Status Review of Renewable and Energy Efficiency Support Schemes in Europe

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INFORMATION PAGE

Abstract

This document forms the latest update to the regular CEER Status Review of Renewable Energy and Energy Efficiency Support Schemes in Europe and builds on the previous CEER report C10-SDE-19-04a. The purpose of Status Review publications is to collect comparable data on RES support in Europe in order to provide policy-makers, regulators and industry participants with information on support schemes for electricity from renewable energy sources, by technology and type of instrument (e.g. Feed-in tariffs and Green Certificates). To collect this data, a questionnaire was circulated to CEER members in July 2012, to explore the renewable electricity support schemes currently in place in Member States across Europe.

This report is considered timely given the intention of the European Commission to review renewable energy support schemes and issue guidance on best practice (as indicated in the Communication on Renewable Energy: a major player in the European energy market COM (2012) 271 Final)).

Please note: this report was republished in June 2013 to provide the complete data for Germany, replacing estimated figures.

Target Audience

Energy suppliers, traders, gas/electricity customers, gas/electricity industry, consumer representative groups, network operators, Member States, academics and other interested parties.

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Related Documents

CEER documents

- "CEER Report on Renewable Energy Support in Europe", CEER, 4 May 2011, Ref. C10-SDE-19-04a, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Electricity/2011/C10-SDE-19-04a_RES_4-May-2011%20final.pdf

External documents

- "Renewable Energy: a major player in the European energy market" Communication from the Commission to the European Parliament, the council, the European Economic and Social Committee and the Committee of the Regions COM (2012) 271 Final, June 2012, http://ec.europa.eu/energy/renewables/doc/communication/2012/comm_en.pdf

- "Regulatory Design for RES-E Support Mechanisms: Learning Curves, Market Structure, and Burden-Sharing", C. Batlle, I. J. Pérez-Arriaga and P. Zambrano-Barragán, MIT Center for Energy and Environmental Policy Research, May 2011, http://web.mit.edu/ceepr/www/publications/workingpapers/2011-011.pdf

- "Renewable Energy Policy Country Profiles", Re-shaping, March 2011, http://www.reshaping-res-policy.eu/downloads/RE-SHAPING_Renewable-Energy-Policy-Country-profiles-2011_FINAL_1.pdf

- "Review report on support schemes for renewable electricity and heating in Europe", Re-Shaping, January 2011, http://www.reshaping-res-policy.eu/downloads/D8%20Review%20Report_final%20(RE-Shaping).pdf

- "Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable Sources", http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF

- "The support of electricity from renewable energy sources. Accompanying document to the Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources" Commission staff working document SEC(2008) 57, 23 January 2008, http://ec.europa.eu/energy/climate_actions/doc/2008_res_working_document_en.pdf

Table of Contents

Table of Tables

Table of Charts

1 Introduction and Executive Summary

One of the aims of the European Commission's Climate and Energy Package is to reach a 20% share of renewable energy generation in EU energy consumption by 2020, in a cost-effective and economically efficient manner. Support schemes for renewable energy sources (RES) are a key mechanism to help achieve this goal, but attract high levels of interest in relation to the differences between Member States' schemes and the overall costs to consumers.

This document forms the latest update to the regular CEER Status Review of Renewable Energy and Energy Efficiency Support Schemes in the EU and builds on the previous CEER report (C10-SDE-19-04a).

The purpose of the Status Review is to collect comparable data on RES support in Europe in order to provide policy-makers, regulators and industry participants with information on support schemes for RES electricity, by technology and type of instrument (e.g. Feed-in tariffs (FITs) and Green Certificates (GCs)).

To collect this data[1], a questionnaire (see Annex 7) was circulated to CEER members in July 2012 to explore the renewable electricity support schemes currently in place in Member States across Europe. **A total of 24 European countries and members of the wider European Economic Area (EEA) responded to the survey (providing complete and partial responses)[2].**

This report is considered timely given the current interest in ways to promote and finance renewable energy and taking into account the on-going debates in some countries on the effectiveness and efficiency of their renewable policy support instruments.

It is intended that this report helps to inform the European Commission's review of RES support schemes in the EU and the issuing of guidance on best practice (as indicated in the CEER response to the Commission's Communication on Renewable Energy[3]).

Key findings and Conclusions

The aim of the analysis was to assess the impact of the expenditure to promote renewable energy through national support schemes at aggregate level for each country, on a comparable basis.

18 countries provided a complete response to the survey, including detailed data on MWh (MegaWatthour) receiving support and the expenditure to promote the schemes. For these 18 countries, unit support levels on final electricity consumed vary from 0.12 to 20.61 €/MWh, while **the average support is around 7 €/MWh[4] (2010).**

A total of 19 countries provided detailed data on MWh receiving support. For these 19 countries, the **RES-supported electricity accounts for on average 8% of the gross electricity generation in 2010 and 9% of final electricity consumption**.

[1] Data accurate at the time of publication; please note this report was republished in June 2013 to provide the complete data for Germany, replacing estimated figures.
[2] This survey updates the previous report with 2010 and 2011 data where available. It should be noted that 2010 figures are used more often as the 2011 data is more restricted in scope and not yet available for all areas of analysis.
[3] COM(2012) 271 Final
[4] The weighted average support is approximately 9 €/MWh (2010), calculated using the amount of final electricity consumed in each country as the weight.

1.1 Methodological approach

In July 2012, a questionnaire on national RES support schemes was developed and circulated to CEER Members (national regulatory authorities for energy, NRAs).

The questionnaire devised for the 2011 report was used as the basis for the 2012 questionnaire. In addition, the 2012 version includes questions developed by the Agency for the Cooperation of Energy Regulators (ACER). These additional questions focus on indirect RES support, such as the level of priority granted for RES-sourced electricity plants when connecting and using the grid, as well as the charges these plants face when connecting and using the grid. The answers to these additional questions are analysed in Section 6.

Countries were asked to provide details on the type of support and the amount of supported RES, broken down by technology. Such data is not available for all schemes in every country. Where data is not available, a total overall figure is provided. Countries also provided varying levels of detail on how they had defined technology type, with the majority of countries providing aggregated data under each source (e.g. giving a total for biomass as a whole) rather than a breakdown by specific source (e.g. wood chip).

1.2 Consumer implications

To the extent that support for renewable electricity is either passed on through electricity prices or directly added to electricity bills, the costs of achieving the agreed objectives will ultimately be borne by end-users.

The purpose of support schemes is to encourage large scale take-up and deployment of renewable energy generation, energy efficiency and heating/cooling technologies amongst industrial, commercial and residential consumers. Large scale take-up of RES would help technologies to mature, learning rates to improve and integration of RES within traditional market arrangements to be tested and refined.

Recognising that the interests of consumers should include consideration of wider issues, an increase in domestic RES production may also bring security of supply benefits.

Understanding the different approaches to RES subsidies undertaken by Member States can help to inform future subsidy designs, ensure the benefits of harmonised approaches are maximised as well as equally distributed across consumer groups and help to provide decision-makers (both at Member State and Commission level) with the comparative information needed to apply subsidies in a targeted and cost-effective manner.

2 Electricity generation based on RES in European Countries

Tables 1 and 2 below represent the supported renewable electricity production in each country, categorised into renewable technology type as provided by CEER members for 2010 and 2011 where available. The numbers are presented with commas separating the millions, thousands and hundreds (e.g. 1,802,074.26). In both 2010 and 2011, Germany had the highest level of renewable electricity receiving support with approximately 82 TWh (TerraWatthour) in 2010 and 103 TWh in 2011. Luxembourg has the lowest levels in both 2010 and 2011 with approximately 0.14 TWh and 0.15 TWh respectively. A further breakdown of electricity produced per technology is given in Annex 6, which separates out biogas and waste. Tables 1 and 2 are graphically shown in Charts 1a and 1b. Due to the large difference between countries in total renewable electricity produced that received support, Chart 1a shows renewable electricity produced for countries where the total receiving support is below 8 TWh and Chart 1b shows countries where the total receiving support is above 8 TWh[5].

Table 1: Total renewable electricity produced per technology in MWh that received support (2010)

	Hydro	Wind	Biomass	Biogas and waste	Photo-voltaic	Geo-thermal	Total
Austria	1,757,907	2,018,942	2,017,562	582,533	51,918	1,398	6,430,260
Belgium[6]	298,885	1,285,040	3,654,803[7]		543,157		5,781,885
Czech Republic	1,238,819	335,493	1,511,911	598,755	615,702		4,300,680
Estonia	27,000	187,000	550,000	11,000			775,000
Finland	134,650	281,600	1,802,074	405,149			2,623,473
France[8]	6,394,400	9,419,600	595,900	722,800	395,400		17,528,100
Germany	5,665,263	37,792,735	25,154,615[9]	1,962,510	11,682,611	27,683	82,285,417
Hungary	183,317	503,649	1,564,830	175,708			2,427,503
Italy	8,216,013	8,965,483	10,279,273[10]		1,817,160	1,273,846	30,551,775
Lithuania	92,973	223,202	113,764	21,957	2		451,899
Luxembourg	7,653	55,084		55,549	21,149		139,435
Netherlands	74,145	3,778,781	4,727,595	409,300	8,725		8,998,546
Norway		1,610,001					1,610,001
Portugal[11]	1,374,114	9,031,861	2,345,870	546,490	166,610		13,464,945
Romania	272,412	292,070	112,115[12]		7		676,604
Slovenia	483,034	11	100,756	124,188	10,305		718,293
Spain	6,740,798	43,127,026	3,141,120	938,012	7,096,700[13]		61,043,656
Sweden	2,611,044	3,485,933	11,162,850		275		17,260,102

[5] Percentage share of final electricity consumption receiving RES support for each country is shown in Table 5.
[6] Figures for Belgium are estimated values (broken down data is available for the Walloon region and federal offshore only, no detailed data is available for Flanders or Brussels)
[7] Belgium figure for biomass includes biogas and waste.
[8] Data for France does not include RES production overseas.
[9] Biomass figure for Germany includes biogas. Biogas and waste figure covers landfill, sewage and mine gas.
[10] Biomass figure for Italy includes biogas, bioliquids and waste.
[11] Figures given are for mainland Portugal only.
[12] Romanian data for biomass includes biogas.
[13] Including PV (6,405,162) and concentrated solar power (691,538)

	Hydro	Wind	Biomass	Biogas and waste	Photo-voltaic	Geo-thermal	Total
UK	1,687,827	10,145,047	4,548,803	5,491,583	23,397		21,913,303[14]

Table 2: Total renewable electricity produced per technology in MWh that received support (2011)

	Hydro	Wind	Biomass	Biogas and waste	Photo-voltaic	Geo-thermal	Total
Austria	1,488,338	1,882,764	1,980,760	559,891	77,970		5,989,723
Belgium[15]	190,845	2,300,962	3,766,644[16]		1,126,624		7,385,075
Czech Republic	1,017,878	397,003	1,682,563	932,576	2,182,018		6,212,038
Estonia	31,000	272,000	747,000	16,000			1,066,000
France[17]	4,664,000	11,679,300	855,100	816,000	1,552,700		19,567,100
Finland	95,238	174,800	2,270,381	71,429			2,611,848
Germany	4,843,458	48,882,777	27,976,618[18]	1,815,205	19,340,185	18,846	102,877,089
Hungary	212,199	601,318	911,831	115,309			1,840,656
Italy	10,225,548	10,980,271	12,331,397[19]		10,705,253	1,242,984	45,485,453
Lithuania	90,231	472,504	119,103	29,815	76		711,729
Luxembourg	4,034	63,763		54,642	25,744		148,183
Netherlands	42,336	4,758,405	4,707,697	529,912	18,918		10,057,268
Norway		2,101,400					2,101,400
Portugal[20]	1,016,760	9,128,050	2,498,560	637,830	187,130		13,468,330
Romania	175,550	1,149,300	183,460[21]		1,270		1,509,580
Slovenia	359,869	7	94,078	152,702	50,046		657,016[22]
Spain	5,270,476	41,733,178	3,681,533	875,414	7,920,643[23]		59,481,243
Sweden	2,698,130	6,093,169	10,305,639		529		19,097,467
UK	2,566,664	15,522,988	5,232,443	5,646,680	343,900		29,342,490[24]

[14] Total for the UK includes 16,646 MWh that includes hydro, wind and PV that migrated to FITs since first being accredited under the Renewables Obligation. A breakdown of this data by technology type is not available.
[15] Figures for Belgium are estimated values (broken down data is available for the Walloon region and federal offshore only, no detailed data is available for Flanders and Brussels)
[16] Biomass figure for Belgium includes biogas and waste.
[17] Data for France does not include RES production overseas.
[18] Biomass figure for Germany includes biogas. Biogas and waste figure covers landfill, sewage and mine gas.
[19] Biomass figure for Italy includes biogas, bioliquids and waste.
[20] Figures given are for mainland Portugal only.
[21] Romanian data for biomass includes biogas.
[22] Total for Slovenia includes 313MWh that is not available broken down by technology.
[23] Including PV (6,141,376) and concentrated solar power (1,779,266)
[24] Total for the UK includes 29,816 MWh that migrated to FITs in 2011 after being accredited under the Renewables Obligation. A breakdown of this data by technology type is not available.

