National Renewable Energy Action Plan

2019 Progress Report for Austria under Directive 2009/28/EC

Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology

Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology

Federal Ministry
Republic of Austria
Agriculture, Regions
and Tourism

Federal Ministry of Agriculture, Regions and Tourism

National Renewable Energy Action Plan (NREAP) – 2019 Progress Report for Austria under Directive 2009/28/EC

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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	hectares
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 2013, 2014, 2015, 2016, 2017 and 2018 that do not correspond to the figures reported in the NREAP 2017 Progress Report. 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].

	2013	2014	2015	2016	2017	2018
Renewable energy sources – heating and cooling[2] (%)	33.4%	33.6%	33.3%	33.5%	33.7%	34.0%
Renewable energy sources – electricity[3] (%)	68.9%	71.1%	71.5%	72.5%	71.6%	73.1%
Renewable energy sources – transport[4] (%)	9.7%	11.0%	11.4%	10.6%	9.7%	9.8%
Overall share of renewable energy sources[5] (%)	32.8%	33.7%	33.5%	33.4%	33.1%	33.4%
of which from cooperation mechanism[6] (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
surplus for cooperation mechanism[7] (%)	0.0%	0.0%	0.0%	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].

	2013	2014	2015	2016	2017	2018
A) Gross final consumption of RES for heating and cooling	4,635	4,333	4,492	4,633	4,784	4,547
B) Gross final consumption of electricity from RES	4,080	4,153	4,234	4,320	4,356	4,442
C) Gross final consumption of energy from RES in transport	620	726	824	719	647	665
D) Gross total RES consumption[9]	9,334	9,211	9,549	9,673	9,787	9,654
E) Transfer of RES to other Member States	0	0	0	0	0	0
F) Transfer of RES from other Member States and third countries	0	0	0	0	0	0
G) RES consumption adjusted for target (D)-(E)+(F)	9,334	9,211	9,549	9,673	9,787	9,654

[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.

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

	2013		2014		2015		2016		2017		2018	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro[11]:	13,383	41,191	13,532	41,229	13,650	41,153	14,116	41,300	14,150	40,832	14,516	41,339
Non pumped	8,272	36,535	8,322	36,531	8,456	36,560	8,493	36,429	8,506	36,114	8,591	36,541
<1MW	388	1,716	408	1,792	396	1,713	416	1,784	430	1,826	399	1,699
1MW–10 MW	745	3,292	855	3,752	840	3,633	862	3,696	869	3,690	853	3,629
>10MW	7,138	31,528	7,059	30,987	7,220	31,214	7,215	30,949	7,207	30,599	7,338	31,213
Pumped	5,111	4,656	5,211	4,698	5,193	4,593	5,623	4,871	5,644	4,717	5,925	4,798
Mixed[12]	13,383	41,191	13,532	41,229	13,650	41,153	14,116	41,300	14,150	40,832	14,516	41,339
Geothermal	1	0	1	0	1	0	1	0	1	0	1	0
Solar:	626	626	785	785	937	937	1,096	1,096	1,269	1,269	1,438	1,438
Photovoltaic	626	626	785	785	937	937	1,096	1,096	1,269	1,269	1,438	1,438
Concentrated solar power	-	-	-	-	-	-	-	-	-	-	-	-
Tide, wave, ocean	-	-	-	-	-	-	-	-	-	-	-	-
Wind:	1,675	3,007	2,110	3,808	2,489	4,679	2,730	5,350	2,887	5,974	3,133	6,326
Onshore	1,675	3,007	2,110	3,808	2,489	4,679	2,730	5,350	2,887	5,974	3,133	6,326
Offshore	-	-	-	-	-	-	-	-	-	-	-	-
Biomass[13]:	1,218	4,696	1,149	4,548	1,133	4,648	1,122	4,780	1,019	4,921	1,001	4,930
Solid biomass	1,017	4,073	959	3,934	939	4,014	917	4,113	838	4,250	824	4,301
Biogas	194	623	189	613	191	634	202	666	180	670	175	628
Bioliquids	6	0	1	0	3	0	3	1	1	0	1	0
TOTAL	16,903	49,521	17,577	50,370	18,210	51,416	19,065	52,526	19,326	52,995	20,089	54,033

[10]Facilitates comparison with Table 10a of the NREAP.
[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.

of which in CHP	4,295	9,866	3,987	8,636	3,052	8,971	3,351	10,589	2,888	9,534	2,847	9,426

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

2013	2014	2015	2016	2017	2018
1,746	1,834	1,794	1,768	1,747	1,762

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 interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)[15].

	2013	***2014***	***2015***	***2016***	***2017***	***2018***
Geothermal (excluding low temperature geothermal heat in heat pump applications)	24	21	23	23	29	28
Solar	174	179	181	181	180	179
Biomass[16]:	4,224	3,900	4,033	4,152	4,272	4,007
Solid biomass	4,182	3,850	3,982	4,097	4,215	3,961
Biogas	42	49	50	54	56	45
Bioliquids	0	0	1	1	1	1
Renewable energy from heat pumps: ***- of which aerothermal*** ***- of which geothermal*** ***- of which hydrothermal***	212	233	254	276	303	334
TOTAL	4,635	4,333	4,492	4,633	4,784	4,547
of which DH[17]	906	875	923	931	988	982
of which biomass in households[18]	1,881	1,650	1,725	1,764	1,787	1,626

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

	2013	**2014**	**2015**	**2016**	**2017**	**2018**
Bioethanol/bio-ETBE	66	63	60	57	56	58
of which biofuels[21] pursuant to Article 21(2)	-	-	-	-	-	-
of which imported[22]	32	30	31	29	26	24
Biodiesel	363	359	373	380	379	362
of which biofuels[23] pursuant to Article 21(2)	-	-	-	-	-	-

[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.

of which imported[24]	244	238	248	268	281	281
Hydrogen from renewables	-	-	-	-	-	-
Renewable electricity	178	178	187	196	200	204
of which road transport	1	1	2	7	12	17
of which non-road transport	178	176	185	189	189	187
Others (as biogas, vegetable oils, etc.) – please specify	13	126	203	86	11	40
of which biofuels[25] ***pursuant to Article 21(2)***	-	-	1	4	7	4
Total	620	726	824	719	647	665

