

Submission of information on forest management reference levels by AUSTRIA in accordance with Decision 2/CMP.6

The content of this submission is the same as that included for Austria with the separate submission made by Hungary and the European Commission on behalf of the European Union and its Member States.

Austria proposes national reference levels for Forest management for the period 2013-2020 of:

- 6.516 Mio ton CO₂ per year in case of accounting for harvested wood products on the basis of the production approach, in line with the guidance provided in FCCC/KP/AWG/2010/CRP.4/Rev.4
- 2.121 Mio ton CO₂ per year in case of accounting for harvested wood products on the basis of instantaneous oxidation. This value is consistent with the value included in the draft decision on LULUCF for Austria adopted in Cancun.

The submission is structured in accordance with Annex II of the draft decision on LULUCF.

4. Provide a general description of the construction of the forest management reference level consistent with footnote 1 of paragraph 4 of this decision

The construction of the forest management reference level is based on two data sources:

1. Field data from 1981 to 2002 including 4 full inventory cycles of Austrian National forest inventories (NFIs) conducted in 1981/1985, 1986/90, 1992/96 and 2000/02 covering the whole forest area of Austria (As the latest NFI conducted in 2007/2009 was concluded recently, preliminary results are provided in this submission for information purposes only).
2. Results from a “wood and biomass supply study” which was conducted in the years 2007 and 2008 and is based on NFI data referred to above. This study includes projections for 2020, using the growth and harvest models implemented in a simulation program called PROGNAUS. The results of this study were presented in a press release on 22 January 2009.

PROGNAUS (PROGNosis for AUStria) (Ledermann 2006) serves as the basis for the computation of the “silviculture scenario” of the wood and biomass supply study (The results of this scenario are the basis for the derivation of the reference level). This yield and silvicultural science-based model was developed and applied in 1995 for the first time and is updated continuously. PROGNAUS consists of several sub-models, basically a basal area increment model (Monserud and Sterba 1996), a height increment model (Nachtmann 2006), a tree recruitment model (Ledermann 2002) and a model describing tree mortality (Monserud and Sterba 1999). The performance of PROGNAUS was tested in several studies (e.g. Sterba and Monserud 1997, Sterba et al. 2002). Furthermore, PROGNAUS was applied to evaluate forest management regimes (Ledermann and Sterba 2006).

As a start for the calculations of the future harvesting rates, four different realistic timber price scenarios (71 €/m³, 81 €/m³, 100 €/m³, 162 €/m³¹) were defined, on the basis of historic

¹ 71 €: average biomass price in 2004-2006; 81 €: biomass price end of 2006; 100 €: assumption on moderate increase in biomass prices compared to 2004-2006; 162 €: assumption of doubling of biomass price (same development as oil price in period 1985-2005).

development in biomass and fuel prices and under consideration of future domestic biomass demand.

According to the model the silvicultural relevance of tending activities was attached special importance by means of intensive preliminary cutting and thinning. As final cutting such stands were declared, which had a negative growth of the economic value. Additionally to the silvicultural aspects economic and ecological facts were considered in the calculations. The harvesting costs were estimated via different harvesting models and opposed to revenues gained from diverse price scenarios. Harvests on inventory plots with a positive profit margin free of harvesting costs were up-scaled to the attainable harvesting potential. Ecological aspects were concerned in the harvesting potential insofar, as the selection of the harvesting method and the parts of the trees to be harvested were determined.

Due to the kind of harvesting activities shown in the four timber price scenarios, it is assumed that an increase of the harvesting intensity due to higher prices does not cause changes in increment, which remained quite stable during the last decades. An increase in prices mainly leads to additional preliminary cuttings of the smaller dimensions in stands.

The reference level was derived as mean of the results of the four timber price scenarios referred to above, resulting in an expected timber price around 100 €/m³ in 2020².

5. Provide a description on how each element contained in footnote 1 of paragraph 4 of this decision was taken into account in the construction of the forest management reference level

5a. Removals or emissions from forest management as shown in greenhouse gas inventories and relevant historical data

Both, the figures reported under the UNFCCC in forest land remaining forest land as well as the reference level are based on the results of the Austrian NFIs. The emissions/removals reported under the UNFCCC in forest land remaining forest land so far are based on the results of increment and harvest according to the NFIs 1986/90, 1992/96 and 2000/02.

The model simulations are also based on the status (e.g. area) of the Austrian forests as assessed by the NFI 2000/02. The model PROGNAUS, which was used to conduct the model simulations, is an empirical model which was also derived from and validated for the Austrian forest conditions as indicated by the results of the Austrian NFI (see 4 above).

For the years after 2002 the results of the NFI 2000/02 are used for reporting purposes under the UNFCCC, until the results of the latest NFI, concluded recently, will be used (presumably in the NIR submitted in 2012). More accurate historic data for the years after 2002 were derived on basis of the Austrian records of timber harvest (in the official submission to the UNFCCC referred to as “timber harvest reports”, which is a detailed Austrian statistic of timber harvested, derived bottom-up on the basis of harvest data provided by the forest holders). These Austrian records of timber harvest were used in the submissions to the UNFCCC to exhibit the impact of policies and measures introduced in the recent years on the forest carbon stocks. The increase in harvest rates in the last years - as

² The timber price exceeded 90 €/m³ in 2010

indicated by the Austrian records of timber harvest - correlates very well with the trend of the future harvest simulation results until 2020 as indicated by the model runs.

	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008
Forest land remaining forest land (UNFCCC) ³	-11.4	-14.1	-16.0	-18.8	-15.1	-	-	-	-	-	-
Austrian records of timber harvest	-14.8	-17.6	-20.8	-20.6	-18.6	-13.5	-14.3	-14.4	-10.5	-7.3	-6.6

Table 1: historic net emissions from forest management [Mio t CO₂ eq]

This actual trend is supported by the results of the latest NFI, conducted in 2007 to 2009, which were published recently and can be obtained from the following website www.waldinventur.at. According to those estimates, the Austrian forest resulted in an average net sink of approx. 7.3 Mio t of CO₂ eq. p.a. during the observation period.

NFI 2007/2009	-7.3
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Table 2: historic net emissions from forest management, results from the NFI 07/09 [Mio t CO₂ eq]

These results give evidence for a clearly lower real net sink for the last years, compared to the estimates contained in the national inventory report, as presented in the table above.

5b. Age-class structure

The model simulation – as described in 4) - builds on the status of the Austrian forests as indicated by the NFI results in 2000 to 2002. According to the “wood and biomass supply study”, a future increment of 29.3 Mio m³ o.b. was estimated, which is slightly lower than the historic increment, derived from the last three NFIs (29.8 Mio m³ o.b.), which was finally used in calculating the reference value for conservativeness reasons.