Chart 1: Total energy produced by country from renewables receiving support (2010 and 2011) where the total receiving support is below 8 million MWh

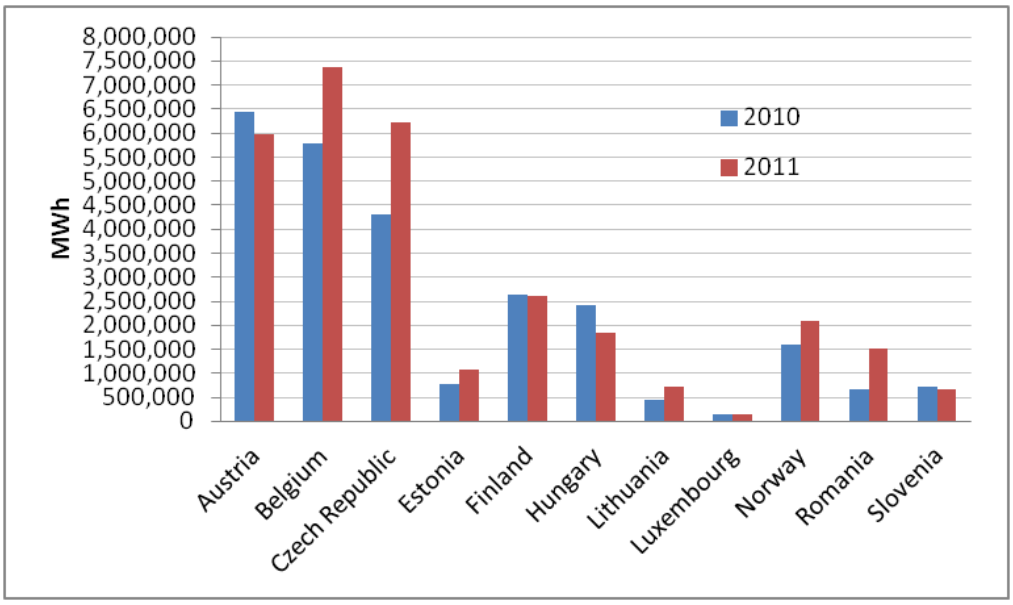
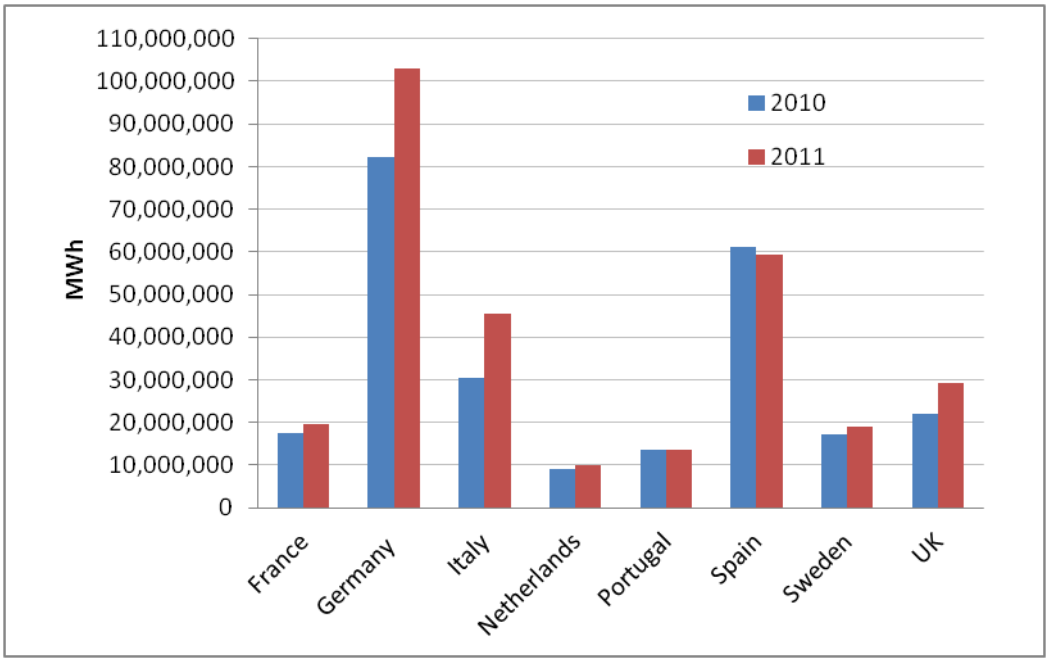


Chart 2: Total energy produced by country from renewables receiving support (2010 and 2011) where the total receiving support is above 8 million MWh



3 Estimates of the expenditure of RES support schemes

3.1 Financing RES support schemes

Table 3 shows that, in the majority of cases, RES electricity national support schemes are financed through the possible pass down of supplier's costs to end users.

In Estonia, the cost of national RES-sourced electricity support schemes is borne by consumers according to the volume of network services used and the amount of electricity consumed.

In France, RES-sourced electricity and energy efficiency support schemes are financed through non-tax levies. Each year, the NRA evaluates the level of the "tax", but the final decision belongs to the Minister for Energy. If the Minister does not follow the NRA's proposal, the tax increases by 3 €/MWh.

In Greece, the cost of RES produced energy is financed through a "specific levy" which is charged to all final customers.

In Austria, Belgium, Greece, Ireland, Italy, Norway, Spain and Slovenia, the non-tax levy is determined by the Government. In Lithuania and Luxembourg the non-tax levy is determined by the NRA. In France, the non-tax levy is proposed by the NRA but fixed by the Government. In Norway the levy has been at the same level since it was introduced.

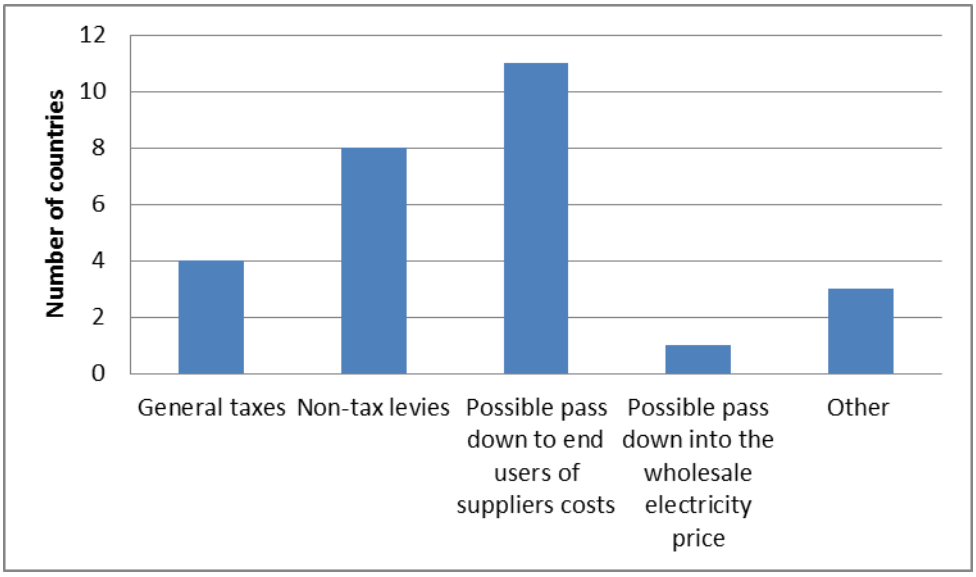
Table 3: Overview of ways of financing RES electricity support schemes (2012)

	General taxes	Non-tax levies	Possible pass down to end users of suppliers costs	Possible pass down into the wholesale electricity price	Other
Austria		X			
Belgium		X	X		Financial aid[25]
Czech Republic			X		
Estonia					X
Finland	X				
France		X			
Germany			X		
Greece			X		
Hungary			X		
Iceland	X				
Ireland		X			
Italy		X		X	
Lithuania		X			
Luxembourg	X	X			
Netherlands	X				
Norway			X		
Poland			X		
Portugal			X		
Romania			X		
Slovakia					Operation tariff

[25] Further details are given in Annex 6.

	General taxes	Non-tax levies	Possible pass down to end users of suppliers costs	Possible pass down into the wholesale electricity price	Other
Slovenia		X			
Spain		X			
Sweden			X		
UK			X		

Chart 3: Overview of ways of financing RES electricity support schemes (2012)



3.2 Recent changes in the financing system of RES electricity support schemes

Recently, a number of countries have seen changes in the way RES electricity support schemes are financed[26]. These changes are explained below based on the responses received from individual countries.

Austria – On 1 July 2012, there was a change in the financing system of RES electricity support schemes due to a new law that entered into force. The new system is financed through network usage charges, metering point charges, network losses charges, costs for guarantees of origins and revenue from the allocation of green electricity at the day-ahead hourly spot market price. In the previous system, the renewable electricity bought by OeMAG (clearing house for green electricity) at the FIT and allocated to electricity suppliers was financed by two price components; settlement prices and flat-rate metering point charges.

Czech Republic - A special tax for solar electricity has been introduced. This tax is imposed on all electricity with installed capacity over 30 kWp (kilowatts-peak), except for electricity to buildings. This new law enters into force on 1 January 2013.

[26] This question relates to changes in the way RES financing is structured, as opposed to changes *within* schemes. However, some countries provided additional information which has been included.

Estonia - Changes were made to the financing system in February 2010. The most significant change in the system of subsidies payable to producers was the move away from the purchase obligation. At the same time the scope of undertakings eligible for subsidies was enlarged.

Germany - The Renewable Energy Sources Act (EEG) is amended regularly. Since the first CEER Status Review (base year 2009), the first major change in the support scheme occurred in 2010: previously, the EEG required a physical transfer of the RES-E to electricity suppliers. The sum of total EEG power generation was predicted monthly. TSOs then transformed the actual fluctuating RES-E generation into a band of constant power, which equalled the predicted generation and transferred that constant power to suppliers. This was known as the "vertical balancing" process. Importantly, TSOs needed to purchase or deliver additional power for meeting differences to the scheduled band. As this caused unnecessary costs, the support framework was changed in 2010 with the entry into force of the Equalisation Scheme Ordinance (AusglMechV). Nowadays, TSOs must sell all RSE-E on the energy exchange (there is no physical roll-over to suppliers any more). Differences between the FITs paid to generators and the marketing revenue on the energy exchange are covered by the EEG surcharge.

2012 saw the introduction of a "market premium" as the second mechanism designed to advance market integration of renewables installations through direct marketing (the first one being the "green power privilege" which allows suppliers to reduce their payments for the EEG surcharge to no more than 2 cent/kWh in case more than 50% of the electricity supplied had been generated from renewable sources). Under the market premium model, the plant operator's remuneration is composed of the revenue generated on the spot electricity market exchange, plus a market premium and a management premium. The sum of the market premium results from the difference between EEG FIT and the actual monthly average of the technology-specific market value of renewable power calculated retroactively. The additionally granted management premium includes transaction costs for admission to the energy exchange, connection to the trading system and clearance (the management premium for onshore and offshore wind as well as for photovoltaic (PV) is set to be reduced according to a draft Ordinance published by the Federal Ministry for the Environment on 20 July 2012.) The EEG 2012 also amended FIT rates for electricity generated from hydropower, sewage and mine gas, biomass, geothermal energy, wind energy and PV. The EEG 2012 was amended again in June 2012 to reduce PV feed-in rates and to terminate PV FITs for new plants, once 52 GW PV capacities are reached (the so-called "PV amendment").

Greece – In 2010, Law 3851 imposed new FIT's for the remuneration of RES units depending on the technology used. In January and August 2012, two ministerial decisions readjusted the FIT's for PV installations. None of these changes applied retroactively.

Italy – The first RES supporting scheme (FIT) was launched in 1992, covering all RES-E technologies. In 1999, a quota system (GCs) on net generation was introduced for all RES technologies connected to the grid from 1 April 1999 onwards.
Since 2008, all RES power plants up to 1 MW (or up to 200 kW in the case of wind power plants and except PV) are supported with a FIT on net generation; for RES power plants above these thresholds (except PV) the GCs mechanism on net generation remained in operation. Starting in 2013 two incentive mechanisms will be in operation for RES-E generation feeding the grid except PV): a FIT for power plants up to 1 MW and Feed-in Premium (FIP) for RES power plants above this threshold.

As far as PV power plants are concerned, two principal support schemes have operated: from 2005 to August 2012, a FIP on gross generation; from August 2012, a FIT on generation feeding the grid coupled with a premium on generation used onsite.

Netherlands - There will be changes to the finance system in 2013, whereby the subsidy will be levied through (existing) energy taxes. This change is not retroactive.

Norway - From 1 January 2012, Norway is part of a Norwegian-Swedish electricity certificate market, which will contribute to the increased production of renewable energy. The electricity certificate market replaces the old investment grant scheme, which previously granted wind power projects with investment support. Up to 2020, Norway and Sweden intend to expand their electricity production based on RES by 26.4 TWh. This corresponds to the power consumption of more than half of all Norwegian households.

The power producers receive electricity certificates from the authorities. Power suppliers and some electricity users are required to purchase electricity certificates for a certain proportion of the electricity they deliver or use. Power customers finance the system, as the costs of purchasing certificates are added on the electricity bill. The price of electricity certificates, and hence the amount of support new renewable electricity producers receive, is determined by supply and demand.

Poland – The Ministry for the Economy is preparing a new RES-Law. Under this law the support system will be the same but the amount of GCs issued will depend on technology, capacity and age of plant.

