

German Report on the Phasing-Out of Inefficient Fossil Fuel Subsidies

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I. Introduction

The G20 states committed themselves to the medium-term elimination of inefficient fossil fuel subsidies at Pittsburgh in 2009. Their communiqué notes, “*Inefficient fossil fuel subsidies (IFFS) encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change.*” In order to deliver on this commitment, the states agreed to carry out a voluntary peer review process. After China and the USA were the first countries to engage in peer reviews, Mexico and Germany declared themselves willing to continue the process.

For this purpose, Mexico and Germany jointly presented the attached Terms of Reference (ToR), which are substantively identical to a very great extent with the ToR used by the USA and China, the intention being to ensure consistency across the G20 peer review process. In their Terms of Reference, the two states propose that note be taken of relevant studies carried out by international organisations such as the IMF, the OECD and the World Bank.

According to these studies, the most common forms of subsidy include:

1. Direct budgetary support;
2. Tax code provisions;
3. Government provisions of auxiliary goods or services either at no charge or for below-market rates to facilitate fossil fuel use or production; and,
4. Requirements that non-government entities provide particular services to fossil fuel producers at below-market rates, or that require non-government entities to purchase above market quantities of fossil fuels or related services.

In order to prepare for the present self-report, Germany initially carried out a critical stocktake at a workshop held in April 2016. This involved the presentation of studies by the Institute for Public Economics at the University of Cologne, the German Institute for International and Security Affairs and Green Budget Germany. Apart from the participating federal ministries, stakeholders from the business world, the academic community and civil society were also invited to the workshop.

The present report on the phasing-out of inefficient fossil fuel subsidies has been drawn up and coordinated within the German Federal Government on the basis of the results of the workshop and the extensive Federal Government materials on subsidy reporting that are available. Taking account of the definition of IFFS adopted by Germany as the basis for its reporting, the criterion of inefficiency and the results from the evaluation of existing subsidies, Germany is currently pursuing the phasing-out of the fossil fuel subsidies discussed in section VIII.

The present report goes beyond the Country Progress Reports that are already presented on a regular basis in giving a comprehensive overview of the existing forms of support for fossil fuels in Germany and preparing the basis for an in-depth discussion of the different forms of support for fossil fuels. We hope this will speed up the process of phasing out inefficient fossil fuel subsidies in Germany and the other G20 countries.

II. The role of fossil fuels in German energy policy

As a highly industrialised country with relatively few fossil energy resources of its own, Germany is reliant to a high degree on an affordable, secure, environmentally and climate-friendly energy system. Given that it contributes 20.3 per cent of domestic value creation, German industry constitutes a central factor in the efforts to secure prosperity, growth and employment.

At present, fossil fuels supply just under 80 per cent of the primary energy consumed in Germany; nuclear energy supplies approximately 7.5 per cent of this energy. Germany is quite overwhelmingly reliant on imports in this field (2014: hard coal: 86.5 per cent; natural gas: 87.4 per cent; mineral oil: 97.7 per cent; nuclear energy: 100 per cent).

At the same time, Germany has committed itself to make a decisive contribution to the achievement of the EU's climate targets. Germany is pursuing the target of reducing its greenhouse gas emissions at least 40 per cent by 2020 compared with 1990. In December 2014, to ensure this target would be met, the German Federal Government adopted the Climate Action Programme 2020 and the National Energy Efficiency Action Plan, which has made a significant contribution to the Climate Action Programme and therefore to the attainment of the Federal Government's climate protection targets. These measures are intended to create the basis for greenhouse gas emissions to be cut 80 to 95 per cent by 2050. In order to achieve these climate-policy targets, Germany has initiated a comprehensive energy transition process, which envisages a fundamental restructuring of the energy supply system, significant reductions in primary energy consumption and significant increases in energy productivity. The table below gives an overview of the individual quantitative targets for the energy transition up to 2050.

	2014	2020	2030	2040	2050
GREENHOUSE GAS EMISSIONS					
Greenhouse gas emissions (compared with 1990)	-27%	at least -40%	at least -55%	at least -70%	at least -80 to -95%
RENEWABLE ENERGIES					
Share of gross final energy consumption	13.5%	18%	30%	45%	60%
Share of gross electricity consumption	27.4%	at least 35%	at least 50%	at least 65%	at least 80%
			EEG 2025: 40 to 45%	EEG 2035: 55 to 60%	
Share of heat consumption	12.0%	14%			
Share in transport sector	5.6%	10%			
EFFICIENCY AND CONSUMPTION					
Primary energy consumption (compared with 2008)	-8.7%	-20%	→ -50%		
Final energy productivity (2008-2050)	1.6 per year (08-15)	2.1 per year (2008-2050)			

Gross electricity consumption (compared with 2008)	-4.6%	-10%	→ -25%		
Primary energy consumption in buildings (compared with 2008)	-14.8%	→ ≈ -80%			
Heating consumption in buildings (compared with 2008)	-12.4%	-20%			
Final energy consumption: transport (compared with 2005)	1.7%	-10%	→ -40%		

Source: Federal Ministry of Economics and Technology

The growing significance of renewable energies in the electricity sector is essentially to be attributed to the Renewable Energy Sources Act (EEG), which sets feed-in tariffs for renewable energy installations, provides for feed-in tariffs to be set by competitive auctions in future (as of 2017) and ensures the preferential feed-in of electricity from installations that use renewable energies. The additional costs are borne by energy consumers through the EEG surcharge.

Since the introduction of the Renewable Energy Sources Act, renewable energies' share of total electricity consumption has risen from six per cent in 2000 to approximately 32 per cent in 2015. Germany's potential to expand renewable energies is to be exploited further. By 2025, 40 to 45 per cent of the electricity consumed in Germany is to be produced from renewable energies, and the figure is to be 55 to 60 per cent by 2035.

Two fossil fuels, coal and gas, play central roles in the Federal Republic of Germany's current energy mix. 24.5 per cent of primary energy consumption is supplied by hard coal and lignite (12.7 and 11.8 per cent in 2015), 21 per cent by natural gas and 7.5 per cent by nuclear fuels. Coal is the most important fuel for electricity production. Approximately 42 per cent of gross electricity generation is dependent on coal (lignite: 23.8 per cent, hard coal: 18.1 per cent). Currently, fossil fuels also still play an important role as back-up technologies for renewable energies, especially in electricity generation, although the tendency is for this role to become less significant. In this context, an important function is performed by two transitional technologies, low-CO₂ natural gas-fired power plants and extremely modern coal-fired power plants, in particular combined heat and power plants, that are capable of responding to developments on the electricity market. Such installations can be operated flexibly depending on the availability of electricity from solar and wind power.

