





# EXPERT EVALUATION NETWORK DELIVERING POLICY ANALYSIS ON THE PERFORMANCE OF COHESION POLICY 2007–2013

YEAR 1 - 2011

## TASK 1: POLICY PAPER ON RENEWABLE ENERGY AND ENERGY EFFICIENCY OF RESIDENTIAL HOUSING

## AUSTRIA

VERSION: FINAL

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A report to the European Commission Directorate-General Regional Policy

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## LIST OF ABBREVIATIONS

- EE Energy Efficiency
- EEN Expert Evaluation Network
- ERDF European Regional Development Fund
- EAFRD European Agricultural Fund for Rural Development
- ETC European Territorial Co-operation
- RES Renewable Energy Sources
- RC & C Regional Competitiveness and Cohesion programmes
- UFI Umweltförderung im Inland

## **1. EXECUTIVE SUMMARY**

The increase in the share of **renewables** and the improvement of **energy efficiency of residential housing** are **priority goals** of the Austrian Climate Strategy (2002/2007) and of the Austrian Energy Strategy (2010), in line with the EU climate and energy package (2008).

The main instruments of **national policy to support renewables** include feed-in tariffs guaranteed for a period of 13-20 years, direct support for investments and research through grants, support for infrastructure networks and accompanying soft measures. Approximately **EUR 418 million per year** of national public funds are available to support renewable energy sources (RES). The focus of support is on biomass, wind power and biogas. Since a number of the larger biomass plants and heating networks which were funded in the past are now too big and work inefficiently, a quality management system was introduced in the year 2006. Austria is probably the only country in Europe which has such an obligatory quality management system for all subsidised projects.

Since the EU funds are fully integrated in the national funding system, the ERDF and – to a larger extent – the EAFRD co-funding help to cover part of the demand to support the diffusion of **biomass systems**. The allocation of ERDF funding to support RES in relation to overall programme budget tends to be small. ERDF financing allocated to renewables (esp. biomass) amounts to about 5% of the total ERDF. In relation to national grants provided for biomass support, ERDF commitments amount to around 6%.

ERDF funds allow wider coverage and a larger number of projects to be funded although they are not a significant part – in terms of funding – of national policy. However, it has to be noted that RES support is – as a **technology field** – linked to the regional innovation and competitiveness policy pursued by the Austrian ERDF programmes and plays in that respect a more important role in the regional strategies than is demonstrated by financial figures only.

In the case of support for **energy efficiency in residential housing** a combination of regulatory measures and direct funding support is applied. In order to develop a coherent approach nationwide to increasing technical standards, agreements were made between central and regional governments to oblige regions to set ambitious aims with respect to energy efficiency and the use of RES. With respect to funding schemes, approximately EUR **452 million** are available each year to directly improve the energy efficiency of residential housing. A large part of this funding stems from the "Wohnbauförderung" (housing support) and from economic recovery packages to contribute to employment.

Energy efficiency of residential housing is not supported by Austrian ERDF- programmes and is covered only by national sources.

## 2. NATIONAL POLICY

#### **Background information**

Austria has one of the largest shares of renewables in total energy consumption in the EU. In 2005, renewables accounted for 23.3% of total energy consumption (as against 8.5% for the EU as a whole), with biomass accounting for 54% and hydropower for 43% (see Annex Table B). Traditionally, large scale hydropower plants (along rivers and in the Alps) have provided the highest proportion of electricity generated from renewables in Austria. For heating, biomass (e.g. firewood and biogas) is used widely in Austria. In contrast, the more modern technology-based sources of energy such as photovoltaic, wind, solar thermal and geothermal are not widespread and currently play a minor role (though high growth is expected).

In order to achieve the ambitious targets of the EU climate and energy package (2008), a process was initiated in 2009 for the development of the **Austrian energy strategy** (April 2010) which has three priorities (i) increasing energy efficiency (ii) increasing the share of renewables in energy consumption from 24.4% in 2005 to 35.5% in 2020 and (iii) increasing the security of energy supply<sup>1</sup>. Increasing energy efficiency in the two main areas of consumption, heating and transport – and the stabilisation of gross energy consumption at 2005 levels – is the **core objective**<sup>2</sup>. Without this stabilisation through energy efficiency measures in all sectors (not only in residential housing) the policy of energy sustainability is doomed to fail.

The energy strategy sets out a number of detailed measures<sup>3</sup> (horizontal measures and action relating to buildings, production of goods and services and mobility) managed at **central and regional level**. Besides major measures at central government level, most of the **regional governments** have developed strategies<sup>4</sup> and funding schemes (with limited means) to foster sustainable energy supply and contribute to the EU climate and energy package. Regions have set ambitious objectives in a number of cases (e.g. the aim in Vorarlberg of achieving energy autonomy in 2050). The regional strategies cover both policy areas (renewable energy and energy efficiency of residential housing) as well as having other goals, such as reducing motorized individual transport or raw material use.

<sup>1</sup> The National Renewable Energy Action Plan Austria (NREAP, June 2011) subsequently submitted to the European Commission is based on the above mentioned Energy Strategy Austria.

<sup>2</sup> EnergieStrategie Österreich, p. 6

<sup>3</sup> A number of measures already exist, others are in the process of being developed (e.g. climate protection law) or are being discussed (e.g. incorporating the energy and climate targets in spatial planning or in an ecological tax reform), though practical implementation is uncertain.

<sup>4</sup> Examples for regional energy strategies: Energiestrategie Steiermark 2025, Klimaprogramm Niederösterreich for the period 2009 –2012, Oberösterreichische Energiestrategie – Energiezukunft 2030, Tiroler Energiestrategie 2020, Energiezukunft Vorarlberg, Energieleitbild Salzburg.

#### Policies in place to support renewable energy sources (RES)

To increase the share of renewables, a broad mix of instruments is offered such as feed-in tariffs guaranteed for a period of 13-20 years (financed by electricity consumers), direct support for investments and research through grants, support for infrastructure networks and accompanying soft measures (awareness, quality control).

Approximately **EUR 418.0 million per year of** national public funds are available to support RES<sup>5</sup>. The most important measures in place are the Green Electricity Act (Ökostromgesetz) and environmental funding at national level ("Umweltförderung im Inland" – UFI) both provided by Central Government. Up to now minor effects in terms of the reduction of RES support can be noted due to the aftermath of the economic downturn<sup>6</sup>.

Green electricity has experienced strong growth since the **Green Electricity Act** came into force in 2003. About EUR 280 million (2010) for feed-in tariffs and EUR 20 million (2010) for investment support in small scale hydro power are provided per year. Most of the plants entitled to support are wind power and biomass. The subsidies available, however, are only partly able to meet demand. For years, there have been many more applications than actual projects approved.

