Bundesrechnungshof

Special purpose report

pursuant to Article 99 Federal Budget Code

on the coordination and governance of energy transition by the Federal Ministry for Economic Affairs and Energy

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Bonn, 28 September 2018

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0 Executive summary

We studied the shift to clean energy and found major shortcomings. These are set out below:

0.1

In spite of the considerable input of human and financial resources, Germany has not yet accomplished the targets set (no. 1.2).

0.2

For nearly five years, the Ministry for Economic Affairs and Energy ("the Ministry") has had lead responsibility for energy transition. This means that the Ministry has the role to coordinate overall actions needed. At the Ministry alone, 34 branches in four directorates-general are involved in this process. In addition, five other federal government departments and all federal states have a role in shifting to clean energy. Still, the Ministry has not defined cross-government coordination. No overall structure for allocating responsibilities has been put into place.

We feel that it is essential for the Ministry to play an effective governance role and, to this end, to determine

- *what coordination functions fall into its remit;*
- *how coordination functions may be properly organised;*
- *what coordination body or unit with overall operational responsibility is to be established;*
- *whether a cross-government committee for coordination among the federal government departments will be set up; and*
- *whether to initiate a joint coordination committee on energy transition formed by federal and state governments.*

The Ministry believes that energy transition is coordinated in an effective and efficient manner and that there is no need for action. The Ministry is also of the opinion that an appropriate level of coordination has been established among all players at all government levels.

This assessment is not convincing because the Ministry has obviously fallen short of many of the targets set and has placed considerable burdens on the private sector, public budgets and private households. One major shortcoming is the fact that the Ministry has not defined and does not plan to define the requirements for rolling out energy transition transparently and efficiently. A body with overall responsibilities and substantial decision-making powers is absolutely needed (no. 2).

0.3

In the Ministry's view, governance tools for transition include monitoring, strategic controlling and internal cross-cutting controlling at directorate level (divisional controlling). At the same time, statute law and ordinances have a steering effect.

1) *As part of monitoring, the Ministry used 48 different sources of data and 72 indicators to track the progress made. The Ministry intends to improve monitoring by adding even more indicators. So far, the Ministry has not defined measurable targets and yardsticks for key goals such as "security of energy supply" and "energy affordability". Unless the Ministry has defined transition targets in a way permitting to measure and track any progress made, no effective steering is possible. Adding further indicators does not address the problem stated.*

   The Ministry has still not ensured sufficient transparency of the costs and expenditures associated with the transition, although it has comprehensive data on federal budget expenditures, the components of energy prices that government can influence and the input required to comply with energy-specific legislation specified in regulatory impact assessments. The Ministry could use such information in order to make all costs and expenditures transparent. Calculating such a "total amount" is necessary to better inform Parliament and the public and to make expenditures of final consumers on electricity and other costs of energy transition transparent.

2) *As part of controlling, the Ministry used various goals, targeted figures and actual figures and indicators in order to measure the status of target achievement. Data relevant for steering were not or not fully recorded. What is more, effective steering of energy transition was hardly possible because key indicator data could only be provided with considerable delay.*

3) *The Ministry also uses various grant programmes to steer the shift to a low-carbon economy. It has continued grant programmes although they were little in demand.*

4) *Currently, 26 laws and 33 ordinances stipulate provisions, partly in great detail, on the generation, storage, transmission, distribution and consumption of energy. It takes much time to amend such laws and ordinances to make them fit for the shift to a low-carbon economy. This leaves little leeway to flexibly adapt governance to the dynamic character of energy transition.*

We make the point for clearance of parliamentary and ordinances from any highly complex rules where possible. Instead, a legal framework for the transition should be established. A potential supplementary tool outside a "command economy" would be a general charge on carbon emissions. As carbon pricing would make the generation of renewable energy more attractive, the Ministry could use its grant programmes to set a clear signal for complementary incentives.

We demand the

- *Federal Government to set measurable targets for affordability and security of energy supply;*
- *Ministry to use indicators only that can have a steering effect;*
- *Ministry to make transition costs as fully transparent as possible with a reasonable input;*
- *Ministry to use steering tools that always focus on the targets of energy transition;*
- *Ministry to consider relying on more effective steering mechanisms such as carbon pricing as a further tool for navigating energy transition.*

In commenting on our findings, the Ministry states that it does not see any need for action as to better steering the shift to a low-carbon economy. The Ministry rejects our cost assessment regarding it as questionable from the methodological point of view. For instance, the Ministry states that the surcharge imposed by the Renewable Energy Sources Act as the biggest cost item and the relief measures cannot be considered as transition costs. The Ministry also rejects our findings on controlling, arguing that the steering effect of the system currently in place has stood the practice test.

We note that the Ministry considers its steering system to be sufficiently effective and does not see any need for action. Given that the goals of energy transition may likely not be accomplished either in full or in part, the Ministry's overall steering is flawed. For a steering system to be effective, verifiable targets need to be defined. In addition, it must be possible to identify any need for action – also in response to external impacts such as economic or population growth. What is also needed is the commitment and ability to change course.

To ensure that shifting to clean energy meets with acceptance in the society at large, the Ministry needs to disclose the financial impact clearly and transparently. According to our calculation, in 2017, costs and expenditures imputable to the transition process totalled some €34 billion. With reasonable effort, the Ministry should make transition costs fully transparent (no. 3).

0.4

In our view, it is a top priority to enhance coordination and governance of energy transition. The Federal Government is still called upon to take action. Otherwise, the general public at home and abroad may gain the perception that Germany is not able to successfully shape and navigate the shift to clean energy which is a long-term process impacting on the domestic economy and society as a whole (no. 5).

1 Introduction

1.1 Audit reports developed by the German SAI

Since October 2013, the Federal Ministry for Economic Affairs and Energy has had lead responsibility for rolling out energy transition. We have audited the Ministry's efforts made to tackle this challenge. Our findings are set out in several reports. In 2014, we advised the Federal Government on organisational and financial aspects concerning all federal government departments entrusted with energy supply matters.[1] Our key findings were as follows:

The relevant federal government departments and federal states implemented the shift to clean energy in a poorly coordinated, inconsistent and redundant way. The Federal Government and federal states did not agree on common goals. It was impossible to carry out monitoring action to review project results. The Federal Government did not have an adequate overview of the bearing the transition had on the federal budget. We noted these shortcomings in coordination and governance with concern.

The Federal Government pledged to enhance overall coordination by pooling the competences required for switching to clean energy at the Ministry. The Federal Government planned to establish a national framework for coordinating the way energy transition unfolds with the federal states. In the course of reorganising energy responsibilities, the Federal Government pledged to explore options for streamlining the overly complex committee structure. The Federal Government planned to enhance monitoring in place by further refining relevant data and applicable indicators.

In 2016, we reported to the Budget Committee of Federal Parliament ("Budget Committee") about the steps taken by the Ministry in rolling out energy transition.[2] We reiterated our concern that the Ministry

- did not take rigorous leadership as an overall coordinator;
- did not have an overview of the bearing energy transition has on the budget;
- did not give equal priority to the goals set by the "energy policy triangle" which are environmental sustainability, security of energy supply and energy affordability.

1 Advisory report to the Federal Government pursuant to Art. 88, para. 2 of the Federal Budget Code: Organisational and financial aspects of the implementation of the federal programmes designed to ensure security of future energy supply, 4 August 2014 (ref. no.: VII 4 - 2013 -0223).

2 Report to the Budget Committee pursuant to Art. 88, para. 2 of the German Federal Budget Code on the steps taken by the Federal Ministry for Economic Affairs and Energy to shift to clean energy with a focus on budget chapter 0903, energy and climate fund, 21 December 2016 (ref. no.: VIII 4 - 2016 - 0722).

To roll out energy transition in an efficient and targeted manner, we recommended merging subject areas at one body. This body should also have a comprehensive overview of the financial impact of switching to clean energy. For the purpose of monitoring, the Ministry should give equal priority to the tasks of environmental sustainability, security of energy supply and affordability of energy, set specific and measurable targets and use suitable indicators to continuously monitor the impact and efficiency of the steps taken.

At its 34th meeting held on 28 April 2017, the Public Accounts Committee (PAC) took up our report and adopted a resolution to the following effect:

The PAC agreed with our findings and conclusions on the organisational set-up of energy transition and the efficient use of human resources. The Committee expected the Federal Government to strengthen the Ministry's role as an overall coordinator. To this end, the PAC expected the coordination functions of the Ministry to be designated and clearly defined. The purpose of the cross-government task analysis was to help to better delimit and define the roles of the various government departments. The Ministry was to do a better job as an overall coordinator and continuously review its organisational set-up and assess staff requirements by means of an internal task analysis. Monitoring of the transition was to be underpinned by providing a balanced priority of the goals of security of energy supply, energy affordability and environmental sustainability. Programme controlling in place was to be further expanded. The PAC demanded the Ministry to report on the steps taken by 31 March 2018.

On 23 March 2018, the Ministry submitted its report to the PAC.[3]

Five years after the Ministry assumed leadership for rolling out the transition, we revisited the implementation efforts. Our findings, conclusions and recommendations are made against the background of the resolution passed by the PAC of 28 April 2017, the Ministry's report of 23 March 2018 and current audit findings. In our overall assessment, we also take into account recent developments since 2013.

We report to Parliament pursuant to Article 99 of the federal financial regulations, the Federal Budget Code. In addition to that, we inform the Federal Government. Due to its significant impact on the federal budget, the private sector and private households, the shift to a low-carbon economy is a matter of particular importance. What is more, further advancing energy transition, which is a multi-generational project, is of continuous importance for society as a whole.

3 The Ministry's report to the PAC on the steps taken to shift to clean energy in accordance with the resolution adopted at the 34th meeting of the 18th legislative period of 28 April 2017. At its meeting on 20 April 2018, the PAC took note of the Ministry's report.