With the energy transition, the German Federal Government is pursuing the aim of transforming the country's energy supply as it moves towards renewable energies and greater energy efficiency. In 2050, 60 per cent of gross final energy consumption and at least 80 per cent of electricity consumption are to be supplied from renewable energies. The market share held by fossil fuels will shrink accordingly.

In 2015, it was decided to gradually withdraw lignite-fired power plants with a total capacity of 2.7 gigawatts (13% of Germany's overall capacity) from the market from 2016 on and

mothball them provisionally. Each of these plants will be used for four years to provide the back-up supply of last resort for the country's electricity grid. After this, the blocks will be finally decommissioned. The operators of the plants that are to be closed down will receive remuneration for ensuring the availability of a back-up capacity reserve and decommissioning their installations. This measure will make a central contribution to the achievement of Germany's national climate targets.

The per capita consumption of fossil primary energy fuels has already fallen by 12 per cent over the last ten years in Germany. Reductions in the consumption of the individual fuels are also to be noted. The development of the absolute levels of consumption and growth rates (GR) since 2006 are shown in the table reproduced below. The figures for 2015 are still provisional.

Primary energy consumption in gigajoules per inhabitant											
Fuel	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	GR 06/15
Mineral oil	63.1	57.1	60.7	56.7	58.3	56.4	56.3	57.4	55.5	55.3	-12.33
Hard coal	24.2	24.9	22.3	18.6	21.4	21.4	21.5	22.8	21.7	20.7	-14.32
Lignite	19.4	19.9	19.2	18.7	18.8	19.5	20.4	20.2	19.4	19.2	-1.02
Natural gas, petroleum gas	40.8	39.4	39.9	37.8	39.5	36.3	36.3	37.9	32.8	34.5	-15.51
Total	147	141	142	133	138	133	134	138	129	130	-12.05

Source: Working Group on Energy Balances, Destatis

III. Support measures pursuant to the Federal Government's Subsidies Report¹

In order to survey the fossil fuel subsidies that are in place, the present report draws on the procedure specified for this purpose in Germany. On the basis of the Act to Promote Stability and Growth, the subsidies granted, which are initially to be looked at in isolation from the definition of State Aid laid down in Article 107 of the Treaty on the Functioning of the European Union (TFEU), are set out every two years in a "Federal Government report on the development of federal financial assistance and tax benefits" (Subsidies Report) that is to be adopted by the Federal Cabinet.

By providing for the systematic review of financial assistance and tax benefits, the Federal Government's subsidy policy contributes to the solidity of the public finances, as well as the observance of the debt brake that has been in force since 2011 and is enshrined in the Basic Law, Germany's constitution. Apart from this, in particular, it ensures the more efficient, effectiveness-oriented deployment of public funds. Not only that, by including a sustainability impact assessment for the first time in its latest Subsidies Report, the German Federal Government has underlined its intention to take greater account of the principle of sustainability, and therefore environmental impacts as well, in its subsidy policy. The target of the regular evaluation of subsidies that has also been incorporated recently into the Federal Government's Subsidy Policy Guidelines is clear evidence of its ambition to increase transparency, strengthen the effectiveness-orientation of the public finances and continually

¹ Where information is presented below about the financial volume of subsidies, the figures given for 2013 and 2014 are verified statistics, while those for 2015 and 2016 are estimates.

review subsidies to ascertain whether they serve these goals. In this respect, the Federal Government's subsidy reporting has the function of providing the German Bundestag and the Federal Government with the information required for subsidies to be reviewed.

The Subsidies Report covers subsidies for fossil fuels paid by the German Federation. It does not look at any other forms of financial assistance provided from the budgets of the Länder and the municipalities.

The fossil fuel subsidies discussed in the Federal Government's most recent, 25th Subsidies Report are set out below.²

a. Grants for the sale of German hard coal for electricity generation, for sale to the steel industry and to offset the impact of capacity adjustments

The German hard coal mining industry is uncompetitive due to its high extraction costs, which are attributable to geological factors, in particular. The German Federation and North Rhine-Westphalia provide capped, degressive assistance to support the sale of hard coal (offsetting the difference between domestic extraction costs and the world market price) and to manage the measures necessary when mines are closed down. RAG AG, in which all German hard coal mining activities are consolidated, has been helping to fund this assistance by sharing some of the costs incurred. This subsidy will be granted until the end of 2018 to facilitate the socially and regionally acceptable winding-down of a hard coal mining industry that is no longer competitive. The hard coal mining industry's "long-term liabilities" (in particular its liabilities to provide support for the water drainage measures that will be permanently required) will still continue to exist after mining has ceased.

Name of financial assistance	Grants for the sale of German hard coal for electricity generation, for sale to the steel industry and to offset the impact of capacity adjustments
Objective	These subsidies are intended to help ensure the hard coal mining industry is wound down in a socially acceptable manner by the end of 2018.
Legal basis	Hard Coal Financing Act of 20 December 2007, amended by Article 1 of the Act of 11 July 2011; Guidelines of the Federal Ministry of Economics and Technology on the granting of assistance to mining companies for the production of electricity from coal, coking coal and expenditure on decommissioning (Coal Guidelines) as amended on 6 July 2011. The Council Decision of 10 December 2010 on State aid to facilitate the closure of uncompetitive coal mines (2010/787/EU) and the authorisations issued by the European Commission on the basis of this decision constitute the basis in European law for the granting of this aid.
Budget item	Chapter 09 03, item 683 11

² In so far as this is the case, the figures given reflect the situation in the middle of 2015. In the spring of 2016, the Federal Ministry of Finance (BMF) presented the draft Second Act for the Amendment of the Energy Tax Act and the Electricity Tax Act. The coordination process on this bill within the German Federal Government has not yet been concluded. The bill is primarily intended to implement the legislation demanded by the German Bundestag, which concerns the taxation of fuels. Furthermore, requirements laid down in European Union law, in particular European State Aid law, have to be transposed into national law.