Moreover, there is a serious bottleneck in the support of small-scale photovoltaic systems provided by **KLI.EN**. The EUR 35 million available (see the Table A below) was committed within hours. With respect to the allocation for Styria, it took only 66 seconds to commit the funds (web-based application)<sup>7</sup>.

The **environmental funding at national level (UFI)** is a core central government measure to support RES at company level. Commercial RES projects are mainly located in tourism, manufacturing and energy and water supply. Most of the funding (non repayable grants) is allocated to biomass and solar energy systems. The UFI has registered a strong growth in demand for funding since 2003 and demand far outweighs the amount of funding available. The ERDF and – to a larger extent – the EAFRD co–funding has helped to meet demand to some extent. However, the major part of financing comes from national sources.

The following table gives an overview of measures by type, authority responsible and volume (if known) in respect of renewable energy sources (RES, including biomass plants, biogas plants, small hydro power plants, wind power, solar thermal and photovoltaic).

<sup>&</sup>lt;sup>5</sup> Data available on financial policy support instruments are limited in detail. The total scale of financial support provided for RES by all levels of government is not known. Comparable data on the main focus of the funding at regional level is also not available.

<sup>&</sup>lt;sup>6</sup> E.g. funds available for UFI 2007: EUR 49.8 million 2010: EUR 48.6 million

<sup>7</sup> Profil No 20, May 2011, p. 20

#### Table A - Overview of existing funding support for RES

Funding instruments	National public funds per year for RES support	EU funds per year	EU funds as% National
The Green Electricity Act (Ökostromgesetz); by Central Government; defines the feed-in tariff for electricity from RES; most funded systems are related to wind power and biomass. Feed- in premiums give RES producers a guaranteed additional amount above the market price for electricity.	EUR 280 million (2010) for feed-in tariffs (varies) EUR 20 million (2010) for investment support in small scale hydro power	no	
<b>Umweltförderung im Inland (UFI),</b> by Central Government, total annual funding budget is about EUR 90 million; subsidies for small heat pumps, biomass and solar thermal systems, only for businesses (not for private person), most of the funds are related to biomass plants. Co-funded by ERDF and EAFRD. In the period from 1993 to 2009 about <u>EUR 2.0</u> <u>billion</u> national public funds were spent for RES support.	EUR 48 million (2009) for specific RES support	EUR 4.5 million (ERDF) EUR 9.0 million (EAFRD)	28% in total (9% ERDF)
<b>Klima:aktiv</b> , established 2007, by Central Government; annual funding budget is about EUR 18 million; only partly related to RES; Klima:aktiv is an soft-measure programme (advisory services) which does not finance any investments but aims at the optimization of the promoted systems	Approx. EUR 1 million	no	
Klima- und Energiefonds (KLI.EN), established 2007, by Central Government, annual funding budget is about EUR 150 million for a number of programmes (2009: 15 programmes) which are partly related to RES, support for research activities and market development as subsidies for small photovoltaic systems	EUR 35 million (2010) for small photovoltaic systems	no	
<b>"Wohnbauförderung",</b> by regional governments, for the new construction and refurbishment of residential housing; about EUR 3 billion total public funds per year (subsidies and/or soft loans); the use of RES is part of the refurbishment and <u>indirectly</u> promoted (the use of RES is in some cases a condition for obtaining the housing subsidy)	RIS specific volume is not known due to federal structures which are not easy to analyse	no	
<b>RES related Research and Development</b> , mainly supported by Central Government, about EUR 24 million in 2008 (www.energieforschungsstrategie.at)	EUR 24 million (2008)	no	
Wärme- und Kälteleitungsausbaugesetz (WKLG); by central government, support for district heating and cooling infrastructure networks, which are also used for RES (but not solely for RES), overall annual funding budget is max. EUR 60 million, see www.awista.at	No data accessible	no	
<b>Regional subsidy schemas</b> for small RES systems are in place in the Bundesländer Wien, Niederösterreich (NÖ), Oberösterreich (OÖ) und Steiermark, Tirol, Vorarlberg; in a few cases co-funded by ERDF	Approximately EUR 5 to 10 million (estimate)	Co- funded in OÖ and NÖ by ERDF	
Qualification and certification schema for installers of RES systems (by a certification body)	No data accessible	no	
Total	Min EUR 418.0 million per year	EUR 13.5 mill./a	3% (ERDF, EAFRD)

Source: Ökostrombericht 2010; Umweltförderungen des Bundes 2009; <u>www.awista.at</u>, not listed: tax exemption for bio fuel

#### Incentives for efficient biomass plants

Large biomass plants for the generation of electricity and heat were strongly developed with the support of public subsidies in the period from 2003 and 2006 (see Ökostrombericht 2010, p. 147). In the meantime – also on account of the rising raw materials costs – a certain consolidation has been reached.

In the past, the majority of the biomass plants and heating networks were not properly planned and implemented (see http://www.klimaaktiv.at/article/archive/25267/). Many of the subsidised plants were too big and inefficient. As a result, they had economic problems (Österreichisches Industrie Magazin, p. 30). In order to use public funds more efficiently, in 2006 the Ministry for Agriculture, Forestry, Environment and Water Management (BMLUFW) introduced a quality management system in the framework of the klima:aktiv programme. Austria is to our knowledge the only country in the EU to have introduced such an <u>obligatory</u> quality management system (in Switzerland and in southern Germany there is consultancy on a voluntary basis).

#### Quality Management System

The aim of the programme "qm heizwerke" is an accompanying quality control in the planning, setting up and running of biomass heating plants ("Biomasseheizwerke"). Through this, a technical and economic optimisation of the existing and new plants should be achieved. Participation in the quality management system is an obligatory requirement for the receipt of a subsidy (national subsidy with an occasional contribution from the ERDF or EAFRD) for biomass heating plants with a capacity of 400kW and/or a network length of 1,000m (it can sometimes also be used for co-generation plants). An independent and certified quality manager is put at the disposition of the builders and planers at the beginning of the process. The former ensures that the quality standards are maintained during the building and running of the biomass plant. He or she gives the builders advice and the whole enterprise is controlled and optimised through a running, automatic data collection. The costs of the quality manager can be included in the grant. From 2007 onwards a project database was developed. The database offers a comprehensive overview of the biomass heating plants and allows a comparative observation and the development of benchmarks. The quality management system is being implemented by the LandesEnergieVerein Steiermark (Provincial energy association of Styria).

