National Renewable Energy Action Plan

2017 Progress Report for Austria under Directive 2009/28/EC

Federal Ministry of Science, Research and the Economy

Federal Ministry of Agriculture, Forestry, Environment and Water Management

National Renewable Energy Action Plan (NREAP) – 2017 Progress Report for Austria under Directive 2009/28/EC

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8 Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and lignocellulosic material (Article 22(1)(i) of Directive 2009/28/EC) 46

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12 Please provide information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates (Article 2(1)(n) of Directive 2009/28/EC) 52

Abbreviations

BGBl.	Bundesgesetzblatt (Federal Law Gazette)
E-Control Austria (ECA)	Energie-Control Austria for the regulation of the electricity and gas industries (E-Control) – public agency
ElWOG	Electricity Industry and Organisation Act
ha	Hectare
GO	Guarantee of origin
HR	Heating requirement
aa	As amended
CR	Cooling requirement
kWh	Kilowatt hour
CHP	Combined heat and power
ÖSG	Green Electricity Act
ÖSVO	Green Electricity Regulation
Dir.	Directive
TOE	Tonne of oil equivalent (1000 ktoe = 41.868 TJ = 11.64 GWh)
SNE-Reg.	System Use Tariff Regulation
t	Tonne
Reg.	Regulation

Note

The following tables also include figures for 2011, 2012, 2013 and 2014 that do not correspond to the figures reported in the NREAP Progress Report 2015. This is due to new information and improved data preparation which resulted in amended calculation bases for reports from the SHARES tool.

1 Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (n-1; n-2 e.g. 2010 and 2009) (Article 22(1)(a) of Directive 2009/28/EC).

Table 1: Sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources[1].

	2011	2012	2013	2014	2015	2016
Renewable energy sources – heating and cooling[2] (%)	44.8 %	45.4 %	45.1 %	46.4 %	46.0 %	46.1 %
Renewable energy sources – electricity[3] (%)	64.5 %	65.3 %	66.9 %	69.2 %	69.3 %	71.7 %
Renewable energy sources – transport[4] (%)	7.8 %	7.9 %	7.8 %	9.2 %	10.1 %	10.5 %
Overall share of renewable energy sources[5] (%)	30.4 %	31.5 %	32.5 %	32.9 %	33.0 %	33.5 %
Of which from cooperation mechanism[6] (%)	0 %	0 %	0 %	0 %	0 %	0 %
Surplus for cooperation mechanism[7] (%)	0 %	0 %	0 %	0 %	0 %	0 %

*Distinction due to new factors – according to SHARES – compared to energy balance for which old factors were still used.

Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)[8].

	2011	2012	2013	2014	2015	2016
(A) Gross final consumption of RES for heating and cooling	4 064	4 235	4 692	4 222	4 392	4 522
(B) Gross final consumption of electricity from RES	3 733	3 841	3 955	4 036	4 094	4 274
(C) Gross final consumption of energy from RES in transport	591	596	612	716	810	856
(D) Gross total RES consumption[9]	8 388	8 672	9 259	8 974	9 297	9 653
(E) Transfer of RES to other Member States	-	-	-	-		
(F) Transfer of RES from other Member States and third countries	-	-	-	-		
(G) RES consumption adjusted for target (D)-(E)+(F)	8 388	8 672	9 259	8 974	9 297	9 653

Table 1b: Total actual contribution (installed RES) made to meet the binding 2020 targets and the indicative trajectory for the shares of energy from renewable resources in the electricity sector[10].

[1] Facilitates comparison with Table 3 and Table 4a of the NREAP.
[2] Share of renewable energy in heating and cooling: Gross final consumption of energy from renewable sources for heating and cooling (as defined in Articles 5(1)(b) and 5(4) of Directive 2009/28/EC) divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of the NREAP applies.
[3] Share of renewable energy in electricity: Gross final consumption of electricity from renewable sources for electricity (as defined in Articles 5(1)(a) and 5(3) of Directive 2009/28/EC) divided by total gross final consumption of electricity. The same methodology as in Table 3 of the NREAP applies.
[4] Share of renewable energy in the transport sector: Final energy from renewable sources consumed in transport (see Article 5(1)(c) and 5(5)of Directive 2009/28/EC) divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport and 4) electricity in land transport (as reflected in row 3 of Table 1). The same methodology as in Table 3 of the NREAP applies.
[5] Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of the NREAP applies.
[6] In percentage point of overall RES share.
[7] In percentage point of overall RES share.
[8] Facilitates comparison with Table 4a of the NREAP.
[9] According to Article 5(1) of Directive 2009/28/EC gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.
[10] Facilitates comparison with Table 10a of the NREAP.

	2011		2012		2013		2014		2015		2016	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro[11]:	12 980	38 649	13 076	39 322	13 149	39 863	13 293	40 128	13 351	39 752	13 689	40 902
Non pumped	7 947	34 789	7 968	35 342	8 038	35 969	8 082	35 988	8 120	35 744	8 458	36 986
<1MW	368	1 533	391	1 551	401	1 688	408	1 765	353	1 679	396	1 811
1MW–10 MW	795	3 306	793	3 104	808	3 264	902	3 698	927	3 561	936	3 795
>10MW	6 784	29 950	6 784	30 688	6 829	31 017	6 772	30 525	6 840	30 503	7 126	31 380
Pumped	5 033	3 861	5 108	3 979	5 111	3 895	5 211	4 140	5 231	4 008	5 231	3 916
Mixed[12]	12 980	38 649	13 076	39 322	13 149	39 863	13 293	40 128	13 351	39 752	13 689	40 902
Geothermal	1	1	1	1	1	0	1	0	1	0	1	0
Solar:	187	174	363	337	626	626	785	785	937	937	1 096	1 096
Photovoltaic	187	174	363	337	626	626	785	785	937	937	1 096	1 096
Concentrated solar power	-	-	-	-	-	-	-	-	-	-	-	-
Tide, wave, ocean	-	-	-	-	-	-	-	-	-	-	-	-
Wind:	1 080	2 107	1 316	2 413	1 645	3 007	2 110	3 808	2 489	4 679	2 730	5 350
Onshore	1 080	2 107	1 316	2 413	1 645	3 007	2 110	3 808	2 489	4 679	2 730	5 350
Offshore	-	-	-	-	-	-	-	-	-	-	-	-
Biomass[13]:	2 015	4 516	2 062	4 605	1 488	4 584	1 152	4 336	1 188	4 409	1 120	4 604
Solid biomass	1 628	3 879	1 672	3 966	1 289	3 961	959	3 718	993	3 785	917	3 956
Biogas	372	625	377	639	194	623	192	618	194	624	202	647
Bioliquids	15	12	13	0	5	0	1	0	1	0	1	1
TOTAL	16 393	45 447	16 818	46 677	16 909	48 081	17 341	49 058	17 966	49 777	18 636	51 952
of which in CHP	2 685	2 719	2 775	2 510	2 630	2 700	2 526	2 477	2 402	2 346	2 250	2 912

Total capacity of pump storage works, output reduced to actual pumps is as follows (in MW):

2011	2012	2013	2014	2015	2016
1 668	1 743	1 746	1 834	1 794	1 768

[11] Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.
[12] In accordance with new Eurostat methodology.
[13] Taking into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

Table 1c: Total actual contribution (final energy consumption[14]) from each renewable energy technology in Austria to meet the binding 2020 targets and the indicative trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)[15].

	2011	2012	2013	2014	2015	2016
Geothermal (excluding low temperature geothermal heat in heat pump applications)	20	23	23	20	23	22
Solar	165	173	176	181	183	183
Biomass[16]:	3 717	3 854	4 292	3 808	3 953	4 219
Solid biomass	3 690	3 814	4 244	3 758	3 903	4 154
Biogas	26	40	47	49	49	64
Bioliquids	1	0	0	0	1	1
Renewable energy from heat pumps: ***- of which aerothermal*** ***- of which geothermal*** ***- of which hydrothermal***	133	145	158	170	192	208
TOTAL	4 035	4 195	4 650	4 179	4 350	4 631
of which DH[17]	861	925	960	896	928	948
of which biomass in households[18]	1 509	1 595	1 730	1 466	1 554	1 596

Table 1d: Total actual contribution from each renewable energy technology in Austria to meet the binding 2020 targets and the indicative trajectory for the shares of energy from renewable resources in the transport sector (ktoe)[19, 20]

	2011	2012	2013	2014	2015	2016
Bioethanol/bio-ETBE	77	77	66	63	60	57
of which biofuels[21] pursuant to Article 21(2)	-	-	-	-	-	-
of which imported[22]	45	45	33	30	31	29
Biodiesel	333	348	357	354	366	372
of which biofuels[23] pursuant to Article 21(2)	-	-	-	-	-	-
of which imported[24]	252	233	248	242	245	279
Hydrogen from renewables	-	-	-	-	-	-
Renewable electricity	181	170	172	172	179	186
of which road transport	0	1	1	1	2	8
of which non-road transport	180	170	171	171	177	178
Others (as biogas, vegetable oils, etc.) – please specify	88	64	71	173	219	105
of which biofuels[25] pursuant to Article 21(2)	-	-	-	-	0	0
Total	679	660	666	762	824	720

[14] Facilitates comparison with Table 10a of the NREAP.
[15] Facilitates comparison with Table 10a of the NREAP.
[16] Taking into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.
[17] District heating and/or cooling from total renewable heating and cooling consumption (RES-DH).
[18] From the total renewable heating and cooling consumption.
[19] Facilitates comparison with Table 12 of the NREAP.
[20] For biofuels taking into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.
[21] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.
[22] From the total amount of bioethanol/bio-ETBE.
[23] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.
[24] From the total amount of biodiesel.
[25] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

2 Measures taken in the preceding 2 years and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan (Article 22(1)(a) of Directive 2009/28/EC).

Table 2: Overview of significant policies and measures

Federal measures

Name and reference of the measure	*Type of measure**	*Expected result***	*Targeted group and or activity****	*Existing or planned*****	*Start and end dates of the measure*
Overriding measures					
Climate Protection Act	Legislative	Establishment of binding climate objectives and responsibilities	Provinces and federal ministries concerned	In force	Started end of 2011; amendments in force since November 2015 and April 2017
Ecological tax reform	Legislative	Heavier taxation of resources and energy consumption	End users	In discussion	In discussion
Energy spatial planning	Legislative	Inclusion of climate and energy targets in Austrian regional planning concept	Federal government, provinces, Austrian Conference on Spatial Planning (OEROK)	Existing	Started 2010
Energy Efficiency Act	Legislative	Statutory regulations to increase energy efficiency	End users, federal government, undertakings	In force	
Domestic environmental support scheme	Financial	Promotion of energy-saving measures	Undertakings (market-determined), associations and municipalities	Existing	End of 2020
klimaaktiv	Voluntary measure	Market launch and fast dissemination of high-quality climate-friendly technologies and services in the construction and renovation, energy savings, renewable energy sources and mobility sectors	Municipalities, undertakings, households/end users	Exists, ongoing implementation	Second phase of klimaaktiv started in 2013. Gradual implementation by 2020
Buildings					
Structural provisions in provincial building regulations	Legislative	Preference for renewable energy systems in the construction sector	Developers	Existing, reform planned	Update ongoing
Further development of support criteria and instruments in the building sector	Financial	Stronger focus on support for thermal renovation of residential buildings and use of renewable energies for heating systems. Support for sustainable planning (housing density)	Federal government, provinces, end users	Existing, reform planned	
klimaaktiv Building standard	Voluntary measure	Implementation of higher standards in relation to energy efficiency, quality of planning and execution, quality of building materials and	Provincial property developers, planners, builders, housing developers, housing	In force	Provisionally until 2020

