not charged as frequently and were more likely to run on fossil fuel than had previously been assumed. This meant that the cost per reduced tonne of CO_2 was relatively high, i.e. around € 1,600.

In short, the government would probably have been able to achieve a bigger reduction in CO_2 emissions by spending the money in a different way. The cost of the Dutch policy was not justified by its environmental benefits.

As we have seen in chapter 4, these problems could have been avoided if the policy had been planned in a more coherent and carefully thought-out manner.

The Minister of Finance announced in his Motor Vehicles Memorandum in 2015 that he would be tightening up the rules. As a result, hybrid vehicles no longer qualify for tax relief.

5.2.2 'Soft' measures for promoting energy-saving have not had much effect

The second explanation for the lack of effectiveness and efficiency lies in the government's frequent use of 'soft' policy tools for promoting energy-saving. The term 'soft tools' is used to refer to non-compulsory tools, tools that provided for all sorts of exemptions, and tools that were enforced only to a limited degree. Examples of such tools are:

- energy-saving covenants that did not contain any sanctions for companies failing to comply with their terms;
- the Environmental Management Act, which was poorly operationalised and the enforcement of which was not given priority (Netherlands Court of Audit, 2011).

The need for taking a less noncommittal approach, with more binding policy tools and more powerful incentives for energy-saving (particularly in the built environment) had already been identified at an earlier stage and was underlined by studies published in 2013 (CE Delft & Institute for Environmental Studies, 2013) and more recently in the autumn of 2015 (Council for the Environment and Infrastructure, 2015).

25
In examining these forms of 'green' tax relief, our assumption was that one of the government's aims in granting this relief was to reduce CO_2 emissions. Another possible reason for pursuing this policy would have been to foster innovation, i.e. to experiment with the use of new technology in order to be able to roll it out on a larger scale and earn money with it in the future. However, even if we assume that the original scheme was designed with this aim in mind, it was still not efficient: both domestic sales and exports of energy-efficient cars continued to rise after the scheme had been scaled down.

Example: Energy-saving policy tools are 'soft' and not sufficiently efficient or effective (Netherlands Court of Audit, 2011)

Not only did government policies on energy-saving have little effect on manufacturing industry in 1995-2008, the balance between costs and benefits was skewed. Government policies resulted in average energy savings of between 0.3% and 0.4% per annum in the manufacturing sector, as compared with the national average of 1.4% per annum. There were a number of reasons why the policies had such little effect:

- The use of less powerful policy instruments than an ex-ante evaluation had previously deemed necessary in order to meet the energy-saving target.
- The tendency for agreements on energy-saving by energy-intensive firms to become less and less binding. The process began with multiyear agreements and ended with a benchmarking covenant the contents of which were then watered down in a series of side letters. Although a number of multiyear agreements reached with small-scale energy consumers at the end of the 1990s did have an effect, this was achieved only at a high cost.
- Policy tools aimed at manufacturing firms were not aligned with their motives for investing in energy-saving techniques. Moreover, the firms themselves failed to meet a key prerequisite: access to data on their own energy consumption and on the opportunities available for saving on this consumption.
- In practice, some of the savings achieved were undone by the adverse effects of trading in CO_2 emission rights.

Apart from the fact that energy-saving measures were not effective, they were also inefficient from a national perspective. As far as cost-effectiveness is concerned, it makes more sense to distribute the energy tax more evenly over the various tax brackets, instead of simply lowering tax rates for large-scale energy consumers. An even distribution results in a lower level of costs across the board, given that all consumers are induced to take the most effective form of action before firms adopt more expensive measures (Netherlands Court of Audit, 2011). In practice, though, other sectors already have an incentive to take relative expensive measures. It should be stressed that a strong tax incentive will not have much effect if the government sticks to its practice of exempting (in relation to electricity consumption) from the top tax bracket bulk consumers who have signed up to the first multiyear agreements on energy-saving, and subsequently to the benchmarking covenant (see section 1.1).

5.2.3 Situation improving despite absence of proper interim policy reviews

A third explanation for our conclusion that policy could have been more effective is the fact that critical warning signals about disappointing results did not prompt the government to alter its policy. The feasibility of the three sustainability-related aims of the government's energy policy, i.e. renewable energy production, energy-saving and lower CO_2 emissions, has consistently been clouded in uncertainty. Our audits have made clear that the Minister of Economic Affairs either was not sufficiently aware of the uncertainties or did not take sufficient account of them.

We believe that the Minister of Economic Affairs needs effective monitoring and evaluation mechanisms in order to ascertain whether he is still on course to achieve his target or whether he needs to change course. He also needs to take the appropriate remedial action if the results of his monitoring activities indicate that this is needed. Five of our audits revealed that critical warning signals about disappointing results did not prompt the government, for example, to lower its targets, raise budgets or adjust policy tools. Successive Ministers of Economic Affairs have retained their faith in the

most optimistic scenarios, even where monitoring activities and audit findings have painted a different picture.

In the case of the MEP (Environmental Quality of Electricity Production) scheme, for example, a number of signs suggested that the scheme was not having as much effect as the Minister of Economic Affairs himself had predicted it would (Netherlands Court of Audit, 2007b). In the case of the trading system in CO_2 emission rights, there was a genuine risk at the launch of the system that the Netherlands would not meet its Kyoto target. The conclusion we drew at the time was that there were shortcomings in both the draft of additional policy measures announced by the government in its 2005 Climate Policy Review Memorandum and its letter on the 'target values' as they were called (Netherlands Court of Audit, 2007c). It was already clear, even at the time when the energy-saving policy was launched, that the government would need to make a huge effort to meet the 2% national energy-saving target.[26] The government subsequently made use of fewer - and less effective - tools in the following years than it had in fact previously judged would be needed in order to meet the energy-saving target (Netherlands Court of Audit, 2011). The following example illustrates the government's optimism.