5c & d. Forest management activities already undertaken and projected forest management activities under a business as usual scenario

According to Chapter 4 of the most recent Austrian National Communication following forest management activities have been identified:

Overall, forestry can play a future key role as supplier of renewable energy sources and other sustainable raw materials. Wood is virtually unrivalled as a fuel. When wood is burned, a neutral carbon balance is maintained. The product range includes firewood billet, wood chips and wood pellets, heating systems for ready-cut wood and tiled stoves, as well as pellet- und automatic woodchip heating or biomass-based district heating systems. Austria has a leading position in biomass utilization. For ecological and economic considerations, but also with a view to Austria's energy independence, a further increase is both necessary and possible. (BMLFUW 2008b)

³ Data taken from the national inventory report 2011

It has been a guiding principle of Austrian forest management policy for more than 300 years to use forests in an economically sustainable manner, balancing the relevant ecological, economic and social functions. Austria is one of the most densely wooded countries in Central Europe with forests covering more than 47 % of the federal territory. According to the NFIs the forest as a characteristic element of the Austrian landscape has grown to cover a total area of 4 million hectares. Ever since the beginning of the Austrian Forest Inventory in 1961 a continuous increase in forest cover has been observed in Austria. Compared with the first inventory period 1961/1970, the forest cover has increased by almost 270,000 hectares to date. Based on the latest forest inventory, sustainability of the Austrian forest cover is certainly guaranteed. Austrian forest management mainly focuses on the targets to maintain the biodiversity, productivity, regeneration capacity and vitality of forests and to improve adaptation to changing – specifically climatic – conditions. Therefore, the preservation of forest gene resources is important in Austria. The preservation of a high genetic diversity is necessary for adaptability and adaptation of forests to environmental conditions, especially in the light of climate change. Forest stands of high genetic values should be represented as much as possible in all growth areas, and their presence should be guaranteed in the long term. An effective measure to ensure comprehensive adaptability is *in situ* conservation. Thereby, forests are preserved at their natural site in order to disturb the constant genetic adaptation processes as little as possible. The goal of the *in situ* conservation measure ‘gene reserve forests’ is to ensure that the genetic information is passed from one generation to the next using natural regeneration. In order to be able to cope with the diverse interest in the utilisation of forests in future, all the national institutions, public and private interest groups, and all forest stakeholders are called upon to further develop a responsible forest management. For this purpose, the Federal Minister of Agriculture, Forestry, Environment and Water Management has developed an Austrian Forest Programme (further information see 11)

5e. Continuity with the treatment of forest management in the first commitment period

Austria did not select any Art.-3.4-activity.

5f. The need to exclude removals from accounting in accordance with decision 16/CMP.1, paragraph 1

In its response to the COP 7 request, the IPCC concluded that “the scientific community cannot currently provide a practicable methodology that would factor out direct human-induced effects from indirect human-induced and natural effects for any broad range of LULUCF activities and circumstances.” Therefore Austria uses the “managed land proxy” and considers all carbon stock changes on managed lands in deriving the forest management reference level.

5g. Consistency with inclusion of carbon pools (account for all changes in the following pools: above-ground biomass, below-ground biomass, litter, dead wood, soil organic carbon; or choose not to account for a given pool if demonstration that the pool is not a source)

In line with the information submitted to the UNFCCC on 23 July 2010, the pools considered in deriving the reference level are consistent with the pools currently reported under the UNFCCC. It therefore includes estimates for the pools above-ground biomass, below-ground biomass and dead wood (the changes in the dead wood pool are considered to remain constant up to 2020). In accordance with IPCC GPG Tier 1 and consistent with the current national reporting practices of sector 5.A.1 under the UNFCCC, it is assumed that both the litter and soil organic carbon pool do not

change. There is currently a study in preparation with the aim to estimate the C stock changes in these pools. After finalization, the results of the study will be used in future reporting and accounting.

5h. Exclude emissions by sources and removals by sinks due to force majeure

The model and the simulation runs which are the basis for the reference level do not include any impact of “force majeure”.

6. Identify pools and gases which have been included in the reference level and explain the reasons for omitting a pool or gas from the reference level construction

In line with the information submitted to the UNFCCC on 23 July 2010, the following pools and gases are considered in the construction of the reference level:

	Changes in carbon pools included in the reference level						GHG sources included in the reference level					
	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil		Fertilization N ₂ O	Drainage of soils N ₂ O	Liming CO ₂	Biomass burning		
					mineral	organic				CO ₂	CH ₄	N ₂ O
Austria	yes	yes	yes	yes	no	no	no	no	no	yes	no	no

Table 3: pools and gases considered in the construction of the reference level

All pools as currently reported under UNFCCC are considered in setting the reference level. There is a study in preparation with the aim to estimate the C stock changes in the soil pool. After finalization, the results of the study will be used in future reporting and accounting.

7. Explain consistency between the pools included in the reference level

See 5g and 6 above

Ensure methodological consistency between the reference level and reporting for forest management during the second commitment period

Both, the reference level as well as reporting for forest management during the second commitment period are based on the data of the Austrian NFI. The estimate methods, conversion factors used, biomass functions and timber functions are the same for the reference level and for reporting on forest management during the commitment period.

The model simulation – as described in 4) - builds on the status of the Austrian forests as indicated by the NFI results in 2000 to 2002, with a given total national forest area of 3.96 Mio. ha, which encompasses 3.371 Mio. ha. of forest areas in yield and 0.589 Mio. ha of non-productive forest areas.

It is assumed that the total Austrian forest area in yield will stay constant until 2020.

The area considered in the reference level is thus slightly higher than in future reporting on forest management since the projections of the forest reference level also include lands subject to Art. 3.3. (as included in the field data of the NFI 2000/2002). Since those lands result in a net sink in Austria, this slight deviation leads to a conservative estimate for the reference level (over estimation of the net sink).

8. Provide a description of approaches, methods and models used in the construction of the forest management reference level, referring, where relevant, to the most recently submitted National Inventory Report

See 4 above

As described under Para 7 - and with the exception of the area under consideration - there is complete methodological consistency between the reference level and the national reporting under the UNFCCC as both build on the results of the Austrian NFI and use the same methods for the conversion of cubic metres stem wood over bark into Gg C of biomass.

The results from the “wood and biomass supply study” referred to under Para 4. which are the basis for defining the reference level have also been published in the fifth National Communication of Austria.

9. Provide a description of how each of the following elements were considered or treated in the construction of the forest management reference level, taking into account the principles in decision 16/CMP.1

9a: Area under forest management

The area used for deriving the reference level is slightly higher than the expected area under forest management for the next commitment period. The projections of the forest reference level include all Austrian forests in yield and therefore also lands subject to Art. 3.3. Since those lands result in a net sink in Austria, this slight deviation in the areas lead to a conservative estimate for the reference level (over estimation of the net sink).

9b. Emissions and removals from forest management and the relationship between forest management and forest land remaining forest land as shown in GHG inventories and relevant historical data, including information provided under Article 3.3, and, if applicable, Article 3.4 forest management of the Kyoto Protocol and under forest land remaining forest land under the Convention

With the exception of the area under consideration there is full consistency between the data sources and estimate methods of the figures reported under sector 5.A.1 forest land remaining forest land (Austria has chosen not to account for Art.3.4 “forest management” during the first commitment period) and the reference level (see 4, 7, 8, 9a above).

Detailed information on Emissions and removals are provided under 5a, including a time series from 1990 – 2008.