State Aid (EU)	No			
Partially/wholly classed as subsidy	Wholly			
Type of budgetary funds	Grant			
Financial volume (€ million)	2013	2014	2015	2016
	1,082.4	1,168.7	1,084.8	1,282.0
Cofinanced by local authorities or EU	Yes			
Type of subsidy	Adjustment assistance			
Time limit	An agreement has been reached between the German Federation, the hard coal mining Länder (North Rhine-Westphalia and Saarland), RAG AG and the Mining, Chemical and Energy Industrial Union (IG BCE) that the subsidised mining of hard coal is to be wound down in a socially responsible manner by 2018.			
Degression	The assistance promised to the hard coal mining industry has fallen since 1998. Federal assistance approximately halved from 1998 to 2005 and shrank once again by approximately 25 per cent from 2006 to 2014. Deviations from this downward trend have been seen, above all, as a result of year-on-year fluctuations in world market prices for hard coal.			
Outlook	The downward trend in levels of assistance and the discontinuation of the subsidies for the sale of hard coal by 2018 were the inevitable implications of the decision that subsidised hard coal mining would be wound down in Germany by the end of 2018.			

The long-term liabilities that will remain following the phasing-out of this support will not be financed with State Aid, but from the assets of the RAG-Stiftung foundation.

b. Granting of adjustment benefit to employees in the hard coal mining industry

In order to allow the socially acceptable management of the necessary reduction in support for hard coal production, employees in the German hard coal mining industry who are aged at least 50 (underground employees) or 57 (surface employees) and who lose their jobs due to the closure of mines or rationalisation measures prior to 1 January 2023 will receive adjustment benefit as a form of transitional assistance for a maximum of five years until they are eligible for pension insurance benefits (general measure under the Social Code).

Name of financial assistance	Granting of adjustment benefit to employees in the hard coal mining industry
Objective	The payments made serve the socially acceptable management of the necessary reduction in support for hard coal production
Legal basis	Guidelines of the Federal Ministry of Economics and Technology on the granting of adjustment benefit to employees in the hard coal mining industry of 12 December 2008
Budget item	Chapter 09 03, item 698 11
State Aid (EU)	No
Partially/wholly classed as subsidy	100 per cent

Type of budgetary funds	Grant			
Financial volume (€ million)	2013	2014	2015	2016
	114.9	116.6	116.0	113.2
Cofinanced by local authorities or EU	Yes			
Type of subsidy	Adjustment assistance			
Time limit	An agreement has been reached between the German Federation, the hard coal mining Länder (North Rhine-Westphalia and Saarland), RAG AG and the Mining, Chemical and Energy Industrial Union (IG BCE) that subsidised hard coal mining is to be phased out in a socially acceptable manner by 2018. In addition to this, a declining number of employees will still be required for the decommissioning of the pits. Against this background, the adjustment benefit guidelines in force at present will apply until 2027.			
Degression	On account of the degressive structuring of the assistance to support sales of coal, the number of employees is going down as well. This trend is also being followed with a time lag by a decline in the number of adjustment benefit cases.			
Outlook	The downward trend in levels of assistance and the discontinuation of the subsidies for the sale of hard coal by 2018 were the inevitable implications of the decision that subsidised hard coal mining would be phased out in Germany by the end of 2018.			

c. Electricity price compensation

Electricity price compensation is used to grant State Aid that offsets the costs added to the price of electricity as a result of European Emissions Trading. Electricity price compensation may only be claimed by companies in sectors at risk of relocation abroad due to their energy-intensive processes and their position in international competition. The European Commission has specified these sectors in the relevant Guidelines for this type of State Aid, which date from 2012.

According to the Federal Ministry of Economics and Technology directive based on the Commission's Guidelines, companies receive proportional, decreasing compensation for their Emissions Trading-related electricity costs. This compensation was initially set at 85 per cent for the funding years 2013 to 2015. During the accounting years 2016 to 2018, companies will receive compensation for their Emissions Trading-related electricity costs at a level of 80 per cent. The compensation is to fall to 75 per cent in 2019 and 2020. Due to the requirements of the European Commission's State Aid Guidelines, the eligible costs are limited by a historical level of baseline output. Furthermore, the amount of compensation is limited by energy efficiency benchmarks that are also determined by the European Commission.

Electricity price compensation serves to protect jobs in Germany. The aim is to ensure that energy-intensive industries, which are an essential factor in Germany's success as an industrial location, remain competitive. Energy-intensive industries, especially, are indispensable to many successful, future-oriented value chains. A total of approximately 800,000 people work in the privileged economic sectors. In particular, electricity price compensation helps to secure production in Germany, which serves to promote climate and

environmental protection in view of Germany's high standards of environmental protection and energy efficiency compared with non-EU countries. Electricity price compensation is designed in a fashion that ensures there are no incentives to increase electricity consumption. This is because the aid for the most important product groups (non-ferrous metals, steel, basic chemicals) is calculated on the basis of product-specific energy efficiency benchmarks. In consequence, only the amount of electricity required to manufacture the product in question at a highly efficient installation is covered by the State Aid. This completely preserves the economic incentive for efficiency improvement measures to be implemented by precisely those companies that have previously produced less efficiently than the benchmark. In this way, electricity price compensation stimulates growth and provides incentives for important future investments.

Name of financial assistance	Electricity price compensation			
Objective	Relieving the burden of indirect CO ₂ costs on electricity-intensive industries to support their international competitiveness.			
Legal basis	Federal Ministry of Economics and Technology Directive on State Aid to undertakings in sectors and subsectors deemed to be exposed to a significant risk of carbon leakage due to EU ETS allowance costs passed on in electricity prices (State Aid for Indirect CO ₂ Costs). The Federal Ministry of Economics and Technology Directive on State Aid for Indirect CO ₂ Costs was published on 30 January 2013 and approved by the Commission on the basis of the ETS Guidelines in July 2013.			
Budget item	Chapter 60 92, item 683 03			
State Aid (EU)	Yes			
Partially/wholly classed as subsidy	Wholly			
Type of budgetary funds	Grant			
Financial volume (€ million)	2013	2014	2015	2016
	0	312.8	203.2	245.0
Cofinanced by local authorities or EU	No			
Type of subsidy	Adjustment assistance			
Degression	Yes			
Outlook	Electricity price compensation has been approved for the third trading period of European Emissions Trading (2013-2020). The compensation will gradually be reduced to 75 per cent over the next few years.			

This measure is not targeted at particular fuels and, in so far as this is the case, does not selectively intervene in competition on the production side. In view of fossil fuels' still large share of the energy production market at present, they benefit from this measure.

d. Exemption of the deployment of coal from energy tax

Pursuant to Section 37 of the Energy Tax Act, the deployment of coal for electricity generation is exempt from energy taxation as a matter of principle.

