TOWARDS A SUSTAINABLE ECONOMY

THE GOVERNANCE OF TRANSITIONS

NOVEMBER 2019

Council
for the Environment
and Infrastructure

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SUMMARY

The Netherlands stands at the threshold of a major and unavoidable sustainability transformation. Climate change, biodiversity loss and increasing raw materials scarcity make it imperative to change how we obtain our energy, use raw materials and produce our food. These changes will have a radical impact not only on the physical environment, but also on our economy: the way we work, produce, consume, feed ourselves, move around, etc. The economy that emerges will, at least in part, have a different structure. These changes will take place in the decades to come under the influence of shifting social norms and values, changing consumer preferences, technological innovations, global agreements and geopolitical developments.

The Dutch government has an essential part to play in steering this transition towards a sustainable economy. The governance options available to national, regional and local authorities to manage the transition process are the subject of this advice. In this report the Council for the Environment and Infrastructure uses academic insights on the governance of transitions to analyse Dutch policy and practice in three topical policy areas: the energy transition, the raw materials transition and the food transition. Drawing on this analysis, the Council formulates a number of points for consideration and makes recommendations for the governance of sustainability transitions by national government.

Develop a vision of well-being as a guiding principle for policy

The Council argues that the government will have to develop a coherent vision on a sustainable society and the pathway to take us there. This vision should provide the glue that binds together the various economic, social and ecological objectives. In this advice the Council discusses several elements that should be addressed in such a vision. The Council believes it is essential that the vision is based on a broader concept of well-being than economic welfare and that it is applied in a more forward-looking way than in the current policymaking process. To properly prioritise the various competing public values during a transition it is necessary to ascertain their importance for delivering well-being.

The vision advocated by the Council is not a static one, but one that will have to be regularly updated. Nor should it consist of just a target blueprint or set of fixed goals, but it must also contain objectives for the shorter term. These interim objectives should pave the way towards the final goals, both in terms of the pace of change and its direction – but they must not detract from a clear focus on the final destination. The short-term objectives and means to achieve them should therefore be regularly scrutinised to ensure they remain consistent with the long-term goals.

Strike the right balance between old and new

The government wants the transition to a sustainable economy to cause the least possible disruption to society. For this reason, the government rightly attaches importance to striking an appropriate balance between maintaining the existing economic structure and fostering structural change. Elements from the old system will also be needed to provide a breeding ground for the necessary innovation. However, the Council notes that, in practice, the search for economic renewal has for too long been conducted within the existing system and that this has prevented or slowed down the transition process.

To determine what the future holds for individual economic sectors, sustainability transitions must be viewed from a macroeconomic perspective. The government should regularly question whether or not it makes sense to continue to invest its own financial and human resources in parts of the old system, and if it does, for how long. This means that right from the start of the transition the government should keep an open mind about phasing out particular economic activities where necessary. The Council notes, however, that in its efforts to stimulate innovation the government tends to cling to the traditional methods of facilitating experiments and encouraging voluntary agreements. More structural opportunities for new sustainability initiatives can be created by moving quickly to amend existing legislation (which tends to benefit established parties).

Steering transitions requires a different role for government

The Netherlands has a rich ‘polder tradition’ for achieving complex policy objectives. This tradition is being continued in the policymaking for the transitions by seeking a consensus with the stakeholders on the strategies to be followed and the measures to be taken. In some cases this means that the parties involved are asked to submit a joint recommendation. In other

cases, the government seeks an agreement to which it is itself a party. The first approach was taken for the Energy Agreement for Sustainable Growth. The second approach was taken for the National Energy Agreement, although in the end the government took an independent decision. Both forms of consultation have their pros and cons and the best approach to take should be decided on a case-by-case basis. However, for transitions with profound social and political implications which will require much new legislation and many licensing and authorisation procedures, agreed by consensus, the Council's preference is for the first approach: an agreement between civil society stakeholders with the status of a recommendation to government. This ensures that the process of reaching a consensus is separate from the subsequent political judgement on the outcome. Regardless of the approach taken, the Council feels it is important that at the outset the government provides a clear framework within which agreements can be made. It must be clear what the objectives are, what government resources are available and what income effects are acceptable.

Make more use of pricing policies and regulation and put the level playing field into perspective

The government can draw on a wide range of policy instruments to support the transition process, from pricing and subsidies to regulation and behavioural measures. The Council observes that national government has been reluctant to use pricing and regulation measures to stimulate business to make the transition to a sustainable economy. The Council advises the government to make more use of both instruments, but especially regulation. Incorporating incrementally rising targets into legislation and permits so that all concerned know where they stand well in advance will facilitate a gradual transition towards a sustainable economy. Regulation also has advantages for the business community: it provides clarity on the legal framework for investment and it provides certainty about the business environment under which investments can be profitable. Regulation that is based on specific sustainability targets which have been set early on in the process will stimulate innovation and support the emergence of markets for sustainable products and processes.

A critical reason why the government is reluctant to use generic pricing measures and regulate markets is the fear of damaging the competitive position of internationally operating companies and industries and undermining short-term economic growth. The Council considers these concerns to be legitimate, but notes that this argument tends to be used selectively when it suits the proponent and that the competition debate is unnecessarily delaying the transition to sustainability. A country's business climate is determined by a range of factors, from the quality of its institutions and infrastructure to the labour market, innovation potential and tax regime. These factors vary from country to country, which makes it impossible to aim for a completely level international playing field when selecting instruments for greening the economy. Moreover, when the potential adverse effects of sustainability measures on the business community are considered, the numerous government measures that benefit business in the Netherlands, such as low energy prices, low corporate tax and other tax benefits, are often overlooked. Finally, in

the Council's view, the fact that sustainability measures are based on international agreements should weigh more heavily in discussions about an international level playing field. Any impacts on the level playing field will therefore, in principle, only be temporary. Turning the burden of proof regarding disruption to international competitiveness on its head could help to balance the debate on this issue.

Core questions

Formulating a vision and goals

What is the vision for the transition and what are the goals?

Designing a roadmap

What steps must be taken to achieve the transition goals?

Determining an actor strategy

Which actors are needed to achieve the vision and goals?

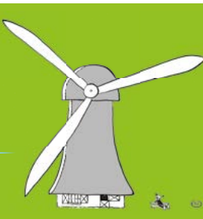
Choosing policy instruments

Which policy instruments are available to the government and how should they be used?

Points for consideration

Coherent vision despite uncertainty

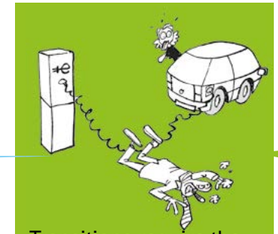
Short-term objectives as well as a clear focus on the final destination



Tension between economic renewal and established interests

Room for manoeuvre as well as a firm steer means the government has to adopt different roles

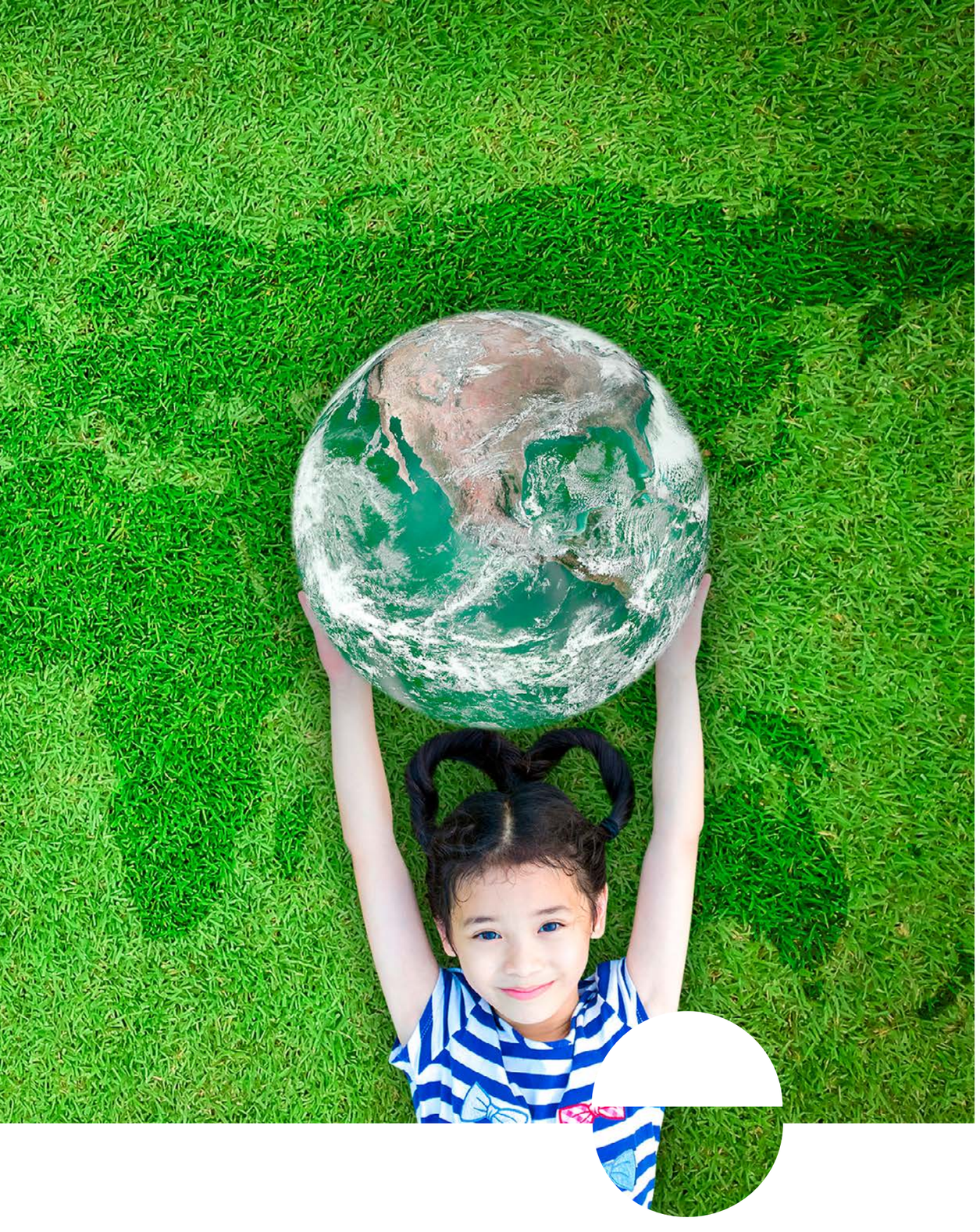
Support depends on more than evidence-based policymaking



Transitions require the use of different governance tools

Recommendations

- Develop a broad vision on the guiding principles and possible consequences of the sustainability transitions that will provide direction and mobilise society.
- Use ‘well-being’ – a broad concept of prosperity and welfare – as the guiding concept for elaborating the vision and balancing the various social objectives.
- Regularly assess whether or not the short-term objectives are still in line with the long-term vision and goals.
- Focus governance primarily on economic renewal and do this from a macroeconomic perspective.
- Right from the start of a transition consider the need to phase out certain activities in addition to adapting existing activities and building new niches.
- Bring in new players to promote economic renewal.
- Consult with the involved parties on the approach to complex transition processes, but be clear from the outset what the government's role is.
- Provide room for alternatives, but set clear parameters beforehand.
- Encourage political and public debate about the vision for a sustainable society.
- In the public debate on the transition give a balanced account of the costs and benefits and the opportunities and risks.
- Make more use of regulation and standardisation as steering instruments for greening market sectors.
- Accept that the governance of sustainability may cause an international competitive disadvantage in the short term, but turn the burden of proof for alleged impacts on the economy and well-being on its head.



1 INTRODUCTION

1.1 Sustainability transitions and government

In the decades to come Dutch society will undergo dramatic changes associated with the sustainability transition that is needed in many areas of life, such as energy supply, raw materials use and the food system. The changes will not only affect the built and natural environment, but also the way we work, produce, consume, feed ourselves, move around, etc. A sustainable society implies different production processes, skills, revenue models and rules; in short, an economy with a different economic structure. These kinds of wholesale changes are called transitions: fundamental, interconnected system changes in technology, institutions and culture that affect the whole of society (Van den Bergh & Kamp, 2006). In this report we refer to the transitions associated with the major sustainability challenges facing our society in areas such as energy, raw materials and food as ‘sustainability transitions’.

These sustainability transitions and their consequences for society are currently the subject of a broad public debate involving all sections of civil society, not only in the Netherlands, but in the rest of the world as well. The need for these sustainability transitions to ensure that the planet remains liveable for future generations is rarely questioned. The changes are necessary for society as a whole and will deliver benefits and opportunities, but they will not be painless. They will involve major investments and

costs and certain groups here in the Netherlands will be negatively affected right from the start. Moreover, transitions are characterised by numerous fundamental uncertainties and unpredictable dynamics, which means that choices will have to be made that will subsequently prove to have been based on incorrect assumptions or insufficient knowledge. For these reasons transitions will never follow a predetermined course; assumptions must be continually adjusted and the approach taken amended accordingly.

Against this background, the Dutch government has to make a number of well-considered strategic decisions regarding its own role in the sustainability transitions:

- What changes are desirable from a societal perspective and which are not, what public interests are at stake, what other interests play a role, what part does government have to play in balancing and promoting different interests?
- Should government take the driving seat, for example to direct the course and pace of change, and what instruments to do this does government have at its disposal?
- Which stakeholders in society (businesses, civil society organisations, individuals) can influence change and how does this affect the influence government wishes to exert?
- What possibilities does the Dutch government have to chart its own course in the European and global arenas?