[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, businesses	In force	Started 2014
Domestic environmental support scheme	Financial	Promotion of energy-saving measures	Businesses (market-driven), associations and municipalities	Existing	End of 2020[26]
klima.aktiv	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, businesses, households/end users	Exists, ongoing implementation	Provisionally until 2020 – planned to continue until 2030
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 energy for heating systems. Support for sustainable planning (housing density)	Federal government, provinces, end users	Existing, reform planned	Update ongoing
klimaaktiv Building standard	Voluntary measure	Implementation of higher standards in relation to	Provincial property developers,	In force	Provisionally until 2020

[26] The 2020 'end date' only relates to the current legal commitment framework. Discussions on extending the framework are ongoing.

		energy efficiency, quality of planning and execution, quality of building materials and construction and core aspects as regards comfort and indoor air quality in the building sector. Annual increase in declared buildings rose from 70 (2016) to 150 (2018).	planners, builders, housing developers, housing development promoters and any parties constructing or renovating a house.		
Renovation offensive 2017 and 2018 et seq.	Financial	Support for thermal renovation measures and renewable energy 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 company cars, motor cycles, scooters and bicycles and support for charging infrastructure. Requirement: electricity based on renewable energy sources	Businesses (market-driven), associations and municipalities	Existing	2016 - 2018
klima.aktiv mobil	Financial	Conversion of fleets and motor pools to vehicles using alternative propulsion and electromobility	Federal government, provinces, municipalities, organisations, associations, businesses, etc.	Existing	Second phase of klima.aktiv 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, businesses	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 to the 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 is in place	In force, amendment 2018.
Amendment to the Fuel Regulation	Legislative	Amendment regarding use of sustainable biofuels to count towards 10% target and introduction of sub-target for advanced biofuels.	Marketer of fuels	Existing	National transposition of 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. Content on training and further education for specialists, and guidelines and advisory tools on the use of renewable energy sources are available for relevant target groups.	Municipalities, businesses, households	In force	Provisionally until 2020 – planned to continue until 2030
Domestic environmental support scheme	Financial	Support for investments in energy supply from renewable energy sources	Businesses (market-driven), 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	Under way	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.	Businesses, associations	Existing	Started 1993/last amendment to Directive in 2015
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, businesses	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 and awareness	Municipalities, end users, entrepreneurs	Existing	Started 2012
2020-2030 Lower Austrian Climate and Energy Road Map	Strategy, Government and Landtag Resolution	Comprehensive strategy paper on creating an energy system fit for the future, limiting the effects of climate change, ensuring efficient infrastructure which is fit for the future, increasing regional added value and encouraging greater commitment from people to energy transition.	Policy makers, general public	Existing	Since 2019
2020 Lower Austrian Climate and Energy Programme	Implementation programme, Government Resolution	Comprehensive energy efficiency and renewables programme	Policy makers, administration, general public	Existing. Currently undergoing reform.	New version in 2020
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	Last amended in 2017
Support for vehicles using alternative propulsion	Purchasing support	Faster uptake of vehicles using alternative propulsion	Private individuals, driving schools, taxi companies	Existing	Started 2012
Support for electric cars	Support	Faster uptake of vehicles	Private individuals, municipalities, associations	Existing	Started 2014
Biomass block heating	Support	Successive development of renewable block heating	Farmers, commercial operations	Existing	Started in 1990. Various forms
Energy advice - Lower Austria	Raising awareness	Investment in high-quality 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	Support	Establishment of heating and hot water systems based on renewable energy when building and thermally rehabilitating residential buildings	Private individuals, businesses	Existing	Started 2009
Burgenland					
Amendment to Building Law	Legislative	Administrative simplification (exception for PV systems)	Private individuals	In force	Started 2013

Amendment to Provincial Electricity Act	Legislative	Administrative simplification (exception for PV systems)	Private individuals	In force	Started 2013
2050 Burgenland Climate and Energy Strategy	Presentation	Objectives: to become climate neutral by 2050 further promotion of renewables until 2050 and numerous additional energy measures	Policy makers, public sector, businesses, private individuals	Effective	Started 2019
Support for alternative engines	Financial	Retrofitting or changeover to vehicles with alternative propulsion	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	Information	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 required for construction of or major modifications to photovoltaic systems and wind turbines up to a certain scale. Concentration of procedures in the case of wind turbines	Private individuals, businesses	In force	
'Winterfit' initiative	Support	Optimisation of existing systems	Private individuals	Existing	
Salzburg 2020 or Salzburg 2050 Master Plan	Strategy	Provincial strategy for increasing energy efficiency and the share of renewable energies	Comprehensive	Existing	
Subsidies for constructing biomass block heating systems	Support	Development, compression and optimisation of renewable block heating	Farmers, commercial operations	Existing	
Energy advice - Salzburg	Raising awareness	Use of high-quality 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	Support	Increase the share of renewable energy	Private households, agricultural and forestry businesses	Existing	

Support for thermal solar panels	Support	Installation of thermal solar panels for hot water and heating	Private households	Existing	
Support for biomass heating systems	Support	Installation of biomass heating systems	Private households	Existing	
Support for geothermal heating systems	Support	Installation of heat pumps	Private households	Existing	
Support for PV systems	Support	Installation of PV systems	Private households, municipalities, businesses	Existing	
Support for solar power storage units	Support	Installation of solar power storage units	Private households, municipalities, businesses	Existing	
Support for electric charging stations	Support	Installation of charging infrastructure	Municipalities, businesses	Existing	
Awareness-raising at exhibitions, seminars, etc.	Raising awareness		Private households	Existing	
Advice on hydroelectric power - Salzburg	Support	Increase in the efficiency of existing small hydroelectric power plants	Small-scale 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 Replaces the 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	Support	Construction of charging infrastructure and faster uptake of electric vehicles	End users, municipalities, SMEs	Under way	Started 2015
PV storage for private companies and SMEs	Support	Increase in share of own PV-electricity use	End users	Under way	Started 2014