		construction and core aspects as regards comfort and indoor air quality in the building sector.	development promoters and any parties constructing or renovating a house.		
Renovation offensive 2015 and 2016 et seq.	Financial	Support for thermal renovation measures and installation of renewable energies as heating systems for private and commercial building owners	Operators and owners of private residential property	Existing	Annually until 2018
Mobility					
Domestic environmental support scheme	Financial	Support for purchasing electric vehicles, electric motor cycles and scooters, electric bicycles and support for charging infrastructure. Requirement: electricity based on renewable energy sources	Undertakings (market-determined), associations and municipalities	Existing	2016 - 2018
klimaaktiv mobil	Financial	Conversion of fleets and motor pools to vehicles with alternative engines and electro-mobility	Federal government, provinces, municipalities, organisations, associations, undertakings, etc.	Existing	Second phase of klimaaktiv mobil started in 2013. Gradual implementation and further development by 2020
Cycling master plan	Strategy	National cycling strategy to increase the proportion of bicycle traffic to 13%	Federal government, provinces, municipalities, organisations, associations, undertakings	Existing	2015 to 2025
National Policy Framework 'Clean energy in transport'	Strategy	Implementation of Directive 2014/94/EU on the deployment of alternative fuels infrastructure	Federal government, provinces	Existing	Until 2025
Amendment of Passenger Vehicle Consumer Information Act (Pkw VIG)	Legislative	Uniform and comprehensible consumer information at petrol stations regarding fuels with a biofuel component.	Fuel labelling	Power to regulate existing	In force, amendment 2018.
Amendment of the Fuel Regulation	Legislative	Amendment regarding use of sustainable biofuels to count towards 10 % target.	Marketer of fuels	Existing/planned	Planned amendment transposing Directive (EU) 1513/2015
Energy supply					
2012 Green Electricity Act (ÖSG 2012) as last amended	Legislative	Support for green electricity	Producers	Existing	Amended several times – most recently: BGBl. I No 108/2017
2018 System Use Tariff Regulation	Legislative	Regulation issued by the Energy Control Commission which sets tariffs for system use (electrical energy)	Producers, end users	Existing	SNE-Reg. 2018 BGBl. II No 398/2017

2013 Gas System Use Tariff Regulation, as last amended	Legislative	Regulation issued by the Energy Control Commission which sets tariffs for system use in the gas industry	Producers, end users	Existing	GSNE-Reg. 2013, as amended in 2018 (BGBl. II No 399/2017)
klimaaktiv renewable energy		Raise awareness of benefits of sustainable heating Dissemination of know-how on optimal choices of heating system using renewable energy. Quality management system for wood heating plants leading to increased efficiency. Work carried out on building networks and sharing information through events and newsletters in the biogas sector.	Municipalities, undertakings, households	In force	Provisionally until 2020
Domestic environmental support scheme	Financial	Support for investments in energy supply from renewable energy sources	Undertakings (market-determined), associations and municipalities	Existing	Started 1993
Energy security					
Development of Austrian transmission and distribution networks	Strategic (master plan 2009–2020)	Medium- and long-term creation of demand-driven grid infrastructure	Federal government, provinces, grid operators	Being implemented	Continuously since 2010
Development of district heating and cooling	Financial	Infrastructure development and improved security of supply	Energy suppliers, district heating companies	Existing	Continuously since 2010
Domestic environmental support scheme	Financial	Investments to extend the grid and establish supply lines for district heating from renewable sources and for the use of waste heat.	Undertakings, associations	Existing	Started 1993/last amendment to Directive in 2009
Energy research					
Compilation of energy research	Voluntary	Presentation of developments in research, development and demonstration projects carried out in Austria in the energy sector	Federal government, provinces, energy companies, undertakings	Existing	Started around 1980

* Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).
**Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?
***Who are the targeted persons: investors, end users, public administration, planners, architects, installers, etc.? Or what is the targeted activity/sector: biofuel production, energetic use of animal manure, etc.?
**** Does this measure replace or complement measures contained in table 5 of the NREAP?

Provincial measures

Name and reference of measure	Type of the measure*	Expected result**	Targeted group and activity***	Existing or planned****	Start and end dates of the measure
Lower Austria					
2012 Lower Austrian Energy Efficiency Act	Legislative	Statutory regulations to increase energy efficiency	End users, entrepreneurs	Existing	Started 2012
2013 Lower Austrian Energy Efficiency Act	Strategy, Government Resolution	Targets for minimum share of total renewable electricity and renewable energy	Policy makers, general public	Existing	Started 2011
2020 Lower Austrian Climate and Energy Programme	Implementation programme, Government Resolution	Comprehensive energy efficiency and renewables programme	Policy makers, administration, general public	Existing	New version in 2017
Electromobility initiative	Creation and establishment of a unit to support and coordinate all measures	Coordinated development of strategies	Policy makers, general public and industry	Existing	Started 2010
Electromobility strategy	Strategy, Government Resolution	Targets for minimum share of electric vehicles, multimodality and industry	Policy makers	Existing	Started in 2015. Revised in 2017
Support for vehicles with alternative drives	Purchasing support	Faster dissemination of vehicles with alternative drives	Private individuals, driving schools, taxi companies	Existing	Started 2012
Small hydroelectric power plants	Subsidies	Construction and renovation of hydroelectric power plants (up to 1 MW)	Natural persons and legal entities	Existing	Started 2003
Support for electric cars	Subsidies	Faster dissemination of vehicles	Private individuals, municipalities, associations	Existing	Started 2014
Biomass local heating	Subsidies	Successive development of renewable local heating	Farmers, trade	Existing	Started in 1990. Various forms
Energy advice - Lower Austria	Raising awareness	Investment in quality, high-value thermal renovation and renewable energy systems	Private individuals	Existing	2005
Sectoral town planning programme for wind energy	Regional planning	Planned development of wind energy	Municipalities	Existing	2014
Residential building subsidies	Subsidies	Establishment of heating and hot water systems based on renewable energy when building and thermally rehabilitating residential buildings	Private individuals, undertakings	Existing	Started 2009
Burgenland					
Amendment to Building Law	Legislative	Administrative simplification (exception for PV systems)	Private individuals	In force	Started 2013
Amendment to Provincial	Legislative	Administrative simplification (exception	Private individuals	In force	Started 2013

Electricity Act		for PV systems)			
Burgenland 2020+ energy strategy	Government and Landtag Resolution	Objectives: self-powered from 2013; 50% renewable energy by 2020; 100% renewable energy by 2050	Private individuals, undertakings, public sector	In force	Started 2014
Support for alternative engines	Financial	Retrofitting or changeover to vehicles with alternative drives	Private individuals	In force	Continuously since 2010
Support programme for PV	Financial	Installation of PV systems	Private individuals	In force	PV since 2009
Solar potential register	Informative	Use of roofs for solar panels	Private individuals	In force	Started 2011
Support programme for renewable energy sources for heating and hot water	Financial	Installations in residential buildings – new builds and renovation	Private individuals	In force	For some 30 years
Salzburg					
Renewable Energy Development Act	Legislative	Administrative simplification. No official approval for construction or major modification of photovoltaic systems and wind turbines that do not exceed a certain size. Concentration of procedures in respect of wind power plants	Private individuals, undertakings	In force	
'Winterfit' initiative	Subsidies	Optimisation of existing systems	Private individuals	Existing	
The Master plan Salzburg 2020 or Salzburg 2050	Strategy	Provincial strategy for increasing energy efficiency and the share of renewable energies	Comprehensive	Existing	
Subsidies for constructing biomass district heating systems	Subsidies	Development, compression and optimisation of renewable district heating	Farmers, trade	Existing	
Energy advice - Salzburg	Raising awareness	Use of quality high-value thermal renovation and renewable energy	Private individuals	Existing	
e5 provincial programme for energy-efficient municipalities	Raising awareness	Increase in the distribution and intensity of development in renewable energy sources	Municipalities	Existing	
Solar potential register	Raising awareness	Use of roofs for solar panels	Home owners	Existing	
Wind register	Raising awareness	Installation of wind turbines	Wind turbine constructors and operators	Existing	
Heat pump register	Raising awareness	Installation of efficient heat pumps	Heat pump installers and operators	Existing	
Support for connections to biogenic local and district heating	Subsidies	Increase the share of renewable energy	Private households, agricultural and forestry undertakings	Existing	
Support for thermal solar panels	Subsidies	Installation of thermal solar panels for hot water and heating	Private households	Existing	
Support for biomass heating	Subsidies	Installation of biomass heating systems	Private households	Existing	

systems					
Support for heat pumps	Subsidies	Installation of heat pumps	Private households	Existing	
Support for PV systems	Subsidies	Installation of PV systems	Private households, municipalities, undertakings	Existing	
Support for solar power storage units	Subsidies	Installation of solar power storage units	Private households, municipalities, undertakings	Existing	
Support for electric charging stations	Subsidies	Installation of charging infrastructure	Municipalities, undertakings	Existing	
Awareness-raising at exhibitions, seminars, etc.	Raising awareness		Private households	Existing	
Advice on hydroelectric power - Salzburg	Subsidies	Increase in the efficiency of existing small hydroelectric power plants	Hydroelectric power plant operators	Existing	
Styria					
Styrian climate change plan including annual monitoring by means of the annual climate change report	Strategy, Provincial Government Resolution	Targets for six sets of measures	Policy makers, general public, industry	In force	Started 2010
Styrian Energy Strategy (revised 2015)	Strategy, Provincial Government Resolution	Targets in five areas	Policy makers, general public, industry	In force	Started 2015
2030 Styrian Climate and Energy Strategy (KESS 2030)	Strategy, Provincial Government Resolution	Targets for eight sets of measures Takes over from climate change and energy strategy.	Policy makers, general public, industry	Provincial Government Resolution (Landtag Resolution to follow)	From 2017
2030 KESS action plan	KESS 2030 implementation programme, Government Resolution	Programme for greenhouse gas reduction, energy efficiency and renewable energy	Policy makers, general public, industry	Planned for 2018	From 2018
2030 Styrian electromobility strategy	Strategy, Provincial Government Resolution	Targets for minimum share of electric vehicles, multimodality and industry	Policy makers, industry	Provincial Government and Landtag Resolution	Started 2016
2030 Styrian electromobility strategy Action plan 2016-2020	2016 - 2020 implementation programme, Government Resolution	Programme for minimum share of electric vehicles, multimodality and industry	Policy makers, industry	Provincial Government and Landtag Resolution	Started 2016
E-Carsharing	Subsidies	Construction of charging infrastructure and faster uptake of electric vehicles	End users, municipalities, SMEs	Being implemented	Started 2015
PV storage for private companies and SMEs	Subsidies	Increase in share of own PV-electricity use	End users	Being implemented	Started 2014
Renovation of small hydroelectric power plants	Subsidies	Renovation and capacity-reinforcement of small hydroelectric power plants	Planners, owners	Existing	Started 2012
E-mobility	Subsidies, co-funding	Faster uptake of electric vehicles	End users	Existing	Started 2015
Biomass district	Kommunalkre	Continued development	Trade, farmers,	Existing	Started