Example: Minister stands firm despite high risk of failure to meet policy target (Netherlands Court of Audit, 2015e)

The Minister of Economic Affairs insisted on abiding by the target of producing 14% of the country's energy from renewable sources in 2020, despite the lack of evidence that the government would indeed be able to meet this target. He said in October 2014 that he was still convinced that the government was on course to achieve the target in 2020, despite the fact that, shortly after the Energy Agreement was signed, both the Energy Research Centre of the Netherlands and the Netherlands Environmental Assessment Agency had suggested that meeting the target for 2020 would be a tough call. About a year later, the 2014 National Energy Outlook included figures from the same research agencies showing that the target would not be met.

Despite these warning signs, the Minister refused to budge from the same optimistic assessment made by his predecessor in 2010. This was the year in which the Minister of Economic Affairs had informed the European Commission, on the basis of the most optimistic scenarios published by the two research agencies, that renewable energy would be likely to account for 14.5% of Dutch energy production in 2020. This was the figure at the top of the bandwidth, whereas the figure at the bottom was 12%. In response to our audit report on the SDE+ scheme for encouraging renewable energy production, the Minister of Economic Affairs reaffirmed his belief that the government was on course for meeting the 14% target in 2020.

The Minister did not change his policy as he retained confidence in the most optimistic scenarios. On paper, the value of the grants that the Minister awarded each year to renewable energy projects was enough to achieve the policy targets in 2020 and 2023. However, this was without taking account of practical experience: in practice, many SDE+ projects failed to generate the projected results or ran into delays. They also tended to generate less energy than they had been expected to do on paper. Our audits showed that renewable energy projects performed (as part of the SDE and SDE+ schemes) in the period between 2008 and 2014 generated on average 26% less than the maximum possible amount, which was the figure on which the government was banking.

26
Or 1.6% per annum in PMEs (Protocol for Monitoring Energy-Saving). See Appendix 2 for further information.

The recently published 2015 National Energy Outlook has once again made clear that the government will not meet the 2020 target set for renewable energy production (Schoots & Hammingh, 2015). This news has prompted the Minister of Economic Affairs to alter his policy, and he has now allotted a substantially higher budget to the SDE+ scheme as from 2016, to ensure that the 14% and 16% targets set for 2020 and 2023 respectively are indeed met (Ministry of Economic Affairs, 2015a). He has also taken a number of other steps, the effects of which will not be obvious until a later stage.

5.3 Positive trend in grants for renewable energy

There is also good news to report about the efficiency of the government's energy policy. Although we have found on a number of occasions that ministers have a tendency to retain faith in optimistic forecasts of the results of their sustainability policies, we have also found that they have learned from past failures and have used these lessons to improve their policies for the future. Our audits of grant schemes for the generation of renewable energy show that the Minister of Economic Affairs now takes a greater interest in financial management and the efficiency of the schemes. This is illustrated by the following example.

Example: Minister takes more interest in financial management and efficiency of grants awarded for renewable energy projects (Netherlands Court of Audit, 2007b; 2010 and 2015e)

The SDE+ grant scheme for encouraging the production of renewable energy (which has been in operation since 2011) is well thought-out and shows that the government has learned lessons from the efficiency problems experienced with previous schemes, i.e. the MEP (Environmental Quality of Electricity Production) scheme, which ran from 2003 to 2006, and the SDE scheme, which ran from 2008 to 2010.

The efficiency of the MEP scheme (2003-2006) was an aspect that had not previously received a great deal of attention. The scheme was permanently open to new applications and its financial management was not up to standard. This paved the way for financial losses. A key lesson learned by the Minister of Economic Affairs is that many of the excess profits earned by beneficiaries could have been avoided if the grants had been linked to actual electricity prices. This was something that the Minister did do in relation to both the SDE scheme (2008-2010) and the SDE+ scheme (in operation since 2011). The main restriction with the SDE scheme was that separate budgets were set for individual energy production techniques, which meant that the scheme acted as an incentive for both cheap and expensive technologies. When the SDE+ scheme was launched, the government decided that there should be just one, all-embracing budget and a phased auction system in which grant applicants were required to compete with each other for the available grants. As a result, the scheme now encourages firms to generate renewable energy at the lowest possible cost.

6 Supervision and accountability

The lack of coherence and prioritisation among the three policy goals has not been conducive to the effective supervision of the energy industry. Our audits have revealed that the external regulator, the Netherlands Authority for Consumers & Markets (ACM), is interested primarily in the aspects of affordability and reliability. However, the ACM has had difficulty properly discharging its statutory responsibilities for regulation and supervision. For example, the regulatory process twice became deadlocked, compelling the Minister of Economic Affairs to intervene. The Minister did so, however, without explaining the reasons for his decision. This may have had a lasting adverse impact on market regulation and the tariffs paid by consumers. As regards the supervision of investments by network operators, we found that the external regulator took a high-trust approach, relying heavily on the plans formulated by the operators themselves and the latters' expertise.

There is scope for improvement in the supervision exercised by the government itself. The ministries concerned do not take a particularly critical view of the investment plans proposed by state-owned energy corporations, i.e. Gasunie and TenneT. No external regulator has been made responsible for monitoring progress in relation to the sustainability targets set out in section 2.2. It is the Minister of Economic Affairs who bears prime responsibility both for monitoring the attainment of policy aims and for ensuring policy coherence and prioritisation. The Minister provides parliament with policy information on these aspects. We have identified certain shortcomings in this information on a number of occasions. This makes it difficult for parliament to exercise democratic control over the aims (in terms of sustainability and otherwise) of the government's energy policy. The policy information therefore needs to be improved.