For further information refer to: www.qm-heizwerke.at

#### Policies in place to support energy efficiency (EE) of residential housing

The objective is to increase the renovation rate in the existing building stock and to achieve increasingly low energy standard in new buildings. The current renovation rate of about1% per year for thermal rehabilitation is not sufficient to meet the targets of the climate strategy. Therefore, an annual renovation rate of 3% in residential housing is envisaged, which should be achieved through a combination of regulatory measures and direct funding support. The most important financial instruments are the targeted use of housing funds

(Wohnbauförderung) and funds from the economic recovery packages. Moreover, the development of technical standards and building of awareness are supported<sup>8</sup>.

Regulatory measures play a significant role as regards the energy efficiency of residential housing. Responsibility for implementing measures for buildings lies with the Bundesländer (regional governments). Technical building standards relating to energy efficiency ("höchstzulässigen Heizwärmebedarf") are set by regional legislation. In order to develop a coherent approach nationwide to increase technical standards, agreements were made between central and regional governments (Art. 15a, BGBL. Nr. 351/1980, BGBL. Nr. 388/1995, BGBL. II Nr. 251/2009) to oblige the regions to set ambitious criteria for energy efficiency and the use of RES as a condition for obtaining housing subsidies ("Wohnbauförderung") (Österreichs JI/CDM–Programm 2009, p.11).

Around **EUR 452 million** a year are available for direct funding schemes including partly the housing subsidies ("Wohnbauförderung"), which are difficult to obtain data for. Residential housing is supported by the so-called "Wohnbauförderung" (housing support) which absorbs large amounts of public funds (about EUR 3 billion a year) and is implemented at regional level, though how much goes to energy efficiency measures is difficult to determine. It is planned to adopt more far reaching provisions to support the wider application of EE for new buildings, renovations, exchange of old heating systems in detached houses, terraced houses, and multi level houses. To that end, housing funds should be shifted in a targeted manner (e.g. from new construction to renovation).

In addition, certain measures such as solar thermal installation and heat pumps are taxdeductible (under the Income Tax Act, "*Einkommenssteuergesetz*").

To counteract the global economic crisis (starting in 2008), support for energy efficiency measures for the renovation of buildings was intensified because significant employment effects <sup>9</sup> were expected<sup>10</sup>.

The central government provided about EUR 100 million in 2009 as part of the Austrian economic recovery package II (Konjunkturpaket II) for the thermal rehabilitation of buildings<sup>11</sup> (EUR 50 million for commercial buildings and EUR 50 million for residential

<sup>&</sup>lt;sup>8</sup> EnergieStrategie Österreich, p. 101 f; Climate Strategy Austria, revision 2007, p. 50 f

<sup>&</sup>lt;sup>9</sup> Energiestrategie Österreich 2010, section 01

<sup>&</sup>lt;sup>10</sup>The actual effects have been quantified by WIFO and University of Graz using the "Austrian Climate Policy Investments Model". These indicate an increase in GDP of 0.14%, in value added of EUR 385 million and in employment of 8,700 (15 people for each EUR 1 million of investments) (*Umweltförderungen des Bundes* 2009, p. 40f)

<sup>&</sup>lt;sup>11</sup> The comprehensive renovation of residential buildings and individual measures such as insulation, new central heating systems, exchange of old windows and doors, and switch to RES. Non-repayable grants covered up to 20% of eligible investment costs up to a maximum of EUR 5,000 (Umweltförderungen des Bundes 2009, p.35 f). The effectiveness of this national funding scheme which consists of thousands of cases a year is not discussed in the present report. Generally, major deadweight effects can be expected.

buildings in the form of non-repayable grants). A new funding offensive for thermal rehabilitation was launched in March 2011, with EUR 100 million being made available for energy efficiency measures, EUR 70 million of which is for residential buildings.

It should be noted, that energy efficiency goals for buildings can only be achieved if the standards in the non-residential, commercial building sector are improved. While the share of renewables in energy consumption is relatively large for residential buildings (about 25%), for commercial and public buildings, it is 10% or less<sup>12</sup>. It would, therefore, be inappropriate to focus support of energy efficiency measures exclusively on residential housing and to neglect commercial and public buildings.

Funding instruments	National public funds per year for EE support (commercial and public buildings NOT included)
<b>"Wohnbauförderung",</b> by regional governments, for the new construction and refurbishment of residential housing; about EUR 3 billion total public funds per year, partly related to energy efficiency	Approximately EUR 380 million per year for thermal rehabilitation of residential housing <sup>13</sup> (estimate)
<ul> <li>Economic recovery package II in 2008 (Konjunkturpaket II), by central Government, about EUR 100 million for new central heating, insulation, exchange of windows and external doors (EUR 50 million for residential buildings); dispersal of funds through "Umweltförderung im Inland" (UFI).</li> <li>Follow-up funding offensive, introduced in March 2011 by central government for thermal rehabilitation (insulation, new heating systems, etc.), EUR 400 million for the period up to 2014 (2011: EUR 30 million for residential buildings)</li> </ul>	EUR 61 million (2009) for private housing
<b>Klima:aktiv</b> , established 2007, by Central Government, annual funding budget is about EUR 18 million; partly related to EE: Advice in the field of the modernisation of residential buildings, the development of standards through klima:aktiv houses, the renovation of large residential buildings. The programme is focussed on soft-measures (advisory services) not investments support.	Approx. EUR 1 million
<b>Energy efficiency related Research and Development</b> , mainly supported by Central Government, about EUR 23 million of public funds in 2008 (partly related to residential housing)	Approx. EUR 10 million (estimate)
Total	Approx. EUR 452 million / year

Source: Umweltförderungen des Bundes 2009, EnergieStrategie Österreich 2010, own calculation

<sup>&</sup>lt;sup>12</sup> NREAP-AT (2010), p. 23 table 6

<sup>13</sup> EnergieStrategie Österreich, p. 101

## 3. ERDF AND COHESION FUND SUPPORT AND CONTRIBUTION TO NATIONAL POLICY

# Background information on Regional Competitiveness and Convergence Programmes (RC & C) in Austria

The ERDF in Austria co-finances one small Convergence and eight Regional Competitiveness (RC&C) Programmes. These programmes are implemented through measures operated by either central or regional agencies (in line with the national or regional strategies) and are fully incorporated into the existing support system<sup>14</sup>.

#### **ERDF** contribution to RES

Support for RES represents a supplementary measure and is of minor importance in financial terms in Austrian programmes.

In total around **EUR 33.8 million of ERDF** financing<sup>15</sup> are **allocated** to renewables (esp. biomass) for the 2007–2013 period. This amounts to about 5% of the total ERDF. The small-scale programme in the Tyrol has the largest share with around 10% of the ERDF allocated to RES (Annex Table A).