1.2 Current status of energy transition (2018)

In its current Monitoring Report, the Ministry presents the various energy transition targets in a table:

	2016	2020	2030	2040	2050
Greenhouse gas emissions					
Greenhouse gas emissions (compared to 1990)	–27.3%*	–40% or more	–55% or more	–70% or more	largely greenhouse-gas-neutral -80% to -95%
Renewable energy					
Share of gross final energy consumption	14.8%	18%	30%	45%	60%
Share of gross electricity consumption	31.6%	35% or more	50 % or more 2017 Renewable Energy Sources Act: 40-45 % by 2025**	65% or more 2017 Renewable Energy Sources Act: 55-60 % by 2035	80% or more
Share of heat consumption	13.2%	14%			
Efficiency and consumption					
Primary energy consumption (compared to 2008)	–6.5%	–20 %	→		–50%
Final energy productivity (2008-2050)	1.1% per year (2008 – 2016)	2.1% per year (2008 – 2050)			
Gross electricity consumption (compared to 2008)	–3.6%	–10 %	→		–25%
Primary energy demand: buildings (compared to 2008)	–18.3%		→		–80%
Heating demand: buildings (compared to 2008)	–6.3%	–20%			
Final energy consumption: transport (compared to 2005)	4.2%	–10 %	→		–40%

Source: Table: Quantitative targets of energy transition, summary and status quo (2016), Sixth Energy Transition Monitoring Report "The Energy of the Future", page 5

4 Sixth "Energy Transition" Monitoring Report "The Energy of the Future" Summary, reporting year 2016 on 27 June 2018.

In its Sixth Monitoring Report (cf. item 16), the Ministry lists 190 programmes that aim at reaching the targets. In 2017, the Ministry alone was allocated €7 billion to fund activities to navigate energy transition. In 2017, the federal government departments and their subordinate bodies had some 675 full-time equivalents (FTEs) that were in charge of rolling out the transition.[5] Ministry staff in 34 branches alone totalled 287 FTEs. We calculated that the expenditures and costs incurred in switching to clean energy amounted to €34 billion or more in 2017.[6] The goals of energy transition (including milestones) covered a period of up to year-end 2050.

Despite current efforts, the monitoring results show that most of the measurable targets set will not be accomplished by 2020:

- Greenhouse gas emissions dropped by 27.3 per cent between 1990 (reference year) and 2016.[7] However, the target to reduce emissions by 40 per cent until 2020 seems unlikely to be achieved.
- Between 2010 and 2016, the share of renewable energies in gross final energy consumption increased by only 3.7 per cent to a total of 14.8 per cent.[8] However, it is uncertain whether the target of 18 per cent can be achieved by 2020.
- The share of renewable energies in gross electricity consumption decreased by 0.3 per cent to drop to 12.9 per cent in the heating market and remained at a low level of 5.2 per cent in the transport sector.[9] It is doubtful if the targets set for the heating sector (14 per cent) and the transport sector (10 per cent) can reasonably be accomplished.
- Primary energy consumption has slightly decreased since 1990. By 2016, the decrease amounted to only 6.5 per cent compared to 2008.[10] It is very likely that primary energy consumption cannot be reduced by 20 per cent until 2020.
- The target to increase final energy productivity as from 2008 by 2.1 per cent each year to a total of 28 per cent is likely not to be met because final energy productivity only increased by 1.1 per cent annually between 2008 and 2016.[11]

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5 The term Full-Time Equivalent refers to full-time positions. The number of actual employees may be higher due to existing part-time positions.

6 See table 1 on page 34.

7 See https://www.umweltbundesamt.de/daten/klima/treibhausgas-emissionen-in-deutschland #textpart-1, data retrieved on 3 September 2018.

8 See https://www.umweltbundesamt.de/indikator-erneuerbare-energien#textpart-1, data retrieved on 3 September 2018.

9 See https://www.umweltbundesamt.de/themen/erneuerbare-energien-im jahr-2017, data retrieved on 3 September 2018.

10 See https://www.umweltbundesamt.de/daten/energie/primaerenergieverbrauch#textpart-2, data retrieved on 3 September 2018.

11 See https://www.umweltbundesamt.de/indikator-energieproduktivitaet#textpart-1, data retrieved on 3 September 2018.

- The target of reducing gross electricity consumption by at least 10 per cent by 2020 seems to be unrealistic. Compared to 2014, consumption has risen again. Gross electricity consumption fell by a mere 3.6 per cent between 2008 and 2016.[12]
- Primary energy demand for buildings has risen again compared to 2014. There was a reduction of 18.3 per cent on the base year of 2008.[13] The target of reducing the primary energy demand for buildings by 80 per cent by 2050 will probably not be achieved.
- The heating demand for buildings is 6.3 per cent lower than in 2008. The target of reducing the demand by 20 per cent by 2020 will not be achieved.[14]
- The target of reducing final energy consumption in the transport sector by 10 per cent by 2020 and by 40 per cent by 2050 compared to 2005 will not be achieved. Since 2005, energy consumption of transport has even increased by 4.2 per cent.[15]
- According to the Federal Statistical Office, consumer electricity prices have risen by nine cents per kWh to reach an all-time high of 30.48 cents since 2008. For companies, electricity prices rose by some three cents per kWh to 12.7 cents.[16]

  From the first to the third quarter of 2017, costs of emergency interventions in the electricity grid that are to be borne by the consumers increased year-on-year and amounted to some €1.2 billion for 2017.[17]

  However, no statement can be made as to the extent to which the goal of energy affordability will be missed because the Federal Government has not defined measurable targets for this goal.

- According to the new global Energy Transition Index (ETI), Germany also performs poorly in an international context.[18] Germany ranks 16th in the overall ETI list. In Europe, eleven countries perform better than Germany, including the world leader Sweden, but also Norway, Switzerland, Finland, Denmark, Austria, the United Kingdom and France.

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12 See Sixth "Energy Transition" Monitoring Report "The Energy of the Future" Summary, reporting year 2016 on 27 June 2018, [German] page 58.

13 See Sixth "Energy Transition" Monitoring Report "The Energy of the Future" Summary, reporting year 2016 on 27 June 2018, [German] page 78.

14 See Sixth "Energy Transition" Monitoring Report "The Energy of the Future" Summary, reporting year 2016 on 27 June 2018, [German] page 73.

15 See https://www.umweltbundesamt.de/indikator-energieverbrauch-des-verkehrs, data retrieved on 3 September 2018.

16 Federal Statistical Office, prices, data on energy price trends, long-time series, from January 2000 to September 2018 (Destatis), 2018, pages 48 et seq.

17 See report on network and system security-measures issued by the Federal Network Agency, year and fourth quarter 2017, page 9.

18 The ETI was presented at the World Economic Forum (WEF on Latin America) in São Paulo (Brazil). Jointly with the World Economic Forum, a consultant firm calculated the status of energy transition in 114 countries on the basis of 40 indicators.

- In its statement on the Sixth Monitoring Report, the expert commission concluded that Germany would fall short of the targets set and/or would be unable to ensure that the targets would be achieved[19]:

Dimension	Indicator	
Adapt to climate change	Reduction in greenhouse gas emissions (lead indicator or goal)	🔴
Nuclear phase-out	Operational nuclear power plants (lead indicator or goal)	🟢
Renewable energies	Increase in the share of renewable energy in gross final energy consumption (lead indicator)	🟢
	Increase in the share of renewable energy in gross electricity consumption	🟢
	Increase in the share of renewable energy in heat consumption	🟡
	Increase in the share of renewable energy in the transport sector	🔴
Energy efficiency	Reduction of primary energy consumption (lead indicator)	🔴
	Final energy productivity	🔴
	Reduction in heat demand in the building sector	🟡
	Reduction in final energy consumption in the transport sector	🔴
Security of energy supply	Expansion of transmission grids (lead indicator)	🔴
	Redispatch measures	🟡
	System Average Interruption Duration Index – SAIDI electricity and SAIDI gas	🟢
Affordability	Final consumer spending on electricity in terms of GDP (lead indicator)	🟡
	Final consumer spending on heating	🟢
	Final consumer spending on road transport	🟢
	Industrial electricity unit costs in the international comparison	🟡
	Household energy costs	🟡
Public acceptance	Overall acceptance of energy transition goals (lead indicator)	🟢
	Overall acceptance of energy transition	🟡
	Overall acceptance-based on personal impact	🔴
target achievement: 🟢 likely 🟡 uncertain 🔴 very unlikely		

Source: Table summary of the overall assessment of the Expert Commission on the status of energy transition in terms of progress towards the 2020/2022 targets, Expert Commission on the Energy of the Future Monitoring Process, Statement on the Sixth Monitoring Report of the Federal Government for 2016, June 2018, page 5.

19 See Expert Commission on the Energy of the Future Monitoring Process, Statement on the Sixth Monitoring Report of the Federal Government for 2016, Berlin, Münster, Stuttgart, June 2018.

Audit finding:

Despite the considerable input of financial and human resources, the 2020 targets of energy transition will largely not be achieved.

Based on these findings, we revisited the coordination and governance *of energy transition in our current audit mission.*

2 Coordination of energy transition

One key challenge faced by the Ministry having lead responsibility for energy transition is to coordinate the shift to clean energy. Coordination governs the internal work and work by federal government departments, the Federal Government and the federal states and work with the European Union (EU). Any action of all parties involved needs to be well geared to and aligned with the goals of energy transition.

2.1 Coordination within the Ministry

At the Ministry, four directorates-general (DGs) are in charge of technical energy transition tasks:

- DG II "Energy policy – heating and efficiency";
- DG III "Energy policy – electricity and grids";
- DG IV "Industrial policy" (branch of "Environmental innovation, electric mobility"); and
- DG VI "Digital and innovation policy" (branch of "Development of digital technologies").

DGs II and III are each subdivided into three directorates with a total of 32 branches. In 2017, 287 staff (FTE) was deployed in 34 branches in charge of rolling out energy transition.

Coordination of the shift to a low-carbon economy within the Ministry is among the functions of one branch of DG III. According to the schedule of responsibilities, this coordination covers synchronising the Ministry's and the Federal Government's reporting on energy policy, audits carried out by the German SAI, statements on expert opinions, parliamentary inquiries and inquiries under the Freedom of Information Act. The Ministry did not specify which activities exactly need to be aligned at the branches. With regard to shaping internal coordination processes, the Ministry referred to the regulations in the Ministry's Supplementary Rules of Procedure. The Ministry did not see any need for further regulations.

Audit finding:

34 branches of four DGs are involved in shifting to clean energy. One of these branches was assigned the coordinator role.