heating systems	dit Public Consulting (KPC) co-funding	of renewable local and district heating	municipal utilities, municipalities		around 1990. Various forms
Energy advice - Styria	Raising awareness	Investment in quality, high-value renovation and renewable energy systems	Private individuals	Existing	Started around 2000
ICH Tu's Initiative	Raising awareness	Information on topics relating to climate change and renewable energy systems, including e-mobility	Private individuals, schools, nurseries, associations, adult learning	Existing	Started 2012
Wind sectoral programme (SAPRO)	Regional planning	Planned development of wind energy	Municipalities, undertakings	Existing	Started 2013
Residential building subsidies	Subsidies	Establishment of heating and hot water systems based on renewable energy when building and thermally rehabilitating residential buildings	Private individuals, undertakings	Existing	Started around 1970
Styrian solar and photovoltaic register	Informative	Use of roof space for solar energy	Private individuals, undertakings	Existing	Started 2010
Support programme under the Styrian Environment Fund for renewable energy sources for heating and hot water	Subsidies	Installations in residential buildings – new builds and renovation	Private individuals, undertakings	Existing	For some 20 years
Amendment to Styrian Building Law, Section 80(6)	Legislative	Anchoring the use of solar energy and renewable energy types to supply hot water to buildings	Developers	Existing	Started 2010
Tyrol					
Renovation of hydroelectric power plants	Financial	Funding of consultancy services for hydroelectric power plant operators	Private individuals, undertakings, communes	In force	Started 2011
Funding for smart power storage units	Financial	Increase in rate of self-supply from self-generated PV electricity through storage or direct use by consumers in households by means of smart management	Private individuals	In force	Started 1 July 2016
'So fährt Tirol' 2050	Strategic, informative	Development of e-mobility strategy (package of measures, communication measures, advisory services and incentive systems)	Private individuals, undertakings, public sector	In force	Started 2016
Residential building subsidies	Financial	Further development of funding criteria and instruments in the building sector The amendment to the 1991 Tyrol Housing Assistance Act (TWFG 1991, LGBl. No 78/2017) implemented the	Private individuals	In force	

		agreement under Article 15a of the Federal Constitutional Law (B-VG) between the Federal Government and the Provinces amending the agreement on measures in the building sector for the purposes of reducing greenhouse gas emissions. Subsidies are granted on the condition that high-efficiency alternative energy systems (e.g. heat pumps, district heating, biomass) are used when installing heating and hot-water supply systems Subsidies for renovation are focused on improving energy efficiency, reducing greenhouse gas emissions and improving air quality. Special subsidies are granted for home technology systems using renewable energy sources (e.g. solar, biomass, heat pumps).			
Solar Tyrol - Solar register	Strategic, informative	Use of roofs for solar panels	Private individuals	In force	Started 2015
Sinfonia	Financial	Renovation of housing in a specific area of Innsbruck; energy efficiency measures; increase in the proportion of renewable energy sources (Smart City)	Private individuals	In force	Started 2014
TYROL 2050 - self-sufficient	Strategic	Renovation of the energy system, 10-point priority programme, including analyses of potential for renewables, biomass supply concepts, specific provincial support, etc.	Private individuals, undertakings, energy industry	In force	2012
Energy efficiency programmes	Strategic, informative	Comprehensive, provisions of product-neutral advisory services	Private individuals, municipalities	In force	
Vorarlberg					
Self-sufficiency Vorarlberg	Legislative	Quantities of renewable energy sources to be increased as follows by 2020 compared with 2005: Hydroelectric power +14%, solar heat +74%, photovoltaic +438%, biogas +37%, wood +12% and geothermal +50%	Private individuals, undertakings	Passed, Government and Landtag Resolution	From end of 2011 to 2020
Renewable energy in buildings	Legislative (Structural Engineering Regulation)	New builds and renovations, energy needs must be met in part by renewables	Private individuals, undertakings	In force	Started 2014
Amendment to	Legislative	Privileges granted for the	Private	In force	Started 2015

Building Law		installation of solar and photovoltaic systems on existing buildings	individuals, undertakings		
Follow-up funding to the domestic environmental support scheme	Financial	Investments in renewable energy systems	Undertakings, associations	Existing	Started 2016
Residential building subsidy guidelines	Financial	Installation of wood heating, heat pumps, solar panels, ventilation	Private individuals	Existing	Started 2016
2017 Energy Support Guidelines	Financial	Installation of wood heating, heat pumps, solar panels, ventilation	Private individuals	Existing	Started 2017
PV subsidies	Financial	Installation of PV systems over 5 kW, topping up support from OeMAG	Private individuals, undertakings	Existing	Started 2017
Vienna					
Solar obligation for certain new builds	Legislative (building regulations)	Solar obligation for non-residential buildings	Undertakings	In force	Since the end of 2014
Amendment to the 2005 Vienna Electricity Act	Legislative	Administrative simplification, higher thresholds for PV	Private individuals, undertakings	In force	Since the end of 2014
2050 framework strategy - Smart City Vienna	Strategy	By 2050 50 % of energy will be from renewable sources, primary energy consumption will fall from 3000 to 2000 watts per capita, reduction in energy consumption for heating, cooling and hot water	Private individuals, undertakings, municipalities		Since June 2014
Support for heat pump systems	Financial	Installation of heat pump systems	Private households	Existing	
Support for solar heating systems	Financial	Installation of solar heating systems	Private households	Existing	
Support for seasonal heat storage units with low-temperature network	Financial	Installation of seasonal heat storage units (geothermal probes) with low-temperature networks	Private households, undertakings	Existing	
Support for PV and hybrid systems	Financial	Installation of PV or hybrid systems	Private households, undertakings	Existing	
Support for electric storage units	Financial	Installation of electric storage units in conjunction with PV/greater share of PV own-use	Private households, undertakings	Existing	
PV own-usage calculator	Informative	Increase in own-use of PV	General public	Existing	
Solar potential register	Informative	Use of roofs for solar panels	General public	Existing	
Geothermal heat potential register	Informative	Use of geothermal heat and thermal groundwater use	General public	Existing	
Small-scale wind potential register	Informative	Use of roofs/surfaces for small-scale wind turbines	General public	Existing	
Amendment to the 2005 Vienna	Legislative	Increase in upper limit for simplified procedure	General public	Planned	From mid 2018 onwards

Electricity Act (WelWG 2005)		for photovoltaic systems between 50 kW and 100 kW.			
Upper Austria					
Support for connections to biogenic district and local heating	Financial	Higher proportion of renewable heating	Private households, municipalities, undertakings	Existing	
Air-conditioning and cooling based on renewable energy sources	Financial	Higher proportion of renewable cooling	Undertakings, associations	Existing	
Support for solar heating	Financial	Installation of solar heating systems	Private households, municipalities, undertakings	Existing	
Support for biomass heating systems	Financial	Installation of biomass heating systems	Private households, municipalities, undertakings	Existing	
Support for heat pumps	Financial	Installation of heat pumps	Private households, municipalities, undertakings	Existing	
Support for photovoltaic systems	Financial	Increase in photovoltaic energy generation	Schools	Existing	
Support for solar power storage units	Financial	Increase in own-use of PV	Private households	Existing	
Support for electric vehicles	Financial	Conversion to alternative drives	Private households	Existing	
Support for electric charging stations	Financial	Support for converting to alternative drives	Municipalities	Existing	
Support for small hydroelectric plants	Financial	Construction and renovation of small hydroelectric power plants	Private households, municipalities, undertakings	Existing	
EGEM Energy Conservation in Municipalities support programme	Financial Information measure	Local action plans for renewable energy		Existing	
Energy consultation and information activities at fairs, seminars, etc. relating to the use of renewable energy by the Oberösterreichischer Energiesparverband (Energy Saving Association of Upper Austria)	Information measure	Increased willingness to use renewable energies	Private households, municipalities, undertakings	Existing	
2006 Upper Austrian Electricity Industry and Organisation Act, 2014 amendment	Legislative	Simplification of the approval of photovoltaic systems and small hydroelectric plants (PV systems require approval above 200 kW, small hydroelectric plants above 50 kW)	General public	Existing	
Construction	Legislative	Priority for renewable	Private	Existing	

Engineering Act and Regulation		energy	households, municipalities, undertakings		
Clean Air and Energy Technology Act	Legislative	Priority for renewable energy	Private households, municipalities, undertakings	Existing	
1993 Upper Austrian Residential Buildings Support Act	Legislative	Connection between support and obligatory use of renewable energies or district heating; ban on positive discrimination in favour of certain technology; legal basis for specific rules in Regulations	Public administration, natural persons, municipalities, social and church associations, commercial property developers and non-profit housing associations	Existing	2009
2008 Upper Austrian Energy Conservation Regulation: support for thermal solar panels	One-off grant	More frequent installation of solar heating systems	As above	Existing	2003
2008 Upper Austrian Energy Conservation Regulation: support for heat pumps	One-off grant	More frequent installation of heat pumps	Private individuals	Existing	2003
2008 Upper Austrian Energy Conservation Regulation: support for connections to biogenic district and local heating	One-off grant	Higher proportion of biogenic district and local heating	Natural persons; property developers and building associations	Existing	2003
2008 Upper Austrian Energy Conservation Regulation: support for subsequently installed, controlled domestic ventilation	One-off grant	Higher proportion of domestic ventilation systems with heat recovery and thus contribution to the use of available heating	Private individuals	Existing	2003
Home Support Regulation: Obligation to use innovative, climate-related systems if conventional energy sources are used	Support requirement	Proportion of homes with innovative, climate-related systems	Natural persons, property developers and building associations	Existing	2009
Carinthia					
Carinthia energy master plan	Provincial Government and Landtag Resolution	By 2025: 100 % renewable energy for electricity and heat By 2035: 100 % renewable energy for mobility	Private individuals, undertakings and public administration	Existing	2014
Guidelines on Housing Subsidies	Financial	Installation of biomass systems, district heating connections, heat	Private individuals, housing	Existing	

		pumps, photovoltaic systems and thermal solar systems	associations		
Energy Support Guidelines	Financial	Installation of biomass systems, district heating connections and thermal solar systems	Undertakings and public institutions	Existing	
Modernisation planning of small hydroelectric plants	Financial	Planning for the modernisation of small hydroelectric plants	Private individuals, undertakings	Existing	
Solar potential register	Informative		General public	Existing	
Building law amendment	Legislative	Administrative simplification by exempting PV systems and thermal solar systems up to 40 m²	General public	Existing	
Energy Support Guidelines	Financial	Installation of biomass district heating systems	Undertakings	Existing	

2.1 Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy (Article 22(1)(e) of Directive 2009/28/EC).

In order to accelerate the development of renewable energies, support is available for green electricity generation systems. Approval of generation systems is based on statutory specifications which ensure that renewable energy-based systems are not disadvantaged. Support for a green electricity system can be divided into three stages.

1. Approval under electricity law

Power generation systems must be approved as such under electricity law. The basis for this is the Electricity Industry and Organisation Act (BGBl. I No 110/2010 as last amended) and the relevant provincial implementing laws. Various approvals may need to be submitted in individual cases (approval under electricity law, operational plant permission, planning permission, permission under water law, permission under forestry law, permission under waste law, environmental impact study/notice).

2. Recognition as a green electricity system

A green electricity system must be recognised as such by the governor of the province in which it will be installed (recognition of systems in accordance with Section 7 of the 2012 Green Electricity Act, as last amended). The 2012 amendment to the Green Electricity Act provides that only raw material-dependent installations (solid and liquid biomass, biogas) will be recognised as green electricity systems as of 2018. This will achieve administrative simplification for photovoltaic systems, small hydroelectric plants and wind power plants

3. Application for support filed with the OeMAG (Green Electricity Clearing Agency)

Support for green electricity systems can be claimed both for raw material-dependent and raw material-independent technologies from the OeMAG, where financially viable, by means of feed-in tariffs. This does not apply to photovoltaic systems under 5 kWp, small hydroelectric plants over 3 MW or medium-sized hydroelectric plants.