Besides this "tangible" RES support, Austrian ERDF programmes offer a broad spectrum of measures which are also related to the development of RES as a **technology field** of major interest. Eco-innovation investments, R&D projects for SMEs, technology transfer by clusters, R&TD activities in research centres and support services are <u>partly</u> related to renewable energy sources (and energy efficiency). That means RES support is linked to the **regional innovation- and competitiveness policy** pursued by the Austrian ERDF programmes.

The **most prominent RES funding instrument**, which is co-funded in 7 of the 9 regional programmes (not supported in the RC programmes of Kärnten und Wien) is "*Umweltförderung im Inland*" (UFI) which is operated by the Federal Ministry of Agriculture, Forestry, Environment and Water Management and managed by the Kommunalkredit Public Consulting (KPC) central agency<sup>16</sup>. Matching funds are provided by the Austrian Ministry and through complementary funding ("Anschlußförderung") by the regions. Most of the ERDF

<sup>&</sup>lt;sup>14</sup> The ERDF is incorporated in this manner because the ERDF funding is minimal in comparison to national funding and it would not make sense to create new funding instruments for the ERDF. Through the integration of the ERDF in the existing system, the funds could be quickly absorbed.

<sup>&</sup>lt;sup>15</sup> This amount is based on the allocation for EU codes 39, 40, 41, 42 and 43 (in total EUR 24.237 million). In addition 30% of EU code 06 has been added because Managing Authorities claimed that regional funding instruments in support of RES are assigned to 06 (SME support for clean technologies).Details are given in Annex Table A.

<sup>&</sup>lt;sup>16</sup> The agency KPC manages ERDF and EAFRD funds and can use <u>both</u> funds for project subsidies.

related funding support for RES is provided through this single funding measure<sup>17</sup>. Support is provided to enterprises for the introduction of RES technologies in the form of non-repayable grants.

ERDF commitments amount to around 5% of the UFI fund relating to RES, according to the calculation in Table C.

Table C - RES - ERDF commitments in relation to UFI spending for the period 2007-
2010/11 (EUR million)

RES technologies by EU code	Umweltförderung im Inland (UFI) National public funds spent in the area of RES 2007–2010	Total AT, Commitments ERDF (01.01.2007– 20.04.2011)	in%
Wind (39)	0	0	
Solar (40)	19.1	0.3	1%
Biomass (41)	155.0	9.4	6%
Others, Hydro, geothermal (42)	26.5	0.1	0%
Total	200.7	9.8	5%

Source: Umweltförderungen des Bundes, 2007, 2008, 2009, 2010; ERDF monitoring, own calculation

The UFI finances the following measures in most of the RC & C programmes:

- Investment in biomass plants (the larger scale such as heating plants) and biogas plants (in 7 programmes). ERDF biomass projects are maily geared towards heat generation and in a few cases also towards electricity generation through co-generation;
- Investment in solar power thermal and photovoltaic (in 7 programmes);
- Investment in other RES such as small scale hydro energy plants (only in Oberösterreich).

Investment in wind power plants is planned in the Oberösterreich regional programme but has not been implemented up until now (funding relates to regional schemes since UFI does not support this particular technology).

Since ERDF co-financing is integrated into the existing funding system, the main focus is on **biomass systems** – just like the UFI. The priorities are very similar even though the scale of funding differs. Evaluation of ERDF co-funded projects (ÖAR, RIMAS 2011) provides only limited information on the types of biomass systems supported. For a small sample of woodchip- based heating systems ("Hackschnitzel Heizanlagen"), it is indicated that their scope ranges from local to supra-regional and raw material supply ranges from internal to international (p. 45) which demonstrates a broad spectrum of funded projects. More detailed information on all funded projects would be useful e.g. the type of project and

<sup>&</sup>lt;sup>17</sup> In addition, a limited number of funding measures managed by regional authorities are co-funded such as the "*Energietechnologieprogramm des Landes Oberösterreich*" and the "*betriebliche Umweltförderung des Landes Niederösterreich*" (RU3). These funding measures relate only to enterprises and are not substantial in financial terms.

beneficiary, the location of the plant, the combination of heat and electricity generation and economic viability, which cannot be covered in the present paper.

The latest data (end-April 2011) show that about 35% of allocated ERDF funds for RES in Austrian programmes are **committed** (EUR 11.9 million – including EU code 06 – out of EUR 33.8 million allocated) which is less compared to total commitments (48%). This relatively slow uptake may be influenced by the very selective approach adopted by the central government agency KPC so as to minimise administrative risks<sup>18</sup>.

Distinguished by technology, biomass shows the highest approval rate (55%) while allocated funds for solar are still hardly utilized (4%).

Code	RES technology	Allocation ERDF 2007-2013 (EUR million)	Commitments ERDF (01.01.2007-20.04.2011) (EUR million)	Commitments in % of allocated funds		
39	Wind	0.1	0	0		
40	Solar	6.6	0.3	4		
41	Biomass	17.2	9.4	55		
42	Hydro, geothermal, others	0.3	0.1	37		

Table D - Allocation and commitments per RES technology for total Austria (EUR million)

Source: ERDF monitoring, status 20 April 2011, please note: figures do not include Code 06 because it cannot be distinguished by technology

Interestingly, the funds committed in respect to renewables in the small-scale programmes in Salzburg, the Tirol und Vorarlberg account for 15% to 18% of the total funds allocated, which is a much larger proportion than foreseen in the original financial allocation (see Annex Table A).

It is evident that large and easily manageable projects are preferred by selecting authorities. Innovative, risky and smaller-scale projects are generally not chosen for ERDF co-financing but funded nationally<sup>19</sup>. SME projects are usually also funded without the involvement of the ERDF. It should be mentioned that small scale biomass plants (less than 4 MW) are funded by the Austrian Rural Development Programme (EAFRD) which is in financial terms more substantial than ERDF support (EUR 9.0 million per year as against EUR 4.5 million per year).

Overall, the contribution of the ERDF to RES is a very specific one. The ERDF covers part of the strong demand for the UFI funding scheme and the main support goes to (larger) biomass systems in enterprises. ERDF funds allow wider coverage and a larger number of

<sup>&</sup>lt;sup>18</sup> Moreover, the focus of the ERDF funding has changed from RES to energy efficiency in commercial buildings as there are more commitments for EE than for RES. The funding support for energy efficiency in commercial buildings is not targeted by the present report.

<sup>19</sup> ÖAR, RIMAS (2011), Evaluierung KPC, p. 64

projects to be funded although they are not a significant part – in terms of funding – of national and regional strategies.