6.1 Lack of coherence and prioritisation in policy planning makes external supervision more difficult

Responsibility for managing the energy networks lies with the network operators. This applies to both national and regional networks and to both gas and electricity networks. The network operators have a monopoly in their markets, which means that there is a risk of their networks being of poor quality and/or too expensive due to a lack of competition. For this reason, the ACM supervises both the network operators' investments[27] and their tariffs on behalf of the Minister of Economic Affairs. We refer to this form of supervision as 'external supervision', as it is not exercised by the ministries themselves. Acting in this capacity, the ACM is required to ensure that the investments made by network operators - the cost of which they can later pass on to their end consumers - are necessary, i.e. not unnecessary or unnecessarily expensive. This is its supervisory task.

The ACM also has a regulatory task: it is required to ensure that the tariffs charged by network operators are no higher than is strictly necessary. Finally, the ACM is also responsible for enforcing the Electricity Act, the Gas Act and the Heating Supply Act in general terms.

If the ACM discharges its responsibilities effectively, taking account of the requirements for reliability and sustainability, the right tariffs result, thus creating scope for necessary and efficient investments in sustainability or reliability. The

27 Including both replacement investments and expansion investments.

Minister of Economic Affairs is in turn responsible for formulating policy, laying down the rules of the game, and assessing the need for major expansion investments.[28]

Our audits have revealed that the ACM, as the external regulator, finds it difficult to discharge both its responsibilities. One of the contributing factors is the lack of coherence and prioritisation (among the various policy aims) during the planning process.

6.1.1 Regulatory process deadlocked on two occasions

One of the ACM's tasks as the external regulator is to set the maximum tariffs that network operators are allowed to charge energy consumers. In order to set these maximum tariffs, the ACM must weigh up a large number of complex interests against one another. Because the management of the energy networks is closely linked with other aspects of energy policy, the ACM often comes into contact with a variety of policy aims in assessing these interests. For example, it might be required to address questions such as: to what extent are network operators entitled to pass on the cost of investments that are required so as to prepare themselves for the growth in renewable energy output? How much pressure may be placed on the affordability of the energy supply in order to facilitate investments in its reliability? The lack of coherence in the energy policy and the failure by the Minister of Economic Affairs to prioritise policy aims during the planning stage, seems to make it hard for the ACM to set the tariffs objectively, taking full account of all the various policy aims. Not surprisingly, perhaps, the regulatory process has become deadlocked on two occasions in the recent past. On both occasions, the Minister of Economic Affairs felt compelled to intervene (see box).

Examples: Minister intervenes in tariff regulation by the ACM (Netherlands Court of Audit, 2009a and 2012a)

Intervention in tariff regulation for gas and electricity networks in 2003

In 2000-2002, the ACM's decisions were constantly contested (both in and outside the courts) by regional network operators objecting inter alia to the valuation of their energy networks. The Minister of Economic Affairs intervened in 2003, appointing a former company director from the energy industry as the new director of the ACM. Agreements with the regional gas and electricity network operators were signed shortly afterwards. The pressure brought to bear by the network operators meant, however, that the value of the networks was not appraised solely on the basis of objective criteria. As a result, there were insufficient guarantees that consumers were not paying again for infrastructure the construction cost of which had already been factored into the tariffs.

Intervention in tariff regulation for the national gas network in 2008

The regulation of the national gas transmission network reached a state of deadlock in 2006. Guided as it was by the interests of effective regulation, the ACM encountered resistance from Gasunie, a state-owned corporation that wanted to have more freedom to undertake expansion investments. Gasunie needed this freedom in order to pursue the government's gas hub strategy, which was designed to enhance the security of the country's energy supply. Taking a different approach to the valuation of the national gas transmission network would create greater investment opportunities for Gasunie. In March 2007, the ACM found itself under increasing pressure from both Gasunie and the Minister of Finance. The Minister of Economic Affairs subsequently intervened in 2008: in a major change to the regulatory framework, the Minister issued a policy rule setting out exactly how the ACM was to set the gas transmission tariffs. The rule was the result of an agreement between the Minister of Economic Affairs and the Minister of Finance. For our part, we wanted to find out how the Minister of Economic Affairs had weighed up the interests of Gasunie, the Ministry of Finance and energy consumers in reaching this decision.

28
I.e. investments covered by the National Coordination (Large-Scale Energy Infrastructure Projects) Regulations (Netherlands Court of Audit, 2015b).

Both of the above interventions were the result of ad-hoc decisions. Both cases involved a one-off valuation of energy networks that was not based on objective criteria, thus making it hard to know how the Minister of Economic Affairs had assessed the disparate interests involved in the process. Both interventions resulted in a situation that favoured the network operators. As a result, both interventions by the Minister of Economic Affairs may well have had a lasting adverse impact on the regulation of the energy market and on the tariffs paid by consumers. We were interested in finding out whether, in the case of the 2008 intervention, energy consumers had been afforded sufficient protection against the network operators' status as monopolists and whether both the efficiency of the network and quality standards had been safeguarded (Netherlands Court of Audit, 2009a).