Romania - Since 2005, Romania has adopted a support system with mandatory quotas combined with the transactions of GCs; a promotion scheme that was approved by Government Decision no. 1892/2004 for the promotion of electricity produced from RES. The promotion system applied to all producers of RSE-E, for which the same number of GCs is granted; respectively 1 GC for each MWh produced and delivered into the network. Producers holding hydropower plants (HPP) commissioned before 1 January 2004, and/or with installed capacities higher than 10 MW, are not eligible for the promotion system. In order to achieve the required objectives, Romania improved the existing promoting system. In November 2008, Law 220/2008 (republished with further amendments and completions) established the system to promote the production of energy from RES. The number of GCs received for each 1MWh delivered differs by the type of RES. It must be noted that the number of GCs and the period for benefiting from GCs are different, in case of HPP, if they are new, existing or refurbished. Also, for wind technology the period for benefiting from GCs depends on whether they are new or second-hand. Law 220/2008 (republished with further amendments and completions), was applied from November 2011, after the approval of this support system by EC Decision 4938/2011 – *State aid SA 33134 (2001/NRO – Green certificates for promoting electricity from renewable sources)*. For the producers who benefited from GCs before the entry into force of the notified support system, the duration of support is decreased by the periods for which the beneficiaries already received GCs, but, from November 2011, they receive benefits of a specific number of GCs based on the technology used, according to the provisions of Law 220/2008.

Spain - In 2010, there were some adjustments made for all solar PV plants with an annual cap for total hours of functioning. The Internal Rate of Return of the projects remains at the same level, as the numbers of years of support were increased from 25 to 30 years. In January 2012, Royal Decree- Law 1/2012 suspends support schemes for future RES plants, not for existing ones.

Sweden - Sweden and Norway have established a common electricity certificate market. A binding agreement on a joint electricity certificate market was signed in 2011, with the opening of the market on 1 January 2012

Based on the information provided, Finland, France, Hungary, Iceland, Ireland, Lithuania, Luxembourg, Portugal, Slovak Republic, Slovenia and the UK have seen no significant recent changes to the way schemes are financed.

4 Expenditure for promoting RES deployment

Table 4 summarises the national support schemes which are in place by country and technology. Only the instruments for which NRAs provided expenditure data are included.

Table 4: Overview of RES electricity support instruments by country and technology underlying the expenditure analysis (2012)

Member State	Hydro	Wind	Biomass and waste	Biogas	Photo-voltaic	Geo-thermal
Austria	Investment grants, Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff	Investment grants, Feed-in tariff	Feed-in tariff
Belgium	Green certificates with guaranteed minimum price	Green certificates with guaranteed minimum price	Green certificates with guaranteed minimum price	Green certificates with guaranteed minimum price	Green certificates with guaranteed minimum price	Green certificates with guaranteed minimum price
Czech Republic	Feed-in tariff, Feed-in Premium	Feed-in tariff, Feed-in Premium	Feed-in tariff, Feed-in Premium	Feed-in tariff, Feed-in Premium	Feed-in tariff, Feed-in Premium	Feed-in tariff, Feed-in Premium
Estonia	Feed in Premium	Feed in Premium	Feed in Premium	Feed in Premium		
Finland	Excise tax return	Excise tax return	Excise tax return	Excise tax return		
France	Feed-in tariff	Feed-in tariff, Call for tenders	Feed-in tariff, Call for tenders	Feed-in tariff	Feed-in tariff, Call for tenders	Feed-in tariff
Germany	Feed-in tariff, Direct marketing, Feed-in Premium	Feed-in tariff, Direct marketing, Feed-in Premium	Feed-in tariff, Direct marketing, Feed-in Premium		Feed-in tariff, Direct marketing, Feed-in Premium	Feed-in tariff, Direct marketing, Feed-in Premium
Hungary[27]	Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff
Italy	Green Certificates, Feed-in tariffs	Green Certificates, Feed-in tariffs	Green Certificates, Feed-in tariffs	Green Certificates, Feed-in tariffs	Feed-in premium	Green Certificates, Feed-in tariffs
Lithuania	Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff	
Luxembourg	Feed-in tariff, Feed-in Premium	Feed-in tariff, Feed-in Premium		Feed-in tariff, Feed-in Premium	Feed-in tariff, Feed-in Premium	

[27] Although geo-thermal power can receive FITs, there has been no geothermal power plant claiming this support yet.

Member State	Hydro	Wind	Biomass and waste	Biogas	Photo-voltaic	Geo-thermal
Netherlands	Feed-in Premium	Feed-in Premium	Feed-in Premium		Feed-in Premium	
Norway		Investment grants				
Portugal	Feed-in tariff	Feed-in tariff, Tendering process	Feed-in tariff, Tendering process	Feed-in tariff	Feed-in tariff	
Romania	Green Certificates	Green Certificates	Green Certificates	Green Certificates	Green Certificates	
Slovenia	Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff	Feed-in tariff	
Spain	Feed-in tariff or Feed-in Premium (optional)	Feed-in tariff or Feed-in Premium (optional)	Feed-in tariff or Feed-in Premium (optional)	Feed-in tariff or Feed-in Premium (optional)	Feed-in tariff (PV) and Feed-in tariff or Feed-in Premium (CSP)	
UK	Green Certificates, Feed-in tariff	Green Certificates, Feed-in tariff	Green Certificates		Green Certificates, Feed-in tariff	

Table 5 and Chart 3 (overleaf) show the share of total electricity receiving support compared to the total gross electricity production and final electricity consumption in 2010 (data for 2011 was not available).

Chart 3 shows that Romania and Norway have the lowest shares of electricity produced receiving support of 1.1% and 1.3% respectively. Portugal and Spain have the highest share of electricity produced receiving support, of 24.9% and 20.1% respectively. For the countries analysed, **the share of total electricity produced receiving support accounts for 9% of the total overall electricity production. The average share of electricity receiving support is 7.9%.**

Norway and Romania also have the lowest shares of final electricity consumption receiving support of 1.3% and 1.6% respectively. Portugal has the highest share of final electricity consumption receiving support, of 27.0%. For the countries analysed, **the share of total final electricity consumption receiving support accounts for 10.3% of the total overall electricity production. The average share of electricity receiving support is 8.9%.**

Table 5: Electricity volumes receiving RES support (2010)

Member state	Electricity receiving RES support (GWh)	Gross electricity produced GWh (Eurostat)	Share of electricity produced receiving support	Final electricity consumption[28] (GWh)	Share of final electricity consumption receiving RES support
Austria	6,430	71,127	9.0%	61,300	10.5%
Belgium	5,782	95,120	6.1%	83,300	6.9%
Czech Republic	4,301	85,910	5.0%	59,225	7.3%
Estonia	775	12,964	6.0%	6,900	11.2%
Finland	2,623	80,667	3.3%	83,500	3.1%
France	17,528	569,002	3.1%	444,100	3.9%
Germany[29]	82,285	627,918	13.1%	529,000	15.6%
Hungary	2,428	37,371	6.5%	42,566	5.7%
Italy	30,552	302,062	10.1%	330,000	9.3%
Lithuania	452	5,749	7.9%	8,300	5.4%
Luxembourg	139	4,592	3.0%	6,600	2.1%
Netherlands	8,999	118,140	7.6%	106,900	8.4%
Norway	1,610	124,505	1.3%	120,556	1.3%
Portugal	13,465	54,090	24.9%	49,900	27.0%
Romania	677	60,619	1.1%	41,300	1.6%
Slovenia	718	16,433	4.4%	12,000	6.0%
Spain	61,044	303,092	20.1%	260,600	23.4%
Sweden	17,260	148,609	11.6%	131,200	13.2%
United Kingdom	21,913	381,129	5.7%	328,300	6.7%

[28] Final electricity consumption is defined as gross electricity production plus net imports in 2010. The figures for the Czech Republic, Hungary and Italy were provided by the respective NRAs. The figure for Norway is taken from Statistics Norway. The remaining figures are taken from the European Commission EU Energy in Figures, Statistical Pocketbook, 2012.

[29] Electricity receiving RES support (GWh) does include direct marketing volumes which benefit from the so-called 'green power privilege'.

Chart 4: Share of electricity produced and final electricity consumption receiving RES support (2010)

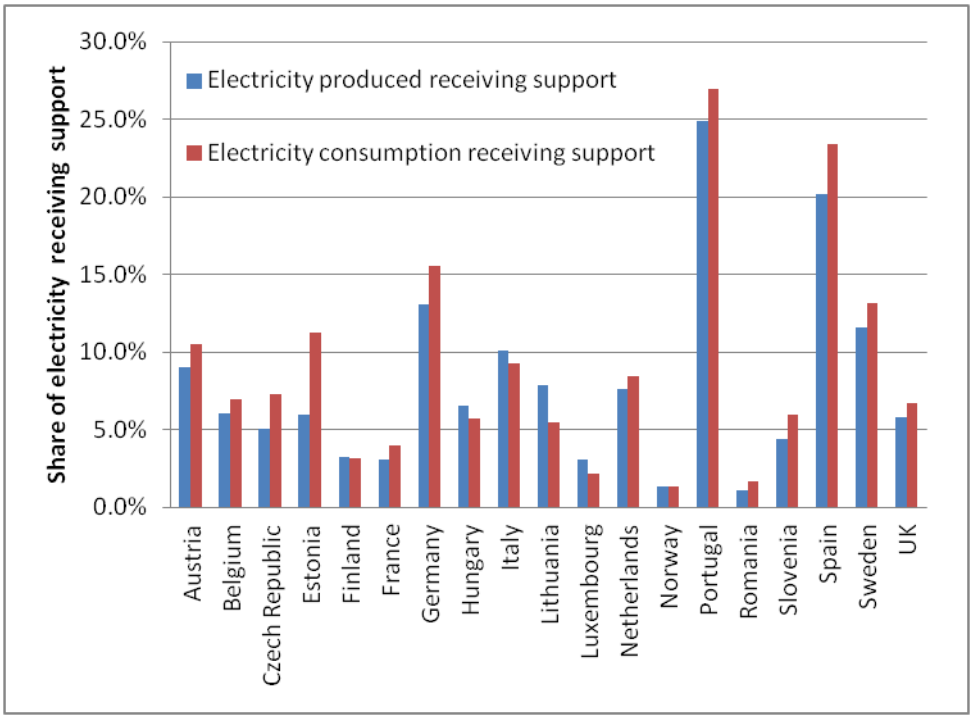


Table 6 and Chart 4 highlight the expenditure on RES support schemes and the gross electricity produced and consumed for countries that provided such data. In order to roughly estimate the burden of RES incentives on consumers' expenditure, the overall incentives were divided by final electricity consumption. Spain has the highest support level per unit of final electricity consumed of €20.61/MWh and Norway the lowest of €0.12/MWh. **The average level of support is €6.85/MWh**[30]. The data is presented for 2010 only as data on gross electricity production and final electricity consumption in 2011 was not available[31].

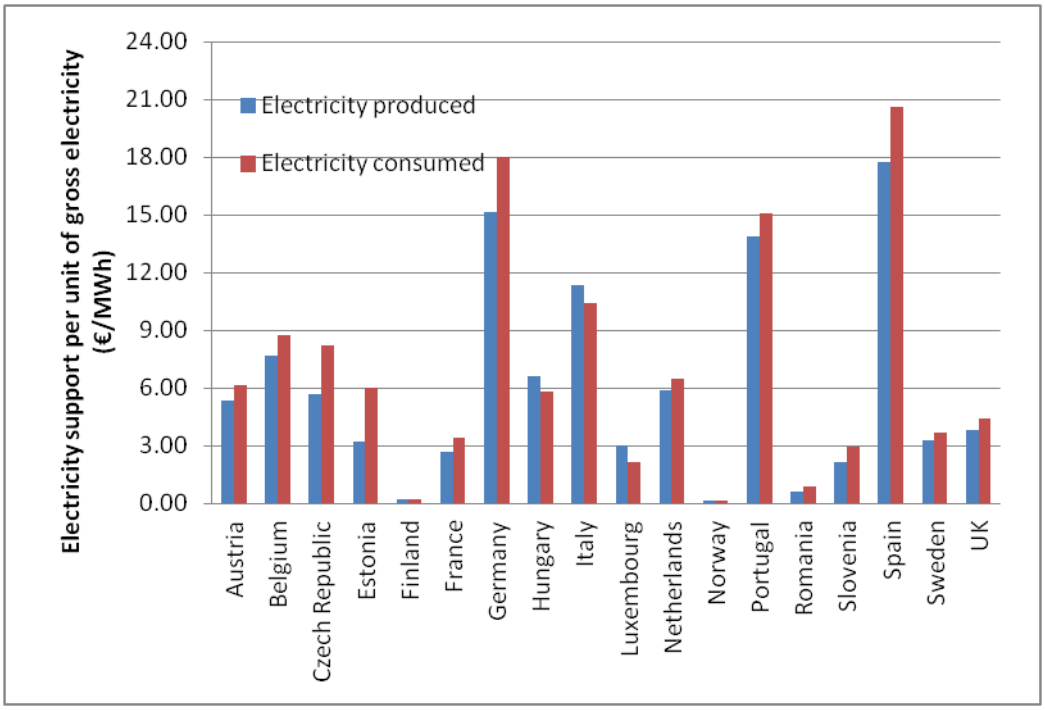
Table 6: Total expenditure on RES electricity support schemes (2010)

Member state	RES-electricity support expenditure (million Euros)	Gross electricity produced (Eurostat) (GWh)	RES- electricity support per unit of gross electricity produced (€/MWh)	Final electricity consumption[32] (GWh)	RES- electricity support per unit of final energy consumed (€/MWh)
Austria	378	71,127	5.32	61,300	6.17
Belgium	729	95,120	7.66	83,300	8.75
Czech Republic	488	85,910	5.68	59,255	8.23
Estonia	42	12,964	3.20	6,900	6.01

[30] Weighted average level of support is €9.34/MWh
[31] Figures taken from Eurostat and the EU Energy in Figures, Statistical Pocketbook, 2012, which have not yet published figures beyond 2010.
[32] Final electricity consumption is defined as gross electricity production plus net imports in 2010. The figure for the Czech Republic, Hungary and Italy were provided by the respective NRAs. The figure for Norway is taken from Statistics Norway. The remaining figures are taken from the EU Energy in Figures, Statistical Pocketbook, 2012.