1.2 Problem definition

In the light of the above, the central question in this report is:
How can the national government steer the transition to a sustainable economy, what strategies and instruments does it have at its disposal, and how can it involve society in the transition?

In answering this question, the Council for the Environment and Infrastructure (the Council) makes reference to three ongoing sustainability transitions: the energy transition, the raw materials transition and the food transition (see box).

Three ongoing sustainability transitions

The energy transition
Greenhouse gas emissions, especially from the combustion of fossil fuels, are causing the Earth to heat up, with several adverse consequences: rising sea levels, biodiversity loss and extreme weather events. The 2015 Paris climate agreement pledges to hold the increase in the global average temperature to well below 2°C and to pursue efforts to limit the increase to 1.5°C. Achieving this will require, among other things, a transition to renewable energy sources instead of using fossil fuels.

The raw materials transition
The sharp increase in the use of raw materials (oil and natural gas, minerals and metals, biomass) has made the Netherlands (like the rest of Europe) highly dependent on supplies of raw materials from other

countries. The shifting geopolitical balance of power is making both these supplies and their affordability less certain than before. The use of fossil raw materials also contributes to carbon emissions during the extraction and processing of materials and the use and disposal of products.
At the same time, our use of materials gives rise to a range of other environmental problems as well. What is needed, therefore, is a transition to a production and consumption system in which raw materials are used and reused more efficiently and in which the demand for raw materials is substantially reduced.

The food transition
The extreme efficiency of food production in the Netherlands makes the Dutch food sector a major player in the global food system. However, the Dutch agricultural system is reaching its limits: it is causing negative impacts on the environment and biodiversity, both at home and elsewhere in the world, and on human health and animal welfare. More recently, concerns have been raised about its contribution to climate change. What is needed, therefore, is a transition to sustainable and healthy production and consumption of food.

In this advisory report the Council formulates general conclusions and makes recommendations on the role to be played by government in current and future transitions, based on the study of three ongoing cases (the energy transition, the raw materials transition and the food transition). It is not the Council's intention to make concrete recommendations on government policy for these three cases.[1] Neither is this advisory report intended to be a handbook for transition governance, as the Council is aware that thinking on transitions and the part government has to play in them is still evolving and will probably never come to a final conclusion. The Council does want this advice to contribute to the further thinking on the part government has to play in sustainability transitions and to be of assistance to the government and all stakeholders in society during the many steps they will have to take over the years to make the Dutch economy more sustainable.

When drawing up an effective strategy for managing transitions, the government will have to answer at least four core questions. These questions provide the framework for this advisory report:

1. Vision and goals: what is the vision for the transition and what are the goals?
2. Roadmap: what steps must be taken to achieve the transition goals?
3. Actor strategy: which actors are needed to achieve the vision and goals and what is the government's relation with these actors?
4. Choice of instruments: which policy instruments are available to the government and how should they be used in the transition to a sustainable economy?

1 See previous advisory reports by the Council on the energy transition (Rli, 2018a; 2015a), on the raw materials transition (Rli, 2015b) and on the food transition (Rli, 2019, 2018b).

1.3 Structure of the report

In Chapter 2 the Council outlines the main insights into the governance of transitions obtained in the disciplines of transition studies, economics and public administration. A number of points that may be important in the development of government strategies for sustainability transitions are highlighted for further consideration. In Chapter 3 the Council examines the extent to which these issues resonate in Dutch policy and practice in the energy transition, the raw materials transition and the food transition. Chapter 4 sets out the Council's conclusions and recommendations on the governance of sustainability transitions.

2 INSIGHTS INTO THE GOVERNANCE OF TRANSITIONS

The course of transition processes and the strategies governments can use to steer these processes are being studied in various disciplines, including transition studies, economics and public administration. Research in these disciplines is delivering insights that complement each other and when brought together provide an overall picture. This chapter describes and explains the insights from each of the three disciplines. From the relevant literature the Council distils a number of general points for consideration which it believes the government should take into account when formulating its strategy for sustainability transitions.

2.1 Insights from transition studies

Complexity of transitions

Sustainability transitions take place within complex systems. Developments taking place in diverse areas of technology, markets, culture, infrastructure, policy, industrial and business structures, and production and logistical

chains are being played out in their respective arenas within the scholarly world, politics, government, official bodies, business and industry, civil society and households. A feature of complex systems is that the relationships between all these developments and parties are dynamic; the actions taken by parties influence each other, keeping the system in a constant state of flux. These changes cannot be predicted.

Course of transitions

How do transition processes unfold and which 'players' take part in them? In the field of transition studies, three levels are usually recognised at which transitions take place (see e.g. Geels et al., 2014):

- the 'landscape': the social trends over the long term, such as the growing climate awareness;
- the 'regime': the established practices, institutions and rules in the prevailing system, such as how energy generation and distribution is regulated;
- the 'niches': small sectors in which innovations are developed, both social (e.g. energy cooperatives as new organisational structures for the promotion of renewable energy) and technological (e.g. new ways of generating renewable energy).

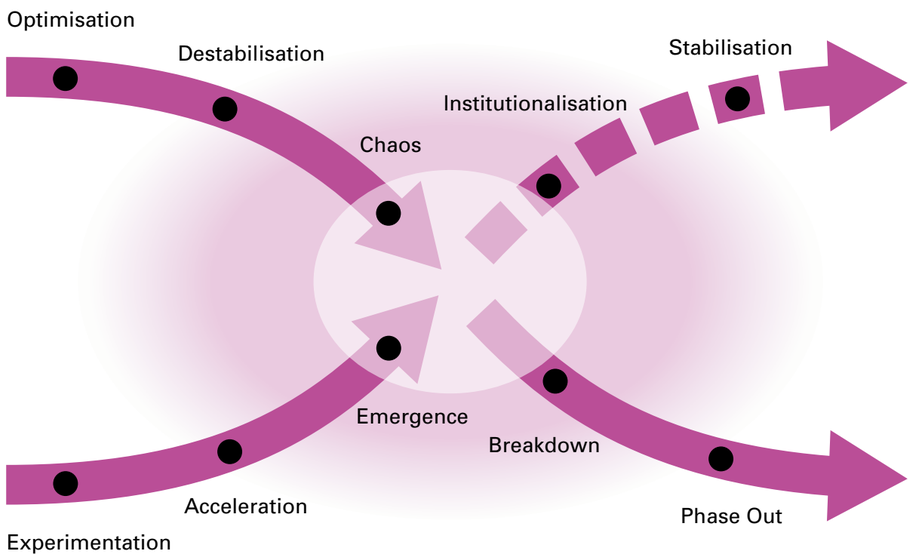
During a transition, regimes can adapt to changing circumstances. However, this is often a gradual process, because previous routines and structures will continue to determine the direction of travel for a long time to come ('path dependency'). Typically, niche and regime players will interact. They challenge each other, learn from each other, negotiate with each other and build new coalitions (Köhler et al., 2019). This interaction can be productive and help to bring the transition to fruition, but the process is not always a smooth one. Transitions affect the economic positions and revenue models of existing players, who will want to protect their own interests and may dispute the need for the transition or the pace at which it should proceed. Regime players may protect established interests for long periods, often because institutional processes, standards and rules are deeply rooted in the existing regime and can have an inhibiting effect on transitions. This desire for stability is at odds with the need for change. Innovations and new concepts invite radical and disruptive change, whereas existing systems and production and consumption patterns are deeply entrenched in the economy and society and often change only very gradually.

The process of 'building' from niches and the gradual 'phasing out' of elements of the old regime can be represented as an X-curve (Loorbach, 2014) (see Figure 1).

Niches are characterised by an initial period of experimentation and acceleration, followed by phases of strong growth, institutionalisation and, finally, stabilisation. This constructive expansion is accompanied by a concurrent decline in which the 'old system' is broken down in phases: first it is optimised and then it enters a period of destabilisation, followed by a chaotic phase leading to the breakdown and eventual phasing out of the old system. Although at the system level we can talk in terms of the 'old' and the 'new', the X-curve shows that parts of the old regime (players,

institutions) are reintegrated into the new regime – either in their original or an adapted form.

Figure 1: Patterns of building and phasing out in transitions: the X-curve



Source: Loorbach, 2014; Lodder et al., 2017, adapted by Rli

Public sector governance options

If the changes resulting from the interaction between the 'old' and 'new' elements of the system do not proceed quickly enough or in the right direction (with regard to the public interests at stake), questions will be raised about the governance options available to government. What aspects of transitions should the government take into account when determining how it can influence the course of events and deciding which governance roles to adopt?

The first aspect the government should consider concerns the above-mentioned complex nature of transitions. This complexity makes it difficult to predict the effects of governance. Small steps can have major consequences, while the effects of major interventions can ultimately be limited by counteractions elsewhere in the system. Termeer & Dewulf (2018) point to the potential of a 'small wins' approach: small but significant steps that quickly generate results, which in turn mobilises more parties to take the process further towards the transition goals.

The second aspect that influences the government's steering options is the diversity of interests involved in sustainability transitions. Sustainability is first and foremost a public interest that needs to be weighed up against other public interests, but private interests must also be considered. This appraisal involves a time element, that of balancing the interests of present and future generations. Finally, there are various territorial interests at the global, national, regional and local scales that must be taken into account. The governance of sustainability transitions is therefore normative; the government must take a stand and state its position on the goal and the direction of change. If private actors (e.g. businesses and consumers) are slow to adopt sustainable practices it is up to the government to take action.

The diverse interests involved and the normative nature of governance demand a process of collective visioning that can bring the ideas and development perspectives of the different players more into line (Hajer & Poorter, 2005). If the various groups in society identify with the tasks facing society as a whole, the chances of the transition eventually coming to a successful conclusion will be greater. The government should not only aim to create a passive acceptance of policy, but also focus on activating and mobilising the market and society. Developing a vision is not a one-off, distinct step in a transition process, but rather a tool for reviewing the process at various moments along the way to see if the chosen destination is still the right one or should be adjusted in the light of technological developments and shifts in public support.

A final aspect of relevance to the government's governance options concerns the long duration of transitions. Transitions easily span several decades. The innovation pathway from initial idea to widespread acceptance and application is a long one, and it takes a long time for systems to change. The length of time involved makes transitions unpredictable and uncertain, and the number of possible transition pathways is large. Political, social and cultural processes all contribute to this uncertainty. Paradoxically, though, the long-term nature of transitions increases their chances of success. If the long-term goals for the system as a whole are known beforehand and provide direction for societal change, the length of time involved provides opportunities for a flexible approach that can respond to developments as they arise (Vollebergh, 2018). Unexpected shocks can be avoided and the changes are easier to accept. This is helped by a learning approach in which practical experience gained from experimentation and demonstration projects is an integral part of the strategy.

2.2 Insights from economics

In the Netherlands, evaluations of the effectiveness of public policy lean heavily on economic analysis. Economic insights are therefore also relevant to the governance of major transitions. The economic conceptual framework described below (the Integrated Assessment Framework for Policy and Regulation – IAK) is used by all government departments in the preparation of policy and regulations. It also forms the basis for the government's cost-benefit analyses and for many of its policy and investment decisions.

Public interest and market failure as an argument for government intervention

The economic conceptual framework for policy analysis is built around two core concepts: the 'public interest' and 'market failure'. In economic terms, the public interest can be defined as maintaining a state of 'optimum welfare' in society. The guiding principle underpinning the framework is that the market – the entirety of supply and demand for goods and services – is best placed to bring about and maintain this level of optimum welfare. The idea is that as long as supply and demand are in balance, the market reflects the preferences of all actors and thus maximises welfare in the most efficient way.

If the market does not do its job properly and optimum welfare is not achieved, it is up to the government to intervene. In other words, not achieving optimal welfare leads to a public interest that legitimises government action. In economic theory, examples of 'market failure' are:

1. negative externalities;
2. public goods;
3. information deficiencies;
4. monopoly situations.

These forms of market failure (at least in part) are causal factors behind sustainability issues. From an economic perspective this can be used as an argument to justify government intervention to provide direction on sustainability issues.[2]

Re 1. Negative externalities

One of the obstacles to sustainability are negative externalities: this is when the prices of goods and services do not fully reflect all the costs and benefits to society associated with making and using these goods and services, such as the costs of a polluted environment and a changing climate. Government intervention is therefore needed to ensure that market prices better reflect the costs and benefits to society. This idea is the main principle underpinning the current policy instruments for greening the economy (see box).

Public sector instruments for greening the economy
(source: CPB, 2018, adapted by Rli)

Pricing

Pricing measures charge the costs of environmental damage to the polluter, making polluting activities more expensive and sustainable alternatives more attractive. Pricing measures work best if they directly address the cause of the environmental damage. Taxes and duties are pricing measures, but they are relatively costly to implement. Issuing emission rights to companies also gives them a price incentive to reduce environmental damage. This instrument is considered to be cost effective because it leads to emission reductions where they are cheapest to achieve, assuming that companies will look for the cheapest option.

Subsidies

An alternative to taxing dirty production processes is rewarding clean production processes. Companies are subsidised for introducing environmentally friendly forms of production, which encourages them to invest more in sustainable innovation and production methods.

Subsidies are relatively expensive to implement. An additional problem is that not all companies need subsidises, but all can claim them.

2 However, the possibility of government failure should also be considered when making final decisions on the action to be taken by government: issues such as the influence of lobbies on government policy, conflicting internal government objectives, inconsistencies between national government policies and regional and local government policies, and information deficits with regard to the private market can negatively impact the effectiveness of government policy (Baarsma et al., 2010).