6.1.2 The supervision of investments in the energy network relies on information provided by the state-owned corporations themselves

The ACM also finds it hard to discharge its supervisory responsibilities as the external industry regulator. The lack of coherence and prioritisation among the various policy aims during the planning process would appear to be a contributory factor in this respect. This may make it more difficult to assess the need for investments that network operators are proposing to undertake in order to safeguard the reliability of the energy supply both in the near future and in the long term. This was a problem we encountered in our audit of government supervision of TenneT's management of the high-voltage network. The supervisory activities rely heavily on input from TenneT and Gasunie (both of which are state-owned corporations) themselves. The Electricity Act only sets 'open standards' for terms such as 'reliable', 'efficient' and 'need'. As a result, the relevant laws either do not contain any definitions of these terms or contain only very general definitions. It was a deliberate decision on the government's part to give the industry itself maximum responsibility for these tasks (Netherlands Court of Audit, 2015b). The same applies to the Gas Act. It was also a conscious decision on the government's part to base its supervisory activities as much as possible on information supplied by the network operators themselves (as part of what is known as a 'high-trust approach' to supervision). For example, the following illustration shows that, in assessing the ex-ante need for investments, the ACM relies heavily on information provided by TenneT itself.

Example: Assessment of TenneT's investments in the Dutch high-voltage network based on information from TenneT (Netherlands Court of Audit, 2015b)

TenneT's 'Randstad 380 kV project' involves the construction of a new (largely underground) high-voltage cable in the large metropolitan region in the west of the Netherlands. The estimated cost of the project is over €1 billion. TenneT wanted a prior guarantee from the ACM confirming the need for the investment and for this reason asked the ACM to assess the need for the investment at an early stage, although the practice at the time was for the ACM to assess such investments only after they had been undertaken. If the ACM were to contest the need for the investment after it had already been undertaken, there would be a risk that TenneT would not be able to pass on the cost of the investment in its tariffs and would hence incur a loss on it. The ACM granted these requests in 2004 and again in 2008, and twice came up with positive assessments. On both occasions, the ACM engaged the services of an external firm of consultants that based its recommendations on information supplied by TenneT itself.

The Minister of Economic Affairs takes the view that energy producers, energy consumers and network operators should, where necessary, come up with their own interpretations of the open standards, i.e. the definitions of terms such as 'need' and 'reliable'. This is the basis on which the ACM assesses the investment plans. We found in 2015 that, although the ACM assesses the efficiency of TenneT's proposed investments, it does not assess their need. As a result, there are no guarantees that the proposed investments are actually needed or that the proposed investments are in the public interest. Thus, there is no comprehensive form of supervision of TenneT's investment plans. There is no guarantee that the ACM has weighed up the interests of the three policy aims. The Minister of Economic Affairs claims that his bill for a new Electricity and Gas Act will solve this problem. In our opinion, however, the solution to the problem lies in enforcing the already existing law rather than changing the law. The Minister's bill simply formalises the inadequate supervision that already exists in practice. On 13 October 2015, the House of Representatives ratified the bill without amending it on this point.

In summary, therefore, the ACM's prime concern in both its regulatory and its supervisory tasks is basically to safeguard the affordability of the energy supply. Although the ACM also supervises the reliability of the energy supply in both the short and the long term, it does not consistently discharge this responsibility in full, as we have already seen in this section in relation to TenneT.[29] Responsibility for supervising the attainment of the sustainability targets lies with the government and parliament. This is a point to which we shall be returning in the next section.

6.2 Government supervision and reporting are both open to improvement

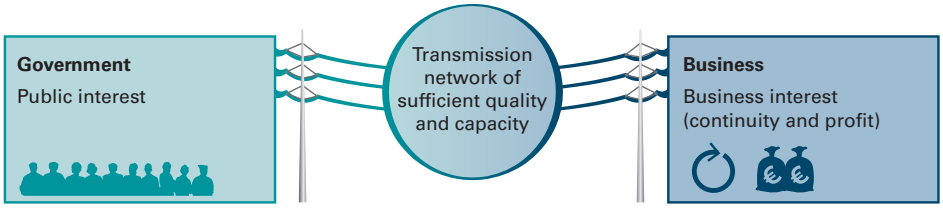
There is also scope for improvement in the internal supervision, i.e. the supervision exercised by the ministries themselves.

6.2.1 Supervision of state-owned corporations lacks coherence and critical counterweight

An important aspect of the supervision for which the ministries themselves are responsible is the supervision of state-owned corporations, including the operators of the national energy infrastructure, i.e. TenneT for the high-voltage network and Gasunie for the national gas transmission network. Because these companies hold monopolies and also serve certain public interests, they are both wholly state-owned corporations. The thinking behind this is that this safeguards the management of the Dutch gas and electricity networks from commercial risks associated with activities other than those that are strictly necessary in order to serve the public interest. In addition to being subject to tariff regulation, like all network operators, TenneT and Gasunie are also supervised as state-owned corporations in accordance with government policy on state-owned corporations. In other words, this means that the shareholder is actively involved in the management of the companies in question. The government is required to assess, in accordance with the rules on state-owned corporations, whether the investments proposed by these corporations are in line with the public interest of securing an affordable, reliable and renewable energy supply. The point is that, as a business, each corporation also has certain interests, such as profit maximisation and continuity, that are not necessarily consistent with the public interest (see Figure 8).

29
The ACM is required to assess whether the network is capable of using the renewable energy that is produced and is not responsible for assessing the sustainability of production itself.

Figure 8 Factors motivating government and business



For government, the public interest is the predominant factor. That is why government supervision is needed in order to safeguard the public interest.

Joris Fiselier *Infographics*

Our audits suggest that the government is not sufficiently critical in its assessments of the state-owned corporations' plans for major foreign investments. This is illustrated by the following example.