After the PAC had demanded the Ministry to carry out an internal task analysis, the Ministry initiated this exercise in DGs II and III and in the cognisant branches of DGs IV and VI.[20] A task analysis serves to explore options for enhancing resource allocation. The following four key questions serve to help scrutinise the tasks:

- Is there a continued need to perform the task in the future?
- Is the current substance and scope of the task needed in order to achieve a target set?
- Is there a specific need for a task to be performed by the organisational unit (area under review) within the Ministry or is another unit able to perform the task more efficiently?
- What is the potential for reshaping operations that will continue to lie within the Ministry's operational area?[21]

The Ministry stated that in 2017 and 2018 it had carried out a task analysis and, on this basis, had assessed staffing requirements according to the alternative procedure.[22] Based on these results, the Ministry calculated an additional need for another 55 staff to perform extra functions at the DGs II and III. The Ministry considered the functions it identified to be high priority stating that they were governed by laws and ordinances, the coalition agreement or resolutions of the Federal Government.

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20 Irrespective of the resolution passed by the PAC, the Ministry stated that it analysed tasks performed by bodies in its remit in 2010, 2011, 2013 and 2015.

21 Cf. www.orghandbuch.de, section 3.2, "task analysis".

22 This "alternative procedure" is a simplified approach that includes analytical elements of an assessment of staffing needs without detailed government-wide surveys. Still, the option of conducting a traditional assessment of staffing needs is also available (cf. www.orghandbuch.de, section 5.3, "alternative procedure").

For example, the Ministry's reasoning for justifying the need for additional staff in a branch of DG II was the need to build up and develop more bilateral energy partnerships to advance and accelerate global energy transition. The Ministry stated that the branch was also to build up relationships worldwide in the field of energy policy and economic policy. Occasionally, the Ministry mentioned a need for coordination among all actors involved in the new tasks. By the end of May 2018, the Ministry was unable to respond to our request for information on what options for improvement had resulted from the analysis of tasks – particularly with regard to coordination functions.

Audit finding:

So far, the Ministry has not used the task analysis to enhance coordination functions of energy transition.

In 1991, the Federal Government appointed a Federal Energy Commissioner who is responsible for a narrowly defined task within energy transition.[23] Duties of the Federal Energy Commissioner encompass the specification of uniform, verifiable energy requirements for planning and monitoring all federal construction works up to their completion.[24]

Audit finding:

For more than 25 years, the office of a Federal Commissioner has been in place. The Federal Commissioner is responsible for a narrowly defined task of energy transition. However, no body has been put into place to coordinate the complex task of overall energy transition.

23 Cabinet decision of 11 December 1991. Applicable for an unlimited period; cf. response of the Federal Government to the brief enquiry submitted by Frank Sitta, Grigorios Aggelidis, Renata Alt, other members of Parliament and the parliamentary group of the free democrats party (FDP), parliamentary paper 19/2270, page 18.

24 See website of the commissioner: https://www.bbsr.bund.de/BBSR/EN/SpatialDevelopment/EnergyClimate/EnergyClimate_node.html, data retrieved on 3 September 2018.

2.2 Coordination among federal government departments

Even after conferring lead responsibility to the Ministry in 2013, the following ministries still have had a say on shifting to clean energy:

- Federal Ministry of Education and Research;
- Federal Ministry of Transport and Digital Infrastructure;
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety;
- Federal Ministry of Food and Agriculture; and
- since 2018, the Federal Ministry of the Interior, Building and Community.[25]

During our field work, the Ministry pointed out that its overall coordinator role had been underpinned by the organisational directive of the Federal Chancellor of 17 December 2013[26] and the merging of functions at the Ministry. According to the Ministry's report to the PAC[27], more organisational steps would have been needed to further strengthen the Ministry's role such as a decision of the Federal Cabinet or an organisational directive of the Federal Chancellor. In the months preceding federal parliamentary elections on 24 September 2017, however, it had been wise not to modify the organisational structure. The Ministry stated that after the elections, the head of the Federal Chancellery[28] had made the point for postponing any organisational changes within the federal government departments until a new coalition had been formed.[29] In addition, the Ministry had already emphasised in its comments on the German SAI's 2016 draft audit report that cross-government task analyses or assessments of staffing needs were neither necessary nor useful, since the Ministry's energy transition tasks were clearly delimited from those of other federal government departments.

Audit finding:

In the Ministry's opinion, there is no need for further action to strengthen overall coordination of energy transition.

25 Organisational directive of the Federal Chancellor of 14 March 2018.

26 As a result, the responsibility for enhancing energy efficiency was transferred from the Federal Ministry of Transport and Digital Infrastructure, and the responsibility for energy transition, including climate change aspects that are linked to energy transition, was transferred from the former Federal Ministry for the Environment, Nature Conservation Building and Nuclear Safety to the Federal Ministry for Economic Affairs and Energy.

27 The Ministry's report to the PAC on measures of energy transition in accordance with the resolution passed at the 34th meeting of the 18th legislative period of 28 April 2017.

28 Letter of 17 October 2017.

29 According to the Ministry, this conservative approach also applied to any re-scoping of federal government portfolios. The Ministry holds that the strengthening of the Ministry's role as the overall coordinator of energy transition demanded by the PAC could only be initiated in the 19th legislative period by the new Federal Government.

In its report[30], the Ministry assumed that the PAC did not expect an informal delimitation of tasks among federal government departments, but a formal overarching task analysis. However, due to the principle of departmental autonomy[31], the Ministry stated that it was not authorised to conduct such work beyond its own remit. Nevertheless, at the Committee for Organisational Management, the Ministry stated that it had repeatedly pointed out to the other federal government departments that the PAC had expected a cross-government task review. However, the other ministries referred to Art. 65 sent. 2of the German Constitution stating that all government departments were authorised to organise their affairs of their own accord.

Audit finding:

The Ministry believes that conducting the cross-government task analysis as demanded by the PAC is neither necessary nor possible.

According to the Ministry's schedule of responsibilities, the tasks of the branch responsible for internal coordination coincide with the external coordination of tasks among the federal government departments. The Ministry also pointed out that cooperation among the government departments was laid down in the Joint Rules of Procedure of the Federal Ministries. As in the case of internal coordination, the Ministry did not specify which activities needed to be aligned among federal government departments or what form such coordination was to take.

Audit finding:

Even after five years of exercising lead responsibility, the Ministry failed to specify what action is needed to coordinate energy transition.

According to our findings, there is also the need to align work among ministries that have shared responsibilities in other policy areas. The Cross-Government Committee for Spatial Data may serve as an example: With the cabinet decision of 17 June 1998, the Federal Government decided to refine the spatial data system across all federal government departments. In order to coordinate the various departmental requirements, the Federal Government set up the Cross-Government Committee for Spatial Data. The Committee reports to the Federal Ministry of the Interior, Building and Community. Other Committee members are the Federal Chancellery, the Federal Ministries for Economic Affairs and Energy, of Finance, of Defence, of Education and Research, of Transport and Digital Infrastructure, for the Environment, Nature Conservation and Nuclear Safety and of Food and Agriculture.

30 Report of the Ministry to the PAC on measures of energy transition pursuant to the resolution adopted at the 34th meeting of the 18th legislative period on 28 April 2017.

31 The departmental autonomy principle is laid down in Art. 65 sent. 2 of the German Constitution.

Audit finding:

In other policy areas, cross-government committees have been set up to coordinate work among several ministries.

2.3 Coordination of Federal Government with the federal states and with the EU

Energy transition efforts are being implemented nation-wide across all federal states. The federal states have own powers to shape energy policy, e.g. under regional development law. What is more, the federal states have developed grant programmes to implement their respective energy policy goals.

One of the tasks of the Ministry's above branch is to coordinate energy transition efforts within Federal Government and with the federal states. According to the schedule of responsibilities, this includes general policy matters regarding the relationship between Federal Government and federal states, assessing energy structures and strategies of the federal states, energy policy matters dealt with by the Conference of Ministers for Economic Affairs and other energy-related topics discussed at various government levels.[32]

From the Ministry's point of view, the Federal Government and the federal states align action on energy policy much closer than is required by law or by good practice in other policy areas. The Ministry stated that such coordination on energy policy took place, for example, at the conferences of Ministers for Economic and Environmental Affairs and meetings of the Federal Chancellor with the heads of government of the federal states.[33] In key energy policy projects, the Ministry pointed out that the federal states were even involved before the official hearing of the federal states or the Federal Council of Constituent States (the Federal Council).[34] In addition to that, the Ministry referred to senior levels of the Federal Government and the federal states meeting regularly.[35] Current and projected energy efficiency funding activities are aligned via the processes established for the Energy Efficiency Platform, the related working group at Federal Government and federal state level, and via deliberations between leaders of Federal Government and federal states in charge of energy efficiency matters. Information and alignment activities in the field of energy efficiency had also been pooled in the working group on energy grants that has recently been established.

32 Meetings of the Federal Chancellor and heads of governments of the federal states, state secretaries, senior directors and subject-matter experts.

33 The Ministry's directors who are responsible for energy policy regularly meet with their counterparts of the various federal states' energy ministries to discuss current energy policy matters.

34 Representatives of the federal states also attend meetings of the Electricity Transition Platforms and related working groups.

35 The federal states requested for more meetings at subject-matter expert level as part of the joint working group on electricity industry of Federal Government and the federal states. The Ministry intends to initiate such meetings for leaders of government departments.

For example, by April 2014, Federal Government and the federal states had established 24 committees with up to nine sub-working groups that were in charge of coordinating and sharing information on diverse energy transition matters. An updated overview that has expressly been designated as being non-final by the Ministry shows that by now, at the time of our audit mission, the number has grown to some 45 committees, including working groups.

Audit finding:

Energy transition is a topic discussed both at the Conference of Ministers for Economic Affairs and at the Conference of Ministers for the Environment.

Currently, there are some 45 committees in place that deal with energy transition matters.

According to the Ministry, one may rightly say that "*matters discussed [in such committees] may have the quality of genuine decisions"*[36].

The Federal Government and the federal states set up various committees that cover policies that need joint action across all government levels to be successful. For example, coordination of the joint task: "Improvement of regional economic structures" is vested in a body with decision-making powers: the Federal Government and the federal states set up a coordination committee chaired by the Ministry that adopts the coordination framework and also decides on the allocation of funds among the federal states and on the purpose for which the funds may be appropriated.[37] Another example is the joint committee established by the Federal Government and the federal states in accordance with Art. 18c, Second Book of the Social Security Code. In this committee, subject-matter experts of the Federal Ministry of Labour and Social Affairs, the Federal Employment Agency, regional representatives and the local umbrella organisations of municipalities discuss key matters on implementing basic benefits for job-seekers.