Name of tax benefit	Energy tax advantage for electricity generation			
Objective	Preventing the double taxation of electricity generation.			
Legal basis	Section 37 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	700	700	700	700
Financing formula	German Federation: 100 per cent			
Type of subsidy	Productivity/growth assistance			
Degression	No provision has been made for degression because the objective of this measure is to remain in place.			
Outlook	There are no plans at present for fundamental changes to this arrangement.			

If the rates of taxation applied to coal in Germany were also extended to its deployment for electricity generation, this would amount to inappropriate double taxation because, as a matter of principle, it is the consumption of electricity that is taxed in Germany.

e. Energy tax advantage for certain processes and procedures

In order to ensure and improve the international competitiveness of manufacturing industry, certain uses of energy products may be exempted from energy taxation on the basis of Article 2(4)(b) of Council Directive 2003/96/EC of 27 October 2003 (Energy Products Directive). These are particularly energy-intensive processes and procedures such as the manufacture of glass(ware), ceramic products, cement, lime, metal production and processing or chemical reduction processes. The granting of this energy tax advantage to energy-intensive processes and procedures is intended to prevent any deterioration in the international competitiveness of goods that are produced in Germany and may be traded internationally, as well as preventing Germany's status as a business location from being jeopardised, and countering the relocation of production and jobs abroad. Although this energy tax advantage does not provide any direct incentives for energy-efficient, climate-friendly manufacturing processes, it does prevent production from being relocated to third states outside the EU that often have significantly lower standards of environmental protection and energy efficiency. In so far as this is the case, it also contributes to environmental and climate protection. Furthermore, this energy tax advantage helps to ensure Germany's standard rates of energy taxation, which are high compared with both other European countries and the rest of the world, can be retained.

Name of tax relief	Energy tax advantage for certain processes and procedures			
Objective	Ensuring and improving the international competitiveness of particular sectors of manufacturing industry			
Legal basis	Sections 37 and 51 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	548	589	590	590
Financing formula	German Federation: 100 per cent			

Type of subsidy	Sectoral support
Degression	No provision has been made for degression because the objective of this measure is to remain in place.
Outlook	There are no plans at present for fundamental changes to this arrangement.

This measure is not targeted at particular fuels and, in so far as this is the case, does not intervene selectively in competition on the production side. In view of fossil fuels' still large share of the energy generation market at present, they profit from this measure.

f. Tax advantage for energy products used in inland shipping operations

A tax advantage is granted in the form of a tax exemption or tax relief for energy products used in inland shipping operations for purposes such as the commercial transport of passengers or goods, or the provision of commercial services. Energy products for commercial shipping vessels that operate in the Rhine basin and on certain other inland waterways are exempt from taxes and duties on account of international agreements; the same applies to operations on other inland waterways. Given the many potential intersections within the inland waterway network, it would not be possible to limit these benefits geographically in practice, or it would only be possible for this to be done at the price of high administrative costs.

Name of tax benefit	Tax advantage for energy products used in inland shipping operations			
Objective	Harmonisation of competitive conditions for shipping operations on other waterways with the exemption from taxes and duties that applies for the Rhine basin on the basis of international treaties			
Legal basis	Section 27 subsection (1) Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	160	160	160	160
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			
Degression	In view of the extant agreements and the different levels of taxation on shipping operations in the Community, it will only be possible for subsidies to be phased out in cooperation with the other EU states and the states party to the relevant treaties.			
Outlook	There are no plans at present for changes to be made to this arrangement.			

This measure is not targeted at particular fuels and, in so far as this is the case, does not intervene selectively in competition on the production side. In view of fossil fuels' still large share of the market for energy products used in inland shipping operations at present, they profit from this measure.

g. Tax advantage for agricultural and forestry businesses (agricultural diesel)

This tax advantage serves to ensure German agricultural and forestry businesses remain competitive. Agricultural businesses benefit from a reduced rate of tax on diesel fuel,

providing it is used in agricultural machinery and vehicles for the purposes of land management or land-related animal husbandry.

Name of tax benefit	Tax advantage for agricultural and forestry businesses (agricultural diesel)			
Objective	Ensuring the competitiveness of German agricultural and forestry businesses			
Legal basis	Section 57 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	430	400	400	400
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			
Degression	No provision has been made for degression because the objective of this measure is to remain in place.			
Outlook	There are no plans at present for fundamental changes to this arrangement.			

In view of fossil diesel's large share of the agricultural machinery fuel market, this measure quite overwhelmingly favours fossil fuels.

h. Energy tax advantage for local public transport

The tax increases on fuels introduced in Germany since 1 January 2000 are reduced by just over 40% for motor vehicles and rail operations in the local public transport sector. This tax advantage strengthens local public transport (as a more energy-efficient form of passenger transport) in comparison with private vehicles.

Name of tax benefit	Energy tax advantage for local public transport			
Objective	Ensuring and strengthening the competitiveness of local public transport			
Legal basis	Section 56 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	72	76	76	76
Financing formula	German Federation: 100 per cent			
Type of subsidy	Productivity/growth assistance			
Degression	The 2004 Budget Support Act reduced the level of this advantage with effect from 1 January 2004. Further degression would not be expedient.			
Outlook	There are no plans at present for fundamental changes to this arrangement.			

This measure is not targeted at particular fuels and, in so far as this is the case, does not intervene selectively in competition on the fuel market. In view of fossil fuels' large share of the market at present, they profit from this measure.

i. Tax advantage for energy products used to power gas turbines and internal combustion engines at advantaged installations in accordance with section 3 of the German Energy Tax Act (electricity generation, combined heat and power, gas transportation and storage)

As a consequence of this tax advantage, diesel oil, other heavy oils, natural gas, liquefied gases and gaseous hydrocarbons that are used as fuels to power gas turbines and internal combustion engines in advantaged installations pursuant to section 3 of the Energy Tax Act are only taxed at the rate laid down in section 2 subsection (3) of the Energy Tax Act (heating fuel rate). Advantaged installations are defined as fixed installations

1. whose mechanical energy is used exclusively for the generation of electricity or
2. that are used exclusively for the combined generation of heat and power, and that reach an annual utilisation ratio of at least 60%, excluding installations covered by point 1 above, or
3. that are used exclusively for the transportation of gas via pipeline or the storage of gas.

This tax advantage for inputs into electricity generation is intended to prevent double taxation (as a matter of principle, electricity tax is levied on the output side). This support for electricity production, the combined generation of heat and power, and gas transportation and storage serves to maintain independent supplies of electricity, heat, gas, etc. (security of supply), as well as efficient supply routes, and to ensure German industry remains competitive.