Renovation of small-scale hydroelectric power plants	Support	Renovation and capacity reinforcement of small-scale hydroelectric power plants	Planners, owners	Existing	Started 2012
E-mobility	Support, co-funding	Faster uptake of electric vehicles	End users	Existing	Started 2015
Biomass block heating systems	Kommunalkredit Public Consulting (KPC) co-funding	Continued development of renewable local and district heating	Commercial operations, farmers, municipal utilities, municipalities	Existing	Started around 1990. Various forms
Energy advice - Styria	Raising awareness	Investment in high-quality 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, businesses	Existing	Started 2013
Residential building subsidies	Support	Establishment of heating and hot water systems based on renewable energy when building and thermally rehabilitating residential buildings	Private individuals, businesses	Existing	Started around 1970
Styrian solar and photovoltaic register	Information	Use of roof space for solar energy	Private individuals, businesses	Existing	Started 2010
Support programme under the Styrian Environment Fund for renewable energy sources for heating and hot water	Support	Installations in residential buildings – new builds and renovation	Private individuals, businesses	Existing	For some 20 years
Amendment to Styrian Building Law, Section 80(6)	Legislative	Anchoring the use of solar energy and renewable energy within the hot water supply system to buildings	Developers	Existing	Started 2010
Tyrol					
Renovation of small-scale hydroelectric power plants	Financial	Funding of consultancy services for small-scale hydroelectric power plant operators	Private individuals, businesses, 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 Funding period: 1 July 2016 – 31 December 2018	Private individuals	Expired	From 1 July 2016 to 31 December 2018
Photovoltaic and storage systems	Financial	Special support programme 'Oberes und Oberstes Gericht' regional planning association 9	Private individuals, businesses, associations, municipalities	In force	Started 2015 Started 2018

		Special support programme 'Pitztal' regional planning association 12 and Special support programme 'Lechtal-Reutte' nature park region			Started 2015
LED municipal street lighting	Financial	Special support programme 'Oberes und Oberstes Gericht' regional planning association 9 Special support programme 'Pitztal' regional planning association 12 and Special support programme 'Lechtal-Reutte' nature park region	Municipalities	In force	Started 2015 Started 2018 Started 2015
So fährt Tirol 2050	Strategic, information	Development of e-mobility strategy (package of measures, communication measures, advisory services and incentive systems)	Private individuals, businesses, 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 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	Private individuals	In force	

		home technology systems using renewable energy sources (e.g. solar, biomass, heat pumps).			
Solar Tyrol - Solar register	Strategic, information	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, businesses, energy industry	In force	2012
Energy efficiency programmes	Strategic, information	Comprehensive product-neutral advisory services	Private individuals, municipalities	In force	Started 2010
Vorarlberg					
Self-sufficiency Vorarlberg	Legislative	Renewable energy sources are to be increased as follows between 2005 and 2020: Hydroelectric power +14%, solar heat +74%, photovoltaic +438%, biogas +37%, wood +12% and ambient heat +50%. An action plan is currently being developed for the new period. Sub-targets include a 100% renewable power supply by 2030 and an increased share of renewable energy in total final energy consumption reaching 50% by 2030.	All	Passed, Government and Landtag Resolution	In force until end of 2020; extension until 2030 under preparation
Renewable energy in buildings	Legislative (Structural Engineering Regulation)	Requirement to use highly efficient alternative heating systems. In the case of new builds and renovations, energy needs must be partly met by renewables.	All	In force	Started 2014
Amendment to Building Law	Legislative	Priority given to the installation of solar and photovoltaic systems on existing buildings	Private individuals, businesses	In force	Started 2015
Follow-up funding to the domestic environmental support scheme	Financial	Investments in renewable energy systems	Businesses, associations	Existing	Started 2016
Residential building subsidy guidelines 2020/2021	Financial (credit)	Installation of wood heating, heat pumps, solar panels, ventilation	Private individuals	Existing	Started 2020

2020 Energy Support Guidelines	Financial (grant)	Installation of wood heating, heat pumps, solar panels, ventilation	Private individuals	Existing	Started 2020
2019 PV electricity storage support	Financial	Installation of PV electricity storage units	Private individuals, businesses	Existing	Since 2019
Vienna					
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, energy consumption will be reduced for heating, cooling and hot water	Private individuals, businesses, municipalities	In force	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, businesses	Existing	
Support for PV and hybrid systems	Financial	Installation of PV or hybrid systems	Private households, businesses	Existing	
Support for electric storage units	Financial	Installation of electric storage units in conjunction with PV/greater share of own-use PV	Private households, businesses	Existing	
PV own-usage calculator	Information	Increase in share of own-use PV	All	Existing	
Solar potential register	Information	Use of roofs for solar panels	All	Existing	
Geothermal heat potential register	Information	Use of geothermal heat and thermal groundwater	All	Existing	
Small-scale wind potential register	Information	Use of roofs/surfaces for small-scale wind turbines	All	Existing	
Amendment to the 2014 Vienna Building Regulation	Legislative	Solar obligation for non-residential buildings	Businesses	In force	Since the end of 2014
Amendment to the 2018 Vienna Electricity Act	Legislative	Extension of simplified procedure to include photovoltaic systems up to 100 kW	All	Existing	Since November 2018
Amendment to the 2018 Vienna Building Regulation	Legislative	Energy area plans, greening of building fronts, increasing the use of renewable energy in residential buildings, banning solid and liquid energy sources in new buildings and major renovations	All	Existing	Since November 2018
Vienna Biomass Support Implementing Act	Legislative	Support for solid-biomass-based green electricity systems	Businesses	Existing	Since December 2019
Upper Austria					
Support for connections to	Financial	Higher proportion of renewable heating	Private households,	Existing	