Regulation (standardisation)

The government can set statutory standards for production and consumption activities that have adverse environmental impacts with the aim of curbing or prohibiting activities with a negative impact on society. Environmental legislation is an example of this strategy. Standards that incentivise companies to develop innovative alternatives to polluting activities are referred to as technology-forcing standards. Regulation has the advantage of clarity, but a disadvantage can be that businesses and the public are not stimulated to do more than the minimum necessary to comply with the standards. An additional disadvantage is that regulation does not automatically lead to efficient solutions and can limit innovation.

Behavioural measures

Behavioural change can also be achieved through information campaigns, information provision and 'nudges' (enticing consumers to make certain choices, for example by putting environmentally friendly products on supermarket shelves at eye level). Such behavioural measures can make pricing policies and regulation more effective.

Public investment

In some cases the government will consider the desired social effects to be so important that it decides to act as a producer or investor itself. The construction and management of energy distribution networks, for example, is a public task carried out by state-owned companies, such as TenneT (electricity) and GTS (gas).

Re 2. Public goods

Other forms of market failure may also need to be resolved during transitions. If a specific piece of knowledge or infrastructure is required for a transition but this is not provided by the market – simply because there is not yet a market for it – a situation arises in which there are 'public goods': goods which can only be produced through cooperation. That can also be a justification for government intervention, which is then legitimised by the need to create the required markets or give direction to existing markets.

For example, government intervention may be needed when established companies consider the financial risks of investing in innovative knowledge and technology to be too high. These companies can become 'locked into' the existing system of production facilities, infrastructure, accumulated expertise and knowledge infrastructure, and if that has a knock-on effect on government policy towards established companies there is a risk that the transition will fail. The more influence existing interests with market power have on the direction of research and development, the greater this risk becomes. Mazzucato (2013) points to what the government can do to solve such system failures. It can promote radical innovation if the market does not do so because of this fundamental uncertainty. Mazzucato (2019) argues that value creation is by definition a process of interaction between the market, government and society. If the transition has a public goal, the government should certainly not limit itself to curbing negative externalities, but should also work to produce public goods.

Re 3. Information deficiencies

A lack of relevant information, for example about the sustainability risks of products, can also lead to market failures during sustainability transitions. Providing information about the sustainability effects of goods can be a costly business for manufacturers, but it is important. If consumers are not able to come to a proper judgement about the sustainability risks of a product, there will be no incentive for manufacturers to produce it more sustainably or for consumers to pay for these costs. To remedy this type of market failure, the government can actively promote transparency in providing information about the sustainability of products. Flawed or inadequate information on production chains can also cause market failures. For example, if there is no transparent information about residual waste streams that can be of value elsewhere in the production and supply chain, supply and demand will not be matched.

Re 4. Monopoly situations

Monopolies and cooperation between businesses are regulated in numerous ways to protect consumers against the adverse effects of market power and price agreements. However, making more efficient use of raw materials and products may require new forms of cooperation between companies. It may be useful, for example, for companies to agree on standardisation of products to facilitate recycling. Such agreements are tolerated in practice under competition law as long as they do not lead to distortion of competition. This means that, under competition law, a balance must always be struck between social welfare in the short term (preventing cooperation that leads to market power and price agreements) and social welfare in the longer term (promoting cooperation that leads to more sustainable production and contributes to the transitions). These two interests may conflict with each other.

Cooperation between individuals

Cooperation between individual consumers deserves attention from an economic point of view. A model that complements the market with room for cooperation based on common values and responsibilities will be able to ensure that appropriate use is made of scarce raw materials (Ostrom, 2003). This calls for more scope for taking joint responsibility.

Incentives to derive maximum benefit from goods and services

In a market economy, market incentives encourage producers to adopt efficient production methods. In a circular economy, producers should be encouraged to make products that have a long life and from which consumers can derive maximum use, and that are designed to keep used materials in the economic cycle for as long as possible. Stegeman (2019) argues that this is prevented by several aspects of the current market organisation to do with conventional market pricing mechanisms and the way in which ownership structures have arisen. Stegeman analyses how better use of products, buildings and infrastructure can contribute to reducing the use of raw materials. Sharing or hiring products reduces the volume that needs to be produced and so reduces raw materials use. He argues that preventing incentives for non-sustainable activities in markets will require fundamentally new ideas on ownership, for example by separating property rights on raw materials from the functionality of

products. In such an arrangement, the raw materials remain the property of the producer and the only thing that is traded is the right to use the product.

2.3 Insights from public administration

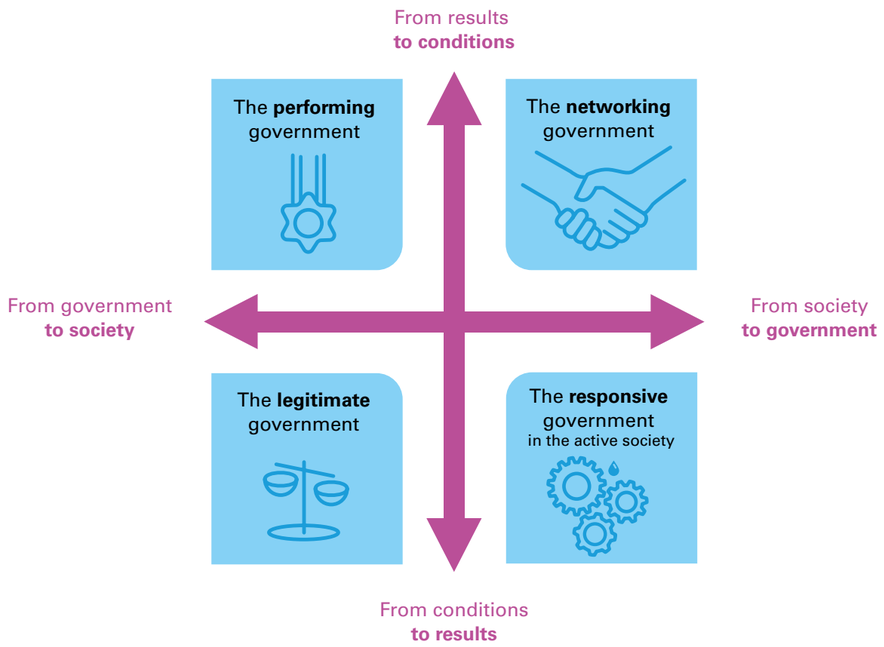
Four roles of government

The study of public administration also provides insights into the role of government in steering transitions and the use of policy instruments. Particularly relevant are the four roles of government as defined by the Netherlands School of Public Administration (NSOB, 2018) (see Figure 2).

1. The *legitimate government* focuses on the legitimacy of government action. Government is the defender of rights and obligations in society. Procedural diligence and equal treatment are paramount. The emphasis is on legislation and setting operational standards to be upheld by all parties in society.
2. The *performing government* focuses on the effective and efficient delivery of the agreed outcomes. In this role the government is responsible and accountable for the effective realisation of agreed objectives. This requires a more active deployment of government resources; in addition to legislation, the government also uses its own financial and human resources.
3. The *networking government* recognises that policy objectives are often only achieved in collaboration with non-governmental parties. To realise their own goals, partners can help to achieve similar or overlapping interests and goals. Coalition forming is key. Financial and human resources are deployed proactively to initiate change and mobilise other actors, for example by entering into agreements and providing co-financing.
4. Finally, the *responsive government* recognises that public value can be created not only by government, but also by other parties within society. The government does not so much seek to acquire allies in the pursuit of its own goals, but to participate in existing initiatives and activities which it can stimulate and facilitate with relatively small interventions, such as temporary financing or pre-financing and providing room for experimentation within the legal framework.

When steering sustainability transitions the government does not have to choose one of these four roles, but in practice will have to adopt a mix of roles in how it acts. Depending on the nature and scale of the task at hand and the phase the transition is in, the government may at times lean more towards one or the other. The government has to decide which role should be the starting point for each particular task at hand and then find ways to give sufficient practical expression to aspects of the other roles.

Figure 2: Four forms of governance



Source: NSOB, 2014, adapted by Rli

If parties in society are already working energetically to implement an agenda and the new niches required to drive the transition are therefore already in development, the government is best advised to direct it efforts to activities that belong to the networking or responsive role. Even if societal goals and interests dovetail well with the private interests of civil society stakeholders, the government should still lend its support to this energy in society, either through cooperation (the networking government) or by letting the parties in society take the initiative and play a facilitating role (the responsive government) (Van der Steen & Loorbach, 2016). If the necessary changes and niches do not emerge from within society itself, or if there are major conflicts of interest between social actors, greater commitment or participation on the part of the government will be appropriate, and greater emphasis on the legitimate or performing government will be needed to get the transition underway and keep it moving forward. The range of instruments suited to these latter perspectives can help to move established parties in the right direction if they display a tendency to resist the changes.

Political dimension of the governance of sustainability transitions

The four roles of government described here constitute a conceptual framework to guide government action during the various phases of sustainability transitions as effectively and efficiently as possible. It is assumed that the governance of sustainability transitions is based on well-informed policymaking in which policies are underpinned by and evaluated against the results obtained, the goals achieved and a cost-effective use of public funds.

Nevertheless, transitions are in essence political processes. By definition, therefore, there is more to it than technical effectiveness and efficiency. Transitions also involve profound changes in society, the economy and the institutional order. As a consequence, transitions create winners and losers, which leads to redistribution issues. Various individuals and groups (actors) will have different views on the desired direction of travel (vision and goals)

and about how to get there (substantive strategy and policy instruments). It is the responsibility of government and politicians to balance these collective interests and ensure there is a socially acceptable redistribution of costs and benefits. To this end it essential before embarking on sustainability transitions to conduct a wide-ranging public and political debate. In this political debate, perceptions, impressions and emotional aspects all play a part, as do political considerations motivated by the desire to acquire and hold on to power.

2.4 Findings from the literature

Designing a transition strategy is a complicated business. The Council draws the government's attention to six points arising from the literature discussed above that concern the 'tensions' which can arise during the process of decision-making by government. The need to provide direction clashes with the uncertainties that characterise transitions. For example, the desire for a cost-effective approach may be incompatible with the desired pace of the transition, and there may be friction between the need for change and resistance to change.

The following six points for consideration are discussed within the framework of the four tasks facing the government that are used to structure this report: (1) formulating a vision and associated goals, (2) designing a roadmap for achieving this vision, (3) determining an actor strategy, and (4) choosing policy instruments.

2.4.1 Points for consideration when formulating a vision and goals

Point 1: Transitions require a coherent vision on a sustainable society, despite the uncertainties about how that future will unfold.
A transition is a wide-ranging and profound process of change that affects many aspects of society. It results in radical changes to our values and what is considered to be 'normal'. An essential aspect of any transition strategy, therefore, is placing the sustainability transitions within a broader vision for the future of Dutch society. The government can then set out a clear, normative course for the various transitions as a whole.

A vision is essential to create clarity, mobilise society and maintain momentum for many years to come. However, whatever course is pursued, there will be both winners and losers. Choices will have to be made between a range of public and private interests, and so not everyone will be enthusiastic. Combined with the uncertainty about how the future will unfold, for individuals, businesses and institutions, this can pose a risk to progress. If there is much uncertainty and resistance, there may be a temptation to focus on just a single, more manageable aspect of the transition and/or on just the first steps to be taken. The danger then is that the bigger picture and longer term objectives will be lost from view.

Point 2: Short-term objectives are indispensable, but they must not detract from a clear focus on the final destination.
Because transitions are long-term processes, long-term goals set early in the process and accepted by society as a whole can help to create clarity

on the direction of travel. People and businesses will then be able to make appropriate plans and decisions. But to actually get these people and business to act it is also necessary to set short-term objectives and get some quick results. The danger, though, is that setting short-term objectives will (unintentionally) divert the long-term effort into old familiar ways, with the risk of foreclosing other, as yet unknown but possibly more effective options and endangering the prospects of reaching the final goal.

2.4.2 Points for consideration when designing a roadmap

Point 3: Transitions require economic renewal, but this often goes against the established order.
The transition to a sustainable economy necessarily involves the development of new economic activities. After an initial experimental phase involving many and various innovative initiatives, the ones that show potential have to be scaled up to form a stable economic basis (the 'building' phase). At the same time, existing economic activities will have to made more sustainable, possibly by learning from and cooperating with emerging and new players ('adaptation'). To prevent major shocks to the economy, this process of building and adaptation will be gradual. But the existing economy will not be able to remain intact; some elements will eventually have to disappear ('phasing out').

Although building, adaptation and phasing out are all indispensable for a successful transition, there is a chance that vested interests will resist radical change and attempt to slow down any changes. In this regard it is important to note that the government itself is part of the established order: the entire system of institutions, policy, rules, agreements and processes is largely set up to maintain the existing system, not to facilitate renewal by building the new and phasing out the old. Resistance, both outside and within government, is therefore inevitable and it must be overcome. The roadmap for the transition must anticipate this resistance and be prepared for it.

2.4.3 Points for consideration when determining an actor strategy

Point 4: Transitions require room for manoeuvre and a firm steer at the same time, which in turn means the government has to adopt different and sometimes contradictory roles.
Transitions will not get up steam and succeed if the business community and society do not get behind them. In its transition strategy the government should therefore seek to cooperate with a wide range of different actors. The networking and facilitating roles of government needed for this are not always compatible with the steering role of government needed to guide the transition to its conclusion. Effectively switching between these different roles of government in a dynamic environment of market players, civil society organisations and the public is a complicated business, but essential for a successful transition.