Support can only be provided for energy delivered to the public grid under a grid access contract with the local grid operator. The OeMAG is only obliged to grant the application if the total electricity delivered to the public grid from a green electricity system will be delivered to the Green Electricity Clearing Agency over a period of at least 12 calendar months and the system operator belongs to the Ecobalance Group. Remuneration is only paid for green electricity fed into the public grid.

In addition to support in the form of remuneration for green electricity delivered via feed-in tariffs, investment subsidies and special provincial grants and occasional special federal support programmes are available, especially within the framework of the Climate and Energy Fund.

2.2 Please describe the measures taken to ensure the transmission and distribution of electricity produced from renewable energy sources and to improve the framework or rules for the bearing and sharing of costs related to grid connections and grid reinforcements (Article 22(1)(f) of Directive 2009/28/EC).

It should be noted in general that, with regard to connecting systems for generating energy from renewable sources to circuit systems and the transmission of this energy, there are no differences compared to systems based on other forms of energy.

Transmission and distribution of electricity produced from renewable energy sources	It is the grid operator's responsibility to connect power generation systems to the network in accordance with EIWOG and the System Use Tariff Regulation (E-Control, SNE-Reg.), taking account of the technical and organisational rules applicable to grid operators and users (TOR), as defined by the regulatory authority for gas and electricity (E-Control Austria). EIWOG also stipulates that the grid operator's duties include guaranteeing supply to customers. Transmission and grid operators must take appropriate precautions and integrate them into their regular grid planning. The principle of non-discrimination in connection with electricity grids is fully provided for by law. **Excerpt from ÖSG 2012 BGBl. I No 75/2011, as last amended:** **Section 6 System grid connection** (1) Every system has a right to be connected to the grid belonging to the grid operator within whose concession area the system is located. *(2) E-Control shall ensure during the course of competition monitoring that grid operators treat all applicants seeking connection equally and transparently. For this purpose, it may request grid operators to report their procedures for processing applicants' enquiries and applications, for example how and within what period of time they respond to enquiries and applications, which criteria are applied in the event of competing grid admission applications, and which measures are taken to ensure the equal treatment of applicants. If the reported or actual procedures seem unsuitable for the purposes of ensuring fair competition, E-Control may take measures in accordance with Section 24(2) of the E-Control Act, BGBl. I No 110/2010, as last amended.*
Costs related to grid connections and grid reinforcement	No distinction is made between conventional systems and green electricity systems. The relevant rules governing grid connections costs are set out in the System Use Tariff Regulation. Particular reference is made to grid access and grid supply fees. At present, grid feeders and grid customers must pay a network access fee, which must directly reflect the cost of providing the connection. Customers must also pay a grid supply fee. Section 7 of the SNE-Reg. states that the grid supply fee payable by grid customers is

	an output-based grid user fee charged in order to offset indirect costs in the upstream grid. Thanks to these investments in the grid customers can use it at commensurately low prices.

3 Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in the 2015 National Renewable Energy Action Plan (Article 22(1)(b) of Directive 2009/28/EC).

Support schemes for renewable energy

The most important instruments used to support energy from renewable sources are described below.

Current support under the klimaaktiv mobil support programme:

Title	klima**aktiv** mobil
Target group	Applications for support can be filed by Austrian undertakings, territorial units, associations, federations, religious denominations, etc.
Description	Retrofitting fleets and motor pools with alternative engines and electromobility is an important objective of klima**aktiv** mobil which serves to increase the proportion of renewable energy sources in transport. With the BMLFUW-bmvit action package for promoting electromobility with renewable energy in Austria in cooperation with car importers, two-wheeled vehicle importers and Austrian sports retailers, 2017 marked another milestone in accelerating the introduction of electromobility onto the market and the expansion of support options on offer.
Level of support	Support takes the form of investment subsidies. Support is capped at 30 % of eligible costs. Support for vehicles with alternative engines is mainly processed via flat-rate subsidies. Detailed flat rates and funding tables can be found at umweltfoerderung.at/verkehr. Moreover, funds from the European Agricultural Fund for Rural Development (EAFRD) have been provided via klima**aktiv** mobil for the Austrian Programme for Rural Development 2014–2020. Between 2007 and 2016, klima**aktiv** mobil projects (fleet retrofitting, measures to increase cycling and climate-friendly mobility management) received some EUR 87.5 million in national funding from the BMLFUW under klimaaktiv mobil, the Climate and Energy Fund and the domestic environmental support scheme, and a further EUR 1.4 million in EU funding (EAFRD). Around EUR 30.4 million was available for alternative fleets and electromobility.

Support under Model Regions E-Mobility with 100 % Renewable Energy within the framework of the Climate and Energy Fund programme:

Title	Model Regions E-Mobility with 100 % Renewable Energy
Target group	7 model regions, electromobility
Description	Since 2008, seven electromobility model regions have been set up in Vienna, Graz, Salzburg, Klagenfurt, Lower Austria and Vorarlberg, and nationally by Austrian Post. The aim was to test various electromobility systems, anchor electromobility into everyday life throughout Austria and thereby produce a solid basis for rolling out electromobility as widely as possible. With various initiatives involving vehicles, infrastructure, business models and distribution, it was possible to directly introduce into the model regions approximately 2 000 new electric vehicles (passenger vehicles) and install 3 000 charging points.
Level of support	Overall, the BMLFUW granted approximately EUR 21 million in funding under the Climate and Energy Fund to develop electromobility in the model regions. Funding took the form of investment grants for electric vehicles, installation of charging infrastructure and the provision of renewable energy.

Support from the Climate and Energy Fund:

Title	Wood heating 2015 and 2016 support action
Target group	Private households
Description	Support action for the installation of pellet- and wood chip-fired central heating and pellet-fired stoves or the replacement of old wood boilers.
Level of support	Support is granted for newly installed pellet- and wood chip-fired central heating that replaces one or several existing fossil fuel boilers or electric night and direct storage heaters and pellet-fired stoves if these reduce the use of fossil fuels. Support is also available for replacing wood-fired heating systems which are at least 15 years old with pellet- and wood chip-fired central heating or for reducing the fuel consumption of 15-year-old wood heating systems by constructing pellet-fired stoves. Funding in the form of a non-repayable investment grant for pellet- or wood chip-fired central heating to replace existing fossil fuel boilers: EUR 2 000. Funding of EUR 800 is provided if an old heating system is replaced by pellet- or wood chip-fired central heating. Lump-sum support of EUR 500 is available for pellet-fired stoves.

Title	Model renovation (2015 and 2016)
Target group	Undertakings, such as accommodation businesses, contractors, public-sector facilities and territorial units, religious establishments and associations
Description	Comprehensive renovation projects in business and government buildings can be supported. Comprehensive renovation measures include manufacturing measures to improve thermal insulation and measures to apply renewable energy sources and increase energy efficiency.
Level of support	Measures for thermal/energy renovation of buildings (insulation, window replacement) and renewable energy applications and energy efficiency (individual biomass systems, CHP, photovoltaics, etc.) are supported. As part of the programme a 40 % funding rate is set for thermal/energy renovation of buildings and 25% for measures for using renewable energy and increasing energy efficiency. However, this may be reduced by the upper limits set out in state aid rules and programme-specific maximum funding levels. Supplementary amounts are possible within the scope of the maximum limits.

Title	Support for photovoltaic systems up to 5 kW (2015 and 2016)
Target group	Natural persons and legal entities
Description	The Climate and Energy Fund supports photovoltaic systems of no more than 5 kWp in order to provide an incentive for private households, small businesses and associations in Austria to opt for an environmentally and climate-friendly energy supply. The aim of the programme is to provide investment subsidies to support individual photovoltaic systems.
Level of support	Lump-sum of EUR 275 per kWpeak for free-standing systems and roof-mounted systems up to 5 kWpeak. Lump-sum of EUR 375 per kWpeak for photovoltaic systems integrated into buildings up to 5 kWpeak.

Title	Support for photovoltaic systems for farmers and forestry undertakings up to 30 kW (2015 and 2016)
Target group	Agricultural and forestry undertakings
Description	The Climate and Energy Fund supports photovoltaic systems of between 5 and 30 kWp in order to provide an incentive for agricultural and forestry undertakings to opt for an environmentally and climate-friendly energy supply. Investment subsidies are granted for individual photovoltaic systems The support programme is implemented as part of the 2014-2020 Austrian Rural Development Programme and the EU funds approximately 50 %.
Level of support	Lump-sum of EUR 275 per kWpeak for free-standing systems and roof-mounted systems of between 5 and 30 kWpeak. Lump-sum of EUR 375 per kWpeak for photovoltaic systems integrated into buildings of between 5 and 30 kWpeak.
Title	Support for solar panels (2015 and 2016)
Target group	Private individuals
Description	The Austrian Government's Climate and Energy Fund provides support for using climate- and environmentally-friendly solar thermal collectors and in so doing promotes the installation of solar panels in private homes. Support is granted for installing new solar panels for heating buildings and/or supplying buildings with hot water. Buildings must be over 15 years old.
Level of support	Support is provided as a non-repayable lump sum and depends on the usage of the solar panel: • Lump sum of EUR 750 for solar panels used for supplying hot water • Lump sum of EUR 1 500 for solar panels used for heating buildings

Title	Solar heating – Large solar systems (2015 and 2016)
Target group	All natural persons and legal entities engaged in commercial activity (but not limited to trade regulations), especially production plants, commercial and service undertakings, district heating

	network operators, energy supply undertakings, tourism undertakings, public-sector facilities in the form of an undertaking with a market-driven activity.
Description	The Climate and Energy Fund supports innovative large solar thermal systems with a collector surface of between 100 and 2000 m^2 under this programme. In 2016, the maximum size of the system was increased to 10 000 m^2.
Level of support	The support rate is capped at 40 % of environment-related additional investment costs plus any premiums. Consultation with accompanying research experts is mandatory during the application procedure.

Title	Solar House demonstration project (2015 and 2016)
Target group	(Co-)homeowners, property owners or tenants of detached or semi-detached houses (new builds and existing buildings), excluding natural persons
Description	The Climate and Energy Fund supports innovative solar thermal systems that provide solar coverage amounting to at least 70 % of the total heating needs of a detached or semi-detached house. All funding applicants must obtain advice on their applications.
Level of support	The support rate is determined in accordance with the heating requirement of the building and, depending on this, amounts to between 40 % and 50 % of investment costs relating to the environment. Support is limited to a maximum of EUR 17 000 per project.

Title	Climate and energy model regions 2015 and 2016
Target group	• Municipalities • Community-owned enterprises, including market-determined undertakings • Other commercially active organisations, public institutions, associations, religious denominations in active climate and energy model regions that are planning to implement a project on/in public buildings/property.
Description	The following investment support is available for active regions under the extensive climate and energy model regions programme: • Photovoltaic systems on public buildings/properties • Wood heating in public buildings • Thermal solar systems on public buildings
Level of support	**Amount of support for photovoltaic systems** The amount of support for photovoltaic systems is • EUR 275 per kWp for free-standing systems and roof-mounted systems + EUR 100 per kWp national supplement • EUR 375 per kWp for systems integrated into buildings + EUR 100 per kWp national supplement **Amount of support for wood heating** Support is provided as a non-repayable net investment subsidy depending on the installed system performance (kW) and amounts to EUR 120 per kW for the first 50 kW (0–50 kW) and EUR 60 per kW for each further kW (51–399). **Amount of support for thermal solar systems** Support is provided as a non-repayable net investment subsidy depending on the installed collector area and amounts to EUR 100 per m^2 for standard collectors and EUR 150 per m^2 for evacuated tube collectors. In 2016, funding was increased to EUR 130/m^2 for standard collectors, EUR 170/m^2 for evacuated tube collectors and EUR 110/m^2 for air collectors.