According to the latest NFI conducted 2007/2009 harvest rates have increased significantly – by more than 37% - in Austria (in comparison to the results of the NFI 2000/02, which are used so far for reporting purposes under the UNFCCC).

	2000/2002	2007/2009
NFI	18.8	25.8

Table 4: historic harvest rates, results from the NFI 00/02 and 07/09 [Mio. m³ o.b.]

This recent trend correlates quite well with the projected development up to 2020.

9c. Forest characteristics including age class structure, increments, rotation length and other relevant information, including information on forest management activities under “business as usual”

The status of the Austrian forests in yield as assessed by the Austrian NFI is the basis for the UNFCCC reporting and for the modeling of the “wood and biomass supply study”. The estimates are hence based on the same data sources and take into account the specific characteristics of the Austrian forests, including age class structure and increment (see 4, and 5b above). In addition rotation length and harvest decisions were modeled based on actual national circumstances such as harvesting behavior under “business as usual”, taking into account timber prices assumed in the four different price scenarios mentioned under Para 4. All related aspects of nature conservation were given full consideration, e.g. areas subject to the Natura 2000 directive and other protected areas were not considered in the harvesting decisions. Further impacts were also included in the “wood and biomass supply study”, such as accessibility of forests – see 4 above.

9d. Historical and assumed harvesting rates

Historical harvest rates

The harvest rates reported under the UNFCCC in forest land remaining forest land are based on the results of the Austrian NFIs 1986/90, 1992/96 and 2000/02. For the years after 2002 the results for the period 2000/02 are reported under UNFCCC until the results of the recent NFI 2007/09 will be available.

In the former submissions to the UNFCCC the Austrian records of timber harvest were used for the reporting of historical harvest data (see 5a). This provides a more accurate picture of the most recent harvest rates up to 2008. The Austrian records of timber harvest underestimate the real harvest rates. This leads to an overestimation of the net removals compared to the results of the NFIs (as shown in Para 4).

The following information on harvest rates was already submitted to the UNFCCC on 23 July 2010, together with the reference level

	1990	1995	2000	2005	2006	2007	2008
Austrian records of timber harvest	19.0	16.7	16.0	19.9	23.1	25.8	26.4

Table 5: historic harvest rates, results from Austrian records of timber harvest [Mio. m³ o.b.]

The time series of the historic biomass harvest rates (in mio. cubic metres stem wood over bark) listed above is taken from the Austrian records of timber harvest, for consistency reasons. The results show that the harvest rates increased by more than 60% in the period 2000 – 2008.

The results from the latest NFI 2007/2009, which will be used in future reporting under the UNFCCC, give evidence for this increase in national harvest rates and correlate quite well to the trend of the future harvest simulation results until 2020 as indicated by the model results used for setting the reference level.

NFI 2007/2009	25.8
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Table 6: historic harvest rates, results from the NFI 07/09 [Mio. m³ o.b.]

Assumed harvest rates

The model simulations which were the basis for the reference level are based on the status of the Austrian forests as assessed by the NFI2000/02. The used simulation model PROGNAUS is an empirical model which was also derived from and validated for the Austrian forest conditions as indicated by the results of the Austrian NFI. The projected harvesting rates for 2010, 2015 and 2020 take into account the specific national circumstances (forest status and growth, available timber for harvesting, access to the forests etc.) and are subject to four different realistic price scenarios.

Harvest [Mio. m ³ o.b.]	2010	2015	2020
wood and biomass supply study	28.6	29.7	31.0

Table 7: projected harvest rates, results from the wood and biomass supply study [Mio. m³ o.b.]

According to the results of the model runs, the harvest rates are projected to slightly further increase by 1,4% annually up to 2020.

9e. Harvested wood products

To simulate the impacts of the policies and measures referred to in Para 11 on the domestic production of harvested wood products, the simulation model FOHOW (simulation model for the Austrian forest based economy) has been used, which is tailor made to represent the Austrian national circumstances. The performance of FOHOW which is a simulation model using the System-Dynamics (SD) language consisting of approx. 1500 equations was tested in several studies (e.g. Schwarzbauer 1989, Schwarzbauer 1991, Schwarzbauer 1993, Schwarzbauer and Rametsteiner 2001, Schwarzbauer and Stern 2010).

FOHOW consists of four types of modules:

- (1) General economy: includes only exogenous variables (GDP, population).
- (2) Forest industry and forest product markets: includes supply, demand, prices and trade for each semi-finished product.
- (3) Forestry: includes timber supply from three ownership categories: small private forest owners (< 200 ha), larger private forest owners (>= 200 ha) and Austrian Federal Forests. Timber markets are at the border between (2) and (3).
- (4) Forest resources: includes forest area, growing stock and increment each broken into coniferous and non-coniferous forests, ownership categories and two age-classes.

In this model the forest sector is modelled as a whole (see figure 1) assessing aspects related to supply and demand of wood in the forest based industries; hence the following product groups are included: coniferous logs, non-coniferous logs, coniferous pulpwood, non-coniferous pulpwood, sawmill residues, fuelwood, coniferous sawnwood, non-coniferous sawnwood, particle- and fibreboard, pulp, waste paper, paper and paperboard.