Point 5: Transitions will get nowhere without support, but this cannot be won with evidence-based policymaking alone.
Transitions cannot succeed without public support. It is therefore essential that sustainability transitions and the relevant policies are backed by clear, rational, substantive arguments. But that is not enough. The radical social consequences of transitions will directly affect people's lives; there will be redistribution effects and the social value system will undergo major changes. Transitions are not just substantive and rational processes, but are also characterised by uncertainty, perceptions, impressions and psychological factors. While arguments from rational policymaking processes are necessary, they are not sufficient for obtaining public support. The actor strategy must therefore also address the political process and find ways to engage with and reduce the psychological resistance to change in society.

2.4.4 Points for consideration when choosing policy instruments

Point 6: Pricing measures can be effective, but transitions require the use of other governance tools as well.
The main plank of current government policy is that the market is best placed to bring about optimum social welfare. According to economic theory, pricing measures are the best tools for repairing or preventing market failures. In the case of transitions, however, other failure factors are involved which legitimises government intervention. For example, there is a risk that existing market players will not initiate vital innovations because of the considerable uncertainties involved, and that when market players do pursue innovation they will not make a clean break with the past, whereas transitions require a fundamental change. Achieving sustainability transitions may therefore also demand a more profound shift and an overhaul of the regulations to make it clear which market practices are desirable and which are not.

3 TRANSITION POLICY IN PRACTICE

In this chapter the Council examines to what extent each of the six points formulated in the previous chapter from a review of the literature on transitions is an issue in Dutch policy and practice. This assessment is made on the basis of three case studies – the energy transition, the raw materials transition and the food transition – and revisits the processes of (1) formulating a vision and goals, (2) designing a roadmap, (3) determining an actor strategy, and (4) choosing policy instruments.[3]

3.1 Formulating a vision and goals

Point 1 in practice:

Transitions require a coherent vision on a sustainable society, despite the uncertainties about how that future will unfold.

The three transition cases (see Appendix 2) show that at the moment the government's ideas about the transition agendas are to a certain extent

3 Dutch policy on each of these transitions is set out in more detail and commented upon in Appendix 2.

normative and provide some guidance on the direction to be taken, but also that they are often limited to subsystems and sectors, such as the energy system and the agricultural sector. As a result, relatively little attention is given to the broader social consequences and the significance of these developments to society in the future. Thinking remains rooted in existing production processes and the technological solutions linked with these are proposed as the first steps to be taken. The need to explore the potential of different options is not being given the attention it deserves.

The Council observes a certain reticence on the part of the government when drawing up transition visions, due in part to the complexity of the material and the uncertainties involved. Those visions that have been established are therefore relatively limited in scope. Picturing the route a transition will take for a single subsystem is difficult enough and is subject to considerable uncertainty, so linking several subsystem transitions into a broader vision of the consequences for society is clearly a much more complex business. However, the Council feels that the government's narrow vision runs the risk of channelling the process towards system optimisation rather than system change, which could easily prevent the full realisation of the transition agenda.

Moreover, in the visions that it has formulated for the transitions, the government has been reluctant to make normative pronouncements about the type of society that will emerge from the transitions. For example, the transitions will inevitably involve changes in the degree of individual freedom of choice and the value placed on economic growth, but these aspects are hardly touched upon in the visions. Neither is the competition between different social goals. The Council believes that a critical aspect in all this is the tension between sustainability and economic growth. While reducing CO_2 emissions is considered to be important, so is the maintenance of economic earning power. Such competition between goals reflects the great diversity of underlying public values (ecological, social and economic), private interests and government interests that are involved in transitions involving the whole of society. The government's thinking does not properly address whether or not goals and sustainability conditions are compatible, who will be negatively affected and what the government's views on this are.

Point 2 in practice:
Short-term objectives are indispensable, but they must not detract from a clear focus on the final destination.
The case studies provide insights into the various ways in which goals are used in Dutch policies to steer transition processes. Goals clarify the direction of travel and what this will involve. The main purpose of some goals is to be a marker on the horizon to mobilise action (e.g. a circular economy by 2050), while others are accountable, fixed, short-term targets (e.g. a 49% CO_2 emissions reduction by 2030). The differences in practice can be partly explained by the phase differences between the transitions. The technical parameters, definitions and rationale for the transitions to a circular economy and to a circular agriculture are less developed than for the energy transition, which means the possibilities for setting concrete targets in these transitions are somewhat limited at the moment. Another

difference between the transitions is the diversity of underlying issues. The great diversity of issues in the raw materials transition makes it less suited to an approach that aims for a single generic and specific goal. The main goal of this transition, therefore, is more qualitative and requires further operationalisation into a number of separate objectives for specific issues.

The Council notes that the Dutch government sets policy goals not only to give direction to transitions, but also to manage the pace at which transitions take place. Interim objectives are set to ensure that transitions unfold gradually without any major shocks, while at the same time keeping up the pressure to make the necessary changes in time. This entails a risk: most of the interim objectives can be met by optimising the existing system, for example by improving efficiency, but it is uncertain whether such measures will be sufficient to achieve the final goal. The case studies revealed that the parties concerned are aware of this. For example, the National Climate Agreement states that CO_2 storage should not prevent the adoption of alternative transition technologies (Klimaatakkoord, 2019). However, in practice there is still a risk of further lock-in to the existing system, which would make it more difficult to complete the transition.

3.2 Designing a roadmap

Point 3 in practice:
Transitions require economic renewal, but this often goes against the established order.
The three cases show that in the initial phase of a transition the emphasis is on the upward half of the X-curve: stimulating innovation, facilitating experimentation, stimulating voluntary agreements, etc. All these actions are needed to gain some initial momentum and reveal the opportunities the transition opens up. The food transition is still largely in this phase and the implementation programme for the circular economy still consists of many initial actions and preparatory activities. Active governance on the downward half of the X-curve – phasing out and adapting non-circular activities in the regime – is still absent. Among the regime players there are certainly some frontrunners, but their participation is voluntary and they account for just part of the whole playing field.

The energy transition is in a more advanced state and is now around the crossing point in the middle of the X-curve (Rli, 2019). The roadmap is now being turned into packages of concrete measures, budgets and instruments, which also involves dividing the responsibilities, tasks and costs between the parties involved. The existing economic activities of the regime players are now fully in the picture, with a growing emphasis on compulsion rather than voluntary action. An example in the electricity sector is the announced closure of the coal-fired power stations (phasing out). The industrial sector is committed to an active adaptation strategy aimed at making

existing industrial activities greenhouse gas neutral. But because so far the emphasis has been on reducing carbon emissions by making efficiency improvements and there has been little or no adaptation, let alone phasing out of unwanted economic activity, progress has been laboured and marked by friction between maintaining the old and introducing the new.

3.3 Determining an actor strategy

Point 4 in practice:

Transitions require both room for manoeuvre and a firm steer at the same time, which in turn means the government has to adopt different and sometimes contradictory roles.

The case studies show that the government does indeed adopt different roles, although not as part of a reasoned strategy. The standard role chosen by the government would appear to be that of the networking government, regardless of the phase the transition is in. However, the government's role does shift during a transition. For example, the governance process for the energy transition began with a networking government approach in which setting the agenda and goals was largely the responsibility of government, but the follow-up process (tightening up the vision, operationalising the goals, detailing the strategy and deploying policy instruments) took place in close consultation with business and civil society. Subsequently, however, once the draft National Climate Agreement had been prepared, the government opted for more of a steering role – although this change in role ran counter to the expectations of the original network partners.

Point 5 in practice:

Transitions will get nowhere without support, but this cannot be won with evidence-based policymaking alone.

The cases show that the Dutch government acknowledges the importance of public support and involvement in the transitions and tries to promote and facilitate such support in various ways. One of these, as set out in the National Climate Agreement, is to aim for a balanced distribution of costs and benefits across the different groups in society and between people and business. However, this still seems to be based on the assumption that our economic system will remain unchanged, despite the transitions the country has embarked upon, and that any real 'pain' can be avoided by some shrewd redistribution.

The Council observes that the government is also working to garner support for the transitions by involving civil society organisations (nature conservation and environmental organisations, trade unions and membership organisations such as the Royal Dutch Touring Club ANWB) in the various social agreements. These organisations are being given a voice in the consultation processes because they represent large sections of Dutch society. In representing their specific 'target interests' they can help to shift the public debate and build broad public support for policies and measures. However, the Council notes that the influence and representative nature of these organisations has come under pressure in recent years and this has reduced the ability of these organisations to effectively generate support among the population. A related issue is the complexity of the transitions and the shifting tensions between old and new. We see that

while new developments and emerging parties (such as new niche players) are needed to move the process forward, in practice it can be difficult for the government to involve them in shaping the transition strategy. One of the reasons for this is that these parties as yet have little or no organised representation.

Finally, the government is also working on generating support for the transitions by giving people a voice in the preparation of policy on issues facing society. Attempts to do this include the Energy Dialogue and the Climate Dialogue, held in 2016 and 2018 respectively to inform the energy transition. The government is also making an effort to involve the public in the implementation of agreements, such as the development of the Regional Energy Strategies, the transition to gas-free neighbourhoods and the spatial integration and operation of green energy projects. Despite these initiatives, though, the Council observes that there is still no real public or political debate on where the transitions should take us, whereas it is precisely this question that people are concerned about. They are apprehensive about the consequences the transitions will have for their day to day lives.

3.4 Choosing policy instruments

Point 6 in practice:

Pricing measures can be effective, but transitions require the use of other governance tools as well.

The three cases show that a wide variety of policy instruments are being used. Contrary to what is advocated by the academic community, the Dutch government is reticent about pricing the negative social impacts of economic activities. Businesses are being nudged in the desired direction mainly through the provision of subsidies and other positive incentives. Pricing measures are used selectively, in an international context, within the EU's emissions trading scheme (ETS) for energy-intensive industrial and energy companies. Moreover, the National Climate Agreement includes an additional CO_2 levy for these companies to ensure that the agreed emission reductions are achieved.

Regulation and standardisation are important instruments in general environmental policy. However, in the transition cases described above we see that regulation and standardisation are used mainly to regulate semi-public sectors and utilities – such as the ban on burning coal for the generation of electricity – or on a small scale – such as phasing out scooters with internal combustion engines. In the case studies, regulation and standardisation are not widely used to steer market sectors (i.e. companies) in the desired direction.

The Council points out that maintaining a level international playing field is an important consideration when choosing instruments for implementing Dutch policies on sustainability transitions. This throws up an unwelcome choice between pursuing national policy or supporting international policy. The Dutch government also wrestles with the question of how national sustainability policies for energy and raw materials use and for food production should relate to policies in other countries. This issue is particularly pertinent in sectors competing in international markets where margins are tight and costs are a significant competitive factor. This is found in all three transition cases: in the energy transition for the energy-intensive industries, in the food transition for the agricultural sector and in the raw materials transition for sectors such as manufacturing, chemicals and food.

The Council observes a certain tension between on the one hand the desire to be at the forefront of international development and marketing of new products and production processes – with the aim of achieving the desired goals and sustain earning power in the Netherlands over the long term – and on the other hand the fear of pricing Dutch industry out of the market in the short term, undermining its profitability or forcing it to relocate elsewhere. The degree to which this dilemma is an issue depends among other things on the phase the transition is in. At the moment this is a bigger issue in the energy transition than in the raw materials transition, for example, because mandatory measures are already being adopted in the former, while the latter is still largely in an exploratory stage.

The Council also observes that existing international coordinating mechanisms, such as the Paris climate agreement and EU-wide agreements, do not inspire sufficient confidence. There seems to be a fear that other countries will drag their feet, resulting in an uneven playing field which could erode the competitive position of businesses and even whole sectors. In turn this could lead to businesses going bankrupt, investing elsewhere or relocating. It could also lead to the 'leakage' of CO_2 emissions to countries with less stringent climate policies. In that case, an energetic national policy could actually put the brakes on progress towards international climate targets.

4 RECOMMENDATIONS

In the previous chapters the Council identified several points from the academic literature concerning government policy on sustainability transitions. It also analysed to what extent and how these are an issue in the Dutch situation. How should national government respond to these issues to ensure that the sustainability transitions the country is embarking upon can be taken forward and brought to a successful conclusion? In this chapter the Council makes a number of recommendations, again arranged in the order of the four main elements of a transition strategy: formulating a vision and goals, designing a roadmap, determining an actor strategy and choosing policy instruments.

4.1 Recommendations on formulating a vision and goals

Point 1: Transitions require a coherent vision on a sustainable society, despite the uncertainties about how that future will unfold.

Recommendation 1:
Develop a broad vision on the guiding principles and possible consequences of the sustainability transitions that will provide direction and mobilise society.

To develop a good transition strategy, national government must form a coherent picture of the consequences of creating a sustainable society and the imbalances it will create, and where possible steer change in an appropriate direction. The current situation with separate policies for each of the transitions is therefore not up to the task. The Council realises that preparing such an all-encompassing vision is a complex business: it is not just a question of working out the future opportunities and threats, but also of reflecting on the interrelationships between the sustainability transitions and other developments, such as geopolitical developments, urban development, digitisation and social and cultural trends. But this complexity must not be an excuse for failing to develop a vision. However complex it may be, a 'wider narrative' on creating a more sustainable Netherlands is certainly needed. This strategic vision must show how economic growth can be linked to achieving social and ecological objectives (see also Putters, 2019).