Other measures

klimaaktiv as a benchmark for learning

Since the Ministry of the Environment (BMLFUW) launched the klima**aktiv** climate initiative in 2004, hundreds of undertakings, organisations, municipalities, educational establishments and individuals have become actively involved in fighting climate change. Through their commitment and know-how, they have contributed directly towards meeting Austria's climate objectives. The training coordination by klima**aktiv** together with training providers have ensured that the necessary further training has been

provided and that professionals have become qualified. In total, more than 18 000 people have already taken part in training with klima**aktiv**. Furthermore, 20 klima**aktiv** training partners present klima**aktiv**'s standards as part of their training. An e-learning platform is available for nine course areas and has had more than 1 400 participants. As part of klima**aktiv**'s 'energy efficient businesses' programme, 608 provincial energy advisors received training on the latest standards for the most important production technology. Approximately 1 570 driving instructors became qualified SpritSpar trainers (eco-driving initiative) for passenger vehicles, HGVs/buses and tractors and 30 klima**aktiv** mobil driving schools were certified.

Support under the domestic environmental support scheme (UFI):

Target group	Support may be claimed by any Austrian undertaking, non-profit association, religious denomination or territorial unit (provided it has a business with a market-driven activity).
Description	Measures for using renewable energy sources, increasing energy efficiency, mobility measures and measures to prevent or reduce air pollution, noise or hazardous waste are eligible for support.
Level of support	Support takes the form of investment subsidies, equal to between 15 % and 30 % of environment-related costs, depending on the focal point of the support. In 2015 and 2016, up to EUR 70.2 million per annum was available to applicants from federal resources within the framework of the domestic environmental support scheme. In addition, funding was also awarded via the domestic environmental support scheme from the European Fund for Regional Development (EFRD) and the European Agricultural Fund for Rural Development (EAFRD).

In addition to the UFI, a special programme to support thermal renovation measures was also launched, aimed at achieving energy savings and, at the same time, using renewable energy sources in buildings.

Target group	Support is directed at private households and undertakings
Description	Measures for increasing energy efficiency and using renewable energy sources in buildings receive support.
Level of support	Support takes the form of investment subsidies, equal to between 15 % and 30 % of environment-related costs, depending on the focal point of the support. In 2015 and 2016, up to EUR 123.5 million was available to applicants from federal resources within the framework of the 'renovation offensive'.

UFI support in 2015

Support sector	Purpose of project	Rate of support
Energy supply		
Waste heat recovery	Recovery of industrial or commercial waste heat and feeding into local and district heating networks	30 %
Wood heating for undertakings' own supply	Small boilers (< 400 kW)	120 Euro/kW up to 50 kW EUR 60 for each additional kW
	Boiler in micro-network	25 %
	Large boiler (≥ 400 kW)	20 %
District heating supply	District heating network	25 %

based on renewable energy sources	Boiler replacement	15 %
	Combined heat and power	10 %
	Geothermal	30 %
	Optimisation of local heating supply	15 % for primary measures or 25 % for secondary measures
	New installation or extension of heat distribution	25 %
	Consolidation of heat distribution for ≤ 25 customers and ≤ 50 kW	EUR 56/kW
District heating for undertakings	Small system (< 400 kW)	EUR 28 or EUR 56/kW up to 100 kW (fossil fuel or biogenic network) EUR 16 or EUR 32/kW for each additional kW
	Large system (≥ 400 kW)	20 %
Heat pumps for undertakings	Small heat pump (< 400 kWth)	EUR 85 Euro/kWth up to 80 kWth, EUR 45/kWth for each additional kW (water-water) EUR 70 Euro/kWth up to 80 kWth, EUR 35/kWth for each additional kW (air-water)
	Large heat pump (≥ 400 kWth)	15 %
Thermal solar systems for undertakings	Small system (< 100 m²)	EUR 100/m² for standard collectors EUR 150/m² for evacuated tube collectors
	Large system (≥ 100 m²)	20 %
Power generation on islands based on renewable energy sources	Sun, wind, water	30 %
Manufacturing of biofuels and motor fuels	Production systems for biodiesel, bioethanol, vegetable oils, biogas, etc.	25 %
Energy recovery from biogenic raw materials and residue	Treatment and substitution	25 %
Natural gas combined heat and power for undertakings	Combined electricity and heat production	25 %

Energy conservation		
Thermal renovation of buildings for undertakings	Thermal insulation of buildings over 20 years old	10 to 35 %
New builds with energy-efficient construction	Heating and overheating protection for new builds	Reduction in heating requirements: EUR 0.20 to EUR 0.50/kWh reduction in cooling requirements: EUR 0.60 to EUR 0.75/kWh
Energy savings in undertakings	Building equipment and appliances, energy recovery from production processes, heat recovery	30 %
	Optimisation of street and outdoor lighting	EUR 25/light source (0 to 40 W) or EUR 50/light

		source (> 40 W)Supplement for lighting control: 20 %
	Heat recovery in cooling and ventilation systems < 100 kWth	160 Euro/kW (0 to 30 kW) or 80 Euro/kW (31 to 99 kW)
Indoor LED systems	Conversion to LED lighting systems	EUR 600 to EUR 700/kW
Air-conditioning and cooling for undertakings	Energy from waste heat/renewable energy sources	30 %

Transport and mobility		
Transport measures in undertakings	Reduction in CO_2 emissions	30 %

Other support schemes		
Raw material management in undertakings	Efficiency improvements and innovative service concepts	20 to 30 %
	Positive effect on the environment due to the use of renewable raw materials	25 %
Air pollution control	Dust-reducing measures Secondary and primary air pollution control	15 to 30 %
	Retrofitting of vehicles with particle filters	EUR 2 500/vehicle
Hazardous waste in undertakings	Prevention, recovery and treatment	10 to 30 %
Other environmental protection measures in undertakings	Innovative plants, noise reduction/prevention, etc.	10 to 40 %

Renovation offensive		
Thermal renovation of buildings for undertakings	Thermal insulation of buildings over 20 years old	10 to 35 %
Renovation check for private individuals	Thermal insulation of buildings over 20 years old and conversion of heat generation systems	EUR 1 000 to EUR 6 300 max. 30 %
Renovation check for private individuals Multi-floor residential buildings	Thermal insulation of buildings over 20 years old and conversion of heat generation systems	EUR 1 000 to EUR 4 300 max. 30 %

UFI support in 2016

Support sector	Purpose of project	Rate of support or without EU cofinancing
Energy supply		
Environmentally-friendly heating	Wood heating < 400 kW *	135 Euro/kW up to 50 kW EUR 60 for each additional kW
	District heating connection < 400 kW *	EUR 32 or EUR 62/kW up to 100 kW (fossil fuel or biogenic network) EUR 16 or EUR 32/kW for each additional kW
	Thermal solar systems < 100 m² *	EUR 130/m² for standard collectors EUR 170/m² for evacuated tube collectors EUR 110/m² for air collectors
Waste heat recovery	Recovery of industrial or commercial waste heat and feeding into local and district heating networks	35 %/30 %
Wood heating for undertakings' own supply	Boiler ≥ 400 kW	35 %/30 %
	Boiler in micro-network	35 %/30 %
District heating supply based on renewable energy sources	District heating network	30 %/25 %
	Boiler replacement	- / 15 %
	Combined heat and power	- / 20 %
	Geothermal	35 %/30 %
	Optimisation of local heating supply	15 % for primary measures or 25 % for secondary measures
	New installation or extension of heat distribution	30 %/25 %
	Consolidation of heat distribution for ≤ 25 customers and ≤ 50 kW	EUR 62/kW
District heating for undertakings	System ≥ 400 kW	30 %/25 % biogenic network 20 %/15 % biogenic network
Heat pumps for undertakings	Small heat pump (< 400 kWth) *	EUR 85 Euro/kWth up to 80 kWth, EUR 45/kWth for each additional kW (water-water) EUR 70 Euro/kWth up to 80 kWth, EUR 35/kWth for each additional kW (air-water)
	Large heat pump (≥ 400 kWth)	25 %/20 %
Thermal solar systems for undertakings	System ≥ 100 m²	25 %/20 %
Power generation on islands based on renewable energy sources	Sun, wind, water	35 %/30 %
Manufacturing of biofuels and motor fuels	Production systems for biodiesel, bioethanol, vegetable oils, biogas, etc.	25 %/20 %
Energy recovery from biogenic raw materials and residue	Treatment and substitution	30 %/25 %
Natural gas combined	Combined electricity and	30 %/25 %

heat and power for undertakings	heat production	

Energy conservation		
Thermal renovation of buildings for undertakings	Thermal insulation of buildings over 20 years old	10 to 30 %/10 % to 30%
New builds with energy-efficient construction	Heating and overheating protection for new builds	20 to 30 %/15 % to 25 %
Energy savings in undertakings	Building equipment and appliances, energy recovery from production processes, heat recovery	35 %/30 %
	Optimisation of street and outdoor lighting	EUR 25/light source (up to 40 W) or EUR 50/light source (> 40 W)
	Heat recovery in cooling and ventilation systems < 100 kWth *	EUR 160 Euro/kWth up to 30 kWth, EUR 80 for each additional kWth
Indoor LED systems	Conversion to LED lighting systems *	EUR 600 to EUR 700/kW
Air-conditioning and cooling for undertakings	Energy from waste heat/renewable energy sources	35 %/30 %

Other support schemes		
Raw material management in undertakings	Efficiency improvements and innovative service concepts	- / 20 % to 30 %
	Positive effect on the environment due to the use of renewable raw materials	35 %/30 %
Air pollution control	Dust-reducing measures Secondary and primary air pollution control	- / 15 % to 25 %
	Retrofitting of vehicles with particle filters *	EUR 2 500/vehicle
	Dust filter in biomass boilers	- / 15 % to 20 %
Hazardous waste in undertakings	Prevention, recovery and treatment	- / 10 % to 30 %
Other environmental protection measures in undertakings	Innovative plants, noise reduction/prevention, etc.	- / 10 % to 40 %

Renovation offensive		
Thermal renovation of buildings for undertakings	Thermal insulation of buildings over 20 years old	10 to 35 %
Renovation check for private individuals	Thermal insulation of buildings over 20 years old and conversion of heat generation systems	EUR 3 000 to EUR 8 000 max. 30 %
Renovation check for private individuals Multi-floor residential buildings	Thermal insulation of buildings over 20 years old	EUR 3 000 max. 30 %

* no EU cofinancing for lump-sum support, maximum 30 % of eligible costs

Support under the 2012 Green Electricity Act, as last amended

Title	Support for investment under the Green Electricity Act
Target group	Natural persons and legal entities
Description	Small hydroelectric plants up to 10 MW and medium-sized hydroelectric power plants (10 MW to 20 MW) are supported under Sections 24, 25, 26 and 27 of the 2012 Green Electricity Act via investment subsidies. As of 2018, investment support is also granted for photovoltaic systems and power storage units.