Member state	RES-electricity support expenditure (million Euros)	Gross electricity produced (Eurostat) (GWh)	RES- electricity support per unit of gross electricity produced (€/MWh)	Final electricity consumption[32] (GWh)	RES- electricity support per unit of final energy consumed (€/MWh)
Finland	16	80,667	0.20	83,500	0.19
France	1,511	569,002	2.66	444,100	3.40
Germany	9,512	627,918	15.15	529,000	17.98
Hungary	247	37,371	6.62	42,566	5.81
Italy	3,427	302,062	11.35	330,000	10.38
Luxembourg	14	4,592	3.03	6,600	2.11
Netherlands	690	118,140	5.84	106,900	6.46
Norway	15	124,505	0.12	120,556	0.12
Portugal	752	54,090	13.90	49,900	15.07
Romania	37	60,619	0.61	41,300	0.90
Slovenia	36	16,433	2.17	12,000	2.97
Spain	5,371	303,092	17.72	260,600	20.61
Sweden	483	148,609	3.25	131,200	3.68
United Kingdom	1,438	381,129	3.77	328,300	4.38

Chart 5: RES-electricity support per unit of gross electricity produced and per unit of final electricity consumed (2010)



Tables 7 and 8 and Charts 5 and 6 (overleaf) present overall unit support levels (on supported electricity) and unit support levels by technology for 2010 and 2011.

In the case of FITs, the level of subsidy was estimated by subtracting the average wholesale electricity price from the overall tariff. In the case of investment grants (which represent a one-off payment), the effect of the grant was either calculated over the operational lifetime of the plant or equivalised to the payment period of a comparable FIT within a specific country.

Where different support schemes are in place for the same technology in the same country and separate cost data was available, a weighted average incentive was calculated using the energy supported for each instrument as a weighting. Support levels vary widely across European countries, especially for wind.

Table 7: RES support levels by main technology and country (2010)

Weighted average support level (on electricity supported) by technology (€/MWh)

Member state	Hydro	Wind	Biomass	Biogas and waste	Photo-voltaic	Geo-thermal	Total (€/MWh)
Austria	4.27	30.95	88.97	107.27	295.40	40.51	50.91
Belgium	47.56	94.88	99.75		420.67		126.12
Czech Republic	44.54	41.84	52.40	118.19	435.83		113.37
Estonia	51.85	53.48	53.64	54.55			53.55
Finland	4.21	6.90	6.90	2.76			6.12
France	12.28	35.51	49.48	38.78	496.03		86.19
Germany[33]	35.65	41.05	120.88[34]	24.06	387.92	155.69	115.60
Hungary	74.26	106.29	104.71	93.02			101.89
Italy	80.30	76.10	120.40[35]		406.80	82.40	112.17
Luxembourg	33.97	28.32		59.59	415.15		99.76
Netherlands	98.46	81.16	74.84	46.42	389.68		76.70
Norway		9.17					9.17
Portugal	49.85	52.84	56.37	46.53	291.10		55.84
Romania[36]	55.00	55.00	55.00[37]		55.00		55.00
Slovenia	23.34	95.38	57.69	120.04	350.88		49.57
Spain	44.01	45.55	77.51	29.81	399.93		87.98
Sweden*							27.98
UK[38]	62.77	69.63	62.04	61.11	199.63		65.63
Minimum support	4.21	6.90	6.90	2.76	55.00	13.57	6.12
Maximum support	98.46	106.29	120.40	120.04	496.31	82.40	126.12

*Figures for Sweden are not available broken down by technology.

[33] Data for Germany are calculated by subtracting the average wholesale electricity price and avoided network charges from overall payments. Direct marketing volumes are not taken into account.
[34] Biomass figure for Germany includes biogas.
[35] Biomass figure for Italy includes biogas, bioliquids and waste.
[36] In Romania, in 2010, each technology received 1 GC per 1 MWh. The value of GC was the same for each technology (55 € /GC).
[37] Romanian data for biomass includes biogas.
[38] The €/MWh values for each technology for the UK are given for electricity supported under the Renewables Obligation and under the FITs scheme. The values for the FITs schemes are estimated values only, based on the average €/MWh under the FITs schemes.

Chart 6: RES support levels by main technology and country (2010)

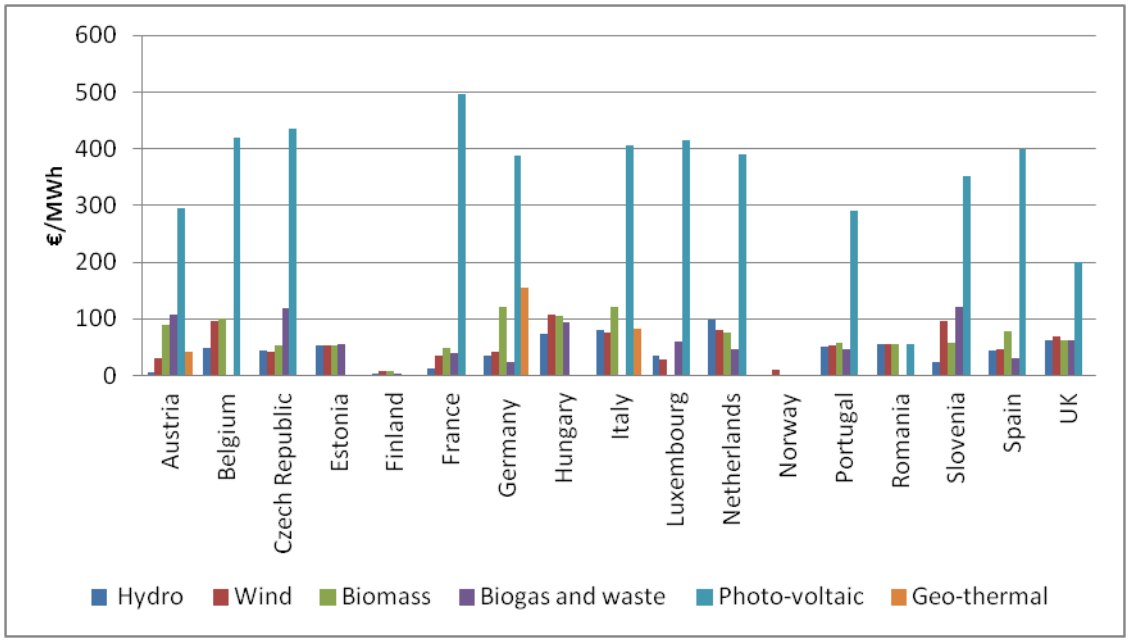


Table 8: RES support levels by main technology and country (2011)

Weighted average support level (on electricity supported) by technology (€/MWh)

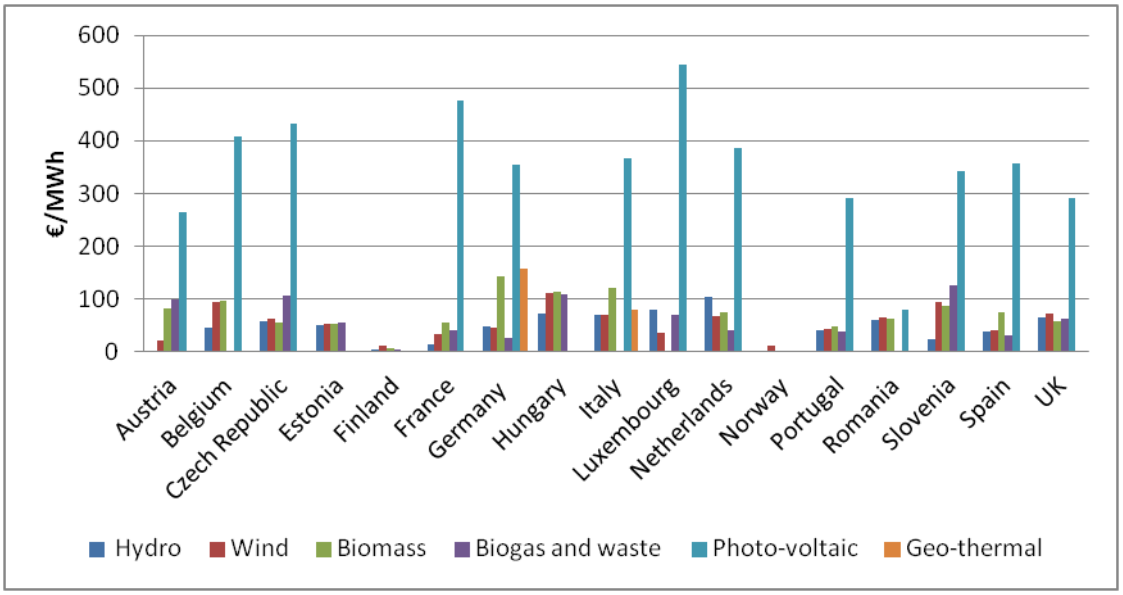
Member state	Hydro	Wind	Biomass	Biogas and waste	Photo-voltaic	Geo-thermal	Total (€/MWh)
Austria	1.13	21.55	81.12	98.20	263.64		46.49
Belgium	45.17	94.58	96.57		407.42		142.04
Czech Republic	57.08	63.56	55.06	107.50	432.33		196.32
Estonia	51.61	53.68	53.68	56.25			53.66
Finland	4.20	11.97	6.74	4.20			6.93
France	13.17	33.04	54.85	41.45	477.22		116.00
Germany[39]	48.66	45.43	143.74	25.97	353.82	157.59	130.77
Hungary	71.78	111.48	112.97	108.77			107.33
Italy	70.30	69.00	119.90[40]		367.20	80.00	153.69
Luxembourg	79.33	36.38		70.46	543.43		138.21
Netherlands	103.93	68.47	75.11	41.33	385.88		70.89
Norway		11.27					11.27
Portugal	40.54	42.68	49.16	39.51[41]	291.78		47.03
Romania	59.81	65.17	63.77[42]		78.74		64.39
Slovenia	23.47	95.38	87.24	126.76	343.07		81.05
Spain	39.02	40.94	75.11	31.26	356.76		84.80
Sweden*							21.47

[39] Data for Germany are calculated by subtracting the average wholesale electricity price and avoided network charges from overall payments. Direct marketing volumes are not taken into account.
[40] Biomass figure for Italy includes biogas, bioliquids and waste.
[41] Figure for Portugal is for biogas only.
[42] Romanian data for biomass includes biogas.

Member state	Hydro	Wind	Biomass	Biogas and waste	Photo-voltaic	Geo-thermal	Total (€/MWh)
UK[43]	64.81	72.71	58.48	62.80	290.37		59.92
Minimum support	1.13	11.27	6.74	4.20	78.74	80.00	6.93
Maximum support	103.93	111.48	143.74	126.76	543.43	157.59	196.32

*Figures for Sweden are not available broken down by technology.

Chart 7: RES support levels by main technology and country (2011)



[43] The €/MWh values for each technology for the UK are given for electricity supported under the Renewables Obligation and under the FITs schemes. The values for the FITs schemes are estimated values only, based on the average €/MWh under the FITs schemes.

5 Energy efficiency support schemes

Table 9 and Chart 7 show that **the majority of national energy efficiency support schemes are financed through the possible pass down of suppliers' costs to end users**. No schemes were financed through interest free loans. Germany, Greece, Slovakia and Sweden have no support schemes in place. There were no details available for efficiency schemes in Luxembourg.