Regarding effects, it is probably that the public funding of RES has contributed on the one hand to the reduction of greenhouse gas emissions and on the other to the generation of positive business and economic effects at regional level (e.g. increase of productivity through reduction of heating costs, improved "green" image, increase in gross value added).

#### ERDF contribution to energy efficiency in residential housing<sup>20</sup>

Energy efficiency of residential housing is explicitly NOT supported by RC and C programmes (DG REGIO data may be misleading in this case).

#### Main measures in Cross-Border Co-operation (CBC) Programmes

Cross-border programmes consist of Austria-Czech Republic, Austria-Slovakia, Austria-Germany/ Bavaria, Austria-Hungary<sup>21</sup>. In total, these four programmes provide EUR 303.7 million of ERDF financing for cross-border regional development. Support for RES and energy efficiency is planned in all four programmes; however, the funds allocated are of minor importance.

- For RES (EU codes 39-42) EUR 8.8 million of ERDF is allocated which represents 2.9% of the total.
- For energy efficiency (EU code 43) EUR 3.9 million ERDF is allocated which represents only a 1.3% of total funds, but very little of this goes to residential housing.

In the Austria-Czech Republic programme, energy efficiency measures are targeted on public buildings, while in other programmes "residential housing" is likely also to play a marginal role.

Cooperation projects relating to RES tend to focus on the formulation and, to a lesser extent, the implementation, of local energy strategies, efficient energy use in public buildings and energy audits for companies (see project <a href="http://www.energyfuture.eu/">www.energyfuture.eu/</a>).

## 4. RATIONALE FOR PUBLIC INTERVENTION

The rational for providing RES and EE support in ERDF programmes is indicated in the National Strategic Reference Framework (STRAT.AT 2007, p.89) which sets out in **general terms** that an increase in resource and energy efficiency and the use of renewables in enterprises and in the public sector are core strategies which serve to meet the Kyoto goal, and to enhance competitiveness and improve market access.

<sup>&</sup>lt;sup>20</sup> Support for energy efficiency in commercial buildings which is covered by the ERDF is not covered by this report. Therefore, the contribution of ERDF is only <u>partly</u> reflected in the present report.

<sup>&</sup>lt;sup>21</sup> CBC programmes with MAs in Austria are taken into account.

In addition, national energy strategies and related funding instruments provide very detailed justification, as indicated below.

- One of the guidelines of the **Energy Strategy Austria** (2010) states: funding is targeted at compensating for market failures and to stimulate innovation. The funding of currently non-competitive technologies should be targeted at getting the technologies up to market standard (in the sense that they are profitable to invest in without subsidies). In cases where there is no more need for public subsidies, these should be withdrawn (extract, p. 29).
- Under the Green Electricity Act ("Ökostromgesetz") (in the current May 2011 version) which regulates the support of the generation of electricity from renewables (by feed-in tariffs), the scale of support is calculated on the basis of the simplified formula: Funding volume = Payment volume (Feed-in volume x average feed-in tariff) minus market value (see Table F in chapter 5). The scale of support differs for each technology and fluctuates according to changes in the market price for electricity ("baseload").

One critical issue mentioned by regulatory authority "e-control" is that funding through feed-in premiums has led to the development of technologies which are not economic without subsidies. This is true in particular of biomass and biogas systems, where there does not seem to be any prospect of them being competitive. It is recommended in general by e-control that grants (investment support) should be used to promote the development of technologies which are likely to be commercially viable in the future (Ökostrombericht 2010, p.20).

The guidelines (latest version June 2009) for environmental funding at national level (UFI), which is the major ERDF related co-funding measure, specify in detail the maximum funding rates for each type of renewable energy technology. The UFI refers to the EU state aid regulation and excludes projects with a very short payback period (less than 5 years or less than 3 year in the case of *de-minimis* aid). To ensure funding efficiency, subsidies for all measures have a cap related to technology need (CO<sub>2</sub> dependent funding basis max. EUR 150 per ton CO<sub>2</sub>). Only the additional costs of an investment are eligible and not the total costs.

Overall, the rationale for intervention by the government is clearly stated and there are very detailed requirements for the calculation of the volume of funding which are in accordance with EU regulations.

A debate is currently taking place on the rationale for continuing to support biomass and biogas systems in particular for electricity generation because they are unlikely to be profitable even in the long-term without public subsidy<sup>22</sup>. At the same time, biomass lobbyists are requesting a sharp rise in public subsidies to meet the EU climate and energy package targets.

Project costs for a biomass heating plant (2,426 MWh /a heat production; $CO_2$ reduction of 605.91 tons per year compared to fossil sources)	1.4
Minus non eligible costs (e.g. administrative fees)	-0.1
Environment relevant costs (CO <sub>2</sub> cap: maximum amount for this specific technology is EUR 1,817,730 =605.91 tons CO <sub>2</sub> x EUR 150 x 20 years)	1.3
Minus reference costs (= investment costs of a standard heating system )	- 0.2
Additional costs for investment (funding basis)	1.1
Funding = max. 25% of additional costs for investment plus 5% or max EUR 10,000 for the additional administrative burden for an EU-project (funds provided by central and regional government and in some cases by EU)	0.3

Source: KPC, PPP Expertinnentag Umweltförderungen, 04.05.2010

## 5. RATE OF SUPPORT AND PROFITABILITY

The rate of support for RES varies in Austria with the profitability of renewable energy production since the scale of support is provided by feed-in premiums. Only the additional cost over the market price is funded. The rate of support for every RES technology is outlined in the following table.

Data for 2008	Feed-in volume (GWh/year)	Average feed- in tariff (Cent/kWh)	Payment volume including market value (Feed-in volume x average feed-in tariff) (EUR Million a year)	Funding volume (=Payment volume minus market value) (EUR million a year)		
Wind power	1,988	7.79	155	42		
Biomass (solid)	1,900	13.61	259	142		
Small scale hydro	945	5.62	53	-7		
Biogas	503	17.71	89	61		
Biomass (liquid)	36	17.71	6	4		
Photovoltaic	17	60.08	10	9		
Others	52	7.72	4	1		
Total	5,440	10.59	576	252		
Average market tariff	2008	7.28		Actual scale of support		

Table F - Calculation of funding volume to support electricity generation from renewables

Source: Ökostrombericht 2010, own adaptation

The figures indicate that the construction and operation of wind power systems is possible with relatively little public support, while biomass systems generate the same amount of electricity as wind power but require more than three times more public support.

<sup>&</sup>lt;sup>22</sup> See for example the article: "Der Biomasse-Schmäh" in the "Österreichisches Industrie Magazin", June 2011, p. 22 ff.

According to Energy Strategy Austria<sup>23</sup> RES should be implemented where they have the greatest effect in relation to the costs.