Title	Tariff subsidies under the Green Electricity Act
Target group	Private individuals, undertakings, territorial units
Description	Renewable energy systems are supported in accordance with the Green Electricity Act. They must be recognised as green electricity systems in a notice issued by the provincial governor. Support is provided via fixed acceptance tariffs for the green electricity generated and delivered to the public grid.

The Act amending the 2012 Green Electricity Act was published on 26 July 2017 (BGBl. I No 75/2011). The amendment to the 2012 Green Electricity Act can be summarised as follows:

The amendment included administrative improvements, for example non-raw material-dependent installations no longer require a notice of recognition as a green electricity system. In future, the preconditions for such installations will be assessed solely by the OeMAG when a contracting application is submitted and when funding agreements are concluded. The OeMAG will henceforth also keep its own systems register covering all systems included in the Eco Balance Group.

Regarding tariff subsidies, quotas have been shifted under the amendment in favour of small hydroelectric plants and additional funding has been made available to reduce the waiting list for wind power plants and small hydroelectric power plants. Furthermore, a special quota for follow-up tariffs has been introduced for biogas plants. The funds available for investment support for small hydroelectric power plants have been increased from EUR 16 million to EUR 20 million and funding rates have also been increased. Finally, entirely new investment support has been introduced for photovoltaic systems and power storage units.

Support quotas

In 2012, annual support of EUR 50 million – reduced each year by EUR 1 million – was available for newly contracting green electricity systems and distributed as follows:

EUR 8 million for photovoltaic systems;
EUR 10 million for solid and liquid biomass and biogas, of which EUR 3 million for biomass with a bottleneck capacity of up to 500 kW (capped at EUR 1 million for biogas as of 2018);

EUR 11.5 million for wind power;
EUR 1.5 million for small hydroelectric plants (EUR 2.5 million as of 2018), and
EUR 19 million to other areas (reduced each year by EUR 1 million; as of 2018, EUR 1 million less available).

Reduction in feed-in tariffs

Until such time as the above quotas have been exhausted, contracting shall be mandatory for contracting applications based on the 2012 Green Electricity Act. Moreover, there is a special reduction in feed-in tariffs exclusively for photovoltaic systems. Tariffs are set annually by way of a regulation and may also cover several years. In such cases, the tariffs valid for the previous year shall apply, reduced by 8 % for photovoltaic systems and 1 % for all other types of green power technology, until a new regulation is issued.

Increase in green electricity flat rate

The European Commission deemed the limits on additional green electricity costs for energy-intensive companies ('industry cap'), due to be introduced under the 2009 Amending Act, as unlawful aid. The current law (ÖSG 2012, as last amended) provides that green electricity costs shall be reduced over the long term by gradually reducing feed-in tariffs. At the same time, the green electricity flat rate has been increased, and will be amended every 3 years (the first time was for 2015).

The 2012 Green Electricity Act therefore enables easier and quicker access to support for new systems and faster processing of applications already filed. However, there is less support due to lower feed-in prices.

Feed-in tariffs **Green Electricity Feed-in Tariff Regulation**	Energy fed into the grid in Austria from supported green electricity systems is remunerated by the OeMAG by feed-in tariffs once all statutory requirements have been satisfied. No use is made of any other instruments, such as quotas or certificates. Feed-in tariffs for first-time new applications for contracting in 2015 were published on 11 November 2014 in the second amendment to the 2012 Green Electricity Feed-in Tariff Regulation (BGBl. II No 285/2014). For 2016, new feed-in tariffs were set out in Regulation BGBl. II No 459/2015. The applicable tariffs are also published on the support body's website www.oem-ag.at. Figure 2 summarises the feed-in tariffs set in the 2012 and 2016 Green Electricity Feed-in Tariff Regulations for electricity from wind, biomass, biogas, landfill gas and sewage gas, geothermal energy and photovoltaics:

FEED-IN TARIFFS FEED-IN TARIFFS FOR NEW GREEN POWER PLANTS 2015/2016		Tariff in cents/kWh in accordance with BGBl. II No 459/2015; for 2015: BGBl. II No 307/2012 as amended by BGBl II No 285/2014
Technologies not dependent on raw materials		**13-year period**
Wind energy		9.27/9.04
Photovoltaic	2015: 5 kWp up to 200 kWp	11.5 cent/kWh + EUR 200/kWp investment subsidy
	2016: 5 kWp up to 200 kWp (on or in a building)	8.24 cent/kWh + EUR 375/kWp investment subsidy
	5 kWp up to 20 kWp Grid parity tariff for building-integrated or facade-integrated panels	18 cent/kWh
Landfill and sewage gas	Sewage gas	5.82/5.76
	Landfill gas	4.85/4.80
Geothermal		7.29/7.43
Small hydroelectric power plants		
New plants or >50% renovation	for the first 500 000 kWh	10.34/10.35
	for the next 500 000 kWh	7.43/7.43
	for the next 1 500 000 kWh	6.49/6.49
	for the next 2 500 000 kWh	5.42/5.42
	for the next 2 500 000 kWh	5.12/5.12
	above 7 500 000 kWh	4.87/4.87
Power buoys	for the first 500 000 kWh	none/13.32
	above 500 000 kWh	none/12.32
<50% renovation	for the first 500 000 kWh	8.10/8.10
	for the next 500 000 kWh	5.91/5.91
	for the next 1 500 000 kWh	5.12/5.12
	for the next 2 500 000 kWh	3.73/3.73
	for the next 2 500 000 kWh	3.45/3.45
	above 7 500 000 kWh	3.17/3.17
Technologies dependent on raw materials		**15-year period**
Solid biomass (such as logwood, straw)	High efficiency up to 500 kW	19.50/22.22
	up to 500 kW	17.55/18.80
	500 kW up to 1 MW	15.40/16.32
	1 MW up to 1.5 MW	15.12/14.97
	1.5 MW up to 2 MW	14.62/14.47
	2 MW up to 5 MW	14.02/13.88
	5 MW up to 10 MW	13.53/13.39
	over 10 MW	10.72/10.61

Waste with a high biogenic content	Code 17, tab. 2	minus 25 %
	Code 17, tab. 1	minus 40 %
	Different 5-digit code in tab. 1 and 2 ÖkoStrG	4.85/4.80
Co-firing		Pro rata
Combustion in thermal power plants	Solid biomass	5.94/5.88
	Code 17, tab. 2	minus 20 %
	Different 5-digit code in tab. 1 and 2 ÖkoStrG	minus 30 %
Co-firing		Pro rata
Liquid biomass	Liquid biomass	5.62/5.57
	Supplement for production in efficient CHP	2.00
Biogas from agricultural products (such as maize, slurry)	up to 250 kW	19.12/18.67
	250 kW to 500 kW	16.59/16.15
	500 kW up to 750 kW	13.08/12.97
	over 750 kW	12.67/12.51
	Biogas with co-fermentation of waste	minus 20 %
	Supplement for production in efficient CHP	2.00
	Supplement for preparation of natural gas quality	2.00
Co-firing		Pro rata
Feed-in tariffs for raw material-dependent green electricity systems following expiry of mandatory contracting		
Solid biomass (such as logwood, straw)	up to 2 MW	11.79/11.67
	2 MW to 10 MW	10.15/10.05
	over 10 MW	9.75/9.65
Biogas from agricultural products (such as maize, slurry)		
	up to 250 kW	11.22/11.11
	over 250 kW	9.75/9.65
	Biogas with co-fermentation of waste	minus 20 %

2015 feed-in tariffs in accordance with the 2012 Green Electricity Feed-in Tariff Regulation (ÖSET-VO 2012) Source: BGBl. II No 307/2012, as amended by BGBl. II No 285/2014;
2016 feed-in tariffs in accordance with the 2016 Green Electricity Feed-in Tariff Regulation (ÖSET-VO 2016) Source: BGBl. II No 459/2015

3.1 Please provide information on how supported electricity is allocated to final customers for the purposes of Article 3(6) of Directive 2003/54/EC (Article 22(1)(b) of Directive 2009/28/EC).

Allocation of supported electricity to final customers	Most electricity generated from renewable energy sources (with the exception of hydroelectric plants with a bottleneck capacity of over 10 MW) is fed into the Ecobalance Group based on accounting rules. The Ecobalance Group manager ensures there is a nationwide balance by allocating green electricity to all traders in proportion to the quantity of electricity sold to final customers. A comparatively small proportion of green electricity is fed into conventional balance groups by producers. On the one hand, this applies to the balance group of green electricity suppliers. On the other hand, operators are also able to temporarily switch during the support period from the Ecobalance Group into free competition, whereby suppliers do not receive a feed-in payment under the Green Electricity Act and, at the same time, the potential support claim period is curtailed. **Processing via OeMAG** Operators of green electricity plants benefitting from support 'sell' their electricity to OeMAG and receive the regulated feed-in tariff in return. The OeMAG allocates this electricity to individual electricity traders, who pay the market price in accordance with Section 41(2) of the 2012 Green Electricity Act. In addition to the market price, funding for generating green electricity is financed by final customers via the green electricity support contribution and the flat-rate green electricity charge. How much green electricity is allocated and to which electricity traders depends on how much electricity they supply to final customers. For example, an electricity trader with a market share of 5 % is allocated 5 % of the total quantity of green electricity accepted by OeMAG. This percentage is re-set by OeMAG once a month. Information on the origin of electricity from renewable energy sources benefitting from support can be found in the Electricity Management and Organisation Act (ElWOG). Under Sections 78 to 79a ElWOG, labelling is based on the electricity supplied to the final customer (kWh) and takes the form of a breakdown by % of primary energy sources (solid or liquid biomass, biogas, landfill and sewage gas, geothermal energy, wind and solar energy, hydroelectric power, natural gas, oil and its derivatives, coal, nuclear energy and miscellaneous). **Extract from the Electricity Management and Organisation Act (ElWOG):** **Section 79 Indication of origin (labelling)** *(1) Labelling in accordance with Section 78 shall be based on the electricity supplied to the final customer (kWh) and shall take the form of a breakdown by % of primary energy sources (solid or liquid biomass, biogas, landfill and sewage gas, geothermal energy, wind and solar energy, hydroelectric power, natural gas,*

	oil and its derivatives, coal, nuclear energy and miscellaneous). *(2) Labelling of primary energy sources on electricity bills shall be based on the total quantities delivered to the final customer in the previous calendar or financial year.* *(3) The percentage of various primary energy sources in accordance with paragraph 1 shall be reported as a standard supply mix which takes account of all electricity supplied to final customers by the electricity trader. If primary energy sources cannot be clearly established, for example, where electricity is purchased from electricity exchanges, quantities must be allocated mathematically based on current total European supplies under ENTSO-E, minus quantities supplied on the basis of renewable energy sources.* *(4) Labelling must be clearly legible. Other comments and notes on electricity bills must not give rise to confusion with labelling.* *(5) Electricity traders must document the basis for labelling. Documentation must clearly present the quantities supplied by them to final customers, broken down by primary energy sources.* *(6) Electricity traders which exceed a total supply to final customers of 100 GWh must have their documentation audited by a generally chartered and certified electrical engineer. The outcome must be published in a clear format and confirmed by the auditor in an annex to the electricity trader's annual report.* *(7) As of 1 January 2015, proof of electricity produced in that calendar year must be allocated to the quantities delivered to final customers in a calendar year. Only proof issued in accordance with Section 10 of the 2012 Green Electricity Act, Section 71 or Section 72 or recognised in accordance with Section 11 of the 2012 Green Electricity Act or Section 73 may be used for proof for documentation in accordance with paragraph 6.* *(8) The outcome of documentation which must be prepared within no more than four months of the end of the calendar or financial year or actual delivery period must be kept available for inspection by final customers for a period of three years at the electricity trader's registered (head) office or, if it is located abroad, at the registered office of its agent in Austria.* *(9) On request by the regulatory authority, electricity traders must present the proof referred to in paragraphs 5 to 7 and all documents needed to verify the information within a reasonable period of time.* *(10) Electricity traders or other suppliers required to publish their annual accounts in accordance with Section 8(1) must state the supplier mix in accordance with paragraph 3 and the quantities of electricity sold or delivered in those annual accounts.* *(11) The regulatory authority shall issue detailed regulations governing electricity labelling, especially the scope of the obligations referred to in Section 78(1) and (2) and specifications governing the format of proof of the various primary energy sources and electricity labelling in accordance herewith.*

Compilation of energy research

As a member of the International Energy Agency (IEA), Austria promotes each year publicly-financed research, development and demonstration projects carried out in the energy sector in Austria. The public authorities provided EUR 128.4 million in 2015 and EUR 140.9 million in 2016 for energy research in Austria. As in the previous year, the majority was dedicated to the area of 'energy efficiency' (47.1 %), followed by 'transmission, storage, etc.' (22 %). The area of 'renewable energy sources' received slightly less (EUR 30.5 million, i.e. 21.6 % of public spending on energy research). These three areas, corresponding to 90.7 % of spending, clearly reflect the priorities applying to publicly financed energy research. In the area of renewable energy sources, the overwhelming focus is on solar technology, in particular photovoltaics (40.8 %), followed by bioenergy technology (approximately 36 %), then hydroelectric power, wind energy and geothermal energy.