Example: Insufficiently critical assessment of Gasunie's and TenneT's plans for foreign takeovers (Netherlands Court of Audit, 2012a; 2015a)

The Minister of Finance is the sole shareholder in both corporations. In assessing the business and public interest of planned takeovers, he is entitled to seek the advice of the Minister of Economic Affairs as the minister responsible for government policy in this field. Both corporations have made foreign acquisitions in Germany in recent years. The question in both cases was whether the government made a critical assessment of these investment plans. In the case of Gasunie's takeover of a German party, we were unable to establish whether and how the Minister of Economic Affairs, as the minister responsible for government policy, assessed whether the investment plans were in the public interest. In the case of TenneT's takeover of a German high-voltage network operator, we concluded that, although the Minister had supported the plans from the outset, she had not sought to validate her standpoint by undertaking a study into whether the acquisition was consistent with the government's aims of securing a reliable, affordable and renewable energy supply.

We concluded in more general terms earlier on this year that the decision-making process in relation to these types of investment plans on the part of state-owned corporations is not always transparent and carefully thought-out (Netherlands Court of Audit, 2015d). The supervision of this process hardly ever includes any explicit assessment of the various interests involved. Moreover, given the various shortcomings in the information required to perform it, such an assessment is not practically feasible. We found insufficient evidence as to whether investments are in the public evidence, that the shareholder does not analyse the financial consequences and risks, and that no systematic record is kept of information on the various stages of the decision-making process.

This is also true of the above examples: there was a lack of careful planning in the decision-making process and we found no logical connection between the assessments and the arguments expressed when it was previously decided to retain the two corporations in public ownership. In TenneT's case, we questioned the consistency of safeguarding the management of the national grid against business risks by keeping it in public ownership while at the same time allowing TenneT to undertake foreign activities, even though there were certain risks associated with such activities and it was not clear whether they were in the Dutch public interest (Netherlands Court of Audit, 2015a).

6.2.2 Lack of good policy information makes it difficult for parliament to exercise democratic control

As we have already seen in section 6.1, the ACM bears prime responsibility for supervising progress towards the two energy policy aims of 'affordable' and 'reliable'. The Minister of Economic Affairs is responsible for achieving and monitoring the sustainability aims and reports to parliament on the situation regarding this aspect, in conjunction with the other energy policy aims. In order for parliament to perform its scrutinising role, it needs to have access to good budgetary information and reports.

As we have seen in section 4.2, we have identified shortcomings on a number of occasions in recent years in the policy information published by the Minister on the 'greening' of the energy supply (Netherlands Court of Audit, 2013; 2014b; 2015e and 2015h). For example, the Minister failed to establish, in the draft budget for 2015, a sufficiently clear connection between the individual measures and also the relationship between policy aims, resources, results and the planned timetable. In his response to our audit report on the SDE+ scheme for encouraging renewable energy production, the Minister indicated in broad terms that certain 'new developments' had been initiated that would, he claimed, enable the government to reach the targets set. The Minister explained in the Dutch House of Representatives that he was referring inter alia to the Offshore Wind Energy Act and the new tendering procedure for offshore wind farms. He did not, however, make explicit, i.e. in euros and specific production figures, how and when these developments would help the government to achieve the targets for renewable energy production. The draft budget for 2016 also fails to make this clear.

These shortcomings in the policy information make it difficult for parliament to exercise democratic control by monitoring the sustainability aims of the government's energy policy. The policy information must therefore be improved.

Appendix 1 Court of Audit publications on the subject of energy (2006-2015)

Below follows a list of the reports on which this report is based, together with a brief summary of their contents. See http://www.courtofaudit.nl/english/Themes/Environment_agriculture_and_nature/Climate_and_energy for more detailed information.

Review of Green Power Scheme (2007)

In 2004, we audited the government's policy of encouraging the use of sustainably generated electricity. The report showed that the aims of the government's 'green power policy' were not consistent with each other. We also found that energy suppliers did not give their customers enough information on the electricity they were consuming and on the efficiency risks associated with the policy. In our 2007 review, we looked at the action taken in relation to two of the five recommendations, i.e. on the monitoring of results and the information provided by energy suppliers. We concluded that, although the Minister had kept his promises, there was still room for improvement. The EU has not set any clear targets for the proportion of electricity production to be generated from renewable sources. Regulations on electricity labelling came into force on 1 January 2005 and these are generally well observed in practice. Having said this, there are still certain loopholes in the regulations and these affect the ACM's supervision of the system. In their responses to the report, the Minister of Economic Affairs and the ACM said they agreed with our conclusions. The Minister also said that, provided the current policy was enforced, he was confident that the government would meet the target set for renewable electricity in 2010.

Grant Scheme for the Environmental Quality of Electricity Production (2007)

We examined how the MEP Grant Scheme for the Environmental Quality of Electricity Production operated in practice and what results it had produced. Our main conclusion was that, in distributing MEP grants, the Minister of Economic Affairs focused solely on achieving the policy goal agreed with the European Union, i.e. that 9% of the electricity consumed in the Netherlands each year should be generated from renewable sources by 2010. The Minister failed, however, to devote sufficient attention to ensuring that the goal was consistent with other aspects of the government's policy on renewable energy and a sustainable environment. We also found that the Minister paid insufficient attention to efficiency and financial management (in terms of monitoring and supervision by the Ministry). Finally, there was no guarantee whatsoever that the target set for 2010 would be met. The Minister of Economic Affairs recognised that the MEP scheme needed to be improved and announced a number of measures to this end.