In the case of biomass this means that the generation of electricity is only profitable if the absorption of the heat generated can be used all year round, which is why Energy Strategy Austria seeks to develop combined electricity and heat generation systems.

## 6. COSTS, PUBLIC SUPPORT AND PRICES

According to information from e-control<sup>24</sup>, the costs of generating electricity from RES are reflected in the feed-in tariffs which are defined in the Green Electricity Regulation ("*Ökostromverordnung*"). (See Annex for detailed figures the feed-in tariffs set for the various technologies according to their output power and operating time (source: http://www.e-control.at/de/marktteilnehmer/oeko-energie/einspeisetarife).)

## 7. CONCLUSIONS

First, it should be emphasised that data collection on financial support for RES and EE by National Policy (Bund and Länder) is time intensive and complex due to the numerous actors involved, which can – among other factors – be traced back to the federal system in Austria. The total scale of financial support provided for each policy area by all levels of government is limited to global figures and it would be useful, as an example, to know more about the quantitative contribution of the "Wohnbauförderung" (about EUR 3 billion a year) to Energy Efficiency in residential housing and to RES support. In this respect, the intention in the Austrian Energy Strategy 2010 (see chapter 08: Implementation monitoring and evaluation) to provide more transparency with regard to the measures in place and to improve the evaluation of achievements is critical.

Secondly, the ERDF is successfully supporting the implementation of a policy centred on biomass. In order to guarantee a sensible use of public funds, in 2006 an accompanying quality control was introduced for all projects. It is worth considering the use of the data of the quality control (qm-database) for in-depth evaluations to demonstrate the <u>actual</u> efficiency of biomass systems. The efficiency of biomass is affected by a number of factors such as the way that it is integrated into regional production, the type of project and beneficiary involved, the location of the plant (rural versus suburban areas), and the importance accorded to heating relative to electricity generation. In view of such factors, it is evident that improved information and detailed evaluation are needed to form a judgment on the impact of biomass subsidies. In addition, a negative side effect of biomass subsidies is the increase caused in NOx and particulate matter (PM) emissions, which are an additional

<sup>&</sup>lt;sup>23</sup> See Ökostrombericht 2010, p. 96

<sup>&</sup>lt;sup>24</sup> DI Christian Schönbauer, Telephone interview 30 May 2011

source of air pollutants (ÖAR, RIMAS, 2011, p. 35), which gives rise to a need to counter this.

Thirdly, in the future Cohesion policy, there should be a clarification of roles between the EU funds with regard to the funding of renewables.

It should be considered to use ERDF as a financial instrument in the areas of enterprise related Energy Efficiency and R&D and <u>Innovation</u>, but not to support the diffusion of biomass.

On the other hand, the EAFRD seems to be more appropriate for the <u>diffusion</u> of biomass under strict efficiency. The diffusion is more a rural development theme as biomass plants with few exceptions (Vienna<sup>25</sup>) are not located in urban areas.

<sup>&</sup>lt;sup>25</sup> The large biomass plant in Vienna was not co-funded by EU.

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#### **INTERVIEWS**

BMLFUW Abt. II/3, Gottfried Lamers (interview, written contribution)
ÖROK, Andreas Maier (interview, written feedback)
e-control, Christian Schönbauer (via telephon)
MA Regional Competitiveness Niederösterreich, Dittrich Dominik (comment via e-mail)
MA Regional Competitiveness Tirol, Martin Traxl (comment via e-mail)
MA Regional Competitiveness Salzburg, Maria Rettenbacher (comment via e-mail)
MA Convergence Burgenland, Patricia Feucht (comment via e-mail)
MA Regional Competitiveness Vorarlberg, Angelika Bechter-Edelhofer (comment via e-mail)
Presentation of Task 1 /2011 (Thematic Policy Paper on renewable energy and energy efficiency of residential housing) by Andreas Resch at 42. AG VB-meeting, 3 May 2011 (clarification of access to monitoring data and request for information)

## TABLES

Annex Table A – Allocation and commitment of ERDF funds per EU-Code and programme for the period 2007 – 04/2011 (all funding is related

to <u>enterprises</u>) (EUR million)

Allocation ERDF 2007-2013		Total AT	ERDF Bgld.	ERDF Ktn.	ERDF NÖ	ERDF OÖ	ERDF Sbg.	ERDF Stmk.	ERDF Tirol	ERDF Vbg.	ERDF Wien
6	SME support for clean technologies	32.0	3.7	0.7	8.2	5.6	0.7	10.2	1.2	0.6	1.0
39	Renewable energy: wind	0.1				0.1					
40	Renewable energy: solar	6.6	0.8		1.7	1.7	0.2	1.1	1.0	0.2	
41	Renewable energy: biomass	17.2	2.2		4.7	3.9	0.8	3.0	2.1	0.6	
42	Renewable energy: hydro, geothermal,	0.3				0.3					
43	Energy efficiency, co-generation,	6.0	0.6		1.3	1.3	1.0	0.8	0.8	0.2	
	Sub-total Renewable energy (FOI 39–42, 30% of FOI 06)	33.8	4.1	0.2	8.9	7.6	1.2	7.1	3.5	0.9	0.3
	Subtotal energy efficiency (FOI 43 and 30% of FOI 06)	15.6	1.7	0.2	3.7	3.0	1.2	3.9	1.1	0.3	0.3
	Total programmes	680.1	125.0	67.4	145.6	95.5	13.8	155.1	34.8	17.7	25.2
	Share Renewable energy in % of total	5.0%	3.3%	0.3%	6.1%	8.0%	8.7%	4.6%	10.0%	5.3%	1.2%
	Share Energy Efficiency in % of total	2.3%	1.4%	0.3%	2.6%	3.2%	8.7%	2.5%	3.3%	1.9%	1.2%
Commitments ERDF (01.01.2007-20.04.2011)		Total AT	ERDF Bgld.	ERDF Ktn.	ERDF NÖ	ERDF OÖ	ERDF Sbg.	ERDF Stmk.	ERDF Tirol	ERDF Vbg.	ERDF Wien
6	SME support for clean technologies	7.1	0.7	1.3	2.5	1.2	0.6	0.8	0.0	0.0	0.0
39	Renewable energy: wind	0.0				0.0					
40	Renewable energy: solar	0.3	0.0		0.0	0.1	0.1	0.0	0.1	0.0	
41	Renewable energy: biomass	9.4	0.2		1.3	0.7	1.1	1.7	2.7	1.7	
42	Renewable energy: hydro, geothermal,	0.1							0.1		
43	Energy efficiency, co-generation,	16.4	1.2		4.3	5.4	0.7	3.2	0.8	0.8	
	Sub-total Renewable energy	11.9	0.4	0.4	2.1	1.2	1.3	1.9	2.9	1.7	0.0
	Subtotal energy efficiency	18.5	1.4	0.4	5.0	5.8	0.8	3.4	0.8	0.8	0.0
	Total programmes	327.6	65.0	19.8	52.7	64.8	7.3	83.2	15.9	10.9	8.0
	Share Renewable energy in % of total	3.6%	0.6%	2.0%	4.0%	1.9%	18.2%	2.3%	18.3%	15.3%	0.0%
	Share Energy Efficiency in % of total	5.7%	2.2%	2.0%	9.5%	8.9%	11.3%	4.1%	5.1%	7.7%	0.0%