biogenic district and block heating			municipalities, businesses		
Air conditioning and cooling based on renewable energy sources	Financial	Higher proportion of renewable cooling	Businesses, associations	Existing	
Support for solar heating	Financial	Installation of solar heating systems	Private households, municipalities, businesses	Existing	
Support for biomass heating systems	Financial	Installation of biomass heating systems	Private households, municipalities, businesses	Existing	
Support for geothermal heating systems	Financial	Installation of heat pumps	Private households, municipalities, businesses	Existing	
Support for own-use PV systems	Financial	Increase in PV energy generation	Businesses	Existing	2018, 2019
Support for solar power storage units	Financial	Increase in own-use of PV	Private households, businesses	Existing	2018, 2019
Support for electric charging stations	Financial	Support for converting to alternative propulsion	Municipalities, private households	Existing	
Support for small hydroelectric plants	Financial	Construction and renovation of small hydroelectric power plants	Private households, municipalities, businesses	Existing	
Municipal Energy Programme (GEP) support programme	Financial, information measure	Renewable energy measures		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, businesses	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)	All	Existing	
Construction Engineering Act and Regulation	Legislative	Priority to renewable energy	Private households, municipalities, businesses	Existing	
Clean Air and Energy Technology Act	Legislative	Priority to renewable energy	Private households, municipalities, businesses	Existing	
1993 Upper Austrian Residential	Legislative	Support commits beneficiaries to using renewable energies or	Public administration, natural persons,	Existing	2009

Buildings Support Act		district heating; ban on positive discrimination in favour of certain technology; legal basis for specific rules in Regulations	municipalities, social and church associations, commercial property developers and non-profit housing associations		
Home Support Regulation: obligation to use innovative, climate-related systems if conventional energy sources are used	Support condition.	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: electricity and heat using 100% renewable energy By 2035: mobility using 100% renewable energy	Private individuals, businesses and public administration	Existing	2014
Guidelines on Housing Subsidies	Financial	Installation of biomass systems, district heating connections, heat pumps, photovoltaic systems and thermal solar systems	Private individuals, housing associations	Existing	
Energy Support Guidelines	Financial	Installation of biomass systems, district heating connections and thermal solar systems, own-use PV systems and power storage units for PV systems	Businesses and public institutions	Existing	
Upgrade plans for small hydroelectric plants	Financial	Planning for upgrading small hydroelectric plants	Private individuals, businesses	Existing	
Solar potential register	Information		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	Businesses	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. Systems for generating power are approved on the

basis of statutory specifications which ensure that renewable-energy-based systems are not disadvantaged. Support for green electricity systems 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, operating 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 as of 2018 only raw-material-dependent installations (solid and liquid biomass, biogas) will be recognised as green electricity systems by the Provincial Governor. This will result in administrative simplification for photovoltaic systems, small hydroelectric plants and wind turbines.

3. Application for support filed with the OeMAG (Green Electricity Settlement Centre)

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 2 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 purchase energy if the total electricity fed into the public grid from a green electricity system is delivered to the OeMAG 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).

Generally speaking, 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 grid 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. See in particular grid access fees 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 renewable energy support schemes 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 businesses, territorial units, organisations, associations, religious denominations, etc.
Description	Granting support for retrofitting fleets and motor pools with alternative propulsion and electromobility is an important objective of klima**aktiv** mobil, which serves to increase the proportion of renewable energy sources in transport. The '2019+2020 E-Mobility Offensive' – by the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology (formerly the Federal Ministry of Sustainability and Tourism together with the Federal Ministry of Transport, Innovation and Technology) – for promoting electromobility with renewable energy in cooperation with car importers, two-wheeled vehicle importers and Austrian sports retailers, marked another milestone in advancing the market introduction of electromobility and expansion of support options.
Level of support	Support takes the form of investment subsidies. Support for electric vehicles is primarily granted in the form of 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 made available via klima**aktiv** mobil for the Austrian Programme for Rural Development 2014–2020. Between 2007 and 2018, klima**aktiv** mobil projects (fleet retrofitting, measures to promote cycling and climate-friendly mobility management) received a total of €122.4 million in funding, of which €112.6 million in national funding from the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology under klima**aktiv** mobil, the Climate and Energy Fund and the domestic environmental support scheme. Moreover, they received €9.8 million in EU funding (EAFRD). Around €44.8 million was available for alternative fleets and electromobility.

'E-mobility in practice' support programme under the Climate and Energy Fund:

Title	E-mobility in practice
Target group	Businesses, municipalities, research institutes
Description	Seven electromobility model regions have been set up in Austria since 2008. Building on experience and knowledge acquired to date, the 'E-mobility in practice' tender procedure extended the topic of electromobility further, accelerating its market penetration through targeted awareness-raising initiatives and measures facilitating market entry.
Level of support	In 2017 and 2018, the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology supported two tender procedures each offering €0.5 million for the implementation of e-mobility projects on awareness-raising activities and measures for accelerating market entry.

Support under the Climate and Energy Fund:

Title	Wood heating 2017 and 2018 support measure
Target group	Private households
Description	Support measure 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/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: €2,000. Funding of €800 is provided if an old wood heating system is replaced by pellet- or wood-chip-fired central heating. Lump-sum support of €500 is available for pellet-fired stoves.

Title	Model renovation (2017 and 2018)
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 granted support. 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 as a result of 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 (2017 and 2018)
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 €275 per kWpeak for free-standing systems and roof-mounted systems up to 5 kWpeak. Lump-sum of €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 50 kW (2017 and 2018)
Target group	Agricultural and forestry undertakings
Description	The Climate and Energy Fund supports photovoltaic systems of between 5 and 50 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, with approximately 50% funded by the EU.
Level of support	Lump-sum of €275 per kWpeak for free-standing systems and roof-mounted systems of between 5 and 50 kWpeak. Lump-sum of €375 per kWpeak for photovoltaic systems integrated into buildings of between 5 and 50 kWpeak.
Title	Support for solar panels (2017 and 2018)
Target group	Private individuals
Description	The Austrian Government's Climate and Energy Fund provides support for using environmentally and climate-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: • a lump sum of €700 is paid for solar panel systems •

Title	Solar heating – Large solar-power systems (2017 and 2018)

Target group	All natural persons and legal entities engaged in commercial activity (but not limited to the Industrial Code), especially production plants, commercial and service undertakings, district heating network operators, energy supply companies, 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 area of between 100 and 10,000 m^2 under this programme.
Level of support	The support rate is capped at 40% of environment-related additional investment costs plus any supplementary amounts. Consultation with accompanying research experts is mandatory during the application procedure.