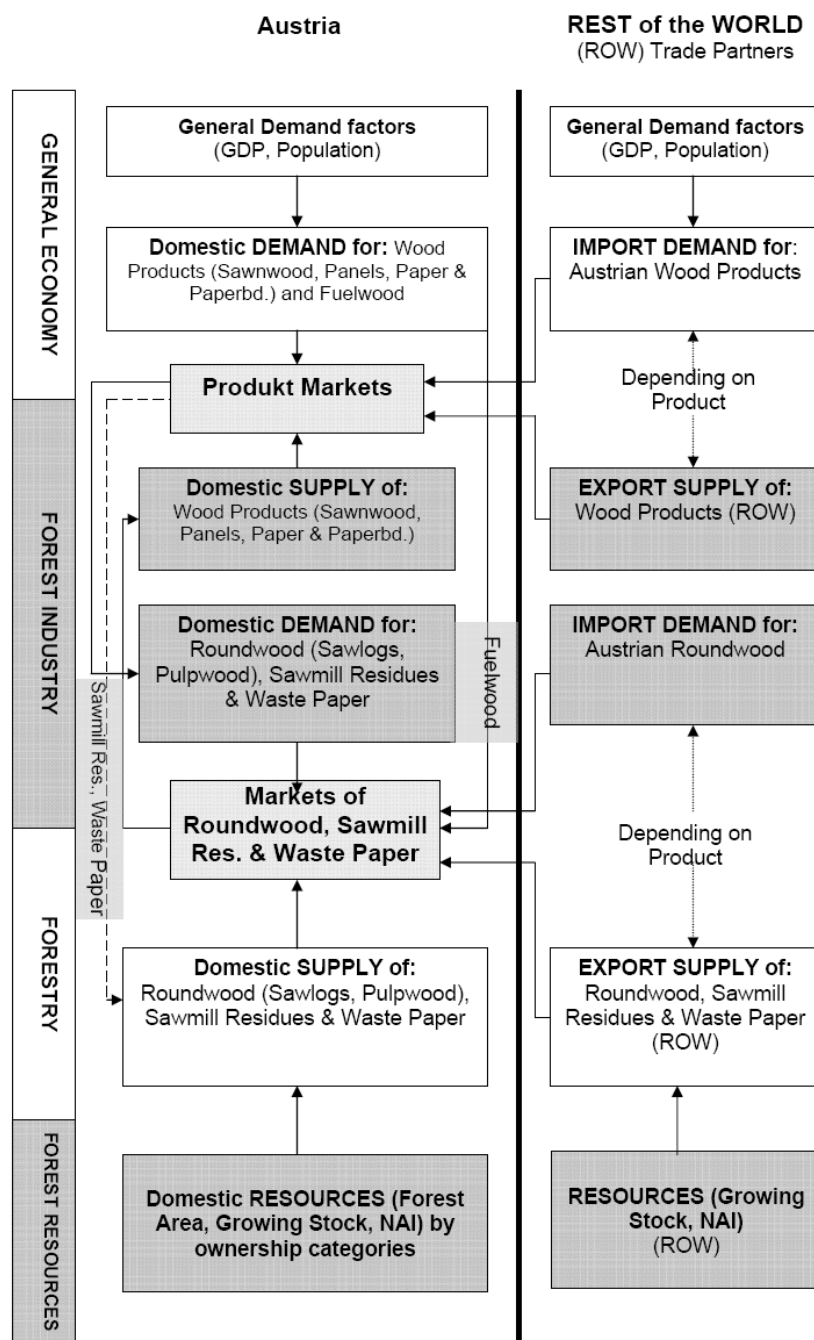


Figure 1: General Structure of FOHOW

A few basic exogenous assumptions (Table 8) have been made in order to run the simulation model FOHOW.

Factors	2008	2009	2010	2011	2012-2015	2016-2020
Annual GDP growth in Austria (%) ^{a)}	2.2	-3.9	2.0	1.9	2.5	2.1
Annual GDP growth in OECD (%) ^{a)}	0.4	-3.4	2.2	2.2	2.5	2.0
	2008	2009	2010	2011	2015	2020
Crude oil price in \$ barrel ^{b)}	99.57	60.12	72.42	76.25	105.33	132.33

Table 8: Basic assumptions of general factors; Sources: ^{a)} 2008-2011: WIFO 2010; 2012-2020: OECD 2010: OECD Baseline Scenario; ^{b)} EIA 2010

In addition to those factors, the future demand for woody biomass for energy purposes has been taken from the GHG emissions projections referred to in Para 11, for consistency reasons.

Historic production data starting from 1961 has been taken from FAO statistics (sector 5 sawnwood, sector 6 wood-based panels and sector 10 paper and paperboard). In order to only estimate emissions from HWP removed from domestic forests which are accounted for under Art 3, it is assumed that mainly industrial round wood serves as raw material for the production of HWPs. Following equations were used to calculate the production of saw wood, wood panel and paper stemming from domestically harvested wood:

$$\text{share}_{\text{roundwood,consumption}} = \frac{\text{Production}_{\text{roundwood}} - \text{Export}_{\text{roundwood}}}{\text{Production}_{\text{roundwood}} + \text{Import}_{\text{roundwood}} - \text{Export}_{\text{roundwood}}}$$

$$\text{Production}_{\text{HWP,domestic harvest}} = \text{share}_{\text{roundwood,consumption}} \times \text{Production}_{\text{HWP}}$$

For the years up to 2020 the results of the simulation model FOHOW (Table 9) have been used.

Production	2005	2006	2007	2008	2009	2020
saw wood (mio. m³)	6.4	6.3	7.6	7.3	5.0	8.5
wood Panel (mio. m³)	2.0	2.2	2.5	2.5	2.0	2.3
paper (mio. t)	2.9	3.1	3.3	3.5	2.7	4.1

Table 9: Production of saw wood, wood panels and paper, resulting from domestically harvested wood

According to the results of the model the domestic production will grow by 30% in total, compared to the historic average (2001 – 2009).

Net emissions from harvested wood products (Table 10) were calculated for wood removed from domestic forests only. For the calculations the IPCC default method (equation 12.1 of 2006 IPCC Guidelines) was used, based on the first-order decay function, using default half-lives as contained in Para. 27 of Annex I of the Draft decision -/CMP.6 Land use, land-use change and forestry (FCCC/KP/AWG/2010/CRP.4/Rev.4) of 2 years for paper, 25 years for wood panels and 35 years for saw wood.

1960	- 1.19	1991	- 1.71
1961	- 0.90	1992	- 1.54
1962	- 0.92	1993	- 1.45
1963	- 0.47	1994	- 2.45
1964	- 0.91	1995	- 2.31
1965	- 0.83	1996	- 2.80
1966	- 1.63	1997	- 2.44
1967	- 1.39	1998	- 2.40
1968	- 1.27	1999	- 1.96
1969	- 1.77	2000	- 1.40
1970	- 1.48	2001	- 2.20
1971	- 1.92	2002	- 3.35
1972	- 2.11	2003	- 3.93

1973	- 1.84	2004	- 3.19
1974	- 1.39	2005	- 3.19
1975	- 1.05	2006	- 3.64
1976	- 2.21	2007	- 4.90
1977	- 2.39	2008	- 4.65
1978	- 2.02	2009	- 0.77
1979	- 2.26	2010	- 4.28
1980	- 2.22	2011	- 4.37
1981	- 2.13	2012	- 4.46
1982	- 1.49	2013	- 4.56
1983	- 1.86	2014	- 4.67
1984	- 2.13	2015	- 4.77
1985	- 1.35	2016	- 4.55
1986	- 1.37	2017	- 4.37
1987	- 1.20	2018	- 4.21
1988	- 2.11	2019	- 4.08
1989	- 2.77	2020	- 3.95
1990	- 2.98	Ø 2013-2020	- 4.39

Table 10: Net emissions from harvested wood products [Mio t CO₂]

9f. Disturbances in the context of force majeure

See 5h above

9g. Factoring out in accordance with paragraph 1(h) (i) and 1(h) (ii) of decision 16/CMP.1

See 5f above

10. Provide description of any other relevant elements considered or treated in the construction of the forest management reference level, including information related to footnote 1 in paragraph 4 of this decision

The basis for the derivation of the reference level was a comprehensive and detailed modeling study of the future timber supply in Austria. It took two years and was carried out and finalized end of 2008. The results were presented in a press release on 22 January 2009 (<http://www.lebensministerium.at/article/articleview/73127/1/26609/>) and are thus independent from any discussion on accounting rules for forest management within the UNFCCC.

11. Provide description of the domestic policies adopted and implemented no later than December 2009 considered in the construction of the forest management reference level and explain how these policies have been considered in the construction of the reference level

GHG emissions projections / Policies and measures up to mid 2009

Measures supporting and promoting an increase in demand for woody biomass, thus leading to an increase in timber prices, are the most important drivers for harvest activities in Austria, which has also been observed in the recent past, as domestic harvest rates increased substantially (described

under 5a). For the modeling of the future domestic wood and biomass supply four different realistic timber price scenarios (71 €/m³, 81 €/m³, 100 €/m³, 162 €/m³⁴) were defined, on the basis of historic development in biomass and fuel prices and under consideration of future domestic biomass demand. The reference level was derived as mean of the results of the four price scenarios referred to above, resulting in an expected timber price below 100 €/m³ in 2020⁵.