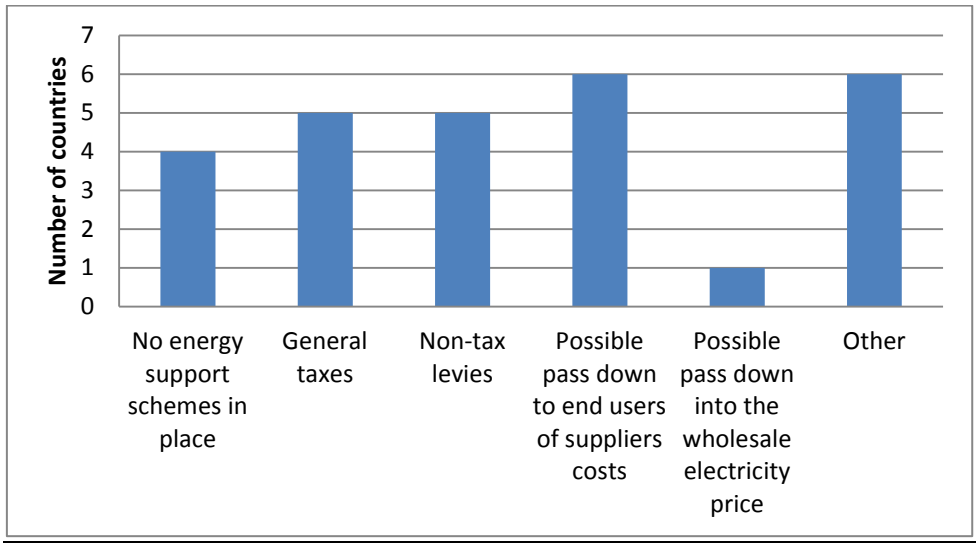
Table 9: Overview of ways of financing national energy efficiency support schemes (2012)

	No energy support schemes in place	General taxes	Non-tax levies	Possible pass down to end users of suppliers costs	Possible pass down into the wholesale electricity price	Other
Austria						Subsidies
Belgium			X			
Czech Republic				X		
Estonia						EU Funds, Kredex, sale of Kyoto units
Finland		X				
France			X			
Germany	X					
Greece	X					
Hungary						EU Funds, the revenues originating from the sale of Kyoto units and preferential loans.
Iceland		X				
Ireland		X				Accelerated Capital allowances[44]
Italy			White certificates			Fiscal incentives financed via Government budget
Lithuania				X		
Netherlands		X				
Norway				X		
Poland				X		
Portugal				X		
Romania						EU Funds and financial institutions
Slovakia	X					
Slovenia			X			
Spain		X	High efficiency			

[44] Details of Accelerated Capital allowances are given on p26.

	No energy support schemes in place	General taxes	Non-tax levies	Possible pass down to end users of suppliers costs	Possible pass down into the wholesale electricity price	Other
			cogeneration			
Sweden	X					
UK				X	X	

Chart 8: Overview of ways of financing national energy efficiency support schemes (2012)



The summary below is based on the responses received from individual countries.

Austria - The financing of national energy efficiency support schemes varies. Some states, as well as some energy providers and interest groups, provide subsidies for energy efficiency. The amount and mode of funding vary in mechanism and volume.

France - National energy efficiency support schemes are financed in part by Public Service Obligations (PSOs) which pay a small part of the schemes; such as small actions in the non-interconnected areas including distribution of energy-saving bulbs, water saving devices on taps and subsidies to help the funding of solar water heating. Currently there is no legal framework to include the funding of energy efficiency actions in the PSOs. The schemes are also financed by the private sector through the saving energy certificate scheme. It is compulsory that energy providers obtain a certain amount of certificates each year. If they do not reach their goal, they have to pay a fine. They obtain certificates through the funding of actions aimed at decreasing energy consumption.

Hungary - Energy efficiency projects are currently financed by EU funds, with the revenues originating from the sale of Kyoto units, Green Investment Scheme (GIS) and preferential loans. However, based on the obligations of the new EU Energy Efficiency Directive, Hungary intends to introduce an energy efficiency obligation scheme. Hungary is currently working on the preparation of the scheme, so details are as yet unknown.

Ireland - Ireland has three national energy efficiency support schemes; the Better Energy Warmer Homes Scheme, the Better Energy Homes Scheme and the Accelerated Capital Allowances for Energy Efficient Equipment.

The Better Energy Warmer Homes Scheme provides for the installation of energy efficiency measures such as insulation and cavity wall insulation in qualifying homes (those of the elderly and the vulnerable). This scheme is financed through general taxation.

The Better Energy Homes Scheme provides grants towards the costs to homeowners of measures to improve the energy performance of their homes, such as insulation and heating controls. This scheme is financed through general taxation.

Accelerated Capital Allowances for Energy Efficient Equipment: Section 46 of the Finance Act 2008 provides that companies may claim 100% of the capital cost of certain energy efficient plants and machinery against corporation tax in the year of purchase. The purpose of this scheme is to encourage businesses to purchase plants and machinery that are highly energy efficient and thus make significant savings on energy costs and reduce carbon emissions.

Italy - The tradable white certificate mechanism (TEE – energy efficiency certificates) is regulated and administered by the NRA; it covers all end-uses and is financed via a small surcharge on electricity and natural gas rates. It entered into force in January 2005 and is driven by an energy efficiency obligation on major electricity and natural gas DSOs (those serving at least 100,000 final customers); national targets for the post-2012 period are currently been defined by the Government.

Norway -Efficiency support schemes are financed by The Energy Fund, established in 2001. The Energy Fund is financed via a small additional charge to electricity bills. The levy corresponds to 0,0013 Euro/kWh (2012), and amounted to approximately €108 million 2010. In addition the fund receives allocations from the state budget.

Portugal - Energy efficiency support schemes are financed by taxes, levies or penalties. There are levies in the administrative process to grant concessions or licences, levies on low efficiency lamps (incandescent) and penalties in the agreements negotiated with high intensity consumption installations. Additionally, there is a tender mechanism in place which is aimed at promoting end-user energy consumption efficiency called PPEC. PPEC is financed via a small additional charge to electricity bills representing 0,2% of the final regulated tariff in 2012.

Romania - The Energy Efficiency Finance Facility (EEFF) is a scheme of the EU and the European Bank for Reconstruction and Development (EBRD) funding to help the support of energy efficiency projects in industry and the private sector (further information is available at http://www.eeff.ro). The FREE Energy Efficiency Fund (http://www.free.org.ro) is a financial institution that finances industrial companies and other energy consumers to facilitate the adoption and use of technologies for efficient use of energy.

Spain - There are FITs for electricity produced from high efficiency cogeneration. Other more general measures for energy efficiency are financed by general taxation and defined by the Government and by Autonomous Regions.

UK – The NRA administers the Government's Community Energy Saving Programme (CESP) and Carbon Emissions Reductions Target (CERT) programme.

CESP came into force on 1 September 2009 as part of the Government's Home Energy Saving Programme. It requires gas and electricity suppliers and electricity generators to deliver energy saving measures to domestic consumers in specific low income areas of Great Britain. It requires all licensed gas and electricity suppliers that have at least 50,000 domestic customers and all licensed electricity generators that have generated on average 10 TWh/year or more in a specified three year period to meet a carbon reduction obligation.

CERT was introduced in 2008 and requires all domestic energy suppliers with a customer base in excess of 250,000 customers to make savings in the amount of CO2 emitted by householders. Energy suppliers are required to deliver measures that will provide overall lifetime carbon dioxide savings of 293 Mt CO2 by December 2012. Suppliers meet this target by promoting the uptake of low carbon energy solutions to household energy consumers, thereby assisting them to reduce the carbon footprint of their homes.

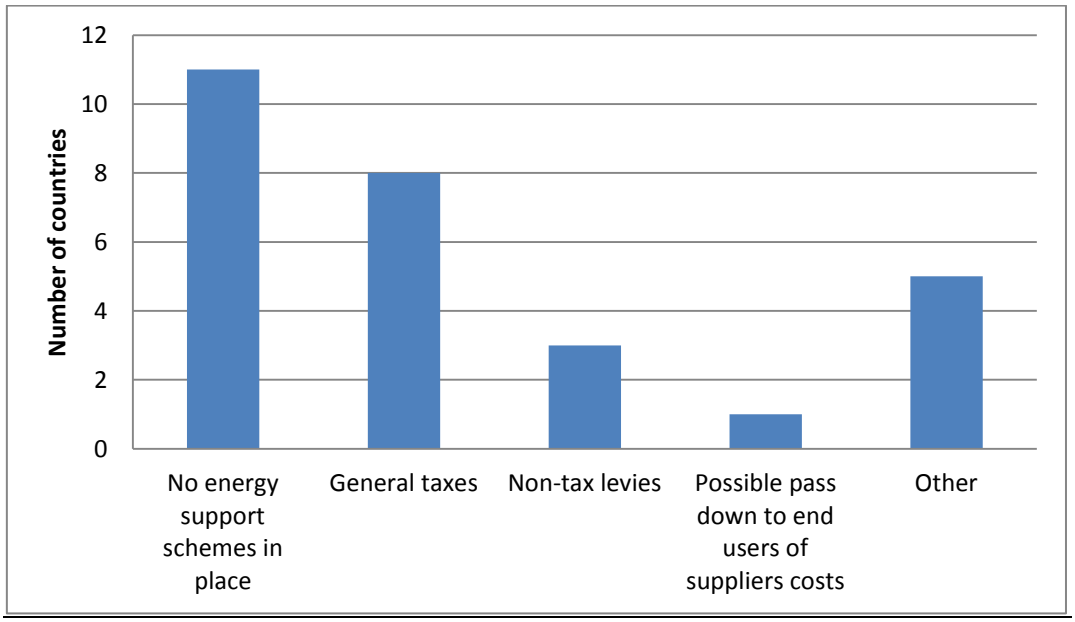
Table 10 and Chart 8 (overleaf) show that in the majority of European countries that responded to the survey, national renewable heating/cooling support schemes are financed through general taxes. Of the countries analysed, 11 have no support schemes in place.

Table 10: Overview of ways of financing national renewable heating/cooling support schemes (2012)

	No energy support schemes in place	General taxes	Non-tax levies	Possible pass down to end users of suppliers costs	Other
Austria	X				
Belgium		X		X	
Czech Republic	X				
Estonia	X				
Finland		X			
France					Subsides, funds and tax incentives
Germany	X				
Greece	X				
Hungary	X				
Iceland		X			Energy Fund Loans for geothermal energy
Ireland			X		
Italy			White certificates		Feed-in tariff for small renewable projects, to be financed via natural gas tariffs
Lithuania	X				
Luxembourg		Renewable CHP plants	Renewable CHP plants		
Netherlands		X			
Norway					The Energy Fund
Poland	X				
Portugal		X			
Romania	X				

	No energy support schemes in place	General taxes	Non-tax levies	Possible pass down to end users of suppliers costs	Other
Slovakia	X				
Slovenia					State Budget
Spain		X			
Sweden	X				
UK		X			

Chart 9: Overview of ways of financing national renewable heating/cooling support schemes (2012)



The summary below is based on the responses received from individual countries.

Czech Republic – National renewable heating and cooling schemes will be introduced in 2013. These will be financed through the possible pass down to end users of supplier costs (via a specific surcharge which may or may not be shown in electricity bills).

Germany - The Act on the Promotion of Renewable Energies in the Heat Sector (Erneuerbare-Energien-Warmegesetz, EEWarmeG) requires owners of new residential and non-residential buildings to cover part of their heat supply with renewable energies and is accompanied by a subsidy programme.

Hungary - According to the latest information on the new Hungarian renewable support system (METAR), a bonus above FIT payments is planned for renewable based heating or cooling, if produced in the form of cogeneration.

France – The funding for renewable heat schemes is run by ADEME (Agency for the Environment and Energy Management). A total €1.2 billion was provided for the period 2009-2013. There are also tax incentive mechanisms to foster improvement works in houses and subsides are available from local authorities.

Ireland - The Renewable Energy Feed-in Tariff (REFIT) scheme includes provision for a different rate of support for electricity produced from high efficiency combined heat and power (CHP) from RES. Qualification as high efficiency CHP is dependent on meeting requirements regarding useful heat under the CHP Directive (2004/8/EC). The REFIT is funded via a PSO levy on electricity customers, which appears as a separate line item on customers' electricity bills.

Italy - National renewable heating/cooling support schemes are financed by white certificates and planned FITs for small energy efficiency measures, including measures to promote the development of renewable efficient heating and cooling systems.

Luxembourg - Support schemes for heating/cooling exist for CHP plants. Support schemes may also exist for other plants but the NRA had no further details on these.

Spain - There are no national renewable heating/cooling support schemes like the support scheme for RES electricity, but there are some measures proposed in order to advance in this field. These measures are financed by general taxation and defined by the Government and by the Autonomous Regions.

UK - The Department for Energy and Climate Change (DECC) introduced the Renewable Heat Incentive (RHI) on 28 November 2011 to promote the uptake of renewable heat technologies by industrial, commercial, public sector and not-for-profit organisations. The NRA administers the scheme on behalf of DECC and is required to pay accredited participants in the scheme a tariff for the amount of eligible heat generated and used, or the amount of bio-methane produced.

6 Additional questions relating to priority grid access and charges for RES-sourced electricity

The 2012 questionnaire contains additional questions, developed by ACER, that focus on the level of priority granted for RES-sourced electricity plants when connecting and using the grid and the charges these plants face when connecting and using the grid.

Table 11 and Chart 9 show that in the majority of European countries that responded to the survey, **the electricity plant is responsible for the RES-sourced electricity plants imbalances**.