Title	Solar House demonstration project (2017 and 2018)
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 the investment costs relating to the environment. Support is limited to a maximum of €17,000 per project.

Title	Climate and energy model regions 2017 and 2018
Target group	• Municipalities • Municipally owned enterprises, including undertakings with a market-driven activity • Other commercially active organisations, public institutions, associations and 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 comprehensive climate and energy model regions programme: • Photovoltaic systems on public buildings/property • Wood heating in public buildings • Thermal solar power systems on public buildings • Thermal energy storage for heating and cooling (new in 2018)
Level of support	**Amount of support for photovoltaic systems** The amount of support for photovoltaic systems is • €275 per kWp for free-standing systems and roof-mounted systems + €100 per kWp national supplement • €375 per kWp for systems integrated into buildings + €100 per kWp national supplement **Amount of support for wood heating** Support is provided as a non-repayable net investment subsidy dependent on the installed system performance (kW), amounting to €155 per kW for the first 50 kW (0–50 kW) and €70 per kW for each additional kW (51–399). **Amount of support for thermal solar power systems >100m²** Support is provided as a non-repayable net investment subsidy dependent on the installed collector surface area, amounting to €150 per m^2 for standard collectors, €195 per m^2 for evacuated tube collectors, and €125 per m^2 for air collectors. **Amount of support for thermal energy storage for heating and cooling** The support rate is capped at 45% of environment-related costs. Eligible costs must amount to at least €50,000.

Other measures

klimaaktiv as a benchmark for learning and further training

As a national climate action initiative, klima**aktiv** has demonstrated over 15 successful years through information, advice, training and quality standards, what methods and solutions exist whereby every person, company, commune and household can help tackle climate change. So as to lead by example even now, klima**aktiv** offers

encouragement for municipalities to switch to climate-friendly heating systems, for companies to adopt climate-active mobility management, for targets to be agreed for individual projects and for corporate goals to be set for large companies. Together with training providers, klima**aktiv** ensures that essential further training is provided and that professionals in the field of energy transition are qualified. In total, more than 21,000 people have already taken part in training with klima**aktiv** content. Furthermore, 18 klima**aktiv** training partners present klima**aktiv**'s standards as part of their training. An e-learning platform is available for nine course areas with more than 750 participants. As part of klima**aktiv**'s 'energy-efficient businesses' programme, 728 provincial energy advisors received training on the latest standards for the most important production technology. Approximately 1,715 driving instructors became qualified SpritSpar trainers (eco-driving initiative) for passenger vehicles, HGVs/buses and tractors and 38 klima**aktiv** mobil driving schools were certified.

Support under the domestic environmental support scheme (UFI):

Target group	Support may be claimed by any Austrian business, 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 the environment-related costs, depending on the focal point of the support. In 2017 and 2018, up to €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 in place, aimed at achieving energy savings and, at the same time, using renewable energy sources in buildings.

Target group	Support is targeted 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 the environment-related costs, depending on the focal point of the support. Under the 'renovation offensive', €43.5 million in federal funding was available to applicants in 2017, and €42.6 million in 2018.

UFI support in 2017

Support sector	Purpose of project	Rate of support with or without EU cofinancing
Energy supply		
Environmentally friendly heating	Wood heating < 400 kW *	€155/kW up to 50 kW €70 for each additional kW
	District heating connection < 400 kW *	€35 or €70/kW up to 100 kW (fossil fuel or biogenic network) €18 or €35/kW for each additional kW
	Thermal solar power systems < 100 m² *	€150/m² for standard collectors €195/m² for evacuated tube collectors €125/m² for air collectors
Waste heat recovery	Recovery of industrial or commercial waste heat and feeding into block and district heating networks	35% / 30%
Wood heating for undertakings' own supply	Boiler ≥ 400 kW	35% / 30%
	Boiler in micro-network	35% / 30%
Block heating supply based on renewable energy sources	Block heating network	30% / 25%
	Boiler replacement	-/ 15%
	Combined heat and power	-/ 20%
	Geothermal	-/ 30%
	Optimisation of block 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	€70/kW
District heating for undertakings		
	System ≥ 400 kW	30%/35% biogenic network 20%/15% fossil fuel network
Heat pumps for undertakings	Small heat pump (< 400 kWth)	€85/kWth up to 80 kWth, €45/kWth for each additional kW (water-water) €70/kWth up to 80 kWth, €35/kWth for each additional kW (air-water)
	Large heat pump (≥ 400 kWth)	20% / 15%
Thermal solar power systems for undertakings		
	System ≥ 100 m²	25% / 20%
Power generation on islands based on renewable energy sources	Solar, wind, hydro	35% / 30%
Manufacturing of biogenic fuels 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 heat and power for undertakings	Combined electricity and heat production	30% / 25%

Energy conservation		
Thermal building renovation for undertakings	Thermal insulation of buildings over 20 years old:	
	'Complete renovation'	15 to 30%
	Individual measures	€6 to €50/m²
New builds with energy-efficient construction	Heating and overheating protection for new builds	Reduction in heating requirements: €0.65 to €0.95/kWh / €0.60 to €0.90/kWh
Energy savings in undertakings	Building equipment and appliances, energy recovery from production processes, heat recovery	35% / 30%
	Optimisation of street and outdoor lighting	€25/light source (0 to 40 W) or €50/light source (> 40 W) Supplement for lighting control: 20%
	Heat recovery in cooling and ventilation systems < 100 kWth	€160/kWth (0 to 30 kWth) and for each additional kW. €80/kWth (31 to 99 kWth)
Indoor LED systems	Conversion to LED lighting systems	€600 to €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 strategies	-/ 20 to 30%
	Positive environmental influence due to 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	€2,500/vehicle
	Dust filter in biomass boilers	-/15-20%
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 building renovation for undertakings	Thermal insulation of buildings over 20 years old	15 to 30%
Renovation check for private individuals	Thermal insulation of buildings over 20 years old and conversion of heat generation systems	€3,000 to €9,000 max. 30%
Renovation check for private individuals	Thermal insulation of buildings over 20 years old	€3,000 to €4,000 max. 30%