Audit finding:

In other major policy areas where there is a need for cooperation across government levels, the relevant joint committees have been assigned statutory responsibilities and quorum thresholds.

36 E-mail of the Ministry dated 2 May 2018, without ref. no.

37 See Arts. 4 and 5 of the Law on the Joint Task for the Improvement of Regional Economic Structures of Federal Government and federal states of 6 October 1969 (Federal Law Gazette I p. 1861), amended by Art. 269 of the regulation of 31 August 2015 (Federal Law Gazette I p. 1474).

Coordination efforts are also needed to embed energy transition in the European context.[38] Within the Ministry such responsibilities lie with another branch of DG III. According to the schedule of responsibilities, the branch is charged with "EU coordination (energy policy)" which includes general policy matters of European energy policy, EU energy policy positions and reports, presentations and papers, preparatory work for deliberations and responding to parliamentary inquiries, etc. The branch collects reports, expert opinions and proposals on EU energy policy issued by other EU Member States, political parties and associations. The branch has the duty to coordinate federal government guidance to the Council Working Group on Energy and the Committee of Permanent Representatives and to process and monitor EU Commission proposals on EU energy policy.

Audit finding:

One branch of the Ministry has the duty to coordinate federal government action on energy policy matters with the EU.

Since 2014, the number of bodies charged with coordinating energy transition at European level has doubled to reach a total of 18.[39]

2.4 Conclusions

2.4.1. Coordination of energy transition within the Ministry

The allocation of technical tasks among four DGs with a total of 34 branches and almost 300 staff makes it imperative to define the efforts needing coordination and to shape coordination work. So far, the Ministry has failed to do so. Instead, the Ministry referred to the Ministry's rules of procedure and the perceived internal and cross-government coordination functions of the branch responsible. Unless the activities needing coordination have been clearly defined by the Ministry, it will remain at the sole discretion of the relevant branches or even individual staff members to decide on the need for coordinating efforts.

38 For the two aspects see no. VI. 3. of the coalition agreement between CDU/CSU and SPD of 12 March 2018.

39 According to the Ministry, Germany's influence on the number of committees is limited since there are currently 27 EU Member States having a say.

The tasks set out in the schedule of responsibilities do not properly serve coordination purposes since they do not provide guidance on how the branch in charge of internal and cross-government coordination shall encourage structured and coherent collaboration among the technical branches. The role of the branch is more or less limited to collecting and aligning information about the current state of affairs received from other organisational units to provide input for various reporting purposes. The branch is not even in the position to coordinate clean energy efforts within the Ministry. Due to its place in the line structure of DG III, which does not even have sole responsibility for energy transition, the branch is not able to effectively ensure coordination. We hold that where several DGs, sub-divisions and technical branches have shared responsibilities, action can be effectively synchronised only at a higher level, e.g. by means of a steering unit placed above directorate level and reporting directly to the Federal Minister. Therefore the poor structural set-up of the Ministry taken alone already presents weaknesses in coordination.

In order to address such organisational shortcomings, a task analysis may be of merit. However, the Ministry can only carry out the internal task analysis demanded by the PAC once it has defined the contents, scope and responsibilities of coordination. We share the Ministry's opinion that additional tasks may increase the burden on the Ministry's coordination role. However, the Ministry did not clearly define the contents, scope and responsibilities regarding its current coordination functions and also failed to do so in its recent task analysis and assessment of staffing needs. We doubt that requisitioning additional staff will help the Ministry to better meet the requirements placed on its coordination role.

2.4.2 Coordination among federal government departments

A task analysis or review is designed in the first place to define tasks fully and consistently without any overlaps or duplications. The Ministry should therefore have clearly defined and scoped its coordination and technical tasks and clearly separated them from similar responsibilities held by other government departments rolling out energy transition. The purpose would have been to avoid, for example, duplication of work or inconsistent decision-making. This approach would have helped to strengthen the Ministry’s overall coordinator role. If this had been done, there would not have been the need for a further initiative of the Federal Chancellery.

The Ministry did not carry out the cross-government task analysis as demanded by the PAC, because it construed the underlying resolution in a strictly formal manner. The Ministry’s reference to the departmental autonomy is, however, not convincing. Where several ministries share responsibilities, it is common practice at federal government level to clearly separate respective functions from one another. The reason for establishing the Committee for

Organisational Management was to strike a balance between departmental autonomy and the need for coordination to better structure and modernise administrative action across the federal public sector. If, however, this Committee that has been put into place expressly for the purpose of coordination is not able to encourage a delimitation of responsibilities across government, it is unrealistic to assume that the above branch may help navigate the federal government departments to a low-carbon economy. As a result, coordination between federal government departments also requires an overarching, maybe cross-government type of body having the decision-making powers needed. The Cross-Government Committee for Spatial Data is a good example of how this can work at federal government level. In our view, a similar committee – instituted by means of a cabinet decision tasking the Ministry – might also be a suitable and effective instrument for the crucial role of coordinating energy transition.[40] It is not reasonable that for a number of years, a Federal Energy Commissioner has been in place to perform a narrowly defined task within energy transition, but that so far no such need has been stated for the clean energy challenge.

2.4.3 Coordination between Federal Government and federal states and Federal Government and the EU

Diverging energy policy targets and separately managed grant programmes of the two government levels make it imperative that all activities and initiatives are synchronised and aligned. However, descriptions such as 'basic matters governing the relationship between the two government levels as part of energy transition' or 'matters of energy policy of the Conference of Ministers for Economic Affairs' are little specific and not well-suited for deriving actual coordination needs from them. Other functions recognised obviously only relate to the input to be provided to the bodies at all levels of government. Also, discussions on clean energy between the Federal Government and the federal states that form the basis for decision-making regularly take place at senior leader levels. As a result, the branch responsible, once again, is not in the position to play an active coordinator role in such discussions and provide leadership on actions to be taken by the two government levels.

Coordination efforts between the Federal Government and the EU made by the branch in charge are impaired because the schedule of responsibilities shows general responsibilities rather than specific coordination tasks. Responsibilities, however, cannot be evaluated in a task analysis since they usually comprise several tasks.

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40 The Export Credit Guarantees Committee of the Federal Government is another inter-governmental committee that may take general decisions on fundamental principles and may commit to providing the funds needed. This Committee is chaired by the Federal Ministry for Economic Affairs and Energy; Members include the Federal Ministry of Finance, the Federal Foreign Office and the Federal Ministry for Economic Cooperation and Development. Committee representatives also include other mandated federal bodies and experts from banking institutions.

The information we provided in nos. 2.1 to 2.3 on the lacking influence the branch responsible has, also applies accordingly. This branch is also not in a position to align work between the Federal Government and the EU.

We also doubt that it is possible to effectively coordinate energy transition between the two government levels or with the EU by creating a number of new committees. Although technical expertise has appropriately been relied on, this reliance is hampered if such expertise is embedded in an overly complex committee structure.[41] Effective coordination does not automatically result from a high number of committees and frequent committee meetings. Creating more and more committees and working groups makes coordination more cumbersome and requires more centralised steering efforts. Furthermore, sharing information is no substitute for sound coordination. A small number of committees authorised to make binding decisions or to provide the basis for decision-making by the Conference of Ministers would help to coordinate energy transition efficiently and more effectively.

2.5 Recommendations

Major prerequisites for a structured and coherent coordination of clean energy efforts have still not been met. The Ministry has the duty to ensure effective coordination. To this end, the Ministry shall determine in the first place

- what specific tasks the Ministry needs to perform to coordinate energy transition in a structured and coherent manner with all stakeholders;
- which organisational units may perform such tasks in an appropriate manner; and
- how to shape processes needed to perform coordination tasks.

The Ministry should explore options for pooling cross-government coordination tasks at an overarching level – for example by creating **a clean energy steering unit** at the state secretary level. The Ministry should also explore the pros and cons of setting up an **interdepartmental clean energy committee** helping to improve coordination among federal government departments.

As to coordination between the two government levels, the Ministry should consider establishing a **joint clean energy committee** composed of representatives of the Federal Government and the federal states.

41 Advisory report addressed to the Federal Government pursuant to Art. 88, para. 2 of the Federal Budget Code: Organisational and financial aspects of the implementation of the federal programmes designed to ensure security of future energy supply, 4 August 2014 (ref. no.: VII 4 - 2013 -0223).

The Ministry should review the need for the number of committees currently in place. Where a committee is considered necessary, such committee should preferably become a working group that should provide support to the joint committee. If necessary, the Ministry should launch the relevant legal initiatives. We also consider it appropriate that decision-making powers on energy transition should be merged with the relevant energy policy unit of the Conference of Ministers for Economic Affairs. In doing so, the fact that overall coordination of the shift to clean energy has been with the Ministry for almost five years would also be duly reflected at policy-making level.

A centralised body with a coordinator role and decision-making powers is also needed to make the shift from electricity transition to genuine sector-wide energy transition (gas, heating and transport). The same is needed for international cooperation on energy which has been set out in the coalition agreement.[42]

Interim audit finding:

We expect the Ministry to play an effective role in energy transition and, to this end, determine

- what coordination functions fall into its remit;
- how coordination functions may be properly structured;
- what overarching coordination body is to be established;
- whether an inter-departmental committee for coordination will be set up among the federal government departments; and
- whether to initiate a joint clean energy coordination committee of the two government levels.

42 See no. VI. 3. of the coalition agreement between CDU/CSU and SPD of 12 March 2018 on the two aspects.

3 Governance of energy transition

3.1 Monitoring

Monitoring serves to track the progress made towards target achievement and the status of efforts made to shift to clean energy. This is to enable adjustments in case of need.[43] Focus is placed on a safe, efficient and sustainable energy supply. The Ministry intends to measure the progress of clean energy programmes by means of indicators. To this end, several targets have been defined at various levels and documented in the recent Monitoring Report.[44] So far, the Ministry has neither defined nor quantified the goals of security of energy supply and of energy affordability.