European trading system in CO_2 emission rights (2007)

In 2007, we examined how the Netherlands was implementing the system introduced by the EU in 2005 for reducing emissions of greenhouse gases, carbon dioxide (CO_2) in particular.
The main conclusion drawn in our audit report was that, although the government had properly implemented a basic system of trading in CO_2 emission rights, in calculating and distributing the total number of CO_2 emission rights, it had taken greater account of the interests and competitiveness of Dutch trade and industry than of the government's commitment to the Kyoto target. Moreover, the implementation of the trading system had been less than transparent in certain respects. The introduction of the trading system in CO_2 emission rights had undermined the ability of the existing Dutch policy on sustainably generated electricity to effectively reduce CO_2 emissions. In their response to the report, the Minister of Economic Affairs and the Minister of Housing, Spatial Planning and the Environment stressed that the trading system could be regarded as a success only if

it was adopted in the same way by all EU member states. Against this background, they said that it was justifiable for the Netherlands to take account of financial interests as any policy that tended to 'hound businesses out of the country' could weaken the Dutch economy and would not help resolve the global clim

Tariff Regulation Energy Transport (2009)

In 2009, we audited the way in which the tariffs paid by Dutch consumers for the operation of gas and electricity networks were regulated. Our main conclusion was that the Minister of Economic Affairs' management of the system of tariff regulation for energy network operators was not based on any predefined strategy. We questioned whether the Minister's ad-hoc appraisal of the interests of consumers and other parties was sufficiently consistent with EU law. We were also concerned as to whether the variety of roles performed by the minister or ministers was conducive to the intended aims of tariff regulation, i.e. protecting energy consumers from the monopoly position of network operators without compromising the high quality of network management. The Minister of Economic Affairs denied that there was any lack of vision and that her decisions were consequently of an ad-hoc nature, claiming that she had set out her vision in the 2008 Energy Report. The ACM backed our recommendation for developing a regulatory strategy and said that this should clearly define the boundary between policy and independent supervision.

Review of CO_2 emission rights: implementation in the Netherlands (2009)

The conclusion drawn in this review, which revisited our 2007 audit report, is that the ministers had kept their pledge to argue in Europe for the maximum harmonisation of the emissions trading system. Nonetheless, the Minister of Economic Affairs and the Minister of Housing, Spatial Planning and the Environment had not acted on our recommendations regarding the overlap between the EU's CO_2 emissions trading system and the existing Dutch policy on sustainably generated energy. As a further point, the Dutch Emissions Authority (NEA) still did not have enough staff capacity to perform its supervisory task. In response to our comment that the ministers could improve the situation by conducting a comprehensive review of the current policy on sustainably generated energy, the Minister of Housing, Spatial Planning and the Environment, writing also on behalf of the Minister of Economic Affairs, said that she expected the 'Interaction between Environmental Policy Tools Project' performed by the Netherlands Bureau for Economic Policy Analysis would provide enough information to form a basis for sound decisions on environmental and energy policies.

Review Sustainable energy production schemes (MEP and SDE) (2010)

This report looked back at the audit we had carried out in 2007. We found that the SDE scheme for encouraging renewable energy production took account of our findings on the Environmental Quality of Electricity Production (MEP) scheme. Ceilings had been imposed on grants, for example, and a connection established with the actual price of electricity. This had curtailed the open-ended nature of the MEP scheme, and the inconsistency in payments that had bedevilled it. We believed there were still risks, however, in the regularity, efficiency and effectiveness of the two schemes. In response to our recommendation that the budget should provide more information on future adjustments to commitments under the SDE scheme, the Minister of Economic Affairs wrote that, although the budget did not lend itself to such detailed information, she would look at the opportunities for providing additional information when the 2011 budget was drawn up.

Energy saving: ambitions and results (2011)

We investigated why the energy-saving targets had not been met and what consequences this would have for the national energy and climate targets agreed by the EU for 2020. The audit showed that energy consumption in the Netherlands had increased by 11% between 1995 and 2007, and not by 4% as the government had planned. There were three reasons for this. Firstly, the government had taken fewer and less effective measures than ex-ante studies had found to be necessary. Secondly, the policy pursued with regard to energy-intensive manufacturing firms had steadily become less and less binding in 2000-2007. Finally, the policy pursued with regard to manufacturing firms was only partially consistent with the motives inducing such firms to invest in energy-saving measures. In response to these findings, the Minister of Economic Affairs wrote that a number of our recommendations were consistent with the new government's policies. The Minister said that he did not believe there was a need for a separate, binding national target for energy-saving, as this could encourage firms to adopt inefficient measures.

A gas hub: benefits, need and risks (2012)

We looked at how the government had argued for the need for its 'gas hub strategy', how it was monitoring its implementation and how the Dutch House of Representatives was informed about the process. Our main conclusion was that the Dutch state had not demonstrably verified in all cases whether the € 8.2 billion investments had been made in the public interest, i.e. had assessed whether the investments would help make the energy supply sustainable, reliable and affordable. At the outset, the Minister of Economic Affairs did not carry out any detailed studies to substantiate the need for the gas hub. Although a study was performed in 2010, € 7.2 billion had already been invested in the gas hub by then. The information given to the House of Representatives on the gas hub project did not go into a number of important issues in sufficient detail: the state's role as the sole shareholder in EBN and Gasunie, how the public interest was served, and the risks that the investments posed to the state. In response to our report, the Minister wrote that she did not agree with our conclusion that no supporting evidence had been adduced for the gas hub strategy prior to the decision taken in 2007. She also felt that our conclusions about the implementation of the gas hub strategy and the role played by the shareholder in this respect were too harsh.

TenneT's purchase of German high-voltage network (2015)

We audited the purchase of Transpower, the German high-voltage network, by TenneT, the Dutch public-sector network operator. The Minister of Economic Affairs, who was closely involved in TenneT's acquisition of Transpower, the German high-voltage network, in 2009, did not demonstrably assess whether the purchase was in the public interest of guaranteeing a reliable, affordable and sustainable power supply in the Netherlands. As a result, it was unclear how the costs and benefits of the acquisition compared with alternative means of achieving the aims of the government's economic policy. Both the Minister of Economic Affairs and the Minister of Finance could have given the Dutch House of Representatives more information on the financial risks to which the state was exposed as TenneT's sole shareholder. The ministers claimed in response that the risks associated with TenneT's activities in the Netherlands and Germany were separate. Unlike us, they did not see any conflict between TenneT's activities as a public-sector network operator and its activities as the manager of part of the German electricity network.