This story must be more than just an inspiring and idealistic picture of the future. The purpose of a broad vision as intended by the Council is to create a clear picture of the desired direction of travel and to mobilise society. The Council realises that preparing such a vision is a complex task. It is therefore vital to determine what the ingredients of such a vision should be. In the Council's view, it should contain the following elements (some of which are discussed in this report):

- a clear argument for (a) the need for a transition to sustainability (because an unsustainable economy will threaten the very foundations of society) and (b) the value of sustainability (because in the end it will lead to a richer rather than a poorer society);
- a definition of the various transitions involved and how they hang together;
- a set of starting assumptions (what do we mean by welfare, how do we want to earn our living, how should we deal with the inevitable tensions

that will arise between the old and the new, what is the government's position in relation to civil society and individuals, how can the policy instruments be deployed, and how can all this be reconciled with the Netherlands' position within the wider international community?);

- normative decisions on issues such as cost allocation, freedom of choice and redistribution effects (which may differ or be weighted differently in each transition);
- an idea of the destination, not in the form of a blueprint, but rather a set of provisional benchmarks against which developments and transition plans can be assessed (visualisations, such as in Panorama Nederland (CRa, 2018) can be helpful in this regard; integrated scenarios and trend analyses by the policy assessment agencies should serve as a conceptual and evidence base);
- a view on the allocation of sufficient public funds.

The Council does not see the creation of a vision as a one-off exercise, but an ongoing process that can incorporate lessons learned from experiences. It will emerge in different places and times and may be recorded in various documents, not just in a single national policy document or coalition agreement; it may also take shape in a series of annual government documents, such as the Budget Memorandum, the Speech from the throne, the government budget and the national government annual financial report. Such a coherent vision acts as a compass and marker on the horizon for setting interrelated concrete objectives across a range of policy areas.

Recommendation 2:
Use 'well-being' – a broad concept of prosperity and welfare – as the guiding concept for elaborating the vision and balancing the various social objectives.

The changes in the workings of society set in motion by the sustainability transitions will inevitably lead to competition between different public goals. The concept of well-being provides a useful framework for balancing the different values within society.

What is well-being?

Well-being comprises everything that people value. The concept is much broader than material prosperity in the form of income and consumption. It includes things like health, education, environmental quality, political freedom of expression, social cohesion, personal development, safety and economic security. Moreover, it not just about well-being 'here and now', but also the well-being of future generations and people elsewhere on the planet (CPB et al., 2018).

The Monitor of Well-Being (CBS, 2018) shows that most indicators of well-being in the Netherlands have improved, also relative to other European countries. However, the indicators for environmental quality and sustainability show a relatively poor situation in the Netherlands, both for the 'here and now' and for effects occurring 'later' and 'elsewhere' (CBS, 2018).

This concept of well-being is useful when addressing how to respond to the tensions between growing and greening the economy. The transition to a sustainable economic structure may have to be made at the expense of traditional economic growth (defined as the trend in national income), at least in the short term. However, this decline in economic growth in the narrow sense may be necessary to secure long-term sustainable economic growth, measured in terms of well-being, and thus for achieving the sustainability targets. In that case, a certain trade-off between well-being now and well-being for future generations will be unavoidable.

At the moment the government uses this broad concept of prosperity and welfare mainly to determine ex post how society has developed and what part national government policy has played in this process. The Council believes that the concept can also be used ex ante to analyse and prioritise the various public interests that may compete with each other during a sustainability transition. The Council considers that more use could be made of this approach when determining the goals of a transition policy. The Council therefore argues for a more forward-looking use of this broad concept of well-being when deciding what action government should take to green the economy and when balancing the various social objectives. In doing so the Council concurs with the advice by the Council of State on well-being (Raad van State, 2018).

Point 2: Short-term objectives are indispensable, but they must not detract from a clear focus on the final destination.

English translation: – GULP! – Piggy banks don't emit nitrogen, do they??

Recommendation 3:
Regularly assess whether or not the short-term objectives are still in line with the long-term vision and goals.
Intermediate, short-term objectives are useful if they help to move the transition towards the final goals at the right pace and in the right direction. Given the complexity of transitions, it is sometimes unavoidable that short-term objectives will be achieved through the use of currently available technologies – even if they have little or no place in the long-term vision.

At the same time, though, care must be taken to ensure that solutions needed to achieve short-term objectives do not form an obstacle to achieving the long-term goals. Examples of such risks the government should be aware of are the use of residual heat from industry in district heating schemes and carbon capture and storage to reduce industrial CO_2 emissions.

4.2 Recommendations on designing a roadmap

Point 3: Transitions require economic renewal, but this often goes against the established order.

English translation: Granddad (90) used to be a relic of the old economy… But now he's part of the brand new economy. Just a question of sitting put.

Recommendation 4:
Focus governance primarily on economic renewal and do this from a macroeconomic perspective.

It is in the public interest that transitions proceed without major shocks or disruptions to society. In view of this it is understandable that the government seeks a proper balance between the old and the new and between building, adaptation and phasing out specific parts of the economy. However, a risk is that the balance will tip towards adapting the old and that renewal will be sought primarily within the existing system. In the Council's view, such a strategy could inadvertently lead to a conservative agenda aimed primarily at maintaining the existing system, but this should never be a goal in itself.

This risk is increased if economic renewal is sought at the sector level, as is the case in the industrial and agricultural sectors. The part to be played by each of the individual economic sectors or industries in the sustainable economy can only be determined with any confidence by looking at the sustainability transitions from a macroeconomic perspective. Maintaining economic earning power at the sector level should not be a goal in itself. Economic growth at the macro level is also possible without growth in the existing economic sectors, as long as they are replaced by other – less polluting – economic activities. Contraction in one sector can be compensated for by growth in another, in terms of both production and employment. Focusing policy too much on separate economic sectors distracts attention from the broader issues surrounding the development of a sustainable economy as a whole.

The components of the economic system, such as the energy system and the food system, will eventually come to an end in their current form. This is inevitable, given the seriousness and urgency of the sustainability agenda. This process will be accelerated by various developments – the digitisation transition, economic activities arising from new IT applications, artificial intelligence, robotisation and 3D printing – and new revenue models within the circular economy. A new 'technology platform' will emerge as the basis for the further development of the economy.

The substantive strategy should address the issue of which elements from the old system can be incorporated into the new system, which involves questions such as these:

- For how long will both systems exist side by side?
- Which elements from the old system will be needed for the development of new economic activities?
- When will the limits of optimising the existing system be reached?

Governments and market parties may approach these questions from different standpoints. The government should regularly review its substantive strategy, at least on the use of its own financial and human resources, to determine whether or not it would be appropriate to stop investing in parts of the old system, and if so, when and how quickly it should withdraw these investments, and also to determine which investments it should still be making. In short, in sustainability transitions the government should think more about the need for a different economic structure instead of focusing on making the existing structure more sustainable. The Council draws attention to the risk that the Netherlands will miss the boat economically if it tries too hard to keep what it already has (and tries to make that more sustainable), while there may be world to win, both for the economy and for sustainability, by more actively investing in other economic activities.

Recommendation 5:
Right from the start of a transition consider the need to phase out certain activities in addition to adapting existing activities and building new niches.
When executing the roadmap it is important right from the start to consider the need to phase out (and adapt) existing regimes and develop new niches. In the initial phase of a transition, the government has a tendency to promote innovation, facilitate experimentation and encourage voluntary agreements – all of which are valuable in getting things going and revealing the opportunities the transition presents – but the Council points out the need during the initial stages of a transition to also pay attention to phasing out (as well as adapting) the existing regime. This is because if the conditions underpinning the existing system do not change, that regime will retain its competitive advantage and the niches being stimulated will remain at a competitive disadvantage. Moreover, if no changes are made to the existing regime there will be a greater chance that the transition will cause more disruption as the need for change becomes more urgent. The government should in any case make the most of the opportunities it has as a client or market player, as described in the National Climate Agreement.

Recommendation 6:

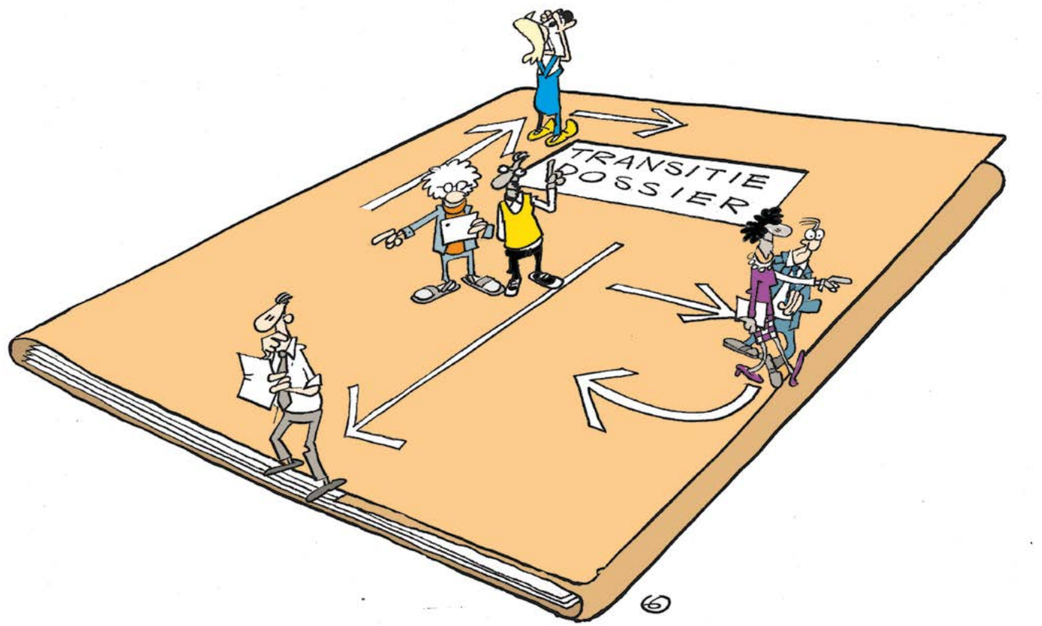
Bring in new players to promote economic renewal.

At the moment the government's transition strategy focuses on action by existing organisations. These organisations (and the interests they stand for) are part of the existing system. The existing system is therefore influential in determining the nature of the agreements made on the transition process. Other options within that process that do not serve the interests of existing players (for example because they do not play a part in it) are therefore less likely to come into the picture.

The Council realises that the involvement of existing parties is to a certain extent unavoidable, in particular to achieve the short- and medium-term transition objectives (such as the CO_2 reduction targets for 2030). However, the Council warns against the risk mentioned above of further optimisation and lock-in to the existing system. Such a state of affairs will ultimately prevent the realisation of long-term goals and the transition to a new and sustainable economic system. Existing players should not therefore be given a decisive role in the transition process. Instead, the new players that emerge during a transition process must be given a prominent place at the table in discussions with government.

4.3 Recommendations on determining an actor strategy

Point 4: Transitions require room for manoeuvre and a firm steer at the same time, which in turn means the government has to adopt different and sometimes contradictory roles.



English translation: Transition file

Recommendation 7:
Consult with the involved parties on the approach to complex transition processes, but be clear from the outset what the government's role is.
The Netherlands has a rich 'polder tradition' in achieving complex policy objectives: civil society is consulted and consensus is sought with stakeholders on the strategy to be followed and the measures to be taken. The current approach to the transitions, as set down in the agreements with private and social partners on the policies for renewable energy, reducing greenhouse gas emissions and reusing raw materials, are in keeping with this tradition.

In general, the Council sees this 'polder model' as a good starting point for formulating a common approach to complex transition processes. A joint process ensures that each party contributes their own specialist knowledge and that there is support for the approach and measures to be taken, and the fact that the parties are involved in implementing the agreements makes the whole process more effective. The government may adopt different governance philosophies depending on the phase the transition is in or the nature of the transition agenda.

The 'polder model' of governance usually leads to a joint agreement on the result to be achieved and how to achieve it. The Council distinguishes between two types of such agreements: (a) an agreement in which the government is a formal party; (b) an agreement with the status of an advice to the government. In the second situation the government is often involved in the preparation of the agreement, but is not formally a party to it.

An example of this type of agreement are the advisory reports by the Social and Economic Council of the Netherlands (SER).

The Council considers both types of agreement to be good instruments in themselves and appropriate for use in transition processes. Which of these is the best approach to take for each transition or part of a transition should be determined on the basis of a situational assessment, with due consideration given in advance to the arguments for and against. The Council draws attention to the following considerations:

- Arguments for government participating as a formal party are that the agreement can be reached relatively quickly and the government is committed to it. Once the agreement is concluded, all the negotiating parties know where they stand. It is essential that, as a negotiating party, the government has sufficient political mandate from the Cabinet and the House of Representatives, because once the agreement has been concluded there is little room for any political input after the event. It should be noted that such agreements cannot contain any binding commitments on new legislation, the granting of licences and permits or other decisions for which public law procedures have to be followed at a later date, such as the law-making process and public consultation and appeal procedures. As a party to agreements with civil society parties, the government is able to commit itself to a best-efforts obligation with regard to legislation and the granting of permits, but cannot commit to specific outcomes.
- Arguments for the second option – negotiation between civil society parties and a subsequent political appraisal of the result – are in a certain

sense the opposite. One argument for the second option is that it leaves more room for political appraisal of the result and thus more leeway in the design of legislation and decisions on authorisations and permits. This option has the least impact on the role of parliament. However, the whole process may take more time. Moreover, it is less certain that the outcome of the negotiations will be upheld in the political process. The parties to the agreement can reduce these uncertainties by inviting the government to participate on an informal basis during negotiations, which will allow them to gauge the political room for manoeuvre.