As part of its work, the "energy monitoring and statistics" branch aggregates a vast amount of energy data from preceding years.[45] The list of references and the sources of the recent Monitoring Report indicate that the Ministry used 48 different sources in order to review and report on the status of 72 energy transition indicators.[46] The Monitoring Report does not specify how the Federal Government's targets and the indicators are linked to the 190 low-carbon programmes underway.

Audit finding:

The Ministry relies on 48 different data sources to review the status of energy transition by means of 72 indicators.

Pursuant to Art. 63 taken together with Art. 35, Energy Industry Act [47], the Federal Government uses the Monitoring Report to inform Federal Parliament each year on the progress of expanding renewable energies.[48] Monitoring work done by the Ministry also encompasses grid expansion, the number of

43 See Fifth "Energy Transition" Monitoring Report "The Energy of the Future", reporting year 2015, issued in December 2016, [German] page 5.

44 See Sixth "Energy Transition" Monitoring Report "The Energy of the Future", reporting year 2016 on 27 June 2018, [German] page 10.

45 Key sources encompass, e.g., public energy statistics. Other data and statistics were provided by the German Federal Network Agency, the German Environment Agency, the Federal Motor Transport Authority, the German Institute for Economic Research, the statistics of the coal mining industry, the working group on renewable energy statistics and the working group on energy balances, https://www.bmwi.de/Redaktion/DE/Artikel/Energie/ monitoring-prozess.html, data retrieved on 3 September 2018.

46 See Sixth "Energy Transition" Monitoring Report "The Energy of the Future", reporting year 2016 on 27 June 2018, number 2.2, figure 2.2.

47 Energy Industry Act of 7 July 2005 (Federal Law Gazette I p. 1970, 3621), amended by Art. 2 para. 6 of the Act as of 20 July 2017 (Federal Law Gazette I p. 2808, 2018 I 472).

48 Pursuant to Art. 63 para. 3 taken together with Art. 35 of the Energy Industry Act, the German Federal Network Agency shall determine electricity and gas prices together with the Federal Cartel Office and shall charge such prices, including taxes and charges, to private households as well as service, manufacturing and commercial enterprises. According to the Ministry, such monitoring is not linked to energy transition.

power stations, energy efficiency and the resulting challenges and recommendations for action needed. Also, the Ministry needs to present the status and trend of security of supply of natural gas and electricity generation as well as other pertinent information.[49] Individual provisions of the Energy Industry Act govern cost monitoring, cost allocation and surcharge.[50] In the Sixth Monitoring Report, for example, the Ministry sets out the surcharge to be levied pursuant to the Renewable Energy Sources Act, energy expenditures and electricity prices applicable to private households and energy costs per kWh incurred by the industry.[51] Other costs are presented on an annual basis such as electricity tax relief or relief under the Combined Heat and Power Act or the average expenditure on ancillary services (facilitating the flow of electric power to match supply and demand).

In its report to the PAC[52], the Ministry stated that a realistic and full overview of all energy transition costs required a full presentation of the various quantitative indicators on sector-related and macroeconomic data reflecting the past and the future (where data are available). To this end, the Ministry suggested using an extended set of indicators for an in-depth monitoring of the National Action Plan on Energy Efficiency and the Energy Efficiency Strategy for Buildings. According to the Ministry, it would also be possible to further enhance the presentation of data on energy costs of private households. From a macroeconomic view, the Ministry's aim was to present final consumer expenditures[53] in an aggregated format and to recognise them separately from the components that are government-driven, regulated or market-driven. In its Sixth Monitoring Report, the Ministry implemented these ideas and presented final consumer electricity costs in aggregate amounts (billion euros).[54]

The Ministry continued that in order to give equal weight to the three goals, the aspect of security of energy supply[55] was presented in more detail than before in the Sixth Monitoring Report. In addition to that, the Ministry stated that it had contracted out various research projects for example on programme impact and on indicators measuring the security of energy supply in the electricity market.[56]

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49 This includes reports on the effectiveness and necessity of adjusting the feeding-in and prices charged, the closing of facilities, rescission payments in case of a closing-down, the network reserve, major natural gas power plants and, as from April 2018, also the effectiveness and necessity of steps taken on the capacity reserve and the resulting costs.

50 E.g. Arts. 35, 51, 51a, Energy Industry Act.

51 On page 89 of the Fifth Monitoring Report, the Ministry presents, however, total amounts relating to central programmes in the section "a level playing field". These include special equalisation schemes in the German Renewable Energy Sources Act (EEG), reductions in the CHP surcharge, electricity price compensation and relief under the Energy Tax Act and Electricity Tax Act.

52 The Ministry's report to the PAC on energy transition programmes in accordance with the resolution adopted at the 34th meeting of the 18th legislative period on 28 April 2017.

53 Including the GDP share of the end consumers' electricity costs.

54 See Sixth "Energy transition" Monitoring Report "The Energy of the Future" Summary, reporting year 2016 on 27 June 2018, [German] page 132.

55 For example, performance of the electricity market 2.0, extreme situations, reserves and European electricity market.

56 And a research project contracted out by the Federal Environmental Agency on indicators to assess the environmental sustainability of energy transition.

Audit finding:

The Ministry intends to use additional indicators to ensure that the three goals (environmental sustainability, security of energy supply and energy affordability) are given equal priority.

The Ministry sent us a detailed list showing the Federal Government's 2017 disbursements on energy transition made from the federal budget and the Energy and Climate Fund.[57] The Ministry stated that transition costs that were subject to governmental influence were also presented in full transparency and that current data were available at the German Federal Network Agency's website. The German grid operators published comprehensive and current information on the internet.[58]

So far, the Ministry has not provided data on the total annual costs and expenditures of the shift to a low-carbon economy. Since 2014, the Ministry has been of the opinion that the Federal Government's expenditures made from the federal budget and from the Energy and Climate Fund as well as the cost elements of energy prices that are subject to governmental influence could not be added up to form the "costs of energy transition". The reason is that even without the transition, energy policy decisions would have to be made, power plant capacities would need to be replaced and electricity grids would need to be operationalised or expanded.[59] The Ministry therefore concluded that overall transition costs could only be determined by means of a counterfactual scenario, i.e. by comparing a situation with energy transition against a situation without.[60] As a rule, such a model was based on assumptions and faced major methodological challenges.[61]

Audit finding:

The Ministry has not yet ensured full transparency of the costs and expenditures associated with energy transition.

57 The Ministry's report to the PAC on the steps taken to shift to clean energy in accordance with the resolution adopted at the 34th meeting of the 18th legislative period on 28 April 2017. The Ministry disclosed to us the expenditures linked to the various budget items of the federal government departments.

58 Cf. https://www.netztransparenz.de/.

59 The Ministry stated that in a scenario without energy transition, the Federal Government would also have incurred expenditures on energy policy programmes. Without energy transition, energy costs borne by private households and enterprises would also have been subject to government-driven charges or levies.

60 According to the Ministry, the following aspects needed to be taken into account: contents and duration of energy transition, the definition of costs, gross and net figures, counterfactual scenario approach, and the benefits of energy transition (e.g. averted impacts of global warming).

61 Comments of the Ministry on the audit of clean energy efforts made by the Ministry Focus: Chapter 0903, Energy and Climate Fund of 5 December 2016, ref. no.: Z-HA 99 1608.

3.2 Controlling

Apart from a monitoring procedure, the Ministry operates a global controlling system and a divisional controlling system to enhance governance of energy transition.

As to its global controlling system, the Ministry reported to the PAC that in June 2017, it had put into place a new branch for "grant controlling, evaluation, and *profi* (project funding information system)" ("strategic controlling").[62] According to the Ministry, the duties of the branch included global controlling and evaluating grant programmes[63]. The Ministry stated that the unit was the central branch for the analysis of the electoral districts system[64] and the programme controlling system. Also, the branch was responsible for implementing the *profi* project funding information system[65]. In the Ministry's view, this fact alone had helped to strengthen the controlling function. According to the Ministry, data retrieved from the programme controlling system were analysed to inform management decisions. Such information was used to modify or extend grant programmes and to study grant structure strategies. DGs were also authorised to do analyses. The Ministry did not hold centralised information on the extent to which the technical branches made use of their data access.

Since 2014, the Ministry has built up and advanced a divisional controlling system at DG II.[66] Since September 2017, a branch of DG II has been entrusted with divisional controlling of the grant programmes managed by Sub-DGs IIB and IIC ("divisional controlling").[67] According to the Ministry, this step had been taken to help directorate leaders to access all key indicator data at any time and to take prompt steering action as needed. The Ministry stated that the IIB6 branch centralised relevant data, validated them and reviewed them against target achievement indicators.[68]

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62 In April 2016, five staff members worked for the grant controlling unit. As to their grades, one staff was higher service (head of team, A 15), 3 higher intermediate service and 1 intermediate service.

63 The Ministry's report to the PAC on the steps taken to shift to clean energy in accordance with the resolution adopted at the 34th meeting of the 18th legislative period of 28 April 2017. In its comments, the Ministry points out that ZB7 is not responsible for evaluating grant programmes.

64 Database for the analysis of project funding by electoral districts.

65 In the *profi* IT system, the various process steps of the grant management are illustrated in database boxes.

66 Divisional controlling includes the grant programmes and several other activities having financial impact on "energy efficiency", "heat from renewable energies" and "energy research" which fall into the remit of DG II.

67 The Ministry stated that this process supplemented cross-divisional controlling within DG Z.

68 According to the Ministry, key indicators monitored by means of divisional controlling are: outflow, number of approved applications, volume of approved funds and – depending on the programme – other criteria, such as the number of advisory activities, the funding leverage, etc. In addition to that, divisional controlling also includes data on carbon reduction or energy savings, where information on this issue is available – in particular from the relevant programme evaluation carried out by external experts and consultants.

Audit finding:

In the Ministry's view, the governance tools for energy transition include monitoring, strategic controlling and divisional controlling.

According to the Ministry, strategic grant controlling done in DG Z and the divisional grant controlling in DG II pursue diverging goals. The Ministry specified that the strategic grant controlling reported to the Ministry's senior leaders, DGs and other bodies such as Parliament. On the other hand, divisional grant controlling served a specified subject-matter purpose and reported to other bodies than the strategic controlling function. The Ministry explained that within DG II, divisional controlling was used as a steering instrument for senior leaders of branches, sub-divisions and DGs. Those organisational levels discussed steering steps and milestones of a minor scope. Therefore, divisional controlling helped senior DG leaders to take steering steps informed by reliable and indicator-based data. According to the Ministry, such decisions referred to reallocating budget funds among programmes, adjusting funding guidelines or discontinuing programmes.