GHG emissions projections

According to Chapter 5 of the most recent Austrian National Communication (NC 5, download at: http://unfccc.int/resource/docs/natc/aut_nc5.pdf), greenhouse gas (GHG) emission projections have been developed in 2008/2009 (Umweltbundesamt, 2009d) which include results for a 'with measures' scenario (wm) up to 2020, comprising climate change mitigation measures that were implemented and adopted under the Austrian Climate Strategy I (BMLFUW 2002) and its amendment Climate Strategy II (BMLFUW 2007) before 8th August 2008.

In line with the increase in demand for woody biomass for energy purposes in the recent years, which mainly resulted from wood use in power plants, CHP-plants and district heating (increase by 60% up to 2008) and increased use of wood in the industry sector (increase by 25% up to 2008), the projections included in the wm scenario show a further increase in demand for woody biomass for energy purposes up to 2020 by 20% compared to 2008 and 2009, resulting in an additional biomass demand of around 3 - 4 Mio m³. In the recent past approximately 20% of the wood supply for energy purposes were imported; assuming that the imports will increase up to 2020 proportionally⁶, the domestic demand for woody biomass for energy purposes of around 2.5 - 3 Mio. m³ compared to 2008 and 2009.

		National energy statistic					wm scenario
		2005	2006	2007	2008	2009	2020
gross domestic consumption of woody biomass for energy purposes	PJ	120	120	135	145	145	170 - 175
	Mio. m ³	15	15	17	18	18	21 - 22
- domestic supply	PJ	96	96	108	116	116	136 - 140
	Mio. m ³	12	12	13.5	14.4	14.4	17 - 17.5
- imports	PJ	24	24	27	29	29	34 - 35
	Mio. m ³	3	3	3.5	3.6	3.6	4 - 4.5

Table 11: gross domestic consumption of woody biomass [Mio m³ / PJ]

In total, the demand for woody biomass of domestic origin for energetic use, resulting from the wm scenario described above (results in Table 11), as well as for the production of saw wood, wood

⁴ 71 €: average biomass price in 2004-2006; 81 €: biomass price end of 2006; 100 €: assumption on moderate increase in biomass prices compared to 2004-2006; 162 €: assumption of doubling of biomass price (same development as oil price in period 1985-2005).

⁵ The timber price exceeded 90 €/m³ in 2010

⁶ Info Memo: According to the national renewable energy action plan for Austria (download at: http://ec.europa.eu/energy/renewables/transparency_platform/doc/national_renewable_energy_action_plan_austria_en.pdf), which was submitted in line with Art. 4 of the directive to promote the use of energy from renewable sources (2009/28 EC) mid 2010, in 2006 around 80 % of the biomass supply stemmed from domestic production, the remaining 20 % has been imported.

panels and paper, resulting from the projections referred to under 9a, exceeds the domestic wood supply referred to in Table 7.

Policies and measures adopted and implemented until mid 2009

Energy demand related policies and measures (taken from NC 5):

Policies and measures relating to this subsector aim at increasing the share of renewable energy sources such as biomass and at switching to fuels with lower (fossil) carbon content.

01_ED Increased use of renewable energy in the sector residential and commercial ('Erneuerbare')

This group of measures comprises a great number of policies and measures defined in the Climate Strategy (BMLFUW 2002) and its amendment (BMLFUW 2007). The overall objective is to increase the use of biomass (log wood, wood chips, wood pellets and wood briquettes) through specific subsidies for renewable energy sources.

Significant policy instruments that promote the implementation of this measure group are the Housing Support Scheme of regional authorities ('Wohnbauförderung' – WBF), Technical Construction Regulations by the *Länder*, the Austrian Climate and Energy Fund ('Klima- und Energiefonds'-KLI.EN), the Domestic Environmental Support Scheme ('Umweltförderung im Inland'-UFI), and the programme klima:aktiv – the last three are funded by the national government (BMLFUW). For further information related to the UFI see chapter cross-cutting policies, related to the KLI.EN see measure 05_EN in the subsector energy supply.

The *Housing Support Scheme (WBF)* promotes inter alia the use of renewable energy and building renovation. Most *Länder* in Austria support the replacement of old fossil fuelled heating systems by highly efficient systems based on renewable energy (solar, biomass) or natural gas (with condensing boiler technology). In addition, the *Länder* continue to promote the connection with existing or new (often biomass-fired) district heating. A majority of dwellings is constructed or renovated with public support in Austria.

A constitutional treaty between the *Länder* and the Federation came into effect in 2006 (BGBl. II Nr. 19/2006) and provided for further improved standards as a prerequisite for receiving subsidies and for a shift of subsidies in favour of the thermal renovation of existing dwellings. This agreement according to Article 15a of the Federal Constitution Act has been amended (BGBl. II Nr. 251/2009) and came into force in August 2009. Additional areas covered by the amended agreement are building law, commercial buildings and additional measures, e.g. a general exemption of fossil fuel fired heating systems from the existing subsidy scheme (see also measure 03_ED and 04_ED), to be implemented by the Federation. The extensions are not included in the wm scenario but especially the exclusion of fossil fuel fired heating systems from the subsidy schemes will promote an increase in woody biomass fired heating systems in the housing sector in the future.

The main objective of the *domestic environmental support scheme (UFI)* (BGBl. Nr. 185/1993 as amended) is to provide economic incentives to promote the implementation of measures in the field of energy efficiency, climate and environmental protection. The following table represents the biomass related project categories relevant for the energy demand subsector. Further information

on the UFI is given in the chapters on energy supply (4.2.1.2), industry (4.2.4) and cross-cutting policies and measures (4.2.7) of the most recent Austrian National Communication.

2004-2007	Number of projects	Environment related investment costs [million €]	Subsidy [million €]
Biomass	1.813	91	23
Biomass – CHP	15	66	12
Biomass district heating systems	455	12	3

Table 12: The domestic environmental support scheme 2004-2007: subsector energy demand (Umweltbundesamt 2009c)

Accordingly, there is a remarkable trend towards renewables, which is partly noticeable in an increase of wood chips and wood pellets consumption. Another indication for the development of emissions is the declining share of fossil fuels and the increasing share of district heating, electricity and ambient energy in total fuel used in the area of residential buildings from 70 % in 1990 to 64 % in 2007. Decreasing CO₂ emissions per amount of fossil fuel from 74 t /TJ (1990) to 66 t/TJ (2007) indicate a shift to less carbon intensive fossil fuels in residential buildings (Umweltbundesamt 2009c).

03_ED forced replacement of heating systems ('Heizkesseltausch')

The target is an increase in the boiler exchange rate via various measures (defined in the Austrian Climate Strategy). It will be achieved through financial support and raising awareness for changing old, inefficient heating systems. This measure also shows co-benefits in terms of emission reductions of air pollutions i.e. PM and NO_x.