Multi-floor residential buildings	and conversion of heat generation systems	

Support sector	Purpose of project	Rate of support with or without EU cofinancing
Energy supply		
Environmentally friendly heating	Wood heating < 400 kW *	€155/kW up to 50 kW €70 for each additional kW
	District heating connection < 400 kW *	€35 or €70/kW up to 100 kW (fossil fuel or biogenic network) €18 or €35/kW for each additional kW
	Thermal solar power systems < 100 m² *	€150/m² for standard collectors €195/m² for evacuated tube collectors €125/m² for air collectors
Waste heat recovery	Recovery of industrial or commercial waste heat and feeding into block and district heating networks	35% / 30%
Wood heating for undertakings' own supply	Boiler ≥ 400 kW	35% / 30%
	Boiler in micro-network	35% / 30%
Block heating supply based on renewable energy sources	Block heating network	30% / 25%
	Boiler replacement	- / 15%
	Combined heat and power	- / 20%
	Geothermal	-/ 30%
	Optimisation of block 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	€70/kW
District heating for undertakings	System ≥ 400 kW	30%/25% biogenic network 20%/15% fossil fuel network
Heat pumps for undertakings	Small heat pump (< 400 kWth) *	€85/kWth up to 80 kWth, €45/kWth for each additional kW (water-water) €70/kWth up to 80 kWth, €35/kWth for each additional kW (air-water)
	Large heat pump (≥ 400 kWth)	20% / 15%
Thermal solar power systems for undertakings	System ≥ 100 m²	25% / 20%
Power generation on islands based on renewable energy sources	Solar, wind, hydro	35% / 30%
Manufacturing of biogenic fuels 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 heat and power for undertakings	Combined electricity and heat production	30% / 25%

Energy conservation		
Thermal building renovation for undertakings	Thermal insulation of buildings over 20 years old	15 to 30%
New builds with energy-efficient construction	Heating and overheating protection for new builds	Reduction in heating requirements: €0.65 to €0.95/kWh / €0.60 to €0.90/kWh
Energy savings in undertakings	Building equipment and appliances, energy recovery from production processes, heat recovery	35% / 30%
	Optimisation of street and outdoor lighting	€25/light source (up to 40 W) or €50/light source (> 40 W)
	Heat recovery in cooling and ventilation systems < 100 kWth *	€160/kWth up to 30 kWth, €80 for each additional kWth
Indoor LED systems	Conversion to LED lighting systems *	€600 to €700/kW
Air conditioning and cooling for undertakings	Energy from waste heat/renewable energy sources	GWP ≤ 150: 35% / 30% GWP > 150 and ≤ 1,500: 25% / 20%

Other support schemes		
Raw material management in undertakings	Efficiency improvements and innovative service strategies	- / 20% to 30%
	Positive environmental influence due to 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 *	€2,500/vehicle
	Dust filter in biomass boilers	- / 25%
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 building renovation for undertakings	Thermal insulation of buildings over 20 years old	15 to 30%
Renovation check for private individuals	Thermal insulation of buildings over 20 years old and conversion of heat generation systems	€3,000 to €12,000 max. 30%
Renovation check for private individuals; Multi-floor residential buildings	Thermal insulation of buildings over 20 years old	€3,000 to €5,000 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, businesses, 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 (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). Support is provided via fixed purchase tariffs for the green electricity generated and fed into the public grid.

The Act amending the 2012 Green Electricity Act was published on 26 July 2017 (BGBl. I No 108/2017). 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 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 one-off 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 €16 million to €20 million and funding rates have also been increased. Finally, entirely new investment support is being introduced for photovoltaic systems and power storage units.

Support quotas

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

€8 million for photovoltaic systems;
€10 million for solid and liquid biomass and biogas, of which €3 million for biomass with a bottleneck capacity of up to 500 kW (capped at €1 million for biogas as of 2018);
€11.5 million for wind power;
€1.5 million for small hydroelectric plants (€2.5 million as of 2018), and
€19 million to other areas (reduced each year by €1 million; as of 2018, €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, as amended, 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 2017 were set in the 2016 Green Electricity Feed-in Tariff Regulation (BGBl. II No 459/2015, as amended by BGBl. II No 397/2016). For 2018, new feed-in tariffs were set out in Regulation BGBl. II No 408/2017. The applicable tariffs are also published on the support body's website www.oem-ag.at. Figure 2 is a table summarising the feed-in tariffs set by Regulation for 2017 and 2018 for purchasing electricity from wind, biomass, biogas, landfill gas and sewage gas, geothermal

energy and photovoltaics:
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

FEED-IN TARIFFS FOR NEW GREEN ELECTRICITY SYSTEMS 2017/2018		**Tariff in cents/kWh** for 2017 in accordance with BGBl. II No 459/2015, as amended by BGBl. II No 397/2016; for 2018: BGBl. II No 408/2018
Technologies not dependent on raw materials		**13-year period**
Wind energy		8.95 / 8.20
Photovoltaic	2017: 5 kWp up to 200 kWp (on or in a building)	7.91 cent/kWh + €375/kWp investment subsidy
	2018: 5 kWp up to 200 kWp (on or in a building)	7.91 cent/kWh + €250/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	5.71 / 5.65
	Landfill gas	4.75 / 4.70
Geothermal		7.36 / 7.29
Small hydroelectric power plants		
New plants or >50% renovation	for the first 500,000 kWh	10.25 / 10.30
	for the next 500,000 kWh	7.36 / 8.44
	for the next 1,500,000 kWh	6.43 / 7.32
	for the next 2,500,000 kWh	5.37 / 4.46
	for the next 2,500,000 kWh	5.07 / 4.09
	above 7,500,000 kWh	4.82 / 3.23
Power buoys	for the first 500,000 kWh	none/13.00
	above 500,000 kWh	none/12.02
<50% renovation	for the first 500,000 kWh	8.02 / 8.60
	for the next 500,000 kWh	5.85 / 6.83
	for the next 1,500,000 kWh	5.07 / 5.83
	for the next 2,500,000 kWh	3.69 / 3.59
	for the next 2,500,000 kWh	3.42 / 3.31
	above 7,500,000 kWh	3.14 / 2.54
Technologies dependent on raw materials		**15-year period**
Solid biomass (such as logwood, straw)	High efficiency up to 500 kW	22.00 / 21.78
	up to 500 kW	18.61 / 17.33
	500 kW up to 1 MW	16.15 / 14.77
	1 MW up to 1.5 MW	14.82 / 13.30
	1.5 MW up to 2 MW	14.33 / 12.62
	2 MW up to 5 MW	13.74 / 11.86
	5 MW up to 10 MW	13.26 / 11.22