The greater the social and political impact of the task at hand and the more legislation and licensing is required as a result, the Council believes there is more to be said for the second option. However, the Council also stresses that the arguments for and against must be carefully weighed up, that civil society stakeholders must know where they and the government stand, and that there can be no question of the government ever negotiating away powers or rights under public law that at a later stage fall to parliament or the public.

Recommendation 8:
Provide room for alternatives, but define clear parameters beforehand.
As mentioned above, the Council takes a positive view of consulting with civil society stakeholders and working together to achieve the goals. Stakeholders are given a framework for action and a set of transition goals. Drawing up this framework is, in principle, a political decision that has to be taken before negotiations take place. Sometimes these goals are fixed as a result of international obligations and sometimes they are domestic commitments, but this does not prevent consulting with stakeholders on the goals, particularly when they become more specific. Ultimately, however, political goals are embedded in the negotiating framework and are not themselves negotiable during the public consultation process.

It may be helpful, if at all possible, for the government to propose an arrangement that will guarantee the desired outcome (achieving the stated goal). Analogous to the 'replacement decision' (*Omwisselbesluit*) used in the Room for the River flood risk management programme, stakeholders would then have an opportunity to propose alternatives. Any restrictions or conditions the government imposes on such alternatives must be set out in advance in the framework to be provided to the parties. These conditions may concern, for example, the availability and use of public resources (financial and non-financial) or the desirability or otherwise of redistribution effects.

Point 5: Transitions will get nowhere without support, but this cannot be won with evidence-based policymaking alone.

Recommendation 9:
Encourage political and public debate about the vision on a sustainable society.

The preparation of the National Climate Agreement shows that a radical sustainability transition can be accompanied by a vigorous public and political debate and that the timing of the debate is unpredictable. For a long time renewable energy and climate change have been investigated and debated within the relative quiet of the scientific and policy communities, on the assumption that they enjoyed broad public support (at least in general terms). The course of the negotiations on the National Climate Agreement show that as the consequences of a transition and the measures to be taken to achieve the goals become clearer, support can rapidly ebb away (I&O Research, 2019).

This only underlines the importance of a broad vision on a sustainable society (see Recommendation 1). A transparent and public dialogue on such a vision gives all stakeholders in society the opportunity to get to grips with what is going on and decide what they think about it. Such debate should obviously take place in the House of Representatives, but not exclusively. Public debate is an essential response to the fundamental issues thrown up by transitions and should take place in various places and times in the transition process; the content and timing of the debate can only be managed to a limited extent. Informing and stimulating debate is the joint responsibility of various players, including the national government (both politicians and officials), civil society organisations and, not in the last place, political parties.

National government made a point of involving civil society organisations in the National Climate Agreement process as they represent specific constituencies and special interests. However, the Council believes that involving such organisations can never take the place of a wide-ranging public debate on the nature and direction of transitions. This broad debate is all the more necessary now that the political landscape is fragmented and polarised and the outcomes of elections have become highly unpredictable.

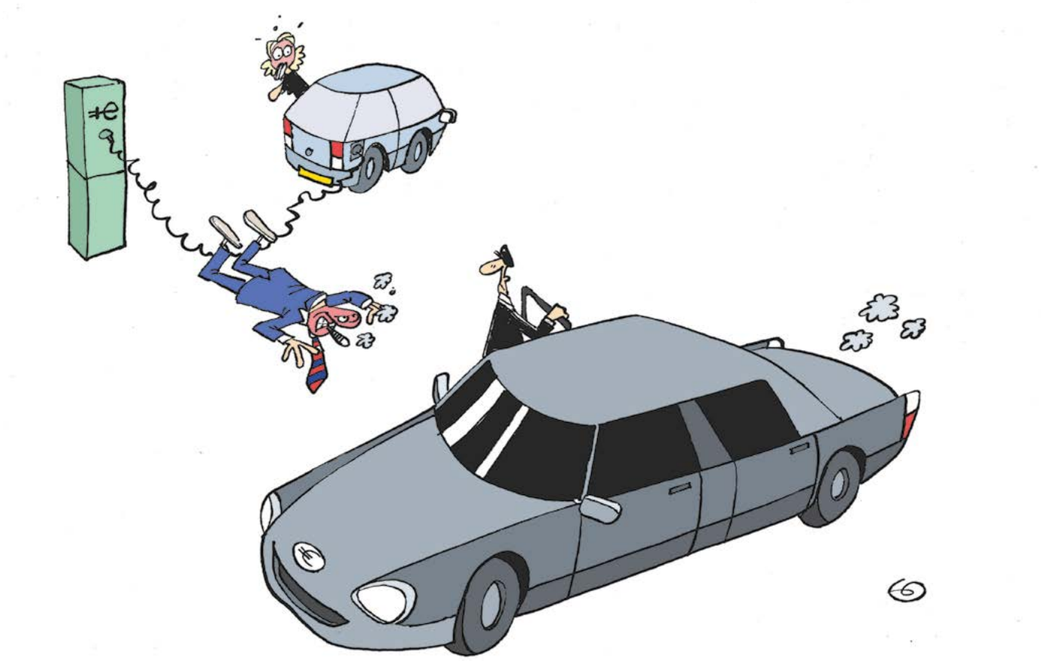
Recommendation 10:

In the public debate on the transition give a balanced account of the costs and benefits and the opportunities and risks.

The sustainability transitions will without doubt have consequences for society. People's fixed routines and lifestyles will change and some businesses will pick up on the opportunities offered by the transitions and profit from them, but there will be losers too. The possible consequences of these developments are already the subject of discussion among the public. People are concerned about having to trade in certain standards and lifestyle comforts and the possible widening of social divisions. The Council believes these are legitimate concerns; the transitions can only be successful if all the consequences are explained and discussed in full. At the same time, a sustainable economy and society will provide opportunities to create new social values. In the opinion of the Council the government must highlight the benefits and opportunities of the transitions in the public debate on the vision on a sustainable society.

4.4 Recommendations on choosing policy instruments

Point 6: Pricing measures can be effective, but transitions require the use of other governance tools as well.



Recommendation 11:

Make more use of regulation and standardisation as steering instruments for greening market sectors.

In Chapter 3 the Council observed that the government's transition policy makes only selective use of pricing in market sectors. In addition, in the

cases studied, regulation and standardisation are mainly used in semi-public sectors and for utilities or on a relatively small scale. The Council believes that governance of transitions in market sectors requires the robust use of both pricing measures and regulation.

The main argument for pricing is to achieve transition goals at the lowest social costs. The Council concurs with the pre-advice of the Royal Dutch Economic Association KVS which states that this instrument should be used more frequently and widely in market sectors (Vrijburg et al., 2018). Pricing measures are most effective in market segments where price increases lead to reduced demand for polluting products and in segments where price increases provide an incentive for innovation in polluting production processes or the development of less polluting alternative products.

However, using pricing as a policy tool gives little control over when and how the desired outcomes will be reached. The Council therefore feels there are arguments for the government to make more use of regulation and standardisation to steer transitions in market sectors, particularly when the aim is not only to reduce local environmental impacts, but also to regulate individual sources of environmental impact. Examples of such measures are environmental permits for emissions of hazardous substances and setting vehicle emission standards. As soon as something is no longer accepted by society, the most stringent form of regulation – prohibition – can be brought into play. Smoking at work and in public places is a good example of this. And under the Paris climate agreement, for example, CO_2 emissions must be reduced to virtually zero by 2050. There will come a time, therefore, when standardisation and regulation will replace pricing altogether.

Incorporating incrementally rising targets into legislation so that all concerned have sufficient advance notice will make it possible to create the conditions for a gradual transition towards a sustainable economy. Regulation also has advantages for the business community. It provides clarity about the statutory and legal framework within which businesses can invest and it provides certainty about the economic conditions for profitable investment. In addition, regulation plus specific sustainability targets set early in the process will help to create markets for sustainable products and processes.

The governance of sustainability transitions must also engage consumers and influence their behaviour. Government has a wider range of instruments at its disposal to influence the behaviour of individuals than just pricing measures and regulation and standardisation. These include land use planning and development projects and the use of ‘persuasive technology’ or ‘nudges’ (technologies and other methods to steer people’s behaviour in a particular direction). From psychology and behavioural economics we know that the effectiveness of these instruments depends on the nature of individual behaviour and the factors determining that behaviour. The Council believes that if instruments to steer consumer behaviour during transitions are to be effective, they must be chosen on the basis of sound behavioural analyses (RIi, 2014)

Recommendation 12:
Accept that the governance of sustainability may cause an international competitive disadvantage in the short term, but turn the burden of proof for alleged impacts on the economy and well-being on its head.
The Council feels that concerns held by internationally operating companies about the negative impact of mandatory measures on their competitiveness and on the Dutch economy are legitimate and must be addressed during the formulation of policy. It stresses that discussions must be based on clear definitions and also take into consideration those facts which put the risk of disrupting international competitiveness into perspective. The argument for maintaining a level playing field must not be used to delay the transition to sustainability.

The Council feels that in discussions about the importance of maintaining an international level playing field it must be clear what is meant precisely by this level playing field: what it comprises and what lies outside its scope. In connection with this, the World Economic Forum has identified more than a hundred factors that make up the business climate in a country and determine national competitiveness.[4] Strictly speaking, the international level playing field covers just a few of these factors: the regulatory framework, fiscal policy and direct state aid. These factors are often regulated or decided upon at the EU level and so are to a significant degree uniform. In that sense there is already a level playing field.

4 These hundred plus factors are divided into twelve categories: (1) Institutions; (2) Infrastructure; (3) ICT adoption; (4) Macroeconomic stability; (5) Health; (6) Skills; (7) Product market; (8) Labour market; (9) Financial system; (10) Market size; (11) Business dynamism; (12) Innovation capacity. In 2018 the Netherlands was ranked sixth worldwide (Schwab, 2018).

The Council also notes that it is impossible to aim for a completely level international playing field when selecting instruments to guide the transition to a sustainable economy, because countries will always look to secure specific location advantages for their 'own' internationally operating companies via the regulatory framework, fiscal policy or forms of direct state aid. This applies to the Netherlands as well as to countries with competing industries. These advantages vary from country to country.

The Council also notes that the argument for a level playing field is often used selectively when discussing investment in sustainable production methods. The argument is usually put forward in response to government measures that adversely influence the level playing field (such as stricter environmental legislation), but government measures that benefit industry (such as lower energy prices via the degressive tax system, low corporation tax or other tax advantages) are left out of the equation.

Stricter environmental measures at the macro level need not necessarily have a major impact on the Dutch economy (Hebbink et al., 2018), but there may be consequences for specific energy-intensive industries. On the other hand, stricter measures may encourage companies to invest more in innovation, which will boost international competitiveness (De Bruyn et al., 2018). It is not certain, therefore, that stricter measures will on balance be detrimental to competitiveness (Hebbink et al., 2018; CPB, 2016).

Finally, in the Council's view, the fact that sustainability measures are based on international climate agreements should also be taken into account

when discussing the international level playing field. This means that the impact on the level playing field will, in principle, only be temporary. Besides, national implementation of international agreements in other countries means that companies in those countries will also have to take measures (and make investments) to reduce their emissions. Carbon emission rights will become scarcer and therefore more expensive in those countries as well. As a consequence of international agreements it is expected that in future more international standards on financing investments will be introduced to promote an international playing field.

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APPENDICES

DUTCH TRANSITION POLICY: DESCRIPTION AND OBSERVATIONS

I. Vision and goals

Description

The energy transition

The white paper 'Energy Report – Transition to Sustainable' (only available in Dutch: *Energierapport – Transitie naar Duurzaam* (EKZ, 2016)) sets out the Dutch government's goal of a low carbon energy supply in 2050. To achieve this the government has decided to focus exclusively on reducing CO_2 emissions. Energy saving and the use of renewable energy are the logical consequence of this approach, but are not separate objectives in themselves. Besides being low carbon, the national energy supply must also be safe, reliable and affordable. Furthermore, the energy transition must provide opportunities for innovative Dutch companies. Europe-wide agreements are expected to lead to a more cost-effective use of the various possibilities available to individual countries, and technological breakthroughs will be the given the chance to develop. The report outlines the need for radical changes that will break with the structures and

organisational models of the current energy system, an example being the shift from a centralised to a distributed system at different scales and levels, including individual households and neighbourhoods.

The coalition agreement of the third Rutte government contains concrete CO_2 reduction targets (Tweede Kamer, 2017). The targets were initially aligned with the Paris agreement, but during the preparation of the National Climate Agreement they were raised to a 49% reduction (48.7 megatonnes) by 2030 and a 95% reduction by 2050. In the coalition agreement these targets were translated into specific CO_2 emission reduction objectives for five policy sectors (electricity, built environment, industry, agriculture & land use, and mobility) with a reduction target in megatonnes CO_2 for each sector.

The raw materials transition

The ambition of the government-wide programme 'A Circular Economy in the Netherlands by 2050' (IenW & EZK, 2016) is to create an economic system that is based on the conservation of natural capital and that makes as much use as possible of renewable and readily available raw materials. Raw materials will be used and reused efficiently; primary raw materials, insofar as they are still needed, will be obtained in a sustainable manner. The interim target for 2030 is a 50% reduction in the use of primary raw materials (minerals, fossil fuels and metals). In the implementation programme for 2019–2023 the Netherlands Environmental Assessment Agency was asked to turn these targets into workable objectives. The 2030 target has yet to be further operationalised in the light of the target for 2050 to ensure steps can be taken to work towards it. The government considers it important to have a shared picture of what the world could look like in 2050 to help decide on the actions that need to be taken now and determine what today's actions will mean for the world in 2050.