In Austria, the subsidy policy for heating systems aims to achieve the installation of high efficient and low emission (CO₂) boilers. Therefore, the regional authorities grant financial support for biomass, district heating, heat pumps and solar heat. The individual rates differ between each regional authority. Model-based results predict a rise of the boiler exchange rate from about 1 % in 2007 to 2.3 % in 2020. Fully implemented this measure group will result in savings of 11.2 PJ fossil fuels by 2020, but with an increase in biomass demand by 4.3 PJ.

04_ED public support for new buildings ('Neubau')

This group of measures represents the effects of subsidized heating systems (renewable) and compulsory building regulations for thermal building quality in new buildings. Policy instruments related to financial subsidies (credit and cash) for better thermal quality (insulation) of new buildings are: the Directive on Energy performance of buildings (Dir 2002/91/EC) and the Housing Support Scheme. For further information related to these policy instruments see also measure 01_ED.

Energy Supply related policies and measures (taken from NC 5):

Consumer awareness

As raising consumer awareness to strengthen dispersion and diffusion of those measures plays an essential role, the climate change initiative "klima:aktiv" (information available at: www.klimaaktiv.at) has been initiated by the Ministry of Environment in 2004. Several thematic programmes have been launched in the framework of klima:aktiv, which support inter alia:

- the mobilisation of woody biomass for energy purposes (“klima:aktiv” Energieholz, information available at: <http://www.klimaaktiv.at/article/archive/25265/>) has increased the use of forest biomass by 2 mio. m³ since 2005 and
- increasing the share of woody biomass used for the production of heat in the residential sector (klima:aktiv Erneuerbare Wärme, information available at: <http://www.klimaaktiv.at/article/archive/30056/>)

The initiative combines various market-based measures and effectuates target-oriented implementation, e.g. by providing easier access to target groups and resources, by enhanced transfer of know-how with support in vocational training and networking of important actors, by the organisation and development of quality assurance and standards as well as by target group specific information and marketing. The impacts of these programmes are only implicitly included in the assumptions for the emission scenarios.

Promotion of renewable energy sources

CO₂ emissions from district heating also depend on annual climatic conditions and correspond to temperature-induced heating energy demand during the winter season. The use of biomass in regional district heating systems has already gained a considerable share in Austria. In 1990 biomass (including the biogenic content share of waste) contributed 8 % to heat production in district heating systems, this share increased to 41 % in 2007. This is to a large extent due to existing public support schemes, granted both by the federal government and the *Länder*, and in many cases co-funded by the European Union.

Representative instruments to promote renewable energies and energy efficiency in Austria’s energy supply include direct financial support for transformation plants (see measure 01_EN), feed-in tariffs for electricity production from renewables (see measure 02_EN) and public funding for research and development (R&D) projects and for demonstration plants (see measure 05_EN). The climate change initiative klima:aktiv, initiated by the Ministry of Environment, includes inter alia a programme on renewable energy, as mentioned in the section energy demand above. On the level of the federal provinces a variety of measures are in place to further promote the use of renewable energies (e.g. solid, liquid and gaseous biomass in the residential sector or in public power/heat generation, photovoltaic plants). Energy related taxes are a cross-sectoral promotive policy too.

01_EN Domestic environmental support scheme (UFI)

Information regarding the Domestic Environment Support Scheme (BGBl. Nr.185/1993 as amended) is also provided in the chapters energy demand, industry (01_IND) and cross sectoral measures.

The main objective of this subsidy is to provide economic incentives for companies to implement measures in the field of energy efficiency, climate and environment protection. The following table represents the biomass related project categories relevant for the energy supply subsector: biomass district heating systems, biomass-powered combined heat and power production from biomass. The focus in the period 2004-2007 was in the area of biomass use and biomass powered combined heat and power plants (about 87 % of supported projects) (Table 13).

2004-2007	Number of projects	Environment related	Subsidy [million €]	CO ₂ reduction efficiency [t/a]
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		investment costs [million €]		
Biomass district heating systems	179	224	37	202.851
Biomass – CHP	36	212	42	602.729

Table 13: The domestic environmental support scheme 2004-2007: subsector energy supply (Umweltbundesamt 2009c)

The total environment related investment costs for 290 projects amounted to € 536.13 million that have been subsidized by € 93.04 million. In general the projects affect both the ETS and the non-ETS sector.

02_EN Green Electricity Act

The Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources was implemented through the Green Electricity Act (BGBl. I Nr.149/2002 as amended). The Act does not only address the main issues raised by the Directive, but also unifies the system for promoting electricity production from renewable energy sources by granting fixed feed-in tariffs for various forms of biomass transformation and power production by wind, water, geothermal energy and photovoltaics. The objective of the Green Electricity Act currently in force is to raise the share of electricity from renewables in electricity consumption in public grids to 10 % by 2010. However, an amendment to the Green Electricity Act which has been adopted by the Austrian government intends to raise the share of renewables in electricity consumption in public grids to 15 % by 2015. Among other amendments, the guaranteed feed-in time was raised in general to 13 years and to 15 years for power plants based on biomass, respectively. Table 14 shows the evolution of Austrian green power output (in GWh) supported by fixed feed-in tariffs from 2002-2007.

	2002	2003	2004	2005	2006	2007	2008
Solid Biomass	95	99	313	553	1.096	1.631	2.400

Table 14: Subsidised renewable electricity [GWh] from 2002-2007 (E-Control 2008)

As in 2008 already 2.400 GWh electricity have been fed into the grid, it can be assumed, that the objective for the year 2015 according to the Green Electricity Act 2008 (BGBl. I Nr.44/2008) will be reached and that the promotion of green electricity will continue thereafter. The projections are therefore based on the assumption that the growth rates for individual renewable energy sources remain at the same level until 2020.

03_EN European Emission Trading Scheme (ETS)

Information regardsing the Emission Trading Scheme according to the Emission Trading Directive (2003/87/EC) is also provided in chapter industry (03_IND). The objective of emission trading is to put a price on fossil fuel emissions in the energy sector by limiting the CO₂ emissions from power plants through a trading mechanism for emission allowances. This directive promoted the use of biomass for energy purposes in the past as shown in Table 15 below.

	2005		2006		2007		2008		2009	
total	326.418	100%	310.913	100%	296.805	100%	299.677	100%	281.761	100%
- biomass	13.740	4,2%	16.061	5,2%	17.202	5,8%	16.965	5,7%	16.554	5,9%

Table 15: Energy related fuel use of installations covered by the ETS 2005-2009 [TJ/a]

05_EN Austrian Climate and Energy Fund (KLI.EN)

According to the 'Klima- und Energiefondsgesetz' (BGBl. I Nr. 40/2007) the objective of the KLI.EN is to contribute to meeting Austria's Kyoto Protocol target through funding of climate and energy related projects. Funds are provided (2007: € 50 million, 2008: € 150 million) for a number of projects and programmes targeting the increased use of renewable energies such as projects related to research on renewable energy, replacement of heating systems, etc. and support for companies, research institutions or municipalities as well as for individuals, depending on the respective programme. 10.000 biomass heating systems have been funded in 2008 through the KLI.EN.