TenneT's investments in the Dutch high-voltage network (2015)

We sought to establish whether the Dutch government had taken due care to ensure that the investments made by TenneT, the Dutch network operator, in the country's high-voltage network were efficient. Our main conclusion was that the Minister of Economic Affairs and the ACM did not exercise adequate supervision to ascertain whether TenneT's large-scale investments in the high-voltage network were indeed efficient. As a result, it was not possible to say whether households, businesses and other organisations were paying the right price for the transmission of electricity. We pointed out that, although the ACM was supposed to issue a comprehensive opinion once every two years on a document setting out all TenneT's investments, it had failed to do so. In response to our report, the Minister of Economic Affairs and the Minister of Finance claimed that they did perform a serious, critical review of TenneT's investment plans. The ACM explained that it disagreed with us about the interpretation of the statutory regulations on its supervisory responsibilities, and operated in accordance with its own interpretation.

State supervision of state-owned corporations (taking EBN as a case study) (2015)

This report centred on government policy on the management of state-owned corporations. In the case of the Ministry of Economic Affairs, the corporations concerned were Gasunie, Gasterra, TenneT, EBN, Urenco and Sababank. The state is required to protect the public interest and manage social capital. The audit generated three important findings. Firstly, the state did not always have the powers it needed in order to be an active shareholder. Secondly, decisions on major investments by state holdings were not always transparent or the result of a carefully planned process. Thirdly, the value of the information provided to the House of Representatives on state-owned corporations was open to improvement. In their response to the report, the Minister of Finance and the Minister of Economic Affairs said that they did not share our firm conclusions about the inadequacy of the information used to assess investment proposals and about the lack of attention paid to the financial consequences of an investment. They did, however, agree with our finding that the provision of information to the House of Representatives was open to improvement.

SDE+ scheme (2015)

In 2015, we audited the SDE+ scheme for encouraging the production of renewable energy. This is the main policy tool used by the Minister of Economic Affairs to meet the targets for 2020 and 2023, i.e. for 14% and 16% respectively of the energy consumed in the Netherlands to be produced from renewable sources. We found that the Netherlands did not appear to be on course to meet these targets. The SDE+ scheme produced less energy from renewable sources than had been thought. This was because the Minister of Economic Affairs did not take account of practical factors: SDE+ projects frequently suffered setbacks and delays. Furthermore, once the projects were in operation, on average they produced 26% less energy than was theoretically possible on paper, sometimes because of technical problems, and sometimes because of a shortage of biomass. At the same time, the scheme operated better in all sorts of respects than its predecessors, i.e. the SDE and MEP schemes. Encouraging though this was, it also meant that changing the scheme would not automatically make the policy goals easier to achieve. Other solutions looked more promising: for example, increasing the size of SDE+ grants, possibly in combination with an extension of the scheme to include projects abroad. A final problem was the fact that the Dutch House of Representatives had only limited information on the costs and benefits of the SDE+ scheme. In his response to the report, the Minister of Economic Affairs said that the new policy he had recently launched would enable the government to meet the targets. He promised to improve the information provided to the House of Representatives. Before taking a decision on additional budgetary measures to achieve the targets for 2020 and 2023, however, he would first like to see the results of the review of the Energy Agreement scheduled for 2016.

Regularity audits, including on energy-efficient and electric cars (2007-2014)

All the ministers present an annual report to parliament each year, listing their tax receipts and expenditures. Every year, we audit the ministries' annual reports and examine their operational management. We have highlighted a range of management problems in our series of regularity audits (as these are known), which have also drawn attention to the way in which ministries report on the objectives of the government's energy policy. The examples include examinations of the tools for guaranteeing that subsidised power is indeed produced from renewable sources, of the mechanisms used for supervising the Netherlands National Petroleum Stockpiling Agency and the Energy Efficiency Benchmarking Audit Office, the SenterNovem grant management office, and the systematic underspending of the budgets for the MEP and SDE grant schemes. Our 2013 regularity audit identified a problem with the supervision of compliance by co-digester operators with the terms and conditions of renewable energy grant allocations. The following year's regularity audit subsequently found that the problem had been resolved. As regards the effectiveness of government policy, our regularity audits in both 2013 and 2014 looked at the incentives for energy-efficient and electric cars. We concluded that these tax incentives were relatively expensive and inefficient and that they produced fewer environmental benefits than had been envisaged. The government had not conducted a proper study of the alternative means of encouraging the sale of electric and semi-electric cars.

Letters on draft budgets (2012-2016)

A good budget lays the foundations for a good set of accounts. Since 2012, we have written letters to parliament each year commenting on each minister's budget. These letters seek to establish a link between the conclusions and recommendations set out in our regularity audits and other audits on the one hand, and the minister's draft budget on the other. They highlight certain points to which parliament might wish to pay particular attention when debating the budget in question. These letters have discussed a range of energy-related issues, such as expenditure on renewable sources of energy, an internal budget reserve for renewable energy, compensation for energy-intensive businesses, the CO_2 performance indicator, the gas hub strategy, energy-saving, energy innovation, the sources of revenue (including natural gas revenue) for the Future Fund, and the new Electricity Act (setting out how the ACM is to be supervised).