Table 11: Overview of financial responsibility for RES-sourced electricity plants imbalances

	The electricity plant	The plant has no responsibility for this	Another institution on behalf of the plant - no incentive to minimise costs	Another institution on behalf of the plant - incentivised to minimise costs	Other
Austria			X		
Belgium				X	Most of the RES sourced plants are responsible for their imbalances. For generation by offshore wind plants, there is a special, more favourable regime
Czech Republic		X			
Estonia	X				
Finland	X				
France	All plants apart from FITs		FITs		
Germany	Direct selling models	Fixed FITs support			
Greece		X			
Hungary				X	
Iceland	X				
Italy	X				
Lithuania				X	
Luxembourg			X		
Netherlands	X				
Norway	X				
Poland	X				
Portugal			X		
Romania	X				
Slovakia					Part of the system operation tariff
Slovenia					Produces can chose to be fully responsible or jointly responsible with the centre of

	The electricity plant	The plant has no responsibility for this	Another institution on behalf of the plant - no incentive to minimise costs	Another institution on behalf of the plant - incentivised to minimise costs	Other
					support
Spain	X				
Sweden	X				
UK	>30kw	<30kw and domestic premises			

Chart 10: Overview of financial responsibility for RES-sourced electricity plants

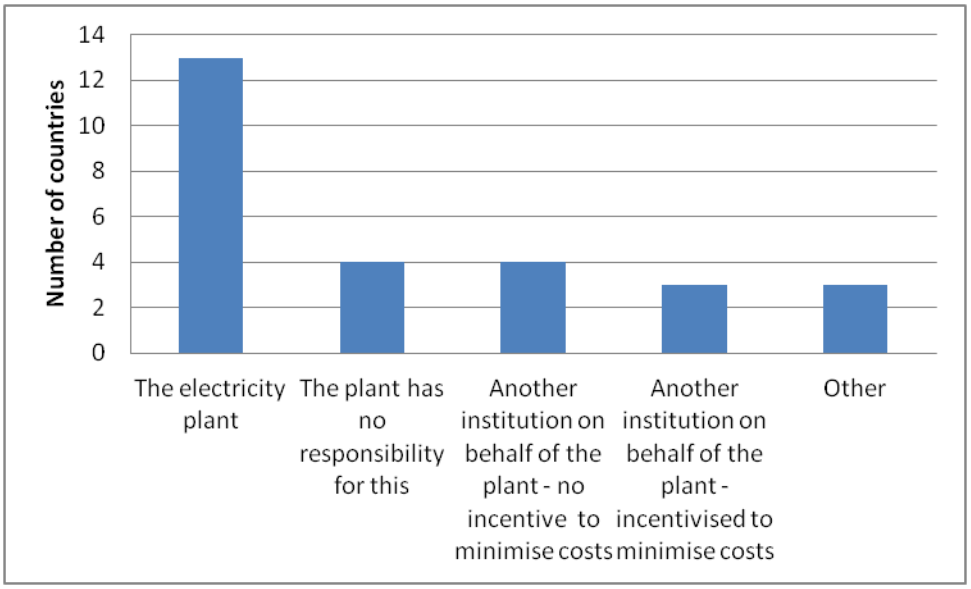


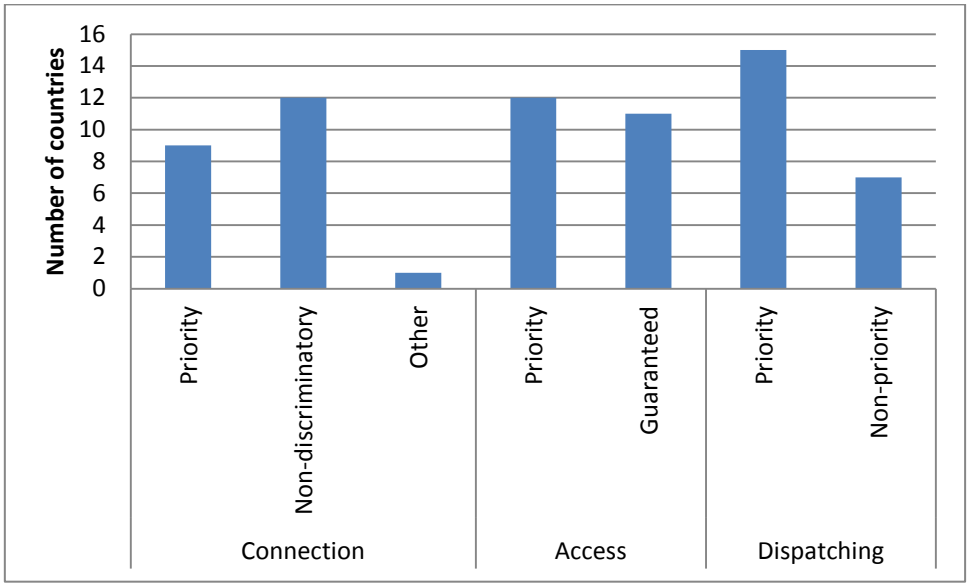
Table 12 and Chart 10 show that in the majority of European countries that responded to the survey, **RES-sourced electricity plants are granted priority in access and dispatching** whereas connection is non-discriminatory.

Table 12: Overview of level of priority granted for RES-sourced electricity plants when connecting and using the grid

	Connection			Access		Dispatching	
	Priority	Non-discriminatory	Other	Priority	Guaranteed	Priority	Non-priority
Austria		X			X	X	
Belgium	X			X		X	
Czech Republic	X			X		X	
Estonia		X			X	X	
Finland		X			X		X
France		X			X		X
Germany	X			X		X	
Greece		X		X		X	
Hungary			X	X		X	
Iceland		X			X		X
Italy	X			X		X	
Lithuania	X			X		X	
Luxembourg	X				X	X	
Netherlands		X		X		X	
Norway		X			X		X
Poland	X			X			X
Portugal		X			X	X	
Romania		X		Max 1 MW[45]	X	X	
Slovakia	X			X			X
Spain	X			X		X	
Sweden		X			X		X
UK		X			X	X	

[45] In Romania, priority access is given to plants of a maximum of 1 MW. For plants above 1 MW access is guaranteed.

Chart 11: Overview of level of priority granted for RES-sourced electricity plants when connecting and using the grid



6.1 Charges for connecting and using the grid for RES-sourced electricity plants

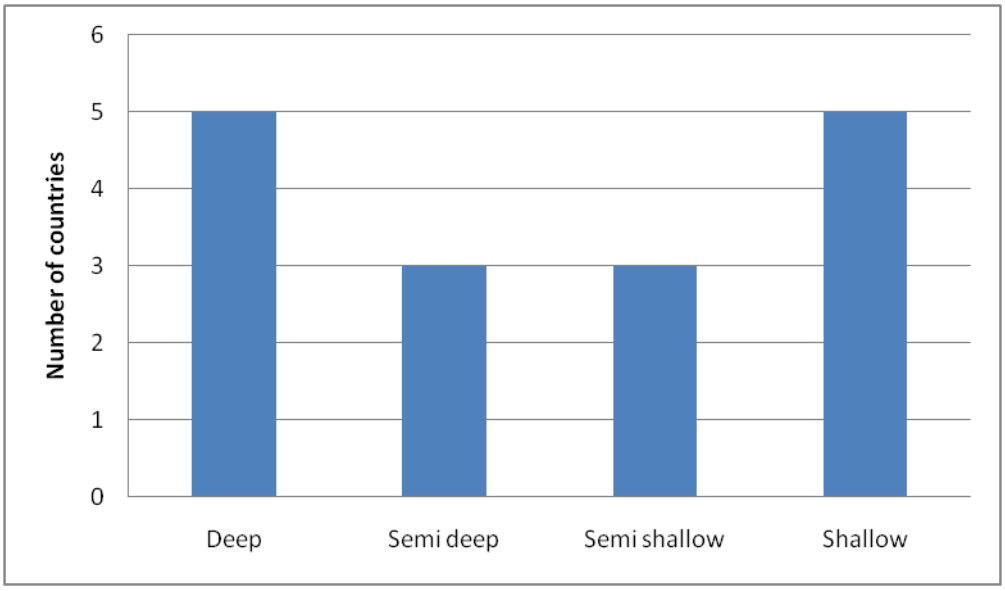
Countries that have connection charge regimes are specified below in Table 13. Countries without any connection charges are not included in this table.

Table 13: Overview of type of connection regime for RES

	Type of regime			
	Deep	Semi deep	Semi shallow	Shallow
Finland	X			
France		X		
Germany				X
Greece				X
Hungary			X	
Iceland	X			
Italy		X		
Lithuania			X	
Norway				X
Poland				X
Romania		X		
Slovakia	X			
Slovenia				X
Spain	X			

	Type of regime			
	Deep	Semi deep	Semi shallow	Shallow
Sweden[46]	X			
UK			X	

Chart 12: Overview of type of connection regimes for RES



Of the countries that responded, 7 have different connection charge regimes for RES-E plants than for conventional plants. Only Lithuania has a different access charge regime for RES-E plants than for conventional plants. These differences are explained below for the relevant countries.

Belgium - The connection of offshore wind farms benefit from additional financial support up to € 25 million spread over 5 years.

Germany - According to Section 13 of the EEG, the costs associated with connecting RES-E installations to the grid connection point which is suitable in terms of the voltage and which is at the shortest linear distance from the location of the installation shall be borne by the installation operator. If the grid system operator assigns the installations a different grid connection point, they shall bear the resulting incremental costs.

Hungary - According to the Ordinance of the Minister of National Development, if a power plant can certify that it will produce electricity every year from a minimum of 70% RES, its connection charge is reduced by 30%. If it can prove that more than 90% of the used resources will be renewable, connection charges will be reduced by 50%. There are no access charges, only connection fees.

[46] The Swedish Electricity Act does not require that the network company charges a fee for connection, however a fee is usually charged. The law requires that such a charge be reasonable and cover costs associated with the connection.

Italy– Low Voltage (LV) and Medium Voltage (MV) RES connection charges are defined on a conventional basis and are not cost reflective. High Voltage (HV) and Extra High Voltage (EHV) RES connection charges are defined pro quota based on the costs of the connection facilities and benefit from discounts.

Lithuania - There are privileges of connection charges for RES-E plants.

Poland - The fee collected for connection of conventional plants is calculated on the basis of the actual costs of investments incurred in relation to the connection. For RES of no more than 5 MW, the fee collected for connection is half the fee calculated on the basis of the actual costs of investment incurred.

Slovenia - Other generators are required to pay for necessary network reinforcements due to their connection (deep charges), while RES-E generators are exempted from this payment. In Slovenia, producers do not pay access charges (G component is zero), unless for their own consumption from the grid. In this respect, RES-E plants are treated equally to all other power plants.

7 Conclusions

The aim of the analysis was to assess the impact of the expenditure to promote renewable energy through national support schemes at aggregate level for each country, on a comparable basis.

The data builds on the previous CEER report (C10-SDE-19-04a) which collected data on support expenditures broken down by type of support scheme and type of technology.

In the European countries and members of the wider European Economic Area (EEA) for which detailed data could be collected, unit support levels on final electricity consumed varied between 0.12 to 20.61 €/MWh, while **the average level of support was found to be approximately 7 €/MWh[47] (2010)**.

RES-supported electricity accounts on average for 8% of the 19 countries gross electricity generation and 9% of the countries final electricity consumption.

This report is considered timely given the current interest in ways to promote and finance renewable energy. As well as input into the European Commission's review of RES support in Europe, CEER will continue its work on sustainable development through its 2013 deliverables[48].

[47] Weighted average support level is approximately 9 €/MWh, calculated using the amount of final electricity consumed in each country as the weight.

[48] For example, the CEER SDE Task Force will produce "Guidelines of Good Practice on demand side management: realising the energy efficiency and wider services potential" in 2013. See CEER Work Programme 2013.

Annex 1 – CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national regulators of electricity and gas at EU and international level. Through CEER, a not-for-profit association, the national regulators cooperate and exchange best practice. A key objective of CEER is to facilitate the creation of a single, competitive, efficient and sustainable EU internal energy market that works in the public interest.

CEER works closely with (and supports) the Agency for the Cooperation of Energy Regulators (ACER).

ACER, which has its seat in Ljubljana, is an EU Agency with its own staff and resources. CEER, based in Brussels, deals with many complementary (and not overlapping) issues to ACER's work such as international issues, smart grids, sustainability and customer issues.

The work of the CEER is structured according to a number of working groups, composed of staff members of the national energy regulatory authorities. These working groups deal with different topics, according to their members' fields of expertise.

This report was prepared by the Sustainable Development Task Force of the CEER Electricity Working Group.

Annex 2 – Additional country specific information

Belgium

In Belgium, GCs in the three regions (Flanders, Brussels and Wallonia) are principally financed by passing down the supplier costs on to the end users. These costs, which consist of the purchase cost for GCs (generally purchased on the GC market) and/or the fine in case the supplier does not reach the required quota, are usually separately indicated. In Flanders and Wallonia, minimum regional guaranteed prices for GCs for each technology are installed. In Flanders, the unit must also be connected on the distribution grid. Distribution System Operators (DSOs) are obliged to purchase these GCs at these minimum prices. The difference between the purchase price (minimum guaranteed price) and the selling price on the market is financed through distribution tariffs. In addition to the regional minimum prices for GCs, there are also guaranteed minimum prices at the federal level for all GCs (including the federal GCs for offshore generation). The Transmission System Operator (TSO) is obliged to buy the GCs at the federal guaranteed minimum prices. Minimum prices at federal level are mostly (due to the higher level of the regional minimum prices in the past) used for GCs for offshore generation. The difference between the minimum guaranteed price for offshore certificates and the selling price on the market is financed by a surcharge in electricity bills. As long as there is no market for these offshore GCs, the selling price for the TSO is zero and the whole cost for buying the offshore GCs is financed by this surcharge. For federal offshore electricity generation, there exists a financial aid in the connection cost (max €25 million per wind farm), which is financed by a specific surcharge. There was no information available on other (fiscal) support measures.

France

Significant modifications to the connection regime of RES-E plants are foreseen: a new national framework has been set up and will be applied when disseminated into regional schemes (most regional schemes will probably be set up in late 2012/early 2013). There will be a dedicated regime for RES-E, which is intended to increase network capacities made available. The connection charge regime for most RES-E plants will change from semi-deep to a hybrid regime (deep on average, as most RES-E related network costs will be covered by RES-E generators, but these costs will be shared between all concerned RES-E plants).