	over 10 MW	10.50 / 10.10
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	4.75 / 4.70
Co-firing		Pro rata
Combustion in thermal power plants	Solid biomass	5.82 / 5.76
	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	5.51 / 5.45
	Supplement for production in efficient CHP	2.00
Biogas from agricultural products (such as maize, slurry)	up to 250 kW	18.48 / 19.14
	250 kW to 500 kW	15.99 / -
	500 kW up to 750 kW	12.84 / 16.24
	over 750 kW	12.38 / -
	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	11.55 / 11.43
	2 MW to 10 MW	9.95 / 9.85
	over 10 MW	9.55 / 9.45
Biogas from agricultural products (such as maize, slurry)		
	up to 250 kW	11.00 / 15.57
	over 250 kW	9.55 / 16.57
	Biogas with co-fermentation of waste	minus 20%

2017 feed-in tariffs in accordance with the 2016 Green Electricity Feed-in Tariff Regulation (ÖSET-VO 2016) Source: BGBl. II No 459/2015, as amended by BGBl. II No 397/2016;
2018 feed-in tariffs in accordance with the 2018 Green Electricity Feed-in Tariff Regulation (ÖSET-VO 2018) Source: BGBl. II No 408/2017

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 groups of green electricity suppliers. On the other hand, operators are also able to temporarily switch during the support period from the Ecobalance Group to 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 systems 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 (EIWOG):** **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 the 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 this 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 verified by an auditor or a generally chartered and certified electrical engineer. The outcome must be published in a clear format and confirmed by the audit body 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 assigned 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 as 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 carries out an annual survey of domestic research, development and demonstration projects in the energy sector which are financed publicly. The public authorities provided €128.4 million in 2015 and €140.9 million in 2016 for energy research in Austria. As in the previous years, 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 (€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 of 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 €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). Published by: 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. Under the domestic environmental support scheme, funding is focused on the 'production of biogenic fuels and motor fuels' and 'energy recovery from biogenic raw materials and residue'. The conditions for support can be found in Figures 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 tool explaining how a megawatt hour of electricity fed into the public grid was generated. 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. These systems can be subdivided into supported/unsupported systems. All systems supported under the Green Electricity Act which have a contract with the OeMAG 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 OeMAG. 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. The latter then supply final customers with electricity. Guarantees of origin therefore serve as the basis for electricity labelling. **<u>Excerpt from the 2012 Green Electricity Act, as last amended:</u>** **Section 10 Guarantee of origin for green electricity systems** (*2) Grid operators to whose grids green electricity systems are connected, shall issue guarantees of origin to system operators, where requested, in respect of quantities of electricity fed from those systems 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 by E-Control in cases of doubt** (*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 as a minimum with 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 system to the HKN database in the month after the electricity is produced, 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 make use of the guarantee of origin, e.g. transfer it to the accounts of electricity suppliers or traders.

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)	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Biomass supply for heating and electricity:												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings, etc.)**	8,000,000	8,100,000	1,582	1,602	1,000,000	1,000,000	198	198	--	--	--	--
Indirect supply of wood biomass (residues and co-products from wood industry, etc.)**	9,300,000	9,700,000	1,575	1,643	6,200,000	6,400,000	1,050	1,084	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.) **	720,835	795,673	180	198	0	0						
Others (please specify)	2,373,485	2,292,547	532	518	0	0						
Biomass supply for transport:												
Bioethanol [2)] **Biodiesel**	261,100 31,600	229,700 29,600	20.7 17.5	23.2 20.2	47,200 370,500	51,200 420,900	31.1 327.4	33.0 372.0	1,000 66,500	890 63,500	0.65 58.7	0.57 56.1
Energy crops (grasses	30,387	29,721	13.3	13.2	-	-	-	-	-	-	-	-

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 2017, approximately 105,300 additional tonnes of bioethanol (=67,900 toe) and in 2018 approximately 109,400 additional tonnes of bioethanol (=70,300 toe) from domestic production were exported.
3) Short rotation areas (fast-growing trees) and Miscanthus.

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

Land use	Surface (ha)	
	2017	2018
1. Land used for common arable crops (wheat) and oilseed (rapeseed)	52,200	45,500
2. Land used for short rotation trees (80% poplars, 20% willows)	1,211	1,195
3. Land used for other energy crops such as grasses (Miscanthus, etc.)	1,125	1,071

N.B.:

Gross area excluding combined production of high-value protein feed. Considerable differences in yield and changes in data collection methods were responsible for the large difference between 2015 and 2016 (in terms of the use of domestic raw material and, consequently, the surface area indicated in Table 4a).
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 taking account of the area's aliquot parts for combined production of protein feed (DDGS, rapeseed 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).
Austrian bioethanol production has since made use of considerable volumes of raw material from starch production residues (approximately 7% of raw materials in 2018), reducing conventional raw material use and the area needed for it. The same is true of biodiesel production. The share of raw materials in domestic biodiesel production accounted for by used cooking oil is rising steadily, and the surface area needed is falling in turn.

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 primarily come 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 providing information on all aspects of land use (LULUCF) in accordance with Article 10 of Decision No 529/2013/EU. The data is also used in the annual greenhouse gas inventory reports.

Energy biomass use continues to be viewed as having a very minor impact on agricultural commodity prices in Austria. The volume and quality of the annual harvest (in Austria, the EU, worldwide) is by far the factor which most influences commodity prices for crops.

Forestry biomass:

After decades of falling revenue from wood (real prices), all stocks saw a moderate price increase between 2015 and 2017 (for both material and energy use). 'Industrial wood' stock, for example, attained nominal price levels from the 1970s.