Source: ERDF monitoring, status 20 April 2011, own calculation

EEN2011	
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	Breakdown of renewables by source (% total renewables)																						
	Renewables as % total energy consumption				mption	Hydro			PV			Wind		Solar thermal			Biomass			Geothermal			
	2005	2006	2007	2008	2020	2000	2005	2008	2000	2005	2008	2000	2005	2008	2000	2005	2008	2000	2005	2008	2000	2005	2008
Belgium	2.2	2.7	3.0	3.0	13.0	4.8	1.7	1.6	0.0	0.0	0.2	0.1	1.4	2.5	0.1	0.2	0.4	94.7	96.6	95.1	0.2	0.1	0.1
Bulgaria	9.4	9.3	9.1	9.4	16.0	29.6	33.2	24.9	na	na	na	0.0	0.0	1.0	na	na	na	70.4	63.8	70.6	0.0	2.9	3.4
Czech Rep.	6.1	6.4	7.3	7.0	13.0	25.4	11.2	7.7	0.0	0.0	na	0.0	0.1	0.9	0.0	0.1	0.2	74.6	88.5	91.2	0.0	0.0	na
Denmark	17.0	16.8	18.1	18.8	30.0	0.1	0.1	0.1	0.0	0.0	0.0	17.2	17.6	16.6	0.4	0.3	0.3	82.2	81.9	82.5	0.1	0.1	0.6
Germany	5.8	7.0	9.1	9.1	18.0	19.4	9.5	6.0	0.1	0.6	1.3	8.3	13.3	11.6	1.0	2.0	2.5	71.1	73.8	77.8	0.1	0.8	0.8
Estonia	18.0	16.1	17.1	19.1	25.0	0.0	0.3	0.3	0.0	0.0	na	0.0	0.8	1.7	0.0	0.0	na	100.0	98.8	98.0	na	na	na
Ireland	3.1	3.0	3.4	3.8	16.0	31.1	14.8	14.7	0.0	0.0	na	8.9	26.2	36.6	0.0	0.0	0.5	60.0	59.0	47.4	0.0	0.0	0.7
Greece	6.9	7.2	8.1	8.0	18.0	22.6	26.4	17.8	0.0	0.0	0.0	2.8	6.7	9.3	7.1	6.2	10.9	67.4	60.6	61.0	0.1	0.1	1.1
Spain	8.7	9.1	9.6	10.7	20.0	36.1	19.3	18.1	0.0	0.0	2.0	5.8	20.9	24.8	0.5	0.7	3.2	57.5	58.9	51.9	0.1	0.1	0.1
France	10.3	9.6	10.2	11.0	23.0	34.6	27.4	27.4	0.0	0.0	0.0	0.0	0.5	2.4	0.2	0.1	0.2	64.4	71.2	69.4	0.7	0.8	0.6
Italy	5.2	5.3	5.2	6.8	17.0	42.2	25.5	25.2	0.0	0.0	0.1	0.5	1.7	2.9	0.1	0.2	0.6	22.8	33.1	36.3	34.3	39.4	34.9
Cyprus	2.9	2.5	3.1	4.1	13.0	0.0	na	na	0.0	0.0	0.0	0.0	0.0	na	79.5	87.2	65.1	20.5	12.8	34.9	0.0	0.0	0.0
Latvia	32.6	31.3	29.7	29.9	40.0	20.3	19.3	19.3	0.0	0.0	na	0.0	0.3	0.4	0.0	na	na	79.7	80.4	80.3	na	na	na
Lithuania	15.0	14.7	14.2	15.3	23.0	4.5	5.1	4.1	0.0	na	na	0.0	0.0	1.3	0.0	0.0	na	95.5	94.5	94.5	0.0	0.4	0.1
Luxembourg	0.9	0.9	2.0	2.1	11.0	17.9	11.7	9.0	0.0	2.6	1.6	3.6	5.2	4.1	0.0	2.6	1.6	78.6	77.9	83.6	na	na	na
Hungary	4.3	5.1	6.0	6.6	13.0	2.9	1.4	1.1	0.0	0.0	na	0.0	0.1	1.1	0.0	0.2	0.2	80.4	91.3	91.7	16.7	7.1	5.9
Malta	0.0	0.1	0.2	0.2	10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	2.4	2.5	3.0	3.2	14.0	0.7	0.3	0.3	0.1	0.1	0.1	3.9	6.3	10.5	0.7	0.8	0.7	94.8	92.6	88.4	0.0	0.0	0.1
Austria	23.3	24.8	26.6	28.5	34.0	54.1	42.7	38.1	0.0	0.0	0.0	0.1	1.6	2.0	1.0	1.3	1.4	44.5	54.0	58.1	0.3	0.5	0.5
Poland	7.2	7.4	7.4	7.9	15.0	4.8	4.2	3.3	0.0	0.0	na	0.0	0.3	1.3	0.0	0.0	0.0	95.2	95.3	95.2	0.1	0.2	0.2
Portugal	20.5	20.5	22.2	23.2	31.0	25.5	11.4	13.2	0.0	0.0	0.1	0.4	4.2	11.2	0.5	0.6	0.8	72.4	81.9	70.6	1.3	1.8	4.2
Romania	17.8	17.5	18.7	20.4	24.0	31.5	35.2	27.0	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0	0.0	68.4	64.5	72.6	0.2	0.4	0.5
Slovenia	16.0	15.5	15.6	15.0	25.0	41.9	38.5	40.6	0.0	0.0	na	0.0	0.0	na	0.0	0.0	na	58.1	61.5	59.4	na	na	na
Slovakia	6.7	6.2	7.4	8.4	14.0	81.7	48.3	34.2	0.0	0.0	na	0.0	0.1	0.1	0.0	0.0	0.0	18.3	50.6	64.6	0.0	1.0	1.1
Finland	28.5	29.2	28.9	30.0	38.0	16.3	14.6	16.1	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.0	83.6	85.2	83.7	na	na	na
Sweden	39.8	42.7	44.2	44.4	49.0	44.9	41.0	37.0	0.0	0.0	0.0	0.3	0.5	1.1	0.0	0.0	0.1	54.8	58.4	61.9	na	na	na
UK	1.3	1.5	1.7	2.2	15.0	16.8	10.2	7.9	0.0	0.0	0.0	3.1	6.0	10.9	0.4	0.7	1.0	79.6	83.0	80.1	0.0	0.0	0.0
EU 27	8.5	8.9	9.7	10.3	20.0	30.9	21.8	18.6	0.0	0.1	0.4	1.9	5.0	6.7	0.4	0.7	1.1	63.2	68.0	69.4	3.5	4.4	3.8