The public authorities supported around 970 projects and activities in 2016 as part of research, development and demonstration projects carried out in the energy sector. In 2016, it was possible to increase publicly-financed energy research by EUR 12.5 million (+9.7 %) compared to the previous year.

Sources: Energieforschungserhebung 2016 (Energy Research Compilation 2016). Ausgaben der öffentlichen Hand in Österreich (Public spending in Austria). Erhebung für die IEA (Compilation for the IEA) Authors: Andreas Indinger, Marion Katzenschlager, Austrian Energy Agency (AEA). Publisher: Federal Ministry of Transport, Innovation and Technology (BMVIT). Schriftenreihe Nachhaltigwirtschaften (Sustainable management series). Berichte aus Energie und Umweltforschung 18/2017 (Energy and Environmental Research Reports 18/2017). Vienna, June 2017.

https://nachhaltigwirtschaften.at/de/iea/publikationen/energieforschungserhebung-2016.php
https://nachhaltigwirtschaften.at/resources/iea_pdf/201718-energieforschungserhebung-2016.pdf

4 Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno cellulosic material (Article 22(1)(c) of Directive 2009/28/EC).

Structure of support schemes	Support schemes to promote renewable energies do not currently include any explicit support for applications that give additional benefits but may also have higher costs. This was identified in the recent study *Sustainable First and Second Generation Bioethanol for Europe* (nova Institute, Germany, September 2017) and is also true of the situation in Austria. As regards attaining targets for biofuels made from wastes, residues, etc., double allowances create an incentive to force the pace of the application of this technology. These points are regulated in the 2012 Fuel Regulation. In the case of support schemes, 'upgrading' waste may, however, cause market distortions and critical developments in that context. The overriding objective of waste avoidance must be safeguarded. In this regard, see Article 21(2) of Directive 2009/28/EC and the amendments to Directive (EU) 2015/1513. In the context of environmental support in Austria, funding is focused on the 'production of biogenic fuels' and 'energetic use of biogenic raw materials and residues'. The conditions for support can be found in Figure 1a and 1b.

5 Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system (Article 22(1)(d) of Directive 2009/28/EC).

Guarantee of origin for electricity and heating and cooling from renewable energy sources	A guarantee of origin is an information instrument which provides information on the way in which a kilowatt of electricity is fed into the public grid. The law only allows operators of systems that use renewable energy sources (water, wind, biomass, etc.) to demand a guarantee of origin from their grid operators. At present, this only covers systems recognised by the provincial governor as a green electricity system (see Section 7 of the 2012 Green Electricity Act). These systems can be subdivided into supported/unsupported systems. All systems supported under the Green Electricity Act which have a contract with the Ecobalance Group manager are classed as supported systems. Unsupported systems are systems that use renewable energy sources but are not supported under the Green Electricity Act and thus do not have a contract with the Ecobalance Group manager. Most of these systems are large hydroelectric systems or systems which previously fell outside the support system as the support period was exceeded. The benefit to system operators is that they can clearly prove their use of renewable energy sources to generate electricity. There are advantages for electricity traders, in that the presentation of guarantees of origin makes annual electricity labelling required by law much easier. Final customers also receive additional information on the electricity product bought. In Austria, guarantees of origin for electricity and heating and cooling are regulated under Sections 10 and 11 of the Green Electricity Act. Grid operators provide producers with guarantees of origin on the basis of the electricity fed into the grid. Producers transfer the guarantee of origin to traders/suppliers under an electricity supply contract. They then supply final customers with electricity. Guarantees of origin therefore constitute proof for the purposes of electricity labelling. **Excerpt from the 2012 Green Electricity Act, as last amended:** **Section 10. Guarantee of origin for green electricity systems** (*2) Grid operators to whose grids green electricity systems are connected, must issue guarantees of origin to system operators, where requested, in respect of quantities of electricity fed from their system into their grid. They shall do so by inputting into E-Control's computer-assisted database the net amounts of generated electricity fed into the public grid.* *E-Control's computer-assisted data processing shall be used for issuing, transfer and cancellation purposes.* *(6) Guarantees of origin in accordance with paragraph 1 must contain the following information:* *1. the quantity of electricity produced;* *2. the type and bottleneck capacity of the system;*

	3. the time and place of production; *4. the energy sources used;* *5. the type and scope of investment aid;* *6. the type and scope of any additional support;* *7. the date on which the installation became operational;* *8. the issue date and unique reference number.* **Section 11. Recognition of guarantees of origin for green electricity from other countries** (1) Guarantees of origin for green electricity from installations located in other EU Member States, EEA states or third countries shall be deemed guarantees of origin in accordance with this Federal Act if they comply with at least the provisions of Article 15 of Directive 2009/28/EC. In principle, the entire system of guarantees of origin constitutes an information transmission chain from producer to consumer on the origin and quality of certain electricity. A central guarantee of origin database (HKN database) allows all processes in this chain to be performed on a single platform. This is an electronic information management system. Once the grid operator has transmitted a feed-in value for the green electricity to the HKN database in the month following the electricity production, guarantees of origin are generated for the month in question and transferred to the green electricity system operator's guarantee of origin account. The system operator can then freely dispose of the guarantee of origin (e.g. transfer it on to electricity supplier or electricity trader accounts).

6 Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes (Article 22(1)(g) of Directive 2009/28/EC).

Table 4: Biomass supply for energy use

	Amount of domestic raw material (*)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (*)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU (*)		Primary energy in amount of imported raw material from non EU (ktoe)	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Biomass supply for heating and electricity:												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings, etc.)**	8 800 000	8 900 000	1 740	1 760	1 200 000	1 200 000	237	237	--	--	--	--
Indirect supply of wood biomass (residues and co-products from wood industry, etc.)**	8 700 000	9 200 000	1 474	1 558	5 500 000	5 700 000	932	966	300 000	300 000	51	51
Energy crops (grasses etc.) and short rotation trees (please specify)	30 500	30 300	13.4	13.3								
Agricultural by-products/processed residues and fishery by-products 1)												
Biomass from waste (municipal, industrial, etc.) **	729 039	703 510	182	175	0	0						
Others (please specify)	2 199 922	1 932 982	514	501	0	0						

Biomass supply for transport:												
Bioethanol 2) **Biodiesel**	38 400 4 600	59 700 17 400	24.7 4.0	38.5 15.3	51 200 601 300	27 300 489 600	33.0 531.4	17.6 432.7	0 0	0 0	0 0	0 0
Energy crops (grasses etc.) and short rotation trees for biofuels (please specify main types) 3)												
Others (please specify)												

* Amount of raw material if possible in m^3 for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste.
** The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC.

1) Included under 'Others'
2) In 2015, an additional approximate 86 400 tonnes of bioethanol (= 55 700 toe) and in 2016 an additional approximate 90 400 tonnes of bioethanol (=58 300 toe) from domestic production were exported.

Table 4 a: Domestic agricultural land use for production of crops dedicated to energy production (ha)

Land use	Surface (ha)	
	2015	2016
1. Land used for common arable crops (wheat) and oilseed (rapeseed)	38 100	51 400
2. Land used for short rotation trees (80 % poplars, 20 % willows)	1 240	1 221
3. Land used for other energy crops such as grasses (Miscanthus, etc.)	1 075	1 078

Comments:

Gross area excluding combined production of high-value protein feed. Considerable yield differences and subsequent price fluctuations were responsible for the large difference between 2013 and 2014 (in the use of domestic raw material and, consequently, the surface area indicated in Table 4 a).
Gross area is often used misleadingly in arguments concerning competition for land use. Net area is therefore what is most important.
Net area is determined by including area factoring for combined production of protein feed (DDGS, rape cake). During biofuel production, only part of the yield is used for ethanol production (starch) or vegetable oil production (oil); a large part of the raw material is retained as valuable protein feed for farm animals and can replace imports of protein feed (e.g. soya imports from soya farms in South America).

7 Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources. Please provide, where available, references to relevant documentation on these impacts in your country (Article 22(1)(h) of Directive 2009/28/EC).

When assessing commodity price impacts, it is suggested to consider at least the following commodities: common food and feed crops, energy wood, pellets.

Agricultural biomass:

Cultivation of energy plants is closely bound to traditional agricultural production. In Austria (and the rest of the world) predominantly the same types of crops and cultivation systems are used for both food and feed. Positive effects arise primarily from the use of by-products (protein feed). No change in land use was identified within the meaning of Article 22(1)(h) of Directive 2009/28/EC. On a general level, Austria submitted a comprehensive report in 2016 containing information on all aspects of land use change (LULUCF) in accordance with Article 10 of Decision No 529/2013/EU The data is also used for the annual climate inventory reports (NIR 2017 and 2016).

Energy biomass use continues to be viewed as having a very minor impact on agricultural commodity prices in Austria. In this context, we would refer – in relation to the ethanol sector – to the findings of the German study mentioned in section 4 regarding first-generation biofuels. Above all the annual differences in yield and corresponding availabilities are by far the main factors influencing crop commodity prices.

Forestry biomass:

After decades of falling wood prices, all stocks saw a moderate price increase until about a year ago (for both material and energy use). 'Industrial wood' stock, for example, attained nominal price levels from the 1970s.

There were many reasons as to why wood prices increased moderately until around a year ago. A relatively large increase in processing capacity in the Austrian wood-processing industry resulted in increased demand (especially for timber stocks which, however, largely serve as energy wood stocks in wood processing). Furthermore, demand is increasing for durable wood products (e.g. the proportion of wood used in new constructions has increased notably) and naturally the increased use of wood for energy production is also having an effect.

Recently an oversupply of wood has been observed on the market, in particular as a result of extreme events. Wood prices have fallen accordingly. The trend is not expected to reverse at present.

The following factors will be instrumental in future developments as regards the rise in energy wood and associated prices:

- Development of the sawmill industry: the sawmill industry is the driving force behind the rise in 'indirectly' available wood biomass. The log cut volume and further distribution of sawmill by-products are decisive factors.