The food transition

The government's vision on agriculture, nature and food is set down in the policy vision 'Agriculture, Nature and Food: Valuable and connected' (LNV, 2018). The principle underlying the document is that the future of our food supplies can only be secured by making the transition to circular agriculture. Circular agriculture is presented as an unavoidable and convincing answer to the problems of climate change, the degradation of the soil and the depletion of water and raw materials. This also includes a new economic strategy for the sector, which is currently geared primarily to lowering costs, increasing production and maintaining a strong export market. The pursuit of continual reductions in the costs of agricultural production must be replaced by the pursuit of continual reductions in the use of raw materials. Other elements of the vision are limiting the impacts on biodiversity, the environment, the climate, animal welfare, the quality of drinking water and the attractiveness of the landscape.

The vision sets out three additional objectives for a robust and sustainable food system: (1) a healthy economic position for farmers, growers and fishers, (2) greater appreciation of food by consumers, high-volume consumers and the hospitality industry, to be facilitated by shorter supply chains and less wastage, and (3) a prominent role for the Netherlands

worldwide in developing and introducing innovative new production methods. The target date is 2030.
In 2019 the agriculture ministry published an implementation plan for realising its vision (*Realisatieplan Visie LNV: Op weg met nieuw perspectief*) which casts ongoing and planned initiatives in the light of the transition to circular agriculture and describes the policies to be implemented over the coming years.

Observations on the scope and normative character of the visions

The energy transition
The 'Energy Report' (EZK, 2016) sets out to present an integrated vision for the future energy supply in the Netherlands. In this report the government sets out its vision of a low-carbon energy system that is safe, reliable and affordable, and which offers opportunities to innovative businesses. The report paints a picture of a radically different energy supply system. The transition to this new energy system will affect the whole of society, because the supply and use of energy affects us all.

The 'Energy Report' contains ambitious CO_2 reduction targets ('what') and translates them into transition pathways ('how') for four uses of energy. The National Climate Agreement (EZK, 2019) takes the same approach, moving from targets (49% CO_2 reduction by 2030) to agreements in five policy areas. As these agreements are worked out in more detail attention is being paid to cross-cutting themes, such as innovation, spatial planning and the labour market. What the 'Energy Report' lacks, in the Council's view, is an integrative overarching vision across the sectors. The observation in the report that the transition to a different form of energy provision will affect the whole of society is correct in itself, but the changes involved will not be limited to the energy supply system alone, as this would downplay the energy transition to a mere technical switchover from fossil to renewable.

The policy documents and the debate on this subject lack a vision on the more fundamental consequences for the economy and society and the underlying public values. The emphasis is on a timely, gradual approach geared to controlling costs, seizing economic opportunities and avoiding disruptive shocks to the economy. However, there is a failure to address the more fundamental choices and resulting issues: the consequences for consumption patterns and the behavioural changes this will require, sustainable consumption choices, possible consequences for existing revenue models (industry and public sector), redistribution issues and consequences for various aspects of well-being such as health, nature and social cohesion. What does society consider to be important in all this, what are the trade-offs and what choices need to be made?

The raw materials transition
In its vision for the transition to a circular economy (the raw materials transition) the Dutch government devotes more attention to the need for a different economy and society. In this vision (IenW & EZK, 2016) it observes not only that the transition may have consequences for the economic structure, but also that the ambition of creating a circular economy will require changes to the economic structure. The government explicitly states

that a collective effort must be made to create circular consumption and production systems, such as a shift from ownership to use. In addition, it highlights the need for social innovation to accompany technological and system innovation.

The food transition

The Dutch government's vision on circular agriculture (LNV, 2018) also clearly expresses the need for a different type of economy, but in this case specifically for agriculture. It advocates a paradigm shift: no longer pursuing continual reductions in the cost of producing agricultural produce, but instead pursuing continual reductions in the use of raw materials. The vision recognises that this will involve major changes to farm structure, the farming culture and the way agricultural businesses operate. However, it is not clear what the changes will mean in practice for the different agricultural sectors, including the scale of animal production. The vision pays little attention to the need for different consumption patterns, such as the need for dietary shifts towards alternative sources of protein.

Observations on the specificity of the stated goals

The energy transition

For the energy transition the Dutch government has set a quantified, empirically substantiated target to be achieved by 2050. The goal is not just a marker on the horizon intended to mobilise action, but an internationally agreed target that must be achieved to limit global warming to below 2°C. The interim target of a 49% reduction in carbon emissions by 2030 is a national choice, within certain limits, but progress of this order will certainly have to have been made by 2030 if we are to achieve the 2050 target. The conditions for the further elaboration of these objectives in the National Climate Agreement are dominated by economic parameters, central among them being cost efficiency and calculability.

The raw materials transition

The national targets for the raw materials transition (a circular economy in 2050 and a 50% reduction in the use of primary raw materials[5] by 2030) are less concrete than those for the energy transition. In its vision for this policy area the government states that we will probably never be able to avoid using primary raw materials altogether or avoid generating residual waste streams. The stated goals, certainly those for 2050, are therefore intended mainly as markers on the horizon to mobilise people and organisations to take action towards this goal. The vision states that decisions must be based on integrated assessments that include not only economic and physical environmental considerations, but other aspects of well-being as well.

The food transition

The Dutch government's vision on circular agriculture (LNV, 2018) has not yet been translated into specific objectives, and for the time being has mainly an agenda-setting function. It stresses the need for a paradigm

5 Primary raw materials (minerals, fossil fuel, metals) are natural raw materials used directly after extraction for the manufacture of products and in production processes. Secondary raw materials are reused (e.g. recycled) primary raw materials.

shift in the agriculture and food sector. Requirements for the further elaboration of the vision have been formulated for a large number of topic areas, including the environment (closed-loop cycles, lower emissions, biodiversity, climate), the economy (earning power, regional economy, export of innovations) and social (value of food, the farmer–consumer relationship, animal welfare).

II. Substantive strategies

Description

The energy transition

In this section the Council discusses the substantive strategy for the transition to sustainable industry. The National Climate Agreement (EZK, 2018) proposes an industrial strategy that aims to make Dutch industries the leaders in their field. By starting to reduce carbon emissions before their competitors in other countries, Dutch industries will be able to improve their competitiveness in the mid to long term. Under this frontrunner strategy, in 2030 Dutch businesses will have to perform better than those companies currently among the top 10% in Europe for CO_2 efficiency.
An important part of the strategy is strengthening the existing regional industrial clusters, where most of the energy-intensive industry in the Netherlands is located. These clusters will be the 'testbed and acceleration room' that will produce the technological 'quantum jumps' needed to create the industry of the future. A select number of industrial growth markets have also been identified (circular food production, energy system integration, closed-loop bioplastics, circular energy-producing building materials) (New Foresight, 2018). It is accepted that this strategy may result in the loss of industrial activities that fall outside the desired transition pathway.

The raw materials transition

The government's substantive strategy for the reuse and recycling of raw materials has three strategic objectives: (1) the high grade use of raw materials in existing value chains; (2) replacing fossil, critical and non-sustainably produced raw materials with sustainably produced, renewable and readily available raw materials; (3) developing new production methods, designing new products, area redevelopment and spatial restructuring, and promoting new forms of consumption.

The strategy contains generic and sector-specific elements. The generic elements include international cooperation on closing materials cycles, internalising environmental costs and creating a level playing field. The last element requires a balanced assessment of what is nationally desirable and what is internationally feasible. The sector-specific approach focuses on five sectors (biomass and food, plastics, manufacturing industry, construction and consumer goods) because these are important for the Dutch economy, have high environmental impacts, are deeply embedded in society and are in line with European priorities. The government programme aims to make the Netherlands a global leader in the circular economy in the five sectors by 2020 by launching innovations on the international markets and

exporting knowledge and expertise, which in turn will increase national revenues. The approach is based on changes being made across the board, not just technological and system innovation, but also social innovation (behaviour, organisational structures). Cooperation within value chains and between sectors will be vital.

The food transition

The aim of the government's strategy for the food transition is to become a frontrunner in the sustainable use of raw materials and a leader in the transition to circular agriculture. By 2030 raw material and resource cycles must be closed at the smallest possible scale, nationally or internationally.[6] The details are outlined in the above-mentioned implementation plan (LNV, 2019). An important element in the strategy is integrating and strengthening existing initiatives and practices that meet the conditions set down in the vision – the 'social movement' track. In a second track the government will create the right conditions and remove obstacles in current policy to pave the way for the necessary changes. A third track concerns the integration of transition agendas at the regional scale. Finally, there is a knowledge, innovation and education track. The implementation plan also places the announced policy changes in the field of sustainability, the circular economy and food wastage within the context of circular agriculture. Food consumption initiatives (LNV & VWS, 2018) (VWS, 2018) are primarily intended to encourage healthier eating patterns and reduce food wastage.

6 Closing materials cycles means that raw materials are used as efficiently as possible in production and supply chains. For example, a livestock farmer would then derive his animal feed primarily from crops grown on his own land, from residual wastes from arable and horticultural systems and from the food industry. Closing cycles therefore requires close cooperation between the various sectors of the economy.

Observations on the substantive strategies

The energy transition

The Dutch government's search for a route from the old production system to the new one is clear to see in the National Climate Agreement. The lion's share of the substantive strategy for industry concerns technological adaptations of production processes and creating infrastructural conditions that will allow the current players in the industrial sector to meet the stated CO_2 reduction targets. The core of the substantive strategy for industry is making existing industrial activities greenhouse gas neutral. This is mainly a conversion strategy: existing companies will be helped to make their current operations climate neutral.

The identified new growth markets (circular food production, energy system integration, closed-loop bioplastics, circular energy-producing building materials) are also closely linked to existing industrial sectors (such as chemicals, logistics, energy, waste management and construction) and existing location factors (such as physical infrastructure, knowledge infrastructure and location). It is accepted that the transition may lead to the loss of some businesses, but there is no active policy of phasing out activities or industries that do not belong in a climate-neutral economy. Attention is given to helping people at risk of losing their jobs as a result

of the transition, especially in traditional industries such as oil and gas production, supply companies and refineries.

The raw materials transition

The Dutch programme to promote the circular economy focuses on five sectors vital for the Dutch economy: biomass and food, plastics, manufacturing, construction and consumer goods. The various sector-specific transition agendas also reflect the search for a route from the old system to the new. For example, the transition agenda for the construction industry speaks of a combination of gradual and disruptive change. On the one hand, the market must be shaken up by start-ups making unexpected new products, innovative business models and new organisational structures, while on the other hand gradual change is also needed, for example through the step-by-step introduction of higher standards and regulations. The transition agenda for manufacturing shows the same dual orientation: manufacturing industry must remain an essential foundation of the Dutch economy, but at the same time it is recognised that unconventional and as yet unknown solutions may be needed that do not fit within the existing economic structure.

The food transition

The government's substantive strategy for the creation of circular agriculture is also geared primarily to making existing structures and businesses more sustainable. The aim is to develop more sustainable production methods, close nutrient cycles7 and find alternative raw materials for animal feed. Agreements are being made with parties in the value chain on sustainable product chains and revenue and financing models. The goal is for the Netherlands to be an international leader in sustainable food production with a high added value and to maintain its prominent position in developing new production methods, both at home and in global food markets. However, the effect of the transition on the size of the various agricultural sectors in the long term remains unknown. The implementation plan does not explicitly state that the transition may mean there will no longer be room for individual businesses or specific production methods. It therefore contains no strategy for farm and business closures, except for pig farms that cause excessive odour nuisance.

III Actor strategies

Description

The energy transition

The Energy Agreement for Sustainable Growth (SER, 2013) was concluded, under the independent guidance of the Social and Economic Council of the Netherlands (SER), by 47 parties from a broad spectrum of government authorities, the business community, trade unions, nature conservation

7 By 'closing nutrient cycles' we mean reducing harmful nitrogen and phosphate losses in agricultural systems. Recycling can increase recovery rates, and precision fertilisation and precision livestock feeding can increase the efficiency with which nutrients are utilised.

and environmental organisations, civil society organisations and financial institutions. The agreements on energy saving in industry were reached in consultation with the industry organisations.

The National Climate Agreement (EZK, 2019) was also concluded with input from a great many civil society organisations, which took part in various 'climate panels' presided over by independent chairs. Support for the process was provided by the relevant ministries and the SER.

The raw materials transition

The purpose of the National Agreement on the Circular Economy, concluded in 2017, is to realise the objectives set out in the government-wide programme for the circular economy. It has now been signed by more than 400 companies, NGOs, financial institutions, government authorities and other organisations. In 2018, transition agendas were drawn up by a transition team, led by an independent chairperson, for five priority value chains: biomass and food, plastics, manufacturing, construction and consumer goods. Each transition agenda contains agreements on the direction of travel, innovation projects, knowledge requirements (including definitions and indicators for monitoring progress), labour market effects, financing and investment. The chairs of the transition agendas are also assisting with the preparation of joint visions to aim for and descriptions of what is needed to get there. Each year a reflection group chaired by the SER will review these visions and the progress made, with an emphasis on the social aspects of the transition to a circular economy, including labour market developments.