Appendix 2 Glossary

Energy	The use of energy-bearing substances, i.e. products containing energy in the form of fuel, heat or power and which act as sources of energy. Natural gas, petroleum, wind power and electricity are all examples of energy.
Affordability	The degree to which consumers are capable of paying for the cost of energy (consisting of the cost of consumption plus fixed charges such as network charges and tax). There are two important aspects here, i.e. purchasing power and competitiveness. The term 'affordability' may also be taken as referring to economic efficiency, i.e. static efficiency (the lowest possible marginal cost of energy) and dynamic efficiency (a permanently lower level of cost in the long term, to be attained by making optimum use of the various sources of energy).
Reliability	The degree to which consumers can be sure that the supply of energy will be large enough (in terms of both output and infrastructure) in both the short and the long term to meet the demand, and also that the energy in question can be supplied. In other words, reliability consists of two aspects: the security of energy supply on the one hand and energy-source security on the other.
Sustainability	A renewable energy supply is an energy supply of the highest possible environmental quality. A renewable energy supply may not have any adverse impacts on current or future generations, the planet or the economy. Secondary objectives have been formulated in relation to energy-saving, reducing greenhouse gas emissions and increasing the proportion of energy produced from renewable sources. Renewable energy sources are inexhaustible over a long period and can be used without this having a major adverse impact on the environment. Examples of renewable energy sources are solar radiation, wind power, heat derived from underground sources, river currents, sea tides and so on.
Renewable energy / sustainable energy / clean energy	For the sake of consistency and simplicity, the term 'renewable energy' is used in this report rather than 'clean energy'. We realise that they are not fully synonymous with each other. The term 'clean energy' is sometimes used by people claiming that there are 'clean' forms of fossil-based energy and that nuclear power is a clean form of energy. The term 'sustainable energy' is consistently used to refer to a wider concept than renewable energy alone. While a 'renewable energy supply' invariably comes from renewable sources, there are other demands it also has to meet. A renewable energy supply may not have any adverse impacts on current or future generations, the planet or the economy. The 'gross final consumption' method is used to calculate the amount of energy generated from renewable sources. This measures the proportion of final energy consumption that is derived from renewable sources. The final consumption of energy is the energy that is supplied to end consumers, i.e. manufacturing industry, the service sector, households, the transport sector and agriculture.
Energy-saving	Using less energy to perform the same activities or functions (Statistics Netherlands definition). The Dutch government has set three energy-saving targets (see below).

Energy-saving target under the Clean and Efficient Programme	The Clean and Efficient Programme launched in 2007 seeks to reduce primary energy consumption by an average of 2% per annum between 2011 and 2020, compared with the figure for 2009. If this target is brought into line with the Dutch Protocol for Monitoring Energy-Saving, the converted average rate of energy-saving is then 1.6% per annum. Although the government has not formulated any binding target since 2010, it has continued to pursue the same policy.
Energy-saving: actual (PME)	Energy-saving as measured in accordance with the Dutch Protocol for Monitoring Energy-Saving (PME). The PME expresses energy efficiency as an annual percentage of primary energy consumption, and thus indicates the extent to which actual energy consumption is lagging behind the benchmark rate of energy consumption, i.e. the amount of energy consumed without any efficiency measures.
Energy-saving: the Netherlands' EU target	The Dutch energy-saving target was set in accordance with the definition in article 7 of the EU's 2012 Energy Efficiency Directive. Under this Directive, member states are required to reduce their energy consumption by 1.5% per annum during the period from 2013 to 2020. The relevant figure for the Netherlands, after the deduction of exemptions, is 31.5%. This is the figure measured in accordance with the final consumption method (i.e. excluding production and supply). The only other savings also included in this target are those based on national policies and not those resulting from self-sustained developments or EU policy.
Energy-saving target under the 2013 Energy Agreement	The parties to the Energy Agreement have pledged to save an extra 100 petajoules of energy in 2020 (based on the 1.5% per annum target for energy-saving). The idea is that this extra saving should be generated by the measures set out in the Agreement. The term 'extra' refers to the saving in final energy consumption that would have resulted if no Energy Agreement had been signed. Only the measures set out in the Energy Agreement count towards the attainment of the target. Consumption is measured with the aid of the final consumption method.
Final energy consumption	'Final' means that only supplies of energy to end consumers such as households and manufacturing companies are counted.
Primary energy consumption	'Primary' also includes the consumption of energy in the course of production and supply.
Reduction in CO_2 emissions	The reduction in emissions of CO_2 and other greenhouse gases throughout the mineral production chain up to the point of energy consumption, measured in CO_2 equivalents.
Supervision	Supervision means collecting information about whether a particular action or object complies with the relevant requirements, forming an opinion on this and, where necessary, intervening as a result.
Internal supervision	The supervision of the parties in the energy sector for which the ministries themselves are responsible. For the purpose of this report, this mainly involves the supervision of state-owned corporations by the Ministry of Economic Affairs and the Ministry of Finance, where relevant.
External supervision	The supervision of the parties in the energy sector for which a non-ministerial regulator is responsible. In the case of energy policy, the main external regulator is the Netherlands Authority for Consumers & Markets (ACM), which is required to supervise compliance with the Electricity and Gas Act and was recently also made responsible for supervising compliance with the Heating Supply Act.

Public interest	Where energy policy is concerned, the term 'public interest' refers to the general policy aim of securing a sustainable, reliable and affordable energy supply.
Regulatory process	The aim of the ACM's regulatory task is to improve the efficiency of network management and also to guarantee the reliability of the network. The ACM's role as a regulator is to set the maximum tariffs that the network operators are entitled to charge energy consumers. The ACM is also required to assess the efficiency of the investments undertaken by the network operators.

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