The monitoring process, the strategic controlling and the internal divisional controlling did not have any system interfaces. The text boxes for entering information were partially redundant. For several goals, the Ministry had not defined any targeted values in the steering instruments. Frequently, indicators were not determined, or targeted and/or actual values to measure target achievement were lacking. Baseline data required to enable the measurement of the degree of target achievement had not been documented. Goals, targeted values and actual values available for measuring target achievement frequently did not coincide across controlling instruments. Often, in the programme controlling system, outflows of funds had not been documented for several years in a row. The Ministry had assessed the effectiveness of a grant programme only in a few cases. In strategic controlling, for example, the Ministry had determined the following indicators: energy savings, carbon reductions achieved, heating and cooling from renewable energies in kWh, job and employment impacts or quantities.[69] In divisional controlling, on the other hand, key indicators included the outflow of funds, approvals (in euros) and the number of applications approved.[70]

69 Cf. analyses of the programme controlling of DGs II and IV that illustrate the targets, status of target achievement, milestones and grant programme progress etc.

70 Cf. annex 2 of the fourth 2017 quarterly report (divisional controlling of DG II).

Audit finding:

Goals, targeted values, actual values and indicators used to measure the status of target achievement differed among the various steering tools.

The Ministry pointed out to us that relevant governance information such as carbon reduction or primary energy savings could only be reflected with a considerable time lag. The Ministry also stated that no uniform methodological requirements were in place to calculate any savings made. Therefore, any programme results evaluations were based on diverging projections or extrapolations developed internally by the technical branches or by third parties.[71] According to the Ministry, DG II meanwhile used detailed methodological guidance[72] for streamlining data collection. The Ministry's report to the PAC states that programme results evaluations and target achievement reviews would be largely aligned in 2018 in order to enhance comparability of the various programmes and to better monitor and assess efficiency and effectiveness of grant programmes. Each grant programme would be complemented by measurable targets to provide a yardstick for controlling work (target agreements).

For the *StepUp!* grant programme[73], the target was set at 1,000 approved applications for 2017.[74] In 2016, the Ministry approved three applications. By 20 September 2017, the Ministry had approved another seven applications. In 2016, 2 per cent of the annual funds were disbursed and by 30 September 2017, another 1.2 per cent of the funds available in the respective year[75] had been disbursed. Still, the Ministry continued the programme.

Under energy saving contracting, 16 applications amounting to €35,000 had been approved by September 2017. For 2017, the targeted amount was 22 applications worth €900,000. The relevant guideline entered into force in January 2015 and expired on 31 December 2017. In December 2017, the Ministry extended the grant programme for another year.[76]

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71 According to its report to the PAC of 23 March 2018 (official records of the Budget Committee 19/047), the Ministry had developed consistent methodological standards for individual parameters and indicators as part of the evaluation of the energy efficiency fund, e.g. for the determination of carbon equivalents and the presentation of savings over project run.

72 This is the methodological part of the evaluation report on the energy efficiency funds of 17 August 2017.

73 *StepUp!* is a competitive programme run by the Ministry to promote private-sector capital expenditure projects to enhance energy efficiency.

74 The grant programme was launched on 1 June 2016.

75 In 2016, the amount available was €50 million; and in 2017, the amount available was €100 million.

76 According to the listing available, in 8 out of 16 grant programmes, the outflow was less than 50 per cent in 2017; another four programmes had an outflow of less than 60 per cent.

Audit finding:

The Ministry continued grant programmes, although there was little demand for them.

3.3 Steering energy transition by means of legislation

Laws and ordinances have a steering effect on energy transition. According to the overview of legislation governing Germany's energy supply system, there are 26 laws and 33 regulations in place at domestic level that govern the generation, storage, transmission, distribution and consumption of energy.[77]

Pursuant to the Joint Rules of Procedure of the Federal Ministries (Arts. 43 para. 1 no. 5 and 44 para. 1), the Ministry has the duty to provide information on the potential regulatory impact of a provision.[78] To assess the regulatory impact, the Ministry needs to fully document the economic impact and risks (compliance costs) associated with a legal provision. Focus needs to be placed on the following aspects:

- expenditures to be incurred by the private sector;
- impact on individual prices and the general price level; and
- impact on consumers.[79]

In many cases, the justifications of draft legislation included projections as to compliance costs developed by the Ministry. For example, the Ministry stated that the consumers' compliance costs due to stricter housing standards would amount to some €220 million and compliance costs for the private sector would total €692 million annually.[80] In another case of draft legislation, the Ministry estimated the public sector compliance costs to increase by less than €45,000 up to 2020.[81]

77 See the Ministry's overview of legislation governing Germany's energy supply system, as of March 2018

78 These encompass the intended effects and unintended side effects of the planned law (Art. 44 para 1 sent. 2 Joint Rules of Procedure of the Federal Ministries).

79 See the guidance on the determination and presentation of the compliance burden of Federal Government regulations of October 2012 including updated annexes VI and VII (as of 2017).

80 Draft of the second regulation on the amendment of the Energy Saving Ordinance, parliamentary paper 113/13 of 8 February 2013.

81 Draft law on the basic reform of the Renewable Energy Sources Act and on the amendment of other energy industry provisions, parliamentary paper 18/1304, 5 May 2014.

Audit finding:

The Ministry has relevant regulatory impact assessment data on the federal budget expenditures on energy transition, the portion of energy prices subject to governmental influence and the compliance costs of clean energy legislation. The Ministry may use these data to make total costs and expenditures as transparent as possible.

Many clean energy laws include overly detailed operational and technical requirements – for example, Arts. 11, 12, 12b and 13, Energy Industry Act, Arts. 9, 28, 38a and 39f, Renewable Energy Sources Act and Arts. 7, 8, 10, and 24, Combined Heat and Power Act.

Amending laws and ordinances is a rather time-consuming exercise.[82] In contrast to common laws, ordinances may be put into force faster; however, often they require the approval of the Federal Council[83] or Parliament's prior approval[84] which also adds to making this procedure rather cumbersome. For example, the legislative process for enacting the national grid fees[85] by way of a staggered procedure was launched when Federal Government[86] introduced the draft law on amending the Energy Industry Act of 27 January 2017.[87] After the amendment of the Energy Industry Act (Art. 24 sent. 1 no. 1 and sent. 2 no. 4) had become effective on 22 July 2017, in April 2018, the Federal Cabinet approved the ordinance on nationwide uniform network charges. On 8 June 2018, at its 968th meeting, the Federal Council[88] endorsed the regulation. On 29 June 2018, the regulation finally entered into force.[89] In contrast, the tax incentive law designed to promote electric vehicles for road transport[90] took six months only from draft to promulgation.[91] The Act had been classified as being particularly urgent in accordance with Art. 76 para. 2 sent. 4 set out in the German Constitution.

82 Before introducing a draft law which is normally done by Federal Government, the Federal Government aligns the proposed law with federal government departments and associations of stakeholders. The draft adopted by the cabinet is passed on to the Federal Council and then submitted to Federal Parliament together with the Federal Council's comments. After the draft has been deliberated by Parliament and communicated to the competent committee, some more steps are needed such as the consent of the Federal Council.

83 See e.g. the second statutory instrument amending the Energy Saving Ordinance, parliamentary paper 113/13, which is based on the Energy Savings Act. After the ordinance was adopted by the Federal Government on 8 February 2016, it was promulgated on 21 November 2013 (nine months after initiating the process); cf.: Arts. 21a para. 6 and 50 sent. 1, Energy Industry Act.

84 This means it is subject to approval by the Federal Council cf.: Arts. 13e para. 5 sent. 5 and 13i para. 1 sent. 1, Energy Industry Act.

85 Over recent years, the level of payments for avoided grid fees has risen continuously at national level. This resulted in a cost burden from using the network, the amount varying among regions. For this reason, grid fees should be harmonised nationwide as outlined in the draft resolution and the report of the Committee for Economic Affairs and Energy on the draft federal law –print 18/11528 – parliamentary paper 18/12999, page 11.

86 Draft law of the Federal Government, Federal Council paper 73/17.

87 Draft resolution and report of the Committee for Economic Affairs and Energy on the draft legislation of the Federal Government – print 18/11528 – parliamentary paper 18/12999, 28 June 2017.

88 Federal Council paper 145/18, 25 April 2018.

89 Federal Law Gazette 2018 I no. 22, 28 June 2018, page 825.

90 Federal Council paper 277/16.

91 Draft law of 27 May and promulgation on 16 November 2016.

Audit finding:

Laws and ordinances on the governance of energy transition are often overly detailed. It is a very time-consuming exercise to amend such laws and regulations as needed.

The Expert Commission stated in its comments on the Fifth Monitoring Report: *"The set of clean energy programmes currently implemented in Germany encompasses a large number of complex regulations and incentive systems and relief schemes. This mix may have been caused by the attempt to accommodate individual stakeholder interests. While there is a growing need to harmonise efforts to achieve target conformity, this diversity and its complex effects and cross-effects may jeopardise developing adequate solutions. To enhance efficiency and governance it would, however, be desirable to use a streamlined and cross-government steering mechanism."*[92] The Expert Commission considered a carbon pricing scheme to be helpful for massively simplifying and streamlining today's highly complex funding mechanisms.[93] The Expert Commission also stated that this uniform and cross-government steering mechanism would enhance the competitive position of renewable energies and make it easier to transform the energy sector.[94] The Expert Commission holds that there would soon be the opportunity to replace various surcharges[95] so that full carbon pricing would not be primarily viewed as an additional burden.[96] Although this instrument also goes well together with the proposed power sector coupling[97] [98], the Ministry has not yet taken it into account in its clean energy efforts.

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92 See Expert Commission on the Energy of the Future Monitoring Process, Statement on the Fifth Monitoring Report of the Federal Government for 2015, December 2016, no. 5 et seq.

93 See Expert Commission on the Energy of the Future Monitoring Process, briefing comment on the current state and major fields of energy transition, October 2017, p. 5; further detailed in the statement of the Expert Commission on the Energy of the Future Monitoring Process, Statement on the Sixth Monitoring Report of the Federal Government for 2016, June 2018, no. 10, p. 141 et seq.