- Successful efforts to match actual wood use to sustainable growth. These efforts are financed by EU resources under the EU Rural Development Programme. Around three-quarters of the growth in commercial forests in Austria are currently in use. Reserves are mainly available in ‘small forests’ (= holdings with a forested area of less than 200 hectares).
- Basic conditions for wood use: although forest cultivation in Europe unquestionably complies with the highest global standards, DG ENER is working to introduce EU-wide sustainability criteria. This project would merely generate bureaucracy (and therefore costs), without leading to any positive effects for the environment. Efforts (financed by EU resources) to match wood use to sustainable growth would be undermined. There is concern that wood use would decline significantly, particularly in the most sensitive small forest areas.

8 Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and lignocellulosic material (Article 22(1)(i) of Directive 2009/28/EC).

Development and share of biofuels made from wastes, residues, etc.	Used cooking oil and animal fat is used for esterification in many biodiesel plants, accounting for some 144 000 tonnes (in 2015) and 168 000 tonnes (in 2016). In certain individual biogas plants, energy crops and green waste are used as raw materials and then partly used as fuel. However, the quantities are commercially irrelevant. No application for double-counting has been made for the marketing in Austria of other biofuels that can be double-counted in accordance with Article 22(1)(i) of the Directive.

Table 5: Production and consumption of biofuels pursuant to Article 21(2) (ktoe)

Biofuels pursuant to Article 21(2)[26]	2015	2016
Production of biodiesel	62.8	57.9
Consumption of biodiesel	0	0.3
Total production of biofuels in accordance with Article 21(2)	62.8	57.9
Total consumption of biofuels in accordance with Article 21(2)	0	0.3
% share of fuels in accordance with Article 21(2) from total RES transport	0 %	0.04 %

[26] Biofuels made from waste, residues, non-food cellulosic material, and lignocellulosic material.

9 Please provide information on the estimated impact of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within your country in the preceding 2 years.

Impact of production of biofuels on biodiversity, etc.	Like all Member States, Austria has undertaken to ensure the sustainable use and restoration of biodiversity and proper distribution of benefits from the use of genetic resources [Convention on Biological Diversity (CBD, BGBl. 213/1995), EU Biodiversity Strategy 2020]. By 2020, the loss of biological diversity must be stopped or reversed. The Habitats Directive and the Birds Directive require Austria to class certain areas as protected sites and to maintain a favourable conservation status for the flora and fauna in question. In the Alpine Convention, Austria pledged to protect species and nature in the Alps. The conservation and promotion of biological diversity in forest ecosystems is a core concern of the Ministerial Conference on the Protection of Forests in Europe (MCPFE). Long-standing efforts have already been made under the support programme for rural development, in cooperation with open-minded agricultural and forestry farmers, in a bid to reconcile a varied, multi-purpose agricultural landscape with support for biological diversity in agricultural landscapes. Austria adopted its 'Biodiversity Strategy 2020+' in 2014. Target 6 of the strategy requires energy to be supplied in a way that preserves biodiversity and lists sub-targets and specific measures for this purpose. The BMLFUW Regulation on agricultural raw materials for biofuels and liquid biomass fuels, BGBl. II No 250/2010, ensures that Austrian agricultural raw materials produced in accordance with cross compliance and conservation law can be declared sustainable. The Austrian National System for Sustainable Agricultural Raw Materials referred to in the Regulation is managed by Agrarmarkt Austria which also acts as the CAP Paying Agency. Since September 2015, Directive (EU) 2015/1513 has also laid down the possibility for the European Commission to recognise national systems. Agrarmarkt Austria's national system (known as the AACS) was recognised by the European Commission under Implementing Decision (EU) 2016/708 of 11 May 2016 and is so far the only recognised national system. The ultimate objective of Directive 2000/60/EC [Water Framework Directive (WFD)] is to 'prevent further deterioration and protect and enhance the status of aquatic ecosystems and … terrestrial ecosystems … directly depending on [them]'. In order to meet the objectives and implement the principles of the WFD, the Federal Minister for Agriculture and Forestry, Environment and Water Management has compiled a National Water Management Plan 2009 (NGP 2009), in cooperation with the provincial water management planning departments, and published it on the Ministry's website. Work is ongoing to finalise the second National Water Management Plan (NGP 2015) (http://www.bmlfuw.gv.at/wasser/wasser-oesterreich/plan_gewaesser_ngp/umsetzung_wasserrahmenrichtlinie/ngp215zeitplan.html).

For all biofuels that are to be counted towards the national targets, economic operators that work in the biofuels production chain (namely from the cultivation of biomass to the production of the finished biofuel) must have a certificate from a 'voluntary system' approved by the European Commission or from a national system or a bilaterally recognised national system so that they can be registered via the national monitoring system, elNa.

Evidence of source materials for biofuels produced sustainably in Austria is provided by means of a voluntary system or Agrarmarkt Austria's national sustainability system (AACS). Certification systems that demonstrate the sustainability of biofuels are listed in the elNa register, but systems that serve exclusively to certify raw materials are not. The system run by AMA is therefore not entered in the elNa register.

Voluntary systems and national systems recognised in Austria

The following table presents the certification systems used by producers of the respective biofuels. In addition to the voluntary systems, two national sustainability systems are

recognised in Austria on the basis of bilateral agreements – the Slovenian and the Slovakian national systems. The designation BLE in the table (Federal Agency for Agriculture and Food) concerns quantities of biofuels imported to Austria under the nabisy system[27] that were transferred via the electronic interface nabisy – elNa. This evidence is collective evidence in the nabisy system which covers several certification systems for a biofuel. In such cases this information in the elNa system cannot be clearly attributed to specific biofuels and is therefore presented with the designation BLE.

Table 6: Certification systems of marketed quantities, separated by biofuel (2016 data)

	Volume [m3]	Mass [t]
Biodiesel (FAME)	568 390.63	507 004.44
2BSvs	17 801.94	15 879.33
BLE	200 053.08	178 447.35
ISCC DE	5 119.49	4 566.58
ISCC EU	273 360.30	243 837.38
KZR INIG System	7 558.97	6 742.60
Red Cert	9 390.57	8 376.38
Red Cert EU	19 008.39	16 955.49
Slovakian national system	35 051.19	31 265.65
Bioethanol	**111 953.27**	**87 099.14**
Abengoa RED/RSBA	7.15	5.56
BLE	37 551.99	29 215.46
ISCC DE	22 338.54	17 379.38
ISCC EU	38 916.59	30 277.11
Red Cert EU	3 082.40	2 398.11
Slovakian national system	9 717.83	7 559.96
HVO	**66 226.11**	**51 192.79**
2BSvs	11 907.28	9 204.33
BLE	8 927.00	6 900.57
ISCC EU	44 685.40	34 541.81
Red Cert EU	706.43	546.07
Total	**746 570.01**	**645 296.36**

It can be seen that the distribution of the certification systems used depends on the individual types of biofuel.

With regard to biodiesel, the voluntary system ISCC EU is used most (48 %). For bioethanol, ISCC DE and ISCC EU have a combined market share of 55 %.
In the case of hydrogenated vegetable oil, ISCC EU dominates the market as the most-used certification system, accounting for almost 67 %.

[27] In Germany, evidence of the sustainability of liquid and gaseous biomass is provided in accordance with Directive 2009/28/EC via the government web application Nachhaltige - Biomasse - Systeme (Nabisy), run by the Federal Agency for Agriculture and Food. This system is also used in other Member States.

The BLE entry, representing in each case approximately one third for ethanol and FAME, indicates the considerable importance of the elNa IT interface with the German Nabisy system, through which an ever-increasing volume of evidence is handled.

National biofuels register – elNa

Since January 2013, the elNa electronic system has been used for providing evidence and monitoring biofuel sustainability in Austria. All trade flows concerning sustainable biofuels in Austria are shown on the web platform developed by the Federal Environment Agency. The IT application thus ensures that sustainably produced biomass can be traced while also guaranteeing mass balance throughout the distribution chain, supported in both cases by on-site checks.

Information on sustainable biofuels verified by certification systems must be added to the Austrian biofuels database, eINa, by economic operators so that sustainability certificates, which are required if the fuels are to count towards national targets, can be issued and to ensure that the biofuels can be counted towards their individual substitution targets.

The database is checked on an ongoing basis, thereby ensuring that input errors are detected in good time. An additional on-site check is also generally carried out once a year, which looks closely at the following:

- Information on system conversion
- Review of the certification status and, if relevant, inspection of the control report for voluntary systems
- Review of mass balance using supplier documents
- Completeness check of reports
- Review of sustainability certificates transcribed when importing biofuels into Austria (correct information, validity, etc.)
- Review of the available management system (quality assurance, storage, traceability of data and documents, competences, etc.)

10 Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (Article 22(1)(k) of Directive 2009/28/EC).

Table 7: Estimated GHG emission savings from the use of renewable energy (t CO_2 equivalent) in t million

Total estimated net GHG emission savings from using renewable energy[28]	2015	2016
- Estimated net GHG savings from the use of renewable electricity	17.47	16.80
- Estimated net GHG savings from the use of renewable energy in heating and cooling	10.54	9.63
- Estimated net GHG savings from the use of renewable energy in transport	2.08	1.72

Note: The data for Table 6 are taken from the publication 'Renewable Energy in Figures 2015 – Development of Renewable Energy in Austria Based on 2014 Data'. It also describes the calculation assumptions and factors.
The publication is being finalised and will be published on the BMLFUW website at the end of 2015 or the start of 2016.

In order to meet the target of a share of 34 % renewables in gross end energy use, no statistical transfers between Member States or participation in joint projects with other Member States or third countries are currently planned. In 2015, the share of renewables in gross end energy consumption rose to 32.8 %.

[28] The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

11 Please report on (for the preceding 2 years) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020. (Article 22(1)(l) and (m) of Directive 2009/28/EC).

Table 8: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in [Member State] (ktoe)[29,30].

The remarks in the previous section also apply.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production (Please distinguish per type of renewable energy and per origin/destination of import/export)	0	0	0	0	0	0	0	0	0	0	0	0

11.1 Please provide details of statistical transfers, joint projects and joint support scheme decision rules.

Statistical transfers, joint projects and joint support scheme decision rules	In order to meet the target of a share of 34 % renewables in gross end energy use, no statistical transfers between Member States or participation in joint projects with other Member States or third countries are currently planned.

[29] Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up 2020. In each report Member States may correct the data of the previous reports.
[30] When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. –x ktoe).

12 Please provide information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates (Article 2(1)(n) of Directive 2009/28/EC).

Share of biodegradable waste for producing energy	The share of biodegradable waste in waste used for producing energy is determined based on information from E-Control, which in turn is based on spot checks, the geographical scope of which is to be expanded.

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Legal sources

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Federal Act Re-regulating the Electricity Sector [2010 Electricity Management and Organisation Act (ElWOG 2010) as last amended

2012 Green Electricity Feed-in Tariff Regulation (ÖSET-VO 2012) as amended by BGBl. II No 285/2014

2016 Green Electricity Feed-in Tariff Regulation (ÖSET-VO 2016), BGBl. II No 459/2015

E-Control, 2017 Green Electricity Report: by Energie-Control Austria under Section 52(1) of the 2012 Green Electricity Act, June 2017 (https://www.e-control.at/documents/20903/388512/e-control-oekostrombericht-2017.pdf/ce32088b-b8dc-85d3-2585-c6af224b3113)

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E-Control Austria www.e-control.at

Kommunalkredit Public Consulting (Environmental Support in Austria – UFI) www.publicconsulting.at

Statistics Austria www.statistik.at

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