Name of tax benefit	Tax advantage for energy products used to power gas turbines and internal combustion engines at advantaged installations in accordance with section 3 of the Energy Tax Act (electricity generation, combined heat and power, gas transportation and storage)			
Objective	<p>1960: Equal tax treatment of the operation of fixed gas turbines for the generation of power and heat with the operation of steam turbines</p> <p>1978: Extension of this tax advantage to fixed internal combustion engines</p> <p>1992: For environmental reasons, support exclusively provided for combined heat and power plants with annual utilisation ratios of at least 60 per cent</p> <p>2006: The transposition of Council Directive 2003/96/EC of 27 October 2003 (Energy Products Directive) led to the adaptation and extension of the previous tax advantage. "Purely" electricity-generating plants are now also included in the category of installations that are advantaged</p>			
Legal basis	Section 2 subsection (3) in conjunction with section 3 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	3	3	3	3
Financing formula	German Federation: 100 per cent			

³ No suitable data are available for the assessment of this measure's financial impacts.

Type of subsidy	Productivity/growth assistance
Degression	No provision has been made for degression.
Evaluations	No evaluations have been conducted to date.
Outlook	There are no plans at present for fundamental changes to this arrangement.

This measure favours fossil fuels such as diesel oil, other heavy oils, natural gas, liquefied gases and gaseous hydrocarbons.

j. Tax advantage for energy products used to produce other energy products for the maintenance of operations (producer's privilege)

In all the EU states, undertakings that produce energy products are exempt from tax in accordance with Article 21(3) of Council Directive 2003/96/EC of 27 October 2003 (Energy Taxation Directive). This energy tax advantage prevents the double taxation of energy products. Support is offered for production plants such as refineries in order to maintain an independent supply of, among other things, fuels, heating fuels and lubricants (security of supply), to secure short, resource-conserving supply routes and to ensure German industry remains competitive. Removing this producer's privilege would lead to a considerable increase in costs for this energy-intensive branch of the economy and disadvantage it significantly in international competition. Ultimately, there would be a risk of production, and hence emissions too, being relocated abroad. Furthermore, this energy tax advantage helps to maintain Germany's standard rates of energy taxation, which are high compared with both other European countries and the rest of the world.

Name of tax benefit	Tax advantage for energy products used to produce other energy products for the maintenance of operations (producer's privilege)			
Objective	Ensuring the competitiveness of production plants			
Legal basis	Sections 26, 37, 44 and 47 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	350	350	350	350
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			
Degression	No provision has been made for degression.			
Outlook	There are no plans at present for fundamental changes to this arrangement.			

This measure is not targeted at particular fuels and, in so far as this is the case, does not intervene selectively in competition on the production side. In view of fossil fuels' still large share of the energy generation market, this measure currently favours the deployment of such fuels for the most part.

k. Energy tax advantage for companies in the manufacturing sector in special cases (tax cap)

Under this scheme, companies in the manufacturing sector have to bear €750 of their CO₂ costs for which no aid is paid out. Subject to this “retention”, such companies are largely exempted from energy tax so that they remain internationally competitive. In this respect, an overall calculation is made, in which the tax burden borne by a company due to the increase in energy tax on heating fuels and the introduction of electricity tax is compared with the relief received by the company on its pension insurance payments (employer contributions) as a result of the reduction of contribution rates since 1 April 1999. If the tax burden is higher than the relief received on its pension insurance payments, the company is reimbursed 90% of the excess energy tax. Furthermore, this tax relief is dependent on the company introducing and operating energy or environmental management systems or, in the case of SMEs, what are known as “alternative systems to improve energy efficiency,” and on the manufacturing sector as a whole meeting ambitious energy efficiency targets with a view to reducing its energy intensity. On the one hand, the tax cap is a suitable measure with which to prevent production processes from being relocated to third states with less rigorous climate protection standards, while protecting jobs at the same time. On the other hand, the arrangements that are provided for also serve to protect natural resources by offering incentives to increase energy efficiency, thus protecting the climate and conserving energy resources for the benefit of subsequent generations. Furthermore, this energy tax advantage for companies in the manufacturing sector, and agricultural and forestry businesses prevents any deterioration in the international competitiveness of goods that are produced in Germany and may be traded internationally.

Name of tax benefit	Energy tax advantage for companies in the manufacturing sector in special cases (tax cap)			
Objective	Preventing distortions of competition			
Legal basis	Section 55 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	167	197	180	180
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			
Degression	No provision has been made for degression because it is assumed this arrangement will continue to be required.			
Outlook	There are no plans at present for fundamental changes to this arrangement.			

In view of fossil fuels’ still large share of the energy generation market, this measure currently favours the deployment of such fuels for the most part.

l. Tax advantage for liquefied gas and natural gas used as fuels

Gaseous fuels are eligible for tax advantages until 2018. The advantageous rate is set at approximately 45% of the standard rate. This support serves to conserve resources, and

protect the climate by establishing natural gas and liquefied gas on the fuel market. Gaseous fuels are substituted for mineral-based, liquid fuels and can thus help to diversify the energy supply. The use of gaseous fuels – including their use outside the transport sector – is an important transitional technology on the pathway towards a far-reaching decarbonisation of the economy. Natural gas is particularly effective in helping to reduce greenhouse gas emissions when used in combination with renewable fuels (e.g. biogas).

Name of tax benefit	Energy tax advantage for liquefied gas and natural gas used as fuels			
Objective	Support for the increased deployment of gas-powered engines on environmental and climate-policy grounds			
Legal basis	Section 2 subsection (2) Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	209	180	200	230
Financing formula	German Federation: 100 per cent			
Type of subsidy	Productivity/growth assistance			
Degression	This tax advantage was partially reduced by the 2004 Budget Support Act.			
Outlook	This tax advantage for natural gas and liquefied gas will expire at the end of 2018. In response to a motion tabled by the parliamentary groups that support the government (the Christian Democratic Union/Christian Social Union (CDU/CSU) and the Social Democratic Party of Germany (SPD)), the German Bundestag called upon the Federal Government to present a draft bill concerning the extension of this reduced rate of energy tax for natural and liquefied gas fuels, including effective steps to finance the additional spending by finding savings elsewhere, and to present this bill by the spring of 2016 at the latest. In the spring of 2016, the Federal Ministry of Finance presented the draft Second Act for the Amendment of the Energy Tax Act and the Electricity Tax Act, the coordination of which within the German Federal Government has not yet been concluded. This bill is intended to put in place the legislation concerning this matter demanded by the German Bundestag.			