94 See Expert Commission on the Energy of the Future Monitoring Process, Comment on the current state and important fields of activity of energy transition, October 2017, p. 5 and Expert Commission on the Energy of the Future Monitoring Process, Statement on the Fifth Monitoring Report of the Federal Government for 2015, December 2016, p. 24.

95 The Expert Commission points out the surcharges imposed pursuant to the Renewable Energy Sources Act and the Combined Heat and Power Act as well as electricity tax.

96 See Expert Commission on the Energy of the Future Monitoring Process, Statement on the Fifth Monitoring Report of the Federal Government for 2015, December 2016, p. 27 et seq.

97 Use of electricity from renewable energy in order to reduce reliance on fossil energies in other sectors (heating, cooling and transport sectors), see http://www.bmwi-energiewende.de/EWD/Redaktion/EN/Newsletter/2016/14/Meldung/direkt-answers.html https://www.bmwi-energiewende. de/EWD/Redaktion/Newsletter/2016/14/Meldung/direkt-erklaert.html, data retrieved on 3 September 2018.

98 Which according to the Expert Commission is not true for the current way of funding renewable energies, see Expert Commission on the Energy of the Future Monitoring Process, Statement on the Fifth Monitoring Report of the Federal Government for 2015, December 2016, p. 28

3.4 Conclusions

Federal Government does not give equal weight to the key goals of energy transition

Although the statutory monitoring procedure gives equal priority to the key goals of environmental sustainability, security of energy supply and energy affordability – often presented as costs or expenditures –, the Federal Government has so far not equally weighted the goals in the monitoring procedure. The Ministry seeks to achieve equal priority in the future by launching more indicators. However, giving equal weight to goals cannot be demonstrated by Federal Government merely by expanding the number of indicators. Unless the relationships among goals, programmes and indicators have been established, additional indicators cannot help enhance the Ministry's monitoring procedure. All indicators need to be linked to goals. All indicators also need to be transparent, sustainable and readily usable. The indicators set must permit assessing any impacts the indicators are responsive to and how such impacts may be influenced by means of recommendations for action developed as part of the monitoring procedure. This is the only way that the monitoring procedure can have an impact on governance. The indicators currently used by the Ministry do not adequately meet these criteria. It remains to be seen whether and to what extent more indicators can help to give equal priority to all goals and if these advance the steering effect sought.

No effective governance without measurable targets

Unless the Federal Government ensures that all energy transition goals are measurable, no effective steering is possible. The Ministry cannot assess the success of its action without targeted values. If no spending caps are defined for energy costs, the Ministry is not able to assess energy affordability. It goes without saying that the costs and expenditures of the shift to a low-carbon economy are major factors that have a crucial governance impact. Policymakers need reliable information about the financial burden the pathway to a clean energy future will place on the federal budget and other sectors of the domestic economy. It is also of considerable interest to the citizens that costs are fully transparent.

Still no adequate transparency of costs and expenditures

We acknowledge that the Ministry has recently gained an overview of federal budget spending. The table the Ministry included in the Monitoring Report also better shows the final consumer electricity costs. However, the Ministry has not ensured full transparency of costs and expenditures needed. Against the background of its statutory duties, the Ministry has information at hand already today on the various costs entailed by shifting to clean energy. The argument brought forward by the Ministry that the costs could only be calculated by means of a counterfactual scenario is not convincing. A counterfactual scenario is no prerequisite for calculating transition costs and expenditures. We concur that this procedure is overly burdensome and inaccurate. In order to derive the transition costs, it is not necessary to list the potential costs in a scenario without energy transition and gauge them against the cost entailed. The option offered by the counterfactual scenario to do without the transition is in fact no viable option any more. Such effects could usefully be identified and presented only if actually needed for mere steering purposes.

The overview of expenditures and costs may be established with reasonable effort by a central body that collects and aggregates available information. In doing so, the Ministry could usefully take into account, for example, (reliable) compliance burden data in draft legislation. This would allow deriving a rough total to better inform Parliament and at the same time make costs and expenditures more transparent for consumers.

The German SAI has analysed various sources available to collect cost and expenditure data incurred in 2017. These are set down below:[99]

99 Estimated costs of the compliance burden data in draft legislation are not taken into account.

Federal expenditures, revenue foregone and burdens on final consumers, status: 2017

Table 1

Federal expenditures and revenue foregone	Amount
Federal budget and energy and climate fund (actual expenditure)	€3.16 billion[100]
Staff costs	€0.05 billion[102]
Energy tax incentives provided in various programmes (e.g. tax relief for high-energy or electricity consuming processes and procedures, general energy tax and electricity duty relief granted to the manufacturing industry, top-bracket offset)	€0.88 billion[102]
Electricity price compensation through aids granted to industrial plants	€0.29 billion[103]
Electricity duty relief	€3.5 billion[104]
Burden on final consumers	
Renewable energy surcharge	€23.98 billion[105]
Surcharge imposed by the Combined Heat and Power Act	€1.17 billion[106]
Offshore liability regime	€0.2 billion[107]
Art. 19 Electricity Network Charges Ordinance	€1.10 billion[108]
Ordinance on interruptible loads	€0.03 billion[109]
Total	**€34.36 billion**

100 Listing of the Ministry of 7 March 2018, no ref. no.
101 Cf. FTE staff numbers of federal government departments and subordinate bodies in e-mails of the Ministry dated 5 March 2018 and 7 May 2018.
102 See Sixth "Energy Transition" Monitoring Report of the Federal Government, reporting year 2016, dated 27 June 2018, [German] p. 213.
103 See footnote 102, page 217.
104 See footnote 102, page 213.
105 Cf.https://www.netztransparenz.de/portals/1/Content/EEG-Umlage/EEG-Umlage%20 2017/20161014_Veroeffentlichung_EEG-Umlage_2017.pdf, data retrieved on 3 September 2018.
106 Cf.https://www.netztransparenz.de/Portals/1/Content/Kraft-Wärme-Kopplungsgesetz/KWK-G-Aufschläge-Prognosen/Anlage_2_indikative_KWKG-Umlage_2017.pdf, data retrieved on 3 September 2018.
107 See footnote 102, page 132.
108 Cf.https://www.netztransparenz.de/portals/1/Content/Energiewirtschaftsgesetz/Umlage%20%c2%a719%20Abs.%202%20StromNEV/Umlage-2017/19-2-StromNEV_Prognose2017_Okt-2015.pdf, data retrieved on 3 September 2018.
109 Cf.https://www.netztransparenz.de/portals/1/Content/Energiewirtschaftsgesetz/Umlage%20%c2%a7%2018%20AbLaV/Umlage%20%c2%a7%2018%20AbLaV%20%202017/AbLaV_Prognose2017.pdf, data retrieved on 3 September 2018.

Although the amount of €34.36 billion does not encompass all clean energy costs, such as the compliance burden forecast for legislative amendments, it is an approximate amount of all costs, expenditures and revenues foregone in one calendar year. This indicator can, however, have a steering impact only if it can be measured against a quantifiable target.

Shortcomings in the management of the Ministry's steering system

Strategic controlling and divisional controlling in their current structure are no reliable tools for the Ministry to effectively steer energy transition. Controlling system data are often redundant and need to be captured manually. The manual procedure used is obsolete, burdensome, error-prone and vulnerable to non-acceptance in the technical branches. All this adversely impacts on data quality. Other evidence we collected illustrates that data needed for steering purposes have either not been recorded, or not fully, or have often been inconsistent. The indicators used so far such as the number of applications or grants approved do not permit drawing reliable conclusions about the progress made towards the targets of carbon reduction or primary energy savings. The indicators might at most reveal the need for adapting grant programmes, for example, to modify grant amounts and thus influence the number of applications.

The indicators referring to the targets set for carbon reduction or primary energy savings have still not been complemented by targeted values and it is impossible to derive actual values (at a quarterly basis for example). In some cases, the Ministry did not determine quantitative targets to measure their achievement degree. Also, the targets set and their actual values were still based on various model calculations. In this respect, the guidance mentioned by the Ministry in the report to the PAC has not helped to change the situation for the better.

Also, effective governance of the shift to a low-carbon economy will continue to be considerably impaired since pertinent steering data on key indicators can only be reflected with a considerable delay. In addition to that, target achievement is also only to be reflected by way of a model. It is therefore not possible to identify to what extent data available deviate from actual figures. This may lead to flawed decision-making. For example, it may be necessary to make adjustments in the steering process although such a need has not been highlighted in the model or the model may erroneously indicate a need for adjustments which in fact does not exist.

As to the annual targets of carbon reduction or primary energy savings, no yardsticks are available to measure what level of savings achieved can be taken as a success.

Even in those cases where the Ministry could have taken prompt action to respond to any needs stated in divisional controlling, it chose not to do so. For example, we would have expected the Ministry to discontinue the *StepUp!* grant programmes and energy saving-related contracting, since the programmes met

little demand only. Thus more funds could have been made available for programmes meeting higher demand.

Steering of energy transition by means of carbon pricing

As a rule, laws should not be overloaded with details.[110] However, common laws and ordinances on the governance of energy transition show an extreme level of complexity. So far, such laws and ordinances need to be amended to reflect any detail needing adjustment. Due to the long response times associated with the formal legislation procedure and the requirement of approval by the Federal Parliament and the Federal Council to ordinances, any decisions taken today will be implemented by Federal Government to become effective in the far future only. By implication, the impact of some steering efforts is delayed by years – such as has been the case for the target-related indicators of carbon reduction or primary energy savings. The framework conditions may have changed while legislation is being processed and enacted so that the steps taken may even entail adverse effects. In order to improve the monitoring process and to shorten the Ministry's response times, the Ministry should explore options for using other more effective steering instruments. From the German SAI's point of view, **carbon pricing**, as suggested by the Expert Commission, might be an appropriate instrument. Since carbon pricing would make generating renewable energy more attractive, the Ministry would be in the position to downsize its grant programmes accordingly. Complex funding mechanisms or instruments, in particular those laid down in common laws or ordinances, could be abolished.[111] The use of efficient market economy elements would also reduce the command economy driven steering burden. If the use of such flexible instruments is not considered a viable option, steering mechanisms should preferably be included in funding guidelines rather than in laws and ordinances.