The NRA is in charge of evaluating the global amount of PSOs. It also evaluates the amount to be paid for each MWh consumed. Until law n2010-1657 (December 2010), if the Minister for Energy did not issue an order fixing the amount of the contribution equal to the ones evaluated by the NRA, the amount of the previous year was automatically renewed. Since law n2010-1657, the increase per year is limited up to 3 €/MWh. However, law n2011-900 (July 2011) amended this principle: there was no increase on 1 January 2012 and an increase of 1.5 €/MWh on 1 July 2012 instead.

Hungary

The 2007 Electricity Act (Law Nr. 2007/86) contains the main provisions regarding the connection of renewables. According to this Act, in the process of construction of new generation capacity, the TSO and the authorised DSO shall, under the conditions and to the extent specified in specific other legislation, bear the costs of technical adaptations to the public utility system. For example, these costs include grid connections and grid reinforcements, which are necessary in order to integrate such new producers feeding electricity produced from RES into the interconnected distribution and transmission network.

The NRA shall regulate network access fees taking the above-specified costs borne by the authorised network operators into consideration to a reasonable extent. The Electricity Act also states that authorised network operators, subject to the conditions laid down in other specific legislation, shall give priority to generating installations using CO_2 emission-free technologies, RES, waste, or producing CHP in connection with the operation of and access to networks. The TSO may refuse access to the transmission network and the distribution network affecting the operation of the transmission network, and/or limit, reduce or suspend contracted supplies in an objective, transparent and non-discriminatory manner. Service may be limited, reduced or suspended in advance, or during the operation of the electricity system if the importation of electricity is disadvantageous for the generation of electricity from RES or waste as an energy source, and the cogeneration of electricity. New generation capacity may be authorised under the principle of equal, transparent and non-discriminatory treatment, according to the criteria of the priority of RES.

Iceland

99.9% of production connected to the grid is renewable. An energy fund provides loans for those drilling for geothermal energy. In cases where the hole is dry or the resources it supplies are insufficient, loan cancellation may be offered.

Italy

Up to now, only programmable RES power plants have been responsible for their imbalances. In particular programmable RES power plants > 10 MVA are responsible for any imbalances as any other conventional power plants (dual pricing, marginal, per unit = Balancing Responsible Party); programmable RES < 10 MVA are subject to slightly different rules (dual pricing, average, per BRP in any bidding zone). Non-programmable RES power plants are not responsible for their imbalances (single pricing, per BRP).
Changes to this regime are going to be introduced as of January 2013: non-programmable RES power plants will be gradually responsible for imbalances. In particular, imbalances over the threshold (20% on hourly basis, 10% from July 2013 to December 2013) will be charged as imbalances from programmable RES power plants until the end of 2012, while imbalances up to the threshold will have the same treatment as non-programmable RES power plants until the end of 2012.

Lithuania

In Lithuania, a special institution is responsible for balancing. Balancing costs are minimised by gathering producers into groups.

Netherlands

All electricity is subsidised through the same (SDE+) premium.

Poland

Energy companies that sell heat are required to purchase renewable heat, but the price must be economically justified

Slovenia

Plants may be either fully responsible or jointly responsible for their imbalances. Each producer in the support scheme can choose between two possibilities: guaranteed purchase of all electricity produced by the national Centre of Support, or, independent sale of electricity in the market and payment of premium by the Centre of Support. In the first case, the Centre of Support is also responsible for imbalances of all producers that use this option, while in the second case the producer is responsible for imbalances (or actually the balance group to which the producer sells electricity).

The connection of RES-E plant is guaranteed under the terms of the Energy Act. This means that system operators are obliged to connect all RES-E plants if they comply with the other provisions specified in the primary and secondary legislation.

UK

In the UK, no priority is given to the connection of renewable generation over other forms of generation and the charging regime does not differ between types of generation connection. Distribution Network Operators (DNOs) have a duty (SLC 19 of the Electricity distribution licence) not to discriminate between classes of connection customer.

Users of the national electricity transmission system (NETS) are subject to three elements of transmission charges: connection charges, transmission network use of system charges and balancing service use of system charges.

Connection charges are charges for the provision and maintenance of connection assets. Connection charges are calculated as the cost of providing and operating assets that are specific to an individual user. The level of connection charges is determined in accordance with the Connection charging methodology statement, prepared by National Grid Electricity Transmission.

Transmission Network Use of System (TNUoS) charges are charges for the provision and maintenance of (potentially) shared transmission infrastructure assets i.e. assets that cannot be solely attributed to a single user. The current TNUoS charging methodology provides for wider access charges which vary by location, reflecting the costs that users (Generation and Demand) impose on the grid. Transmission investments and costs are largely driven by the distance over which power is transported. This means that a user will impose more costs if they are positioned a significant distance away from the existing transmission system. It also means that users will pay more if they source or send their electricity over large distances.

Balancing Services Use of System (BSUoS) charges are charges relate to the costs incurred by the System Operator (SO) in its day-to-day operation of the National Electricity Transmission System. It includes, for example, the costs incurred in the SO's action in the market to resolve constraints on the NETS.

Annex 3 – List of abbreviations

Term	Definition
ACER	The Agency for the Cooperation of Energy Regulators
CEER	Council of European Energy Regulators
CHP	Combined Heat and Power (Cogeneration)
CSP	Concentrated solar power
DNO	Distribution Network Operator
DSO	Distribution System Operator
EC	European Commission
EU	European Union
FIP	Feed-in-Premium
FIT	Feed-in-Tariff
G-component	Payment by generators toward network costs
GCs	Green Certificates
kWp	Watts-peak and kilowatts-peak is a measure of the nominal power of photovoltaic device under laboratory conditions. Kilowatts-peak (KWp) is the most common unit in the domestic context.
kWh	The kilowatthour is a unit of energy equal to 1000Watt hours or 3.6 megajoules. The kilowatthour is the most common billing unit for energy delivered to consumers.
MWh	MegaWatthour is a unit of energy equal to 1,000 kWh or 1,000,000 Watthours
NRAs	National Regulatory Authorities
PSO	Public Service Obligation
PV	Photovoltaic
RES	Renewable energy sources (also used in this report to mean renewable generation)
RES Directive	The Renewable Energy Directive (2009/28/EC)
RES-E	Electricity from Renewable Energy Sources
SDE+	The 'SDE+' ('Stimuleringsregelingduurzameenergieproductie') is the Dutch support mechanism for renewable energy, introduced in 2007.
TSO	Transmission System Operator
TWh	The terawatt hour is a measure of energy large enough to express annual electricity generation for whole countries.

Annex 4 – Definitions

Term	Definition
Deep connection charge regime	The generator pays for connection.
Direct marketing	Producers of green electricity that market the electricity themselves do not receive the fixed Feed-in tariffs, but can claim a market premium in addition to the revenue obtained by the sale of the electricity.
Feed-in tariff	A type of price-based policy instrument whereby eligible renewable energy generators are paid a fixed price at a guaranteed level (irrespective of the wholesale price of electricity).
Feed-in premium	A type of price-based policy instrument whereby eligible renewable energy generators are paid a premium price which is a payment in addition to the wholesale price of electricity.
Guaranteed access	In the event that the electricity from renewable energy sources integrates into the spot market, the guarantee that all electricity sold and supported obtains access to the grid, allowing the use of a maximum amount of electricity from renewable energy sources from installations connected to the grid.
Green Certificates	A tradable commodity proving that electricity is generated using renewable energy sources. The certificates can be traded separately from the energy produced.
Public Service Obligation	A Public Service Obligation is a levy imposed by the Government on all final electricity customers to recover the additional costs associated with electricity from specified sources of generation, including sustainable, renewable and indigenous sources.
Priority Access	The assurance given to connected generators of electricity from renewable energy sources that they will be able to transmit electricity from renewable energy sources in accordance with connection rules at all times, whenever the source becomes available.
Priority connection	The physical connection (link) to the transmission and/or distribution networks of generators of electricity from renewable energy sources is considered a priority over connection to generators of electricity from other sources.
Priority dispatching	When transmission system operators give the priority to generating installations using renewable energy sources, in so far as the secure operation of the national electricity system permits and is based on transparent and non-discriminatory criteria. Member States shall ensure that appropriate grid and market-related operational measures are taken in order to minimise the curtailment of electricity produced from renewable energy sources.
Semi-deep connection charge regime	The generators and system operators share the costs of connection.
Semi-shallow connection charge regime	RES generators pay less for connection than other generators.
Shallow connection charge regime	The system operator pays for connection.
Tender/Tendering process	A type of quantity based policy instrument, whereby a tender is announced by the Government for the supply of electricity from RES, which is then supplied on a contractual basis at the price resulting from the tender.

Annex 5 – Member States and members of the European Economic Area (EEA) represented in this report

Country	NRA
Austria	E-Control
Belgium	CREG
Czech Republic	ERU
Estonia	ECA
Finland	EMV
France	CRE
Germany	BNetzA
Greece	Regulatory Authority for Energy
Hungary	HEO
Iceland	OS
Ireland	CER
Italy	AEEG
Lithuania	NCC
Luxembourg	ILR
Netherlands	NMA
Norway	NVE
Poland	Energy Regulatory Office
Portugal	ERSE
Romania	ANRE
Slovakia	RONI
Slovenia	Energy Agency of the Republic of Slovenia
Spain	CNE
Sweden	EI
UK	Ofgem

Annex 6 – Full breakdown by technology

Table 1: Total renewable energy produced per technology in MWh that received support (2010)

	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Total
Austria	1,757,907	2,018,942	2,017,562	582,533	51,918	1,398					6,430,260
Belgium[49]	298,885	1,285,040	3,654,803 [50]		543,157						5,781,885
Czech Republic	1,238,819	335,493	1,511,911	598,755	615,702						4,300,680
Estonia	27,000	187,000	550,000	11,000							775,000
Finland	134,650	281,600		61,196			343,953			1,802,074	2,623,473
France	6,394,400	9,419,600	595,900	722,800	395,400						17,528,100
Germany	5,665,263	37,792,735	25,154,615[51]		11,682,611	27,683		1,962,51[52]			82,285,417
Hungary	183,317	503,649	1,564,830	53,021			105,224	16,128	1,334		2,427,503
Italy	8,216,013	8,965,483	10,279,273[53]		1,817,160	1,273,846					30,551,775
Lithuania	92,973	223,202	113,764	21,957	2						451,899
Luxembourg	7,653	55,084		50,405	21,149				5,144		139,435
Netherlands	74,145	3,778,781	4,727,595		8,725		355,024	54,276			8,998,546
Norway		1,610,001									1,610,001
Portugal[54]	1,374,114	9,031,861	2,345,870	546,490[55]	166,605						13,464,945
Romania	272,412	292,070	112,115[56]		7						676,604
Slovenia	483,034	11	100,756	124,188	10,305						718,293

[49] Figures for Belgium are estimated values (broken down data was available only for the Walloon region and federal offshore, no detailed data are available for Flanders and Brussels)
[50] Biomass figure for Belgium includes biogas and waste.
[51] Biomass figure for Germany includes biogas.
[52] Landfill gas figure for Germany also includes sewage gas and mine gas, as separate values were not provided.
[53] Biomass figure for Italy includes biogas, bioliquids and waste.
[54] Figures are given for mainland Portugal only.
[55] Biogas figure for Portugal includes landfill gas and sewage waste.
[56] Romanian data for biomass includes biogas.

	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Total
Spain	6,740,798	43,127,026	3,141,120		7,096,700[57]		938,012				61,043,656
Sweden	2,611,044	3,485,933	11,162,850		275						17,260,102
UK	1,687,827	10,145,047	4,548,803	2,671	23,397			4,985,511	503,401		21,913,303[58]

Table 2: Total renewable energy produced per technology in MWh that received support (2011)

	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Total renewables in receipt of support
Austria	1,488,338	1,882,764	1,980,760	559,891	77,970						5,989,723
Belgium[59]	190,845	2,300,962	3,766,644[60]		1,126,624		9				7,385,075
Czech Republic	1,017,878	397,003	1,682,563	932,576	2,182,018						6,212,038
Estonia	31,000	272,000	747,000	16,000							1,066,000
France	4,664,000	11,679,300	855,100	816,000	1,552,700						19,567,100
Finland	95,238	174,800		71,429						2,270,381	2,611,848
Germany	4,843,458	48,882,777	27,976,618		19,340,185	18,846		1,815,205[61]			102,877,089
Hungary	212,199	601,318	911,831	81,405				32,906	998		1,840,656
Italy	10,225,548	10,980,271	12,331,397[62]		10,705,253	1,242,984					45,485,453
Lithuania	90,231	472,504	119,103	29,815	76						711,729
Luxembourg	4,034	63,763		48,730	25,744				5,912		148,183

[57] Including PV (6,405,162) and concentrated solar Power (691,538)
[58] Total for the UK includes 16,646 MWh that includes hydro, wind and PV that migrated to FITs in 2010 after first being accredited under the Renewables Obligation. A breakdown of this data by technology type is not available.
[59] Figures for Belgium are estimated values (broken down data was available only for the Walloon region and federal offshore, no detailed data is available for Flanders and Brussels)
[60] Biomass figure for Belgium includes biogas and waste.
[61] Landfill gas figure for Germany also includes sewage gas and mine gas, as separate values were not provided.
[62] Biomass figure for Italy includes biogas, bioliquids and waste.