Policies and measures in the sector Industry (taken from NC 5)

Policies and measures for the manufacturing industry aim at decoupling emissions from production and come to absolute reductions. To this end, activities aim at:

- improvements in final energy efficiency, and
- a fuel shift from coal to gas or renewable sources.

01_IND Environmental support scheme for installations (UFI)

Information as regards the Domestic Environment Support Scheme (BGBl. Nr. 185/1993 as amended) is also provided in chapters energy demand, energy supply (01_EN) and cross sectoral measures.

The main objective of this subsidy is to provide fiscal incentives for companies to implement measures in the field of energy efficiency, climate and environment protection. The following biomass related categories are of relevance for the industry sector: biomass-powered combined heat and power plants and power production from biomass and waste of biogenic origin.

2004-2007	Number of projects	Environment related investment costs [million €]	Subsidy [million €]	CO ₂ reduction efficiency [t/a]
Renewables	1.125	252	52	565.297

Table 16: The domestic environmental support scheme 2004-2007: sector industry (Umweltbundesamt 2009c)

03_IND European Emission Trading Scheme (ETS)

Information as regards the Emission Trading Scheme (Directive 2003/87/EC) is also provided in chapter energy supply (03_EN). The objective of emission trading is to put a price on fossil fuel emissions in the industry sector by limiting the CO₂ emissions available for industrial installation through a trading mechanism for emission allowances. This directive promoted the use of biomass to substitute process related emissions stemming from fossil fuel use.

The demand will increase further with increases in allowance prices, following the reduction of overall available allowances and the tightening of free allocation (reduction in overall available allowances in 2020 by 21% compared to 2005).

Cross cutting Policies and measures (taken from NC 5)

The Domestic Environmental Support Scheme

Funding according to the environmental support scheme in 2004–2007 has been provided for 7 616 projects whereof 95 % were related to climate change. These projects have brought about an emission reduction of some 2.7 Tg CO₂ equivalents. The environment related investment costs for the years 2004-2007 amount to € 1 464 million. Table 17 lists biomass related projects in the period between 2004 and 2007, which have been supported:

sector	Number of projects	Environment related investment costs (million €)	Subsidy (million €)
Waste management	27	44	7
Energy supply	292	538	94
Industry	1.620	506	86
Agriculture	155	9	2
Energy demand (residential and commercial)	5.442	361	84
Transport	80	6	1
Total	7.616	1.464	274

Table 17: The domestic environmental support scheme 2004-2007: overview (Umweltbundesamt 2009c)

In 2008 2 609 projects have been supported by € 82.4 million, whereof € 79.2 million or 96.1 % were of importance for climate mitigation measures. More than 80 % of the emissions reduction can be attributed to the energy supply and industry sector. Two thirds of the projects, which are rather small due to structural conditions, have been supported within the subsector energy demand. Further information can be found on the webpage and in the annual reports of Kommunalkredit Public Consulting (<http://www.public-consulting.at>).

The Emission Trading Scheme

The emission trading scheme is based on the Austrian Emissions Allowance Trading Act (see Section 4.2.3 of the most recent Austrian National Communication). Emissions trading currently covers greenhouse gas emitting installations which operate in specific sectors (energy intensive installations from industry and energy production sectors) as stipulated in the Austrian Emissions Allowance Trading Act. In 2007, these emitters were responsible for 36 % of the total emissions (based on verified emissions) in Austria. Within the affected sectors, about 80 % of emissions are covered.

The objective of emission trading is to put a price on fossil fuel emissions in the industry and energy sector by limiting the CO₂ emissions available for industrial installation through a trading mechanism for emission allowances. This directive promoted the use of biomass to substitute fossil fuel related emissions. See also measure 03_EN and 03_IND.

Policies and measures for the domestic mobilisation of woody biomass (additional national policies and measures)

Austrian Rural Development Programme

In agreement with the objectives of Regulation EC 1698/2005 and with the National Strategy Plan (<http://land.lebensministerium.at/article/articleview/44221/1/21437>, notified to the European

Commission 8 August 2007) the strategic orientation of the Austrian Rural Development Programme 2007-2013 (<http://land.lebensministerium.at/article/articleview/60417/1/21433>) supports the following measures to improve the competitiveness of the forestry sector:

- cooperation of small-scaled forest owners, e.g. in acquisition of machinery via associations of forest owners or members of machinery pool associations (M122 of the Rural Development Programme 2007-2013),
- introduction of new technologies and innovation in the production process to improve the quality of forestry products (M123b&d),
- cooperation in the development of new products, processes and technologies including improvement of information transfer, strengthening of the efficiency and the further development of services for forest owner associations. 2.5 million cubic metres of timber harvested have already been jointly marketed by subsidized forest management communities, (M124b)
- construction of infrastructure, i.e. forest roads for improving the forest management, including management of future extreme events resulting from climate change (M125)
- and supports product diversification in the agricultural and forestry sector and renewable energy supply in rural areas, by promoting investments in bio energy installations, such as CHP, local heat supply and heat distribution grids (M 311a and M 321c).

	financial support available	Financial support already made available (2007-2009)	Total investment volume triggered so far
M122	28.8	24.2	52
M123b&d	10	3.3	11
M124b	18.9	4.8	6.2
M125a	51.5	39.7	76
M311	78.9	26.2	87
M321c	146.5	31.1	86.6

Table 18: Overview of financial support made available to forest related measures

A financial support of in total 341 Mio. Euro is made available to promote forest related measures during the programme period.

Government Programme

The Government Programme (<http://www.bka.gv.at/DocView.axd?CobId=32965>) of the current election period (2008-2013) includes a strong mandate to further mobilise domestic supply of woody biomass for energy purposes to increase energy security and autarky while reducing dependencies on fuel imports. To support the aim of this Programme, the results of the “wood and biomass supply study” referred to under 4 have been published in a press release on 22 January 2009.

Austrian Forest Dialogue

The Federal Minister for Agriculture, Forestry, Environment and Water Management initiated a multi stakeholder process in April 2003, to bring to the table all different interest groups and improve

coordination of forest related activities. Within three years the first Austrian Forest Programme was developed (<http://www.walddialog.at/filemanager/list/16026/>) which identifies different important topics, objectives and measures regarding Austrian forests. In support of mitigating climate change, the following main goal was identified: G1 Increased utilisation of wood as a renewable raw material (material and energetic use) – best possible substitution of fossil materials.

To operationalise the Austrian Forest Programme, a Work Programme (<http://www.walddialog.at/filemanager/list/29043/>) was elaborated which contains concrete measures to support the objectives of the Forest Programme.