This measure is not targeted at particular gaseous fuels and, in so far as this is the case, does not intervene selectively in competition on the production side. In view of fossil fuels' still large share of the gas production market at present, however, this measure primarily favours the deployment of such fuels.

m. Energy tax advantage for companies in the manufacturing sector, and agricultural and forestry businesses

Companies in the manufacturing sector, and agricultural and forestry businesses are granted tax relief for heating fuels (heating oil, natural gas and liquefied gas) and for their deployment in installations advantaged pursuant to section 3 of the Energy Tax Act. It is set at a uniform 25 per cent of the tax rates reduced according to section 2 subsection (3) of the Energy Tax Act, with a retention of €250 in the calendar year. This energy tax advantage for companies in the manufacturing sector, and agricultural and forestry businesses is intended to prevent any deterioration in the international competitiveness of goods that are produced in Germany and may be traded internationally, as well as preventing Germany's status as a business location

from being jeopardised, and countering the relocation of production, jobs and emissions abroad. Although this tax advantage does not offer any direct incentives for the efficient use of energy products, it does prevent production from being relocated to third states outside the EU that often have significantly lower standards of environmental protection and energy efficiency. In this way, it contributes to environmental and climate protection.

Name of tax benefit	Energy tax advantage for companies in the manufacturing sector, and agricultural and forestry businesses			
Objective	Preventing distortions of competition			
Legal basis	Section 54 Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	145	153	160	160
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			
Degression	No provision has been made for degression.			
Outlook	There are no plans at present for fundamental changes to this arrangement.			

In view of fossil fuels' still large share of the heating market at present, however, this measure currently favours the deployment of such fuels for the most part.

n. Tax advantage for energy products used in the domestic aviation industry

A tax advantage is granted in the form of a tax exemption or tax relief for energy products used in the domestic aviation industry for the commercial transport of passengers or goods by air carriers, or the provision of commercial services. – Taxing these products would result in more aircraft refuelling abroad and a shift to the use of foreign airports near the German border. Taxing these products would therefore undermine Germany's attractiveness as a business location.

Name of tax benefit	Tax advantage for energy products used in the domestic aviation industry			
Objective	Ensuring the competitiveness of the domestic aviation industry			
Legal basis	Section 27 subsection (2) Energy Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	530	530	530	530
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			
Degression	No provision has been made for degression.			
Outlook	There are no plans at present for changes to this arrangement.			

This measure is not targeted at particular fuels and, in so far as this is the case, does not intervene selectively in competition on the market for aviation fuels. In view of fossil fuels' still large share of the aviation fuel market at present, this measure accordingly favours the deployment of such fuels.

o. Electricity tax advantage for rail and trolleybus operations

The electricity used in rail operations, with the exception of internal works lines and mountain railways, and in trolleybus operations, is subject to a reduced tax rate (approx. 55% of the standard rate). This electricity tax advantage for rail and trolleybus operations strengthens the position of these environmentally friendly modes of transport in comparison with private vehicles.

Name of tax benefit	Electricity tax advantage for rail and trolleybus operations			
Objective	Relieving the burden of electricity tax on rail and trolleybus operations			
Legal basis	Section 9 subsection (2) Electricity Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	119	120	120	120
Financing formula	German Federation: 100 per cent			
Type of subsidy	Productivity/growth assistance			
Degression	The 2004 Budget Support Act raised the reduced tax rate of 50 per cent of the standard rate to approx. 55 per cent with effect from 1 January 2004. No provision has been made for further degression.			
Outlook	At present, there are discussions going on about the extension of this tax advantage to electromobility in local public transport as well.			

This measure is not targeted at the fuels deployed for electricity generation and, in so far as this is the case, does not intervene selectively in competition on the production side – fossil and renewable fuels for electricity generation are supported indirectly to an equal extent. In view of fossil fuels' still large share of the electricity generation market at present, this measure currently favours the deployment of such fuels for the most part.

p. Electricity tax advantage for companies in the manufacturing sector, and agricultural and forestry businesses

Companies in the manufacturing sector, and agricultural and forestry businesses profit from tax relief of 25 per cent of the standard tax rate for electricity that is consumed for operational purposes, providing the amount of relief exceeds a sum of €250. This electricity tax advantage for companies in the manufacturing sector, and agricultural and forestry businesses is intended to prevent any deterioration in the international competitiveness of goods that are produced in Germany and may be traded internationally, as well as preventing Germany's status as a business location from being jeopardised, and countering the relocation of production, jobs and emissions abroad. Although this tax advantage does not offer any direct incentives for the efficient usage of electricity, it does prevent production from being relocated to third states outside the EU that often have significantly lower standards of environmental protection and energy efficiency. In this way, it contributes to environmental and climate protection.

Name of tax benefit	Electricity tax relief for companies in the manufacturing sector, and agricultural and forestry businesses			
Objective	Preventing distortions of competition			
Legal basis	Section 9b Electricity Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	975	1,038	1,000	1,000
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			
Degression	No provision has been made for degression because it is assumed this measure will continue to be required.			
Outlook	There are no plans at present for fundamental changes to this arrangement.			

This measure is not targeted at the fuels deployed for electricity generation and, in so far as this is the case, does not intervene selectively in competition on the production side – fossil and renewable fuels for electricity generation are supported indirectly to an equal extent. In view of fossil fuels' still large share of the electricity generation market at present, this measure currently favours the deployment of such fuels to a large extent.

q. Electricity tax advantage for certain processes and procedures

In order to ensure and improve the manufacturing sector's international competitiveness, certain uses of electricity may be exempted from electricity tax by means of tax relief on the basis of Article 2(4)(b) of Council Directive 2003/96/EC of 27 October 2003 (Energy Taxation Directive). This applies for particularly electricity-intensive processes and procedures such as electrolysis, chemical reduction processes, the manufacture of glass(ware), ceramic products, and the production and processing of metal.

The granting of this electricity tax advantage for electricity-intensive processes and procedures is intended to prevent any deterioration in the international competitiveness of goods that are produced in Germany and may be traded internationally, as well as preventing Germany's status as a business location from being jeopardised, and countering the relocation of production and jobs abroad. Although this electricity tax advantage does not offer any direct incentives for energy-efficient and climate-friendly manufacturing processes, it does prevent production from being relocated to third states outside the EU that often have significantly lower standards of environmental protection and energy efficiency. In this way, it contributes to environmental and climate protection.