Currently, three organisational units of the Ministry are performing monitoring and controlling tasks independently of each other. The branches use their own controlling terminology and different sources to retrieve data that are partly redundant, incomplete or even contradictory. The Ministry's steering instruments are used in an uncoordinated and isolated manner. As a result, data needed for steering purposes are held at a decentralised level only. Even if we consider the Ministry's practices solely from an organisational management perspective, they give rise to severe concern. Also, partially the number of measurable targets is too low. Steering via the indicators of carbon reduction or primary energy savings and by means of laws and ordinances is cumbersome and can only be implemented with considerable delay. Taken together these shortcomings weigh heavily and make it difficult for the Ministry to effectively navigate the shift to a low-carbon economy.

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110 See Ossenbühl, Handbook of constitutional law, volume V, 3rd ed. 2007, Art. 100 nos. 20 and 48; ordinances and not the law, is to contain the technical details and service-level instructions on minor policy matters, see Ossenbühl, ibid., Art. 103 no. 3.

111 See sources stated under footnotes 92 to 96 and 98.

3.5 Recommendations

The Federal Government is required to quantify the goals of energy affordability and security of energy supply. The Ministry should solely use indicators that may have an active steering effect on monitoring and on controlling. The Ministry needs to be in the position to retrieve and update reliable data on the indicators at a reasonable amount of time and effort.

The Ministry will need to pursue efforts to present transition as completely and transparently as possible. To this end, the scores of the data available today should be aggregated and totalled up.

Solely steering instruments that fully embrace the clean energy goals can be of help to the Ministry in coordinating and steering the shift to a low-carbon economy. For this purpose, the Ministry shall

- put into place a centralised controlling function fully reflecting the clean energy goals;
- use an appropriate and consistent set of controlling instruments; and
- analyse which organisational structure is best suited for the controlling function.[112]

The data needed for steering the transition should be retained at a centralised data source. To this end, the Ministry needs to make smart choices to determine who shall provide what sound and pertinent data at what point of time. The Ministry should consistently use those steering instruments where it considers such instruments appropriate for governance purposes.

The Ministry needs to examine to what extent it may use more effective steering mechanisms. In particular, the Ministry should consider using carbon pricing as another incentive to shift to a low-carbon economy. If a flexible steering mechanism does not seem to be an adequate option, the Ministry needs to study whether to adopt a law or a statutory instrument to incorporate practical and technical details of energy transition. In the first place, the Ministry should use funding guidelines to steer the transition.

112 Analysing deviations from targeted values is one of the major tasks of a (neutral) controlling unit, which therefore usually takes the form of a governance unit rather than a normal branch. In our view, the task of analysing deviations from targeted values should not be assigned to mere technical branches which are often expected to meet high performance levels.

Interim audit finding:

We demand the

- Federal Government to set measurable targets for energy affordability and security of energy supply;
- Ministry to rely on those indicators solely that can trigger a steering effect;
- Ministry to make the costs of energy transition as fully transparent as possible at a reasonable amount of time and effort;
- Ministry to consistently use steering tools that serve to foster the goals of energy transition;
- Ministry to consider relying on more effective steering mechanisms such as carbon pricing as an incentive for shifting to clean energy.

4 Comments submitted by the Ministry

For the most part, the Ministry sticks to its views which it has already taken on earlier findings of the German SAI. For this reason, the Ministry's comments are summarised below:

The Ministry remains silent on the fact that it will largely fall short of the targets set for energy transition despite the considerable input of financial and human resources. However, the Ministry acknowledges the fundamental significance of effective and efficient coordination and says "*This is especially true for an intergenerational project for society as a whole such as energy transition, which involves several actors at Federal Government, federal state and non-governmental level and which is subject to European and international influences.*"

However, the Ministry strongly disagrees with our findings on poor coordination within the Ministry, with other government departments, with the federal states and at the European level. According to the Ministry, the "*structures in place*" are appropriate "*to ensure efficient and effective coordination of energy transition*". In contrast to our view, the Ministry believes that the branches in charge of coordination do not have a navigating role in switching to clean energy neither within the Ministry nor with the other actors. The Ministry also states that the magnitude of 680 individual tasks hardly permits making arrangements for overall coordination activities.

The Ministry states that the governance unit at State Secretary level recommended by the German SAI would not be perceived as an integral part of directorates in charge of energy transition. The Ministry continues that, due to the allocation of responsibilities among State Secretaries, setting up such a unit within the remit of *one* specific State Secretary does not really make a difference to all organisational units involved in energy transition. The Ministry

refers to the Joint Rules of Procedure of the Federal Ministries (art. 7 para. 2 clause 2) to make the point that, as a rule, technically related tasks shall be entrusted to one organisational unit only such as the directorate having lead responsibility.

The Ministry also states that a cross-government committee is not appropriate to enhance coordination among government departments. The Ministry holds that the committee is not able to make binding decisions within the intergenerational clean energy project because such major decisions are reserved to the legislative bodies. According to the Ministry, a duly authorised joint coordination committee is not capable of enhancing coordination among federal and state governments. The Ministry continues that current coordination practices are efficient and effective. The Ministry also states that compared to the structures in place, merging decision-making authority for energy transition in the energy policy part of the Conference of Ministers for Economic Affairs as recommended by the German SAI also does not provide any added value. The Ministry continues that the Conference of Ministers is governed by formal procedures and so far it has not been the best choice for ensuring in-depth and highly professional discussions on individual topics.

According to the Ministry, its task review activities are in line with the requirements set in the organisational management manual. The Ministry states that nevertheless it has reviewed the classifications in the catalogue of tasks and in individual cases modified these by adding more subtasks as needed. Based on our advice, the Ministry intends to enhance task review activities and make it a recurrent exercise.

The Ministry states that the three goals of energy policy have deliberately been expressed as framework conditions and not narrowed down to a single quantified target. The Ministry states that, rather than using an individual indicator, the Monitoring Report relies on various indicators to assess the progress made towards the goals because the aggregated indicators adequately provide an accurate picture of target achievement.

The Ministry reiterates its view that a reliable cost assessment requires a counterfactual scenario. The Ministry refers to our assessment as "gross cost assessment" and rejects it as questionable from the methodological point of view. For instance, the Ministry states that the renewable energy surcharge being the major cost item of the cost overview prepared by the German SAI cannot be regarded as cost of energy transition. In the Ministry's view, the relief programmes cited do not serve transition purposes but industrial policy purposes, which may also not be attributed to energy transition.

The Ministry also rejects our findings on controlling, arguing that the steering effect of the system currently in place has stood the practice test. The Ministry considers implementing a central data source for steering the transition to be neither possible nor useful and without any added value. The Ministry states that model-based controlling is not possible because the Ministry has a large number of other controlling tasks apart from energy transition.

In principle, the Ministry agrees to the finding that a consistent cross-sector carbon price could help to reduce emissions in a cost-effective way. However, the Ministry highlights budgetary law concerns and potential distributional impacts and impacts on industrial competitiveness that such a reform would entail.

The Ministry states that energy law is so complex because it is a dynamic area of law and technical requirements and solutions constantly continue to develop. The Ministry continues that the legal framework reflects such developments accordingly. Furthermore, the Ministry states that public policy debates characterising the legislative process may contribute to a wider acceptance of the respective policy decision made.

5 Final conclusions

In the present report, the German SAI recommended to the Federal Ministry for Economic Affairs and Energy a set of specific steps designed to enhance coordination and governance of energy transition. The Ministry rejects the majority of these steps and does not see any need for action. We note that the Ministry remains silent on some significant failures to meet the targets set. However, this is a clear indication that the Federal Government's "intergenerational project of energy transition" is at risk of failure. If the Federal Government intends to make the transition a success and reach the energy policy targets set, prompt action is urgently needed.

The Ministry seeks to give the impression that energy transition is well coordinated and governed in all material respects. The Ministry is also of the opinion that an appropriate level of coordination has been established among actors at all government levels. This assessment is not convincing given the targets missed and the considerable burdens placed on the private sector, public budgets and private households. One major shortcoming is the fact that the Ministry has not defined and does not plan to define the requirements for rolling out energy transition to ensure that the targets set are achieved transparently and efficiently. An organisational unit having overall responsibilities and wide decision-making powers is absolutely needed for this purpose.

We see no reason why the Ministry does not include the renewable energy surcharge[113] in transition costs. The renewable energy surcharge burdened the cost of power consumption by almost €24 billion in 2016. As a result of taxes and energy surcharges, the private sector and private households can benefit only little from favourable trends of stock market prices for electricity.

We note that the Ministry considers its steering system to be sufficiently effective and does not see any need for action. Given that the goals of energy transition may likely not be accomplished either in full or in part, the Ministry's overall management of its governance tools is flawed. Provided that the steering system truly reflects the transition status, reasons might include:

- The steering system is too cumbersome.
- No or wrong conclusions are drawn from information provided – also in response to external impacts such as economic or population growth.
- Actions are not sufficiently target-oriented.
- Coordination is insufficient.
- Targets are unrealistic.

113 The renewable energy surcharge serves to fund the expansion of renewable energies. German source: https://www.bundesnetzagentur.de/DE/Sachgebiete/ElektrizitaetundGas/Verbraucher/Energielexikon/energielexikon-node.html, data retrieved on 3 September 2018.

We reiterate that a steering system does not become effective unless verifiable targets have been set and any need for action has been identified. Also needed is the commitment and the ability to make course corrections along the way. Not only for steering purposes but also for improving the overall public perception is it essential that the Ministry clearly discloses the financial impact of energy transition and what portions need to be shouldered by public budgets, the private sector and private households. Therefore, the Ministry should take a reasonable effort and seek to make transition costs fully transparent. Furthermore, we see an urgent need to set measurable targets for energy affordability and security of energy supply and to determine targeted values accordingly. We hold that an understatement of transition costs is neither appropriate nor does it help to build trust.

In the past five years, the costs imputable to energy transition totalled €160 billion or more. If the costs continue to increase and the targets set are not achieved, trust in government is likely to decline further. From our perspective, significant improvements in coordinating and steering energy transition are vital. Otherwise, the impression may arise among the German and international public that Germany is not able to successfully shape and navigate the transition that is a long-term process affecting the economy and society as a whole.

The German SAI's Governing Board adopted this report on 30 August 2018.

Bonn, 28 September 2018

Kay Scheller
German SAI President