Following mitigation measures have been identified to support the thematic issues “contribution of Austrian forests to climate Protection”:

M 115.2 Arrangement of information campaigns and awareness raising to support the increased demand in woody biomass (cross reference to the Biomass Action Plan);

M 115.3 – 115.9 Mobilisation of woody biomass, with respect to market development and environmental circumstances

M 32 Initiation of the thematic window “klima:aktiv” Energieholz (information available at: <http://www.klimaaktiv.at/article/archive/25265/>) for the mobilisation of woody biomass (referred to under “Energy supply related policies and measures”)

M 321.1 Realisation of the “wood and biomass supply study”, which forms the basis for establishing the reference level, included in this submission

M 321.2 Establishment of a “Task Force Renewable Energy” to evaluate the future supply of domestic biomass (see below)

M 322.1 - 322.5 Information management and awareness raising, including initiation of regional contracting and transfer of know-how to forest holders and the forest-based sector

Forest Cooperatives

Cooperative wood harvesting is an appropriate measure to increase wood mobilization especially from small scale forest holdings. A major actor is the Austrian Forest Owner Cooperative (<http://www.waldverband.at/>), a dedicated organisation of the Austrian Chamber of Agriculture, providing a platform for 8 regional cooperatives for collective performance. The major goal is to increase the amount of wood harvested by means of joint production and joint marketing. The results of the latest NFI 07/09 show that the wood mobilisation from small scale forest holdings has been increased by more than 50%, compared to the former NFI 2000/02. The initiative is also closely linked to measures adopted within the Austrian Forest Dialogue.

Task Force Renewable Energy

In 2006 Task Force Renewable Energy (see M 321.2 of the Austria Forest Dialogue) was established, comprising experts and stakeholder from the forest sector, with the aim to define the domestic supply of all sorts of renewable energy sources, including forest biomass. The final report (http://www.energiestrategie.at/images/stories/pdf/02_bmlfuw_09_erneuerbare2020.pdf)

reinforced the findings of the wood and biomass supply study, which forms the basis for establishing the reference level.

Action Programme Timber Flow

In March 2009 the “Action Programme Timber Flow” (“Aktionsprogramm Holzfluss”) (http://www.leader-austria.at/forstwirtschaft/downloads/copy_of_aktionsprogramm-holzfluss-2008-2013) was developed by Federal Ministry for Agriculture, Forestry, Environment and Water Management to support a number of concrete measures – laid down in the Austrian Forest Dialogue, such as the preparation of forest management plans, the construction of forest roads, the purchasing of equipment, or the cooperation with the forest-based sector. The Action Programme has been endowed with 100 million Euro.

12. Provide confirmation that the construction of the forest management reference level neither includes assumptions about changes to domestic policies adopted and implemented after December 2009, nor includes new domestic policies

Only policies and measures which have been provided under 11 above have been considered in defining the reference level. All of those measures have been adopted and implemented before mid 2009.

In addition to those, further policies and measures for post 2012 have been adopted and will further increase the demand for woody biomass. The following measures are listed for information purposes only.

Revision of the Emissions trading Scheme (2009/29/EC)

The revision of the emissions trading directive was adopted on 23 April 2009 and entered into force in June 2009. Starting in 2013, a steep reduction in overall available allowances (- 21% in 2020 compared to 2005) and the tightening of free allocation (e.g. no free allocation granted to electricity producers post 2012) will lead to a further increase in allowance prices, resulting in an increase in biomass demand. Further information can be obtained from the impact assessment prepared by the European Commission (EC 2008) accompanying the proposal to revise the Emission Trading Directive (2003/87/EC) published January 2008.

Directive to promote the use of energy from renewable sources (2009/28/EC)

This directive was adopted on 23 April 2009 and entered into force in June 2009. It determines binding national targets for renewable energy consumption which collectively will lift the average renewable share across the EU to 20% by 2020 (more than double the 2006 level of 9.2%), with a national target for Austria of 34%.

According to the impact assessment prepared by the European Commission (EC 2008) accompanying the ‘climate and energy package’⁷ published February 2008, the achievement of the 20% renewables

⁷ the climate and energy package consists i.a. of the directive to promote the use of energy from renewable sources (2009/28/EC), the effort sharing decision (406/2009/EC) and help reaching the reduction targets defined in the revised emissions trading directive (2009/29/EC)

target will require a significant increase in the use of biomass for energy purposes. The Renewable Energy Road Map projected that - to reach the 20% share of renewables in energy consumption – the use of biomass would be around 195 Mtoe in 2020. Biomass is likely to make up around two-thirds of all renewables in 2020 (as it does today).

Austrian National Energy Strategy

The political target to mobilize additional forest biomass furthermore constitutes an important pillar of the Austrian National Energy Strategy, which was developed starting in April 2009 and finalized March 2010. The strategy (available at <http://www.energiestrategie.at/>) defines manifold measures i.a. to increase the renewables share in the energy supply thus laying the foundations to comply with the legal requirements and targets laid down in the climate and energy package adopted on 23 April 2009.

Measure 6.6.3 of the Energy strategy reiterates one important goal of the Austrian Eco Electricity Act (Ökostromgesetz, BGBl. I Nr. 104/2009) to increase the share of biomass in electricity production by 100 MW electric in 2015.

According to measure 6.6.4 of the Energy strategy additional 50 PJ of forest biomass shall be mobilized between 2005 and 2020 to increase the renewables share – especially in heat production. Approximately half of this 50 PJ has already been mobilized by 2009, mainly due to the installation of new biomass CHP-plants in the framework of the Austrian Eco Electricity Act.

The results of the energy strategy also fed into the national renewable energy action plan referred to in Para. 4 of the directive to promote the use of energy from renewable sources, which was submitted mid 2010.

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- BGBl. I Nr. 149/2002 idF. BGBl. I Nr. 105/2006 Ökostromgesetz: Bundesgesetz, mit dem Neuregelungen auf dem Gebiet der Elektrizitätserzeugung aus erneuerbaren Energieträgern und auf dem Gebiet der Kraft-Wärme-Kopplung erlassen werden (Ökostromgesetz) sowie das

Elektrizitätswirtschafts- und -organisationsgesetz (EIWOG) und das Energieförderungsgesetz 1979 (EnFG) geändert werden. Zuletzt geändert durch BGBl. I Nr. 114/2008.

BGBl. II Nr. 19/2006 Bund-Länder gemeinsame Qualitätsstandards für die Förderung der Errichtung und Sanierung von Wohngebäuden: Vereinbarung gemäß Art. 15a B-VG zwischen Bund und Ländern über gemeinsame Qualitätsstandards für die Förderung der Errichtung und Sanierung von Wohngebäuden zum Zweck der Reduktion des Ausstoßes an Treibhausgasen -aufgehoben durch BGBl. II Nr. 251/2009

BGBl. I Nr. 40/2007 Klima- und Energiefondsgesetz KLI:EN-FondsG: Bundesgesetz über die Errichtung des Klima- und Energiefonds.

BGBl. I Nr. 44/2008 i.d.F. 114/2008 Ökostromgesetz – ÖSG: Bundesgesetz, mit dem Neuregelungen auf dem Gebiet der Elektrizitätserzeugung aus erneuerbaren Energieträgern und auf dem Gebiet der Kraft-Wärme-Kopplung erlassen werden.

BGBl. II Nr. 251/2009 Bund-Ländern Maßnahmen Gebäudesektor zum Zweck der Reduktion des Ausstoßes an Treibhausgasen: Vereinbarung gemäß Art. 15a. B-VG zwischen dem Bund und den Ländern über Maßnahmen im Gebäudesektor zum Zweck der Reduktion des Ausstoßes an Treibhausgasen

Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market

Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on Energy Performance of Buildings

Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC

Decision 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020

Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources

Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community

Council Regulation EC 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development