	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Total renewables in receipt of support
Netherlands	42,336	4,758,405	4,707,697		18,918		333,161	196,751			10,057,268
Norway		2,101,400									2,101,400
Portugal[63]	1,016,757	9,128,050	2,498,560	637,830[64]	187,130						13,468,330
Romania	175,550	1,149,300	183,460[65]		1,270						1,509,580
Slovenia	359,869	7	94,078	152,702	50,046						657,016
Spain	5,270,476	41,733,178	3,681,533		7,920,643[66]		875,414				59,481,243
Sweden	2,698,130	6,093,169	10,305,639		529						19,097,467
UK	2,566,664	15,522,988	5,232,443	71,829	343,900			5,014,648	560,203		29,342,490[67]

Table 3: RES support levels by main technology and country, 2010

Weighted average support level (on electricity supported) by technology (€/MWh)

Member state	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Total (€/MWh)
Austria	4.27	30.95	88.97	107.27	295.40	40.51					50.91
Belgium	47.56	94.88	99.75		420.67						126.12
Czech Republic	44.54	41.84	52.40	118.19	435.83						113.37
Estonia	51.85	53.48	53.64	54.55							53.55
Finland	4.21	6.90		4.20			2.50			6.90	6.12
France	12.28	35.51	49.48	38.78	496.03						86.19

[63] Figures are given for mainland Portugal only.
[64] Biogas figure for Portugal includes landfill gas and sewage waste.
[65] Romanian data for biomass includes biogas.
[66] Including PV (6,141,376) and concentrated solar power (1,779,266)
[67] Total for the UK includes 29,816 MWh that migrated to FITs in 2011 after first being accredited under the Renewables Obligation. A breakdown of this data by technology type is not available.

Member state	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Total (€/MWh)
Germany	35.65	41.05	120.88		387.92	155.69		24.06[68]			115.60
Hungary	74.26	106.29	104.71	103.19			85.70	105.78	105.78		101.89
Italy	80.30	76.10	120.40[69]		406.80	82.40					112.17
Luxembourg	33.97	28.32		62.30	415.15				31.32		99.76
Netherlands	98.46	81.16	74.84		389.68		48.73	31.32			76.70
Norway		9.17									9.17
Portugal	49.85	52.84	56.37	46.53	291.10						55.84
Romania[70]	55.00	55.00	55.00[71]		55.00						55.00
Slovenia	23.34	95.38	57.69	120.04	350.88						49.57
Spain	44.01	45.55	77.51		399.93		29.81				87.98
Sweden*											27.98
UK[72]	62.77	69.63	62.04	61.11[73]	199.63			61.04	61.04		65.63
Minimum support	4.21	6.90	37.22	4.20	55.00	13.57	2.50	24.06	33.05	6.90	6.12
Maximum support	98.46	106.29	120.40	120.04	496.31	82.40	85.70	105.78	112.42	6.90	126.12

*Figures for Sweden are not available broken down by technology

[68] Landfill gas figure for Germany also includes sewage gas and mine gas, as separate values were not provided.
[69] Biomass figure for Italy includes biogas, bioliquids and waste.
[70] In Romania, in 2010, each technology received 1 GC per 1 MWh. The value of GC was the same for each technology (55€/GC).
[71] Romanian data for biomass includes biogas.
[72] The €/MWh values for each technology for the UK are given for electricity supported under the Renewables Obligation and FITs scheme. The FITs value has been estimated using the average €/MWh under the FITs scheme.
[73] Biogas figure for the UK includes landfill gas and sewage waste.

Table 4: RES support levels by main technology and country (2011)

Weighted average support level (on electricity supported) by technology (€/MWh)

Member state	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Other	Total (€/MWh)
Austria	1.13	21.55	81.12	98.20	263.64							46.49
Belgium	45.17	94.58	96.57		407.42							142.04
Czech Republic	57.08	63.56	55.06	107.50	432.33							196.32
Estonia	51.61	53.68	53.68	56.25								53.66
Finland	4.20	11.97		4.20						6.74		6.93
France	13.17	33.04	54.85	41.45	477.22							116.00
Germany	48.66	45.43	143.74		353.82	157.59		25.97[74]				130.77
Hungary	71.78	111.48	112.97	110.02				105.42	117.13			107.33
Italy	70.30	69.00	119.90[75]		367.20	80.00						153.69
Luxembourg	79.33	36.38		76.34	543.43				21.99			138.21
Netherlands	103.93	68.47	75.11		385.88		62.73	5.08				70.89
Norway		11.27										11.27
Portugal	40.54	42.68	49.16	39.51	291.78							47.03
Romania	59.81	65.17	63.77[76]		78.74							64.32
Slovenia	23.47	95.38	87.24	126.76	343.07						231.79	81.05
Spain	39.02	40.94	75.11		356.76		31.26					84.80
Sweden*												21.47
UK[77]	64.81	72.71	58.48	62.80[78]	290.37							55.06
Minimum support	1.13	11.27	49.16	4.20	78.74	80.00	31.26	5.08	21.99	6.74		6.93

[74] Landfill gas figure for Germany also includes sewage gas and mine gas, as separate values were not provided.
[75] Biomass figure for Italy includes biogas, bioliquids and waste.
[76] Romanian data for biomass includes biogas.
[77] The €/MWh values for each technology for the UK are given for electricity supported under the Renewables Obligation and FITs scheme. The FITs value has been estimated using the average €/MWh under the FITs scheme.
[78] Biogas figure for the UK includes landfill gas and sewage waste

Member state	Hydro	Wind	Biomass	Biogas	Photo-voltaic	Geo-thermal	Waste	Landfill gas	Sewage waste	Wood chip	Other	Total (€/MWh)
Maximum support	103.93	111.48	143.74	126.76	543.43	157.59	62.73	105.42	117.13	6.74		196.32

*Figures for Sweden are not available broken down by technology.

Annex 7 – CEER Member survey

EWG-3: CEER Status Review on Renewable Energy Support in Europe (Updating C10-SDE-19-04a)

QUESTIONNAIRE FOR NRAS

SECTION 1: Direct RES support

1. How are the national RES-sourced electricity support scheme(s) financed in your country?

a. General taxation paid by all citizens (e.g. income taxes)
b. Through specific non-tax levies like Public Service Obligations (PSOs)[79] paid by all customers in electricity bills
c. Through the possible pass through to the end user of Supplier costs (via a specific surcharge which may or may not be shown in electricity bills)
d. Through the possible pass through into the wholesale electricity price of the costs borne by the Generator and/or Supplier (without a specific surcharge shown in electricity bills)
e. Others, please specify below

Others – please specify

2. Has there been a change in the financing system in recent years. If so, please specify:

Please specify

3. If they exist, how are national energy efficiency support scheme(s) financed in your country?

a. Not applicable (Please specify if your country intends to introduce such a scheme in the future)
b. General taxation paid by all citizens (e.g. income taxes)
c. Through specific non-tax levies like Public Service Obligations (PSOs) paid by all customers in electricity bills
d. Through the possible pass through to the end user of Supplier costs (via a specific surcharge which may or may not be shown in electricity bills)
e. Through the possible pass through into the wholesale electricity price of the costs borne by the Generator and/or Supplier (without a specific surcharge shown in electricity bills)
f. Interest free loan, with costs recouped via instalments on customer bills (savings achieved through energy efficiency measures will always be higher than the loan cost)
g. Others, please specify below

Others – please specify

[79] In this context, a Public Service Obligation (PSO) is a levy imposed by the Government on all final electricity customers to recover the additional costs associated with electricity from specified sources of generation, including sustainable, renewable and indigenous sources.

3. OPTIONAL QUESTION WHERE APPLICABLE - If they exist, how are national heating/cooling support scheme(s) financed in your country?

a. Not applicable (Please specify if your country intends to introduce such a scheme in the future)
b. General taxation paid by all citizens (e.g. income taxes)
c. Through specific non-tax levies like Public Service Obligations (PSOs) paid by all customers in electricity bills
d. Through the possible pass through to the end user of Supplier costs (via a specific surcharge which may or may not be shown in electricity bills)
e. Through the possible pass through into the wholesale electricity price of the costs borne by the Generator and/or Supplier (without a specific surcharge shown in electricity bills)
f. Interest free loan, with costs recouped via instalments on customer bills (savings achieved through energy efficiency measures will always be higher than the loan cost)
g. Others, please specify below

Others – please specify

4. If you answered (b) to Question 1, and/or (c) to Questions 2 and/or 3, please specify who determines the non-tax levy?

a. The Government
b. The National Regulatory Authority
c. Other, please specify

Others – please specify

Please quantify the overall costs to promote RES-sourced electricity for the years 2010, 2011 and (if possible) 2012 under the accrual basis accounting (i.e. not on a cash basis[80]) for your country according to the table overleaf.

Explanatory note: In order to compare and evaluate actual RES support scheme costs across the EU it is important to use a common approach with reference to a base year (e.g. 2009).

The simplest way to evaluate actual costs for supporting RES schemes is to calculate an aggregate value by taking into account the costs associated with each existing support scheme. The necessary data could be derived from specific cost components in the electricity bill or estimated through information available to the National Regulatory Authority.

Total costs for RES support schemes in 2010, 2011 and 2012 (*if data available)*

Support scheme ID (e.g. name)[81]	**Specify the type of support scheme:** - Feed-in tariff[82]	**Costs for promoting RES through**	**Energy (MWh) or Capacity**	**Specify if costs are based on:** - bills (B)

[80] Under the accrual basis accounting, costs are recognized with respect to the period when revenues are earned while, under the cash basis accounting, costs are recognized when cash is actually paid.
[81] Please give disaggregated data taking into account both the type of support scheme (i.e. feed-in tariff, green certificates, etc.) and the specific conditions of each scheme for the different sources (if many).
[82] In the case of feed-in tariffs, please specify both costs coming from the overall tariff and costs coming from the incentive component to be calculated by subtracting from the overall tariff the wholesale electricity average price. In this case please use two lines of the table.

	- Feed-in premium - Green certificates - Quota obligations - Other	**support schemes** (million Euro[83])	**(MW) receiving support** [84]	- your estimate (E) - other sources (O)
Please expand	*the table as*	*necessary to*	*accommodate*	*information*

SECTION 2: Indirect RES support

6. Are the RES sourced electricity plants financially responsible for their imbalances?

a. Yes, all of them (without exception) and exactly in the same manner as any other conventional plant
b. No, they are not responsible at all
c. There is another institution that has balancing responsibility on behalf of the RES sourced electricity plants. There is not an incentive in place for this institution to minimise the incurred balancing costs.
d. There is another institution that has balancing responsibility on behalf of the RES sourced electricity plants. This institution is incentivised to minimise those balancing costs (please specify, below)
e. Other, please specify below

d, e Please specify

7. Please specify the level of priority granted for RES sourced electricity plants when connecting and using the grid. Cross only one option among the three columns

Connection[85]			**Access**[86]			**Dispatching**[87]	
Priority	Non-discriminatory	Other	Priority	Guaranteed	Other	Priority	Non-priority

[83] If your country doesn't belong to the Euro-zone, please use your local currency or calculate the Euro equivalent (please provide the exchange rate used)

[84] Depending of the schemes that are in place in your country, please specify for each of them the supported volumes in terms of energy (MWh) or capacity (MW).

[85] Priority connection means that the physical connection (link) to the transmission and/or distribution networks of generators of electricity from renewable energy sources in priority to generators of electricity from other sources.

[86] According to Recital (60) of Directive 2009/28/EC:
Priority access means the assurance given to connected generators of electricity from renewable energy sources that they will be able to […] transmit the electricity from renewable energy sources in accordance with connection rules at all times, whenever the source becomes available.
Guaranteed access means, in the event that the electricity from renewable energy sources is integrated into the spot market, the guarantee that all electricity sold and supported obtains access to the grid, allowing the use of a maximum amount of electricity from renewable energy sources from installations connected to the grid.

[87] According to article 16.2 (c) of Directive 2009/28/EC priority dispatching means that '…when dispatching electricity generating installations, transmission system operators shall give priority to generating installations using renewable energy sources in so far as the secure operation of the national electricity system permits and based on transparent and non-discriminatory criteria. Member States shall ensure that appropriate grid and market-related operational measures are taken in order to minimise the curtailment of electricity produced from renewable energy sources…'

Other: Please specify	Other: Please specify	Non-Priority: Please specify

8. Charges for connecting and using the grid for RES sourced electricity plants. Please specify if there are any special treatment for RES sourced electricity plants regarding connection and/or access charges when connecting and using the network.

Connection Charges: **(first connection to the grid)**		**Access Charges**: **(use of the grid)**	
Does the connection charges regime for RES-E plants differ from the one for conventional plants? Cross the right option		Does the access charge regime for RES-E plants differ from the one for conventional plants? Cross the right option	
No	**Yes (please specify)**	**No**	**Yes (please specify)**
Yes: Please specify:		**Yes: Please specify**	

Connection charges regime (for RES-E if you have answered yes to question above; for all generators otherwise):

Please specify which the connection charges regime in place is. Generator will typically pay for connection to the nearest grid point (exceptions apply). Beyond this point, connection charging regimes vary. Cross only one option among the five columns

Deep Generator Pays	**Semideep** Generators and System Operators Share Costs	**Semishallow** RES Generators Pay Less	**Shallow** System Operator Pays	**Other, please specify**

Please specify if needed for any of the selected options