Name of tax benefit	Electricity tax advantage for certain processes and procedures			
Objective	Ensuring and improving international competitiveness in certain parts of the manufacturing sector			
Legal basis	Section 9a Electricity Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	727	738	720	720

Financing formula	German Federation: 100 per cent
Type of subsidy	Sectoral support
Degression	No provision has been made for degression.
Outlook	There are no plans at present for fundamental changes to this arrangement.

This measure is not targeted at the fuels deployed for electricity generation and, in so far as this is the case, does not intervene selectively in competition on the production side – fossil and renewable fuels for electricity generation are supported indirectly to an equal extent. In view of fossil fuels’ still large share of the electricity generation market at present, this measure currently favours the deployment of such fuels to a large extent.

r. Electricity tax advantage for companies in the manufacturing sector in special cases (tax cap)

Subject to a retention of €1,000, companies in the manufacturing sector are exempted from electricity tax to a large extent so that they remain internationally competitive. Under this scheme, a company’s electricity tax burden is compared with the relief received by the company on its pension insurance payments (employer contributions) as a result of the reduction of the contribution rates since 1 April 1999. If the tax burden is higher than the relief received on its pension insurance payments, the company is reimbursed 90% of the excess electricity tax. Furthermore, this tax relief is dependent on the company introducing and operating energy or environmental management systems or, in the case of SMEs, what are termed “alternative systems to improve energy efficiency,” and on the manufacturing sector as a whole meeting ambitious energy efficiency targets with a view to reducing its energy intensity.

On the one hand, the tax cap is a suitable measure with which to prevent production processes from being relocated to third states with less rigorous climate protection standards, while protecting jobs at the same time. On the other hand, the arrangements that are provided for also serve to protect natural resources by offering incentives to increase energy efficiency, thus protecting the climate and conserving energy resources for the benefit of subsequent generations. Furthermore, this energy tax advantage for companies in the manufacturing sector, and agricultural and forestry businesses prevents any deterioration in the international competitiveness of goods that are produced in Germany and may be traded internationally.

Name of tax benefit	Electricity tax advantage for companies in the manufacturing sector in special cases (tax cap)			
Objective	Preventing distortions of competition			
Legal basis	Section 10 Electricity Tax Act			
Financial volume	2013	2014	2015	2016
Revenue shortfall (estimated, € million)	1,870	2,911	1,900	1,900
Financing formula	German Federation: 100 per cent			
Type of subsidy	Sectoral support			

Degression	No provision has been made for degression.
Outlook	There are no plans at present for changes to this arrangement.

This measure is not targeted at the fuels deployed for electricity generation and, in so far as this is the case, does not intervene selectively in competition on the production side – fossil and renewable fuels for electricity generation are supported indirectly to the same extent. In view of fossil fuels’ still large share of the electricity generation market at present, this measure currently favours the deployment of such fuels to a large extent.

IV. General state measures in the social field

Social security in Germany is based on various pillars. Apart from pay-as-you-go schemes such as pension or unemployment insurance, there are state-funded benefits to ensure basic standards of living for jobseekers under Book II of the Social Code, and to ensure basic standards of living in old age and for those with reduced earning capacities under Book XII of the Social Code. While ongoing benefits for housing, heating and other incidental, housing-related expenses are paid every month at the level of claimants’ actual expenditure in addition to the standard benefit rates, further energy costs (such as electricity) are not included in these incidental, housing-related costs; they are already covered by the standard rates. These benefits are neutral with regard to fuels and technologies. In so far as this is the case, there is no subsidy for fossil fuels in this field.

V. Miscellaneous tax benefits

Further to the financial assistance and tax benefits that are directly financed from the federal budget in the energy sector, there is a range of benefits available when energy-related investments are being financed:

- a) Special equalisation scheme to reduce the surcharge levied to finance the additional costs of the deployment of renewable energies in electricity generation (EEG surcharge)

Companies in trade and electricity-intensive sectors with an electricity cost intensity of at least 17 per cent (in certain cases 14 per cent) on average over the last three full business years that possess energy management systems and consumed at least 1 GWh of power during the last full business year pay a significantly reduced EEG surcharge. This measure is being continued and will be updated as part of the ongoing revision of the Renewable Energy Sources Act. The special equalisation scheme is intended to prevent energy-intensive companies from being disadvantaged compared to their international competitors as a result of the support given to renewable energies in Germany.

- b) Special equalisation scheme to reduce the surcharge levied to finance the additional costs of the deployment of combined heat and power plants (CHP surcharge)

Companies in the manufacturing sector with electricity costs greater than four per cent of their turnover, and rail operations that consume more than one gigawatt hour of power a

year pay a significantly reduced CHP surcharge. This measure is being continued and will be updated in the course of the ongoing revision of the Combined Heat and Power Act (KWKG).

c) Relief on grid charges

Companies that purchase electricity from the general supply grid for their own consumption for at least 7,000 hours and whose electricity consumption amounts to at least ten gigawatt hours per calendar year pay reduced grid charges. There is no intention to phase out this measure.

This arrangement privileges end users whose consistent, high consumption of electricity helps to ensure grid-specific costs are reduced or it is at least possible to prevent these costs from being raised. The volumes of power these end users purchase ensure a base load on the grid that is indispensable for its stability. Their privileged treatment in respect of grid charges therefore reflects technical aspects of grid operation.

VI. State regulation in favour of fossil fuels

There are no state-imposed and/or statutory obligations on third parties that result in fossil fuels being advantaged in Germany.

VII. Subsidies to be phased out

a) The definition of subsidies used in the Federal Government's Subsidies Report

The subject matter of the Subsidies Report is specified by Section 12 of the Act to Promote Economic Stability and Growth (StabG). According to the Act, financial assistance is defined as monetary funds allocated by the German Federation to agencies not belonging to the federal administration that benefit private companies and branches of the economy, while tax benefits are exceptional tax rules that lead to revenue shortfalls for the public sector. A special tax regulation is classified as a subsidy within the meaning of the Subsidies Report if it offers advantages with direct or indirect effects on specific sectors or subsectors of the economy. Special regulations with immediate effects that benefit business as a whole over the general public are also tax benefits.