#### Annex Table B – Renewable energy as a share of gross final energy consumption and by source

Source: Eurostat, calculation by applica

### ANNEX

#### **Objectives of NREAP-AT**

# Brief summary of objectives of the National Renewable Energy Action Plan Austria (NREAP, June 2011)

The NREAP is based on the Energy Strategy Austria and formally states the goals of increasing the share of renewables in gross final energy consumption from 24.4%<sup>26</sup> (2005) to 34% in 2020, which would mean Austria being ranked fourth in the EU in this regard (behind Sweden 49%, Latvia 40%, and Finland 38%). The Action Plan is being criticised by the renewable lobby for being insufficiently ambitious since 50% would in their view be achievable.<sup>27</sup>

To achieve the NREAP targets by the year 2020 the volume of renewable supply has to be increased by 18% and at the same time energy consumption in transport, heating and cooling and electricity has to be reduced by 13% overall through efficiency measures (NREAP, p.1).

The share of renewables in all three of the above areas has to be increased significantly (by over 20% by 2020 and bio fuels by over tenfold<sup>28</sup>).

- For electricity, all relevant technologies need to be expanded (hydro, solar, wind, biomass) except for geothermal, the potential of which is too limited.
- For heating and cooling, solar and biomass technologies and heat pumps need to be used more
- For transport, bio ethanol (Bio-ETB) and biodiesel as well as electricity from renewables (e-mobility) need to be expanded<sup>29</sup>.

The increase in energy efficiency is targeted at all areas, particularly transport (a 22% reduction in energy consumption) and heating and cooling (a 12% reduction) and electricity (a 5% reduction)<sup>30</sup>. The reduction in energy consumed by heating, cooling and electricity concerns commercial, and public buildings and not only residential housing<sup>31</sup>.

<sup>&</sup>lt;sup>26</sup> Preliminary calculation as there is no final calculation method available.

<sup>&</sup>lt;sup>27</sup> See Nationaler Aktionsplan für erneuerbare Energie, Mai 2010, prepared by the Association of renewable energies in Austria.

<sup>&</sup>lt;sup>28</sup> EnergieStrategie Österreich, Table, p. 98

<sup>&</sup>lt;sup>29</sup> NREAP-AT (2010), Tables 10 - 12, p. 76 f

<sup>&</sup>lt;sup>30</sup> NREAP-AT (2010), section 1.3, p. 3

<sup>&</sup>lt;sup>31</sup> EnergieStrategie Österreich, p. 52 f, The area of intervention "Buildings" targets residential <u>and</u> commercial buildings.

#### Feed-in Tariffs 2010/2011

	NSPEISETARIFE STROMANLAGEN	2010 / 2011 *)	Tarif in Cent/kWh gemäß BGBI II Nr 42/2010 und BGBI II Nr 25/2011						
Rohstoffu	nabhängige Technol	ogien	Laufzeit 13 Jahre						
Windenergie			9,70						
	gebäudeintegriert	bis 5 kWp 5 kWp bis 20 kWp	über KLI.EN (Investitionszuschuss) 38,00						
Photovoltaik	auf Freiflächen	über 20 kWp bis 5 kWp 5 kWp bis 20 kWp	33,00 über KLI.EN (Investitionszuschuss) 35,00						
		über 20 kWp	25,00						
Deponie- und Klärgas		Klārgas	6,00						
Deponie- und Klargas		Deponiegas	5,00						
Geothermie			7,50						
Rohstof	abhängige Technolog	gien	Laufzeit 15 Jahre						
		bis 500 kW	14,98						
		500 kW bis 1 MW	13,54						
Feste Biomasse		1 bis 1,5 MW	13,10						
(wie Waldhackgut, Stroh)		1,5 bis 2 MW	12,97						
(me trainingut, otron)		2 bis 5 MW	12,26						
		5 bis 10 MW	12,06						
		über 10 MW	10,00						
Abfall mit hohem biogenen		Bsp. Rinde, Sägespäne	minus 25 %						
Anteil	SN 17, Tab. 1,	Bsp. Spanplattenabfälle	minus 40 %						
	Andere 5-stellige SN i	n Tab. 1 und 2 ÖkoStrG	5,00						
Mischfeuerungen			anteilig						
Zufeuerung in kalorischen		se (Waldhackgut, Stroh)	6,12						
Kraftwerken		Bsp. Rinde, Sägespäne	minus 20 %						
	Andere 5-stellige SN i	n Tab. 1 und 2 ÖkoStrG	minus 30 %						
Mischfeuerungen			anteilig						
Flüssige Biomasse	7	Flüssige Biomasse							
-	Zuschlag für Erzeu	gung in effizienter KWK	2,00						
Biogas		bis 250 kW	18,50						
aus landwirtschaftl.		250 bis 500 kW 0ber 500 kW	16,50						
Produkten (wie Mais,	Diseas hai Kafarma		13,00						
Gülle)	-	ntation von Abfallstoffen Igung in effizienter KWK	minus 20 %						
	-	itung auf Erdgasqualität	2,00						
Mischfeuerungen	Luconag ber Aulbere	nong aur Erugaoquanat	2,00 anteilig						
Einspeisetarife für rohstoffabhängige Ökostromanlagen nach Ablauf der Kontrahierungspflicht									
Feste Biomasse		bis 2 MW	8,50						
(wie Waldhackgut, Stroh)		2 bis 10 MW	7,50						
		über 10 MW	7,00						
Biogas aus landwirtschaftl.									
Produkten (wie Mais,		bis 250 kW	9,50						
Gülle)	Diogoa hai Kafarma	Ober 250 kW	8,00 minus 20 %						
*) Entrolling Manager		ntation von Abfallstoffen	minus 20 %						
*) Erstmaliger Neuantrag im	Jahr 2010 oder 2011 im Ra	nmen der gesetzlich vorgege	ebenen Budgetgrenzen						

[Quelle: Energie-Control GmbH, Jänner 2011]