There were many reasons for the moderate increase in wood prices. 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 a considerable oversupply of wood has been observed on the market, in particular as a result of extreme events. Consequently, wood prices have fallen significantly. No reversal in this trend is currently in sight.

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.

According to an interim assessment of the latest forest inventory (2016-2018), approximately 88% of timber growth is used ('use' includes not only harvested wood but also harvest losses, deadwood, etc.). 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, sustainability criteria for wood biomass were introduced in the revised Renewable Energy Directive (Directive (EU) 2018/2001). How proof is actually provided still remains to be established in the implementing legislation. In this regard, it is important that the rules are not excessive. Efforts (financed by EU resources) to match wood use to sustainable growth must not be undermined.

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 175,000 tonnes in 2017 and in 2018. 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.

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

Biofuels pursuant to Article 21(2)[27]	2017	2018
Production – biodiesel	260.5	253.8
Consumption – biodiesel	411.9	448.4
Total production Art. 21(2) biofuels	156.6	153.8
Total consumption Art. 21(2) biofuels	8.40	6.70
% share of Art. 21(2) fuels from total RES-T	1.7%	1.3%

[27] 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 rural development support programme, in cooperation with open-minded farmers and foresters, in a bid to reconcile agricultural and forestry production, maintenance of a varied, multi-purpose agricultural landscape and promotion of 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 Federal Ministry of Sustainability and Tourism Regulation on agricultural raw materials for biofuels and bioliquids, BGBl. II No 124/2018, 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 2015 (NGP 2015), in cooperation with the provincial water management planning departments. It is published on the Ministry's website. (https://www.bmnt.gv.at/wasser/wisa/fachinformation/ngp/ngp-2015.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. Alongside the international systems approved by the European Commission, three

national systems are recognised on the basis of bilateral agreements (Slovenian, Slovakian and Italian systems). The designation 'BLE' used in the table (Federal Agency for Agriculture and Food) concerns quantities of biofuels imported by Austria under the nabisy system[28] and transferred via the electronic interface nabisy – elNa. This evidence is collective evidence in the nabisy system which indicates several certification systems for a single biofuel. In such cases, information in the elNa system cannot be clearly attributed to specific biofuels and is therefore presented with the designation BLE.

Table 6: Certification systems for marketed volumes, presented separately for each biofuel (2018 data)

	Volume [m³]	Mass [t]
Biodiesel (FAME)	**542,091**	**483,545**
2BSvs	10,964	9,780
AACS(AMA)	2,619	2,336
BLE	143,895	128,354
ISCC DE	14,951	13,337
ISCC EU	293,002	261,358
Red Cert	8,478	7,562
Red Cert EU	40,526	36,149
Slovakian national system	27,656	24,669
Bioethanol	**113,527**	**88,324**
2BSvs	1,273	990
AACS(AMA)	746	581
BLE	20,943	16,294
ISCC DE	46,308	36,027
ISCC EU	25,865	20,123
Red Cert EU	6,400	4,979
Slovakian national system	11,991	9,329
HVO	**23,071**	**17,834**
2BSvs	14,508	11,215
BLE	2,850	2,203
ISCC EU	5,561	4,299
Red Cert EU	151	117

As shown above, the certification systems used are distributed depending on the individual types of biofuel.

[28] 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 Office for Agriculture and Food. This system is also used in other Member States.

In the case of biodiesel, the voluntary system ISCC EU is used most (54%). For bioethanol, ISCC DE and ISCC EU have a combined market share of 64%.

In the case of hydrogenated vegetable oil, 2BSvs dominates the market as the most-used certification system, accounting for almost 63%.

The BLE entry – representing 25% for FAME, 18% for ethanol and 12% for HVO – 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 involving 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 elNa (the Austrian biofuels database) 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 system has internal verification mechanisms which automatically verify the plausibility of the data entered before it generates proof of sustainability. On-site checks are also carried out to verify the data entered by market operators. These checks are carried out by technical experts from the Federal Environment Agency. Furthermore, the database is checked on an ongoing basis to ensure that input errors are detected in good time. On-site checks look more 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.)
- Verification of accuracy of data reported by businesses under Section 20 of the 2012 Fuel Regulation
- Verification of existence and validity of contracts under the Fuel Regulation.
- Review of the available management system (quality assurance, storage, traceability of data and documents, competences, etc.)
- Additional support measures in conjunction with elNa

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 use of renewable energy[29]	2017	2018
- Estimated net GHG savings from the use of renewable electricity	15.1	14.9
- Estimated net GHG savings from the use of renewable energy in heating and cooling	9.8	9.9
- Estimated net GHG savings from the use of renewable energy in transport	1.6	1.6

N.B.: The data for 2017 are taken from the publication 'Renewable Energy in Figures 2018 – Development of Renewable Energy in Austria Based on 2017 Data'. It also describes the calculation assumptions and factors. Values for 2018 were generated by the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology on the basis of the calculation assumptions and factors from this publication.

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

[29] 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/estimated excess 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)[30,31].

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	No statistical transfers between Member States or participation in joint projects with other Member States or third countries are currently planned with a view to meeting the target of a share of 34% renewables in gross end energy use.

[30] 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 from previous reports.
[31] 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 using information which in turn is based on samples for which the geographical scope is to be expanded. Energy generated from waste, based on volumes of incinerated waste under the following categories of primary energy sources: a) 'Refuse': household refuse, untreated (SN 91101 and SN 91501 and SN 91307) - fossil content b) 'Refuse – bio-content': household refuse, untreated (SN 91101 and SN 91501 and SN 91307) - biogenic content c) 'Waste with a high biogenic content (household waste)': Residues from mechanical waste processing (SN 91103) and bulky waste (SN 91401) *Category to be renamed in 2018* d) 'Waste': Industrial waste - fossil content e) 'Waste with a high biogenic content (industrial/commercial waste)': Industrial waste - biogenic content Waste codes are based on waste reports in accordance with the AWG (Waste Management Act) and AVV (Waste Incineration Regulation).

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Statistics Austria www.statistik.at

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