The definition of subsidies used by the German Federation is not identical with the definition of State Aid given in Article 107 TFEU. According to the legislation that mandates the Federal Government to report on these matters, it is focussed on payments made to private companies and branches of the economy. In particular, Section 12 of the Act to Promote Economic Stability and Growth defines financial assistance as federal funds for the provision of adjustment, sectoral and productivity/growth support. Where assistance cannot be assigned to these categories, it is recorded as miscellaneous financial assistance. Forms of assistance that directly reduce the prices of particular goods and

services for private households but may indirectly boost business activity are referred to as indirect subsidies. This applies, for instance, to assistance for housing construction.

Financial expenditure of the German Federation on general public functions such as general fundamental research is not counted as subsidies, in which respect it may be difficult to draw the line in individual cases. Federal guarantees are not listed as subsidies either. The main reason for this is that the typically low risk of default means it is highly probable no expenditure of budgetary funds is to be anticipated, while appropriate risk premiums based on market prices are usually demanded.

Under certain conditions, subsidies can be a legitimate instrument of fiscal policy in the social market economy. In this respect, what are decisive are their impacts in terms of growth, redistribution, competition and environmental policy. External effects (positive and negative), including their distribution and possible knock-on costs, are also to be taken into account in the formulation of subsidy policy. State assistance can help to level out regional disparities, provide incentives or start-up funding to encourage new market entrants, accelerate the development and launch of future products and, at the same time, facilitate necessary structural change.

The Subsidies Report is therefore a suitable source from which to gain a comprehensive overview of the forms of assistance for fossil fuels defined as subsidies in Germany, but does not yet offer any suitable distinctions that make it possible to identify measures to be phased out as inefficient subsidies when judged against the yardstick of IFFS.

b) The definition used in the German Country Progress Reports

In order to document the delivery of the commitment made at Pittsburgh in 2009, the G20 countries – including Germany – have presented “Country Progress Reports” since 2010. Against the background of the various types of subsidy that are found around the world, the G20 countries have developed diverse implementation strategies. These strategies are oriented towards national circumstances. It has not been possible to agree on a joint G20 definition of “inefficient fossil fuel subsidies” to date.

The EU members of the G20 have based their efforts to deliver on the commitment made at Pittsburgh on the following joint definition of fossil fuel subsidies:

“A fossil-fuel subsidy is any government measure or program with the objective or direct consequence of reducing below world-market prices, including all costs of transport, refining and distribution, the effective cost for fossil fuels paid by final consumers, or of reducing the costs or increasing the revenues of fossil-fuel producing companies.” Since 2010, this definition of subsidies has been used for the German Country Progress Reports.

c) Inefficiency

Irrespective of the question of how fossil fuel subsidies are to be defined, there are also different opinions on the meaning of the adjective “inefficient” as used in the Pittsburgh communiqué.

On this issue, the G20 stated that, “*Inefficient fossil fuel subsidies (IFFS) encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change.*”

Theoretically, the inefficiency of existing measures is expressed in their incompatibility with an efficient system of state expenditure, taxes and duties. In this respect, the efficiency of the system is judged against the democratically specified goals of that society. An efficient system would also have to take account of positive and negative external effects. Such incompatibility is not easy to detect, even in a closed economy. E.g. the various contributions to CO₂ emissions, smog pollution, health problems, traffic deaths etc. would have to be accounted for⁴ and the social costs that result from them as consequences of the consumption of “dirty goods” would have to be quantified and compared with the current total energy tax burden. It would also be necessary to quantify the effects on volumes of trade and prices, and therefore on GDP.

For example, the IMF⁵ has calculated “pre-tax” and “post-tax” subsidies for 176 countries. The environmental costs or “externalities” due to the consumption of fossil energies are classified as “post-tax subsidies” (calculated as the gap between efficient and actual levels of taxation). This study concluded that the post-tax subsidies in Germany are worth approximately €50bn. Calculations of this kind involve significant uncertainties and imprecisions, and can therefore only represent a rough guide. At the same time, it has to be acknowledged that Germany already has one of the highest burdens of energy taxes and duties in the world. If the Federal Government wished to approximate actual taxation to the level of efficient taxation calculated by the IMF, the tax rates in Germany would have to be roughly doubled. This cannot be the sole approach followed by an open economy like Germany. It will only be possible to find a solution to the issue of the internalisation of the external costs of the use of fossil fuels as part of an international consensus.

The German Subsidy Policy Guidelines emphasise the necessity of evaluations. The aims of new types of financial assistance are to be recorded in a form that allows them to be evaluated. The German Federal Government also aspires to evaluate the effectiveness and efficiency of existing types of financial assistance. In the expanded Subsidy Policy Guidelines of 28 January 2015, it committed itself to the regular evaluation of subsidies to ascertain the extent to which they attain their aims, how efficient they are and how transparent they are. Under this approach, for the purpose of subsidy controlling, all

⁴ On the gap between efficient levels of taxation that reflect environmental damage and actual levels, see IMF (2015) or Jacobsen et al. (2016).

⁵ “Counting the Cost of Energy Subsidies”, *IMF Survey*, July 17, 2015.

subsidies are to be reviewed repeatedly to examine their necessity, expedience and effectiveness (including external effects), and their compatibility with the fiscal, economic, social and ecological objectives of the Federal Government's policies with a view to their potential for optimisation.

VIII. Result

Taking into account the definition of IFFS adopted by Germany as the basis for its reporting, the criterion of inefficiency and the results from the evaluation of existing subsidies, Germany is currently pursuing the phasing-out of the following fossil fuel subsidies:

- Grants for the sale of German hard coal for electricity generation, for sale to the steel industry and to offset the impact of capacity adjustments

This subsidy will expire with the cessation of hard coal mining in Germany at the end of 2018.

- Granting of adjustment benefit to employees in the hard coal mining industry

This subsidy primarily serves to cushion the social impacts on employees who lose their jobs as a result of the cessation of subsidised hard coal mining in Germany when it is necessary for mines to be closed or rationalisation measures taken; it is therefore a secondary subsidy for a fossil fuel, hard coal. Large numbers of jobs have already been lost in the hard coal mining industry as mines have been closed, and this trend will continue. A falling number of employees will be required beyond 2018 for the decommissioning of the pits. According to the relevant legal provisions, this social support will cease to be granted in 2022 at the latest, and it will still be funded until 2027 at the latest.

The other subsidies discussed in the present report either do not fall within the definition of IFFS taken as the basis for reporting or are not classified as inefficient for the reasons stated in each case so that, other than the time limits already set in certain circumstances, no steps to phase out additional subsidies are currently foreseen. In keeping with the Subsidy Policy Guidelines, these arrangements will continue to be examined to identify any need for adjustment.

IX. Literature

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