The food transition

The policy vision 'Agriculture, Nature and Food: Valuable and Connected' (LNV, 2018) announces that the government and stakeholders in society will make agreements in 2019 on the results that need to be achieved in the coming years, how these will be measured and the efforts this will require from each party. For certain tasks, the appropriate scale for these agreements will not be national, but regional. Most agreements build on existing initiatives, such as sectoral and regional implementation and action programmes. The ambition is to recognise and embrace the diversity of stakeholders and give farmers, growers and other players in the market and the knowledge community the opportunity to shape the nature and direction of the food transition. According to the vision document, the transition will depend on a social movement and a government that creates national and regional conditions and stimulates research and innovation.

Following the publication of the vision, a sounding board group was set up and this has contributed to the implementation plan on the themes 'society and politics', 'economy and technology' and 'integrated businesses'.

Observations on the actor strategy for private parties and civil society stakeholders

The energy transition

The 2013 Energy Agreement for Sustainable Growth set the tone for the Dutch government's actor strategy for the energy transition. At that time the government opted for a negotiation process with private parties and civil

society stakeholders. This decision was motivated by dissatisfaction with the lack of cohesion, urgency and continuity in the energy transition policy that had been pursued until then (Van Mill et al., 2016). Negotiations were held with more than forty organisations, including government authorities, employers, trade unions and nature conservation and environmental organisations, on energy saving and clean technologies. Negotiations were also held with many parties, from government bodies and businesses to interests groups, on reducing CO_2 emissions under the National Climate Agreement.

In both sets of negotiations, a working method was sought for reaching long-term agreements with a large number of parties in order to guarantee continuity and feasibility in energy policy and ensure it has the required support. The Social and Economic Council of the Netherlands (SER) made the key decisions on the process for drawing up the National Energy Agreement (themes, negotiating structures, participants, who holds the chair, criteria and conditions). When the National Climate Agreement was drawn up the government took a much more hands-on organisational role. Efforts were made to reach agreements with individual organisations instead of industry organisations and umbrella organisations as was the case for the Energy Agreement. In both cases, the government took on multiple roles: initiator, commissioning party, negotiating party and evaluator. In the Energy Agreement process the government took more of a back seat, but it was a more active negotiator during the preparation of the National Climate Agreement and kept a much closer eye on the outcome of the process, which involved an interim 'government review'. In the concluding phase of the National Climate Agreement, the government exerted tighter control over the process and took the tough decisions or came up with its own alternative proposals, including for an industrial CO_2 tax and alternative mobility measures.

The raw materials transition

For the raw materials transition the Dutch government again opted for an agreement process with a large number of private parties and civil society stakeholders. The process was more voluntary in nature than for the National Climate Agreement. Parties are still able to sign the agreement even after it has been concluded to show that they endorse the objectives and agreements made. The process aims to increase awareness, raise the activity levels among the parties and generate momentum, and is less focused on making binding agreements to achieve a fixed target. The differences with the negotiations on the energy transition and the National Climate Agreement can be explained by a number of factors: the issue itself is more diverse, there are fewer binding and clear-cut international agreements and the transition is in an earlier phase.

The food transition

When preparing its vision on circular agriculture the government consulted various parties involved in food production and consumption. Businesses, civil society organisations and knowledge institutes will also play a major role in the elaboration of the strategy. Numerous programmes and initiatives will provide examples showing how circular agriculture can be economically sustainable and should generate social momentum

throughout the whole value chain from producer to consumer. The existing programmes and initiatives have all been developed in partnerships between government authorities, entrepreneurs and interest groups at a national or regional scale.

Observations on the actor strategy for the public

The energy transition
For the National Climate Agreement the government has chosen a strategy explicitly geared to generating public support and commitment. Elements of this strategy are a balanced division of costs between the public and businesses, a monitoring programme to discover what the public think, a broad approach to involving the public with information campaigns, and a network approach (targeted support and information on concrete themes in cooperation with the business community and civil society organisations). 'Civil dialogues' will also be held to get a clearer picture of how people who take a 'wait and see' attitude or are difficult to reach can be encouraged to take part in the implementation of the National Climate Agreement. In addition, the public will be involved in the preparation of Regional Energy Strategies, in the conversion to gas-free neighbourhoods and in planning for renewable energy generation (including the formation of energy cooperatives).

The raw materials transition
Public involvement in the implementation of the government-wide programme for the creation of a circular economy will be mainly through changes in behaviour and lifestyle. The government will stimulate greater consumer access to facilities that enable circular behaviour (such as sites for separate waste collection). Insights from the behavioural sciences will be used to increase levels of acceptance and use of these facilities. In addition, a communication strategy will be pursued that aims to change public behaviour, including a government-wide campaign appealing to people to take action that contributes towards the transition goals.

The food transition
The government's transition policy for circular agriculture addresses the public primarily as consumers and seeks to raise their appreciation of the value of food, one of the aims being to reduce waste. Shorter chains between producers and consumers should lead to more contact with farmers and growers and an understanding of their position, and to greater appreciation for and consumption of organic and local productions. The public are asked to show greater willingness to pay more for food from circular farming systems. They are not encouraged to change their diets and consumption patterns (other than drawing their attention to the 'Wheel of Five' – the rules and components of a healthy diet published by the Netherlands Nutrition Centre) or how this can contribute to more sustainable food production as envisaged in circular agriculture.

Observations on the actor strategy within government

The energy transition

The fossil economy makes a large contribution to public finances in the form of natural gas revenues, fuel duties, taxes on profits and wages from energy companies and energy-intensive industries (Weterings et al., 2013), and ownership interests, for example in port authorities, Schiphol Airport and KLM. Also, many government policies, including innovation policy, infrastructure policy and fiscal policy, are deeply rooted in and geared towards a fossil economy. The public sector is tightly bound up with the current economic structure. This means that the sustainability transitions will require not only a government strategy directed at other parties, but also an *internal* government strategy for the budgetary consequences of the transitions. At the moment only the bare bones of such a strategy exist. The Council observes, for example, that the National Climate Agreement does contain a chapter on the role of government in setting an example for climate-neutral operations and vehicle fleets, energy labels for government buildings, sustainable procurement and so on, but that there is no internal government strategy on how to deal with the inevitable consequences of the transitions for government finances.

IV. USE OF POLICY INSTRUMENTS

Description

The energy transition

The instruments included in the National Climate Agreement to bring about the energy transition contain a mix of elements. The emphasis is on standards and subsidies, with a supporting role for pricing mechanisms. Around half of the expected emission reductions are to be achieved through the introduction of standards and prohibitions, particularly for electricity generation (ban on combustion of coal), mobility (compulsory blending with biofuel) and in the built environment (decoupling from the gas mains). Industry will be under a legal obligation to implement CO_2 reduction measures with payback periods of five years or less. In addition, energy-intensive industries will be subject to a national CO_2 tax to ensure the intended reductions are achieved. This tax will be introduced in a form designed to minimise the risk of businesses and/or production relocating abroad and investment levels declining. Finally, the aim is to raise European carbon reduction targets to improve the operation of the EU emissions trading system (EU ETS) and raise the price of CO_2 to at least 30 euros per tonne.

Subsidies and tax breaks are also valuable policy tools. The SDE+(+) sustainable energy incentive scheme is a key instrument for increasing the generation of renewable electricity and reducing CO_2 emissions in agriculture and the built environment. The scheme is particularly

important for reducing industrial CO_2 emissions (PBL, 2019). Tax measures and subsidies are also the government's main policy tools for reducing emissions in the mobility sector. A further measure, specifically for industry, is the stimulation of innovation by means of demonstration projects and pilots on measures to reduce costs and speed up the introduction of new technologies onto the market.

The raw materials transition

The implementation programme for the circular economy contains a broad mix of potential instruments and reviews a large number of possible policy instruments: self-management by companies (product responsibility), legislation and regulation (such as eliminating obstacles in the waste legislation), innovation policy (such as circular redesign), circular procurement, market incentives (waste disposal charges, pricing environmental impacts, true pricing) and financing instruments (including an investment platform). This phase mainly involves research, exploratory studies and small-scale pilot projects to identify the potential for and the effects of the various policy instruments. Attention is also given to the use of supporting policies and instruments in the areas of behaviour and communication, education and the labour market, and international cooperation. An 'Accelerator House' will be established to facilitate and scale up projects by bringing parties together, including financiers. The main strategy for the five priority sectors of the economy is to conclude voluntary agreements, such as the Plastic Pact, the Bioplastics Covenant (still to be signed), the Concrete Agreement and various green deals.

The food transition

The policy vision 'Agriculture, Nature and Food: Valuable and Connected' (LNV, 2018) sets out nine assessment criteria for circular agriculture to evaluate the effectiveness of policy instruments. The implementation plan is based on existing policies for environmental and water quality, biodiversity, fertilisers, etc. Specific obstacles in existing legislation and regulations that stand in the way of the transition to circular agriculture will be removed and provisions made to allow regional experimentation. In addition, agreements will be made with businesses and government authorities in regional deals on more sustainable production methods, closing nutrient cycles and finding alternative raw materials.

As part of EU agriculture policy, ways will be found to create financial incentives by linking additional rewards above basic income support to performance indicators related to circular agriculture. Such indicators are being developed for monitoring and evaluation. Finally, agreements will be made with parties in the value chain on the creation of sustainable product chains and sustainable revenue and financing models.

Observations on the type of measures and policy instruments

The energy transition

The National Climate Agreement of June 2019 contains a varied mix of policy instruments and measures tailored to each sector of the economy. The choice of instruments evolved during the preparation of the final agreement. The initial set of instruments in the draft agreement of December 2018 was oriented strongly towards standards, regulation

and subsidies (PBL, 2019). The sectors most subject to standards and regulation were electricity generation (ban on combustion of coal), mobility (compulsory blending with biofuel) and the built environment (gas-free neighbourhoods). Subsidies and tax advantages were the main instruments for increasing the generation of renewable electricity, reduce CO_2 emissions in agriculture and the built environment, and especially to reduce industrial CO_2 emissions. Pricing was a relatively little used instrument in the draft agreement; no new pricing measures were proposed on top of the existing ones. The pricing instruments for small users in domestic markets are the national energy tax and the sustainable energy surcharge. For energy-intensive companies operating in international markets there is the ETS, which sets a price for CO_2 emissions. The decision to impose and extra CO_2 tax on industry means that the final National Climate Agreement puts much more emphasis on pricing. Major polluters will pay extra for their emissions and will be subject to a CO_2 emissions ceiling based on the ETS. If they exceed this ceiling they will pay an additional charge on top of the ETS price.

The raw materials transition

The package of measures to speed up the raw materials transition is still under development. Analysis of the circular economy implementation programme (*Uitvoeringsprogramma Circulaire Economie 2019–2023* (IenW, 2019)) shows that at this stage there are no taboos regarding possible policy instruments and the palette of instruments reviewed in the programme is broad. Where concrete measures are already being implemented, they lean heavily towards voluntary actions, including voluntary agreements (or covenants), such as the Plastic Pact between plastic-producing and plastic-using companies and the government.

The food transition

The package of policy instruments to be used in the food transition consists mainly of numerous agreements with agricultural organisations and businesses, and parties in the production and supply chains. Furthermore, it has been decided to remove obstacles in existing legislation and introduce positive incentives, to translate national policies into more detailed regional deals and environment and planning strategies, and to introduce regulations for developing and sharing knowledge. In addition, EU agricultural policy instruments will play a major role in the policy for the food transition. Although EU policy has traditionally consisted of subsidies designed to stimulate growth, improve the efficiency of production and make food available at affordable prices for consumers, EU agricultural policy instruments are increasingly focused on more social objectives. Under the implementation plan, the government wants to make maximum use of EU agricultural subsidies for the development of circular agriculture.

Observations on the international aspect of the policies

The energy transition

When choosing policy instruments for internationally operating sectors, especially industrial companies, the Dutch government is particularly concerned about the effects that government measures can have on

international competitiveness and operations, because many energy-intensive companies compete in global markets. The government's approach is to offer companies opportunities to make major greenhouse gas emission reductions in the Netherlands. Moreover, the National Climate Agreement states that ambitious emission reductions must not be made at the expense of maintaining an attractive business climate for industrial companies. The arguments for this are that otherwise industrial activities may relocate abroad, which would increase emissions abroad and not benefit the climate, and the need to avoid the risk of losing industrial activity and jobs in the Netherlands. For these and other reasons, when choosing policy instruments the government aims to keep the costs of the transition to companies as manageable as possible. Transition policies must not endanger the maintenance of an international level playing field. The importance attached to this is illustrated by the discussions on the CO_2 tax during the preparation of the National Climate Agreement.

The raw materials transition

The circular economy will also include companies that are active in global markets, such as manufacturing, chemicals and food. When pricing environmental impacts caused by these companies, the Dutch government will seek cooperation with neighbouring countries. The implementation programme presents the international dimension as an opportunity to exchange knowledge, raise the level of ambition, strengthen political support, broaden the market for secondary raw materials, speed up the rate of innovation and make use of international and EU financing mechanisms. Incidentally, PBL has noted that Dutch policy for the circular economy goes beyond that of other European countries (PBL, 2018). The Netherlands has set a target of halving its use of raw materials by 2030 *in absolute terms*, whereas other ambitious countries (Germany and Austria) have set targets for a *relative* reduction in their use of raw materials (i.e. per euro earned). The Netherlands also goes further in its proposed monitoring of transition policy than other countries in Europe and by the EU, including the development of new indicators.

The food transition

In the transition to circular agriculture the Dutch government has to take into account many aspects of the common agricultural policy and EU legislation. The international competitiveness of the companies involved is also a significant factor in food transition policy. National policy instruments used by the government to tackle specific national (and often sector-specific or region-specific) environmental problems or to meet national climate or other environmental targets often meet with a great deal of resistance because of the expected impact on international competitiveness.

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