Federal Ministry of
Economy, Family and Youth

European Commission
Directorate-General for Energy and
Transport
FAO Mr
Director-General Matthias Ruete
Brussels
BELGIUM

Name/phone extension:
Dr. Otto Zach / 3020
Reference number:
BMWFJ-552.800/0067-IV/2/2009
Your number/message:

Please reply citing the reference number to the email address post@IV2.bmwfj.gv.at

Directive 2009/28/EC; Notification in accordance with Article 4(3)

Dear Director-General,

The Federal Ministry of Economy, Family and Youth refers to your letter dated 13 October 2009 in which you refer to Member States' obligation to report until 31.12.2009, pursuant to Article 4(3) of the Directive on the promotion of the use of energy from renewable sources.

In this context it is stated that Austria considers it can achieve the objective of the relevant Directive 2009/28/EC to cover 34% of gross final energy consumption through renewable energy sources in its own country by 2020 pursuant to the definition in the directive.

The basis of this conclusion is currently being prepared in the 'Austrian Energy Strategy', which will be completed at the beginning of 2010. This energy strategy builds particularly on the objectives of the EU energy and climate package in a quantitative manner and will be developed comprehensively in several extensive groups and all relevant forums.

The objectives of the energy strategy and priorities of the individual specialist groups can be found in the enclosed 'Basis paper for working groups on the preparation of an Austrian energy strategy', which I would hereby like to present you with.

Further information is available on the internet site www.energiestrategie.at created specifically for this process.

Allow me to take this opportunity to wish you all the best for the upcoming holidays.

Basis paper

Kind regards,
Vienna, 23.12.2009
For the Federal Minister:
Dipl.-Ing. Mag.iur. Dr.mont. Alfred Maier

Electronically produced.

Basis paper for working groups on the preparation of an Austrian energy strategy

17.06.2009

1 Initial situation and context

Energy status

Our energy system is facing major challenges: while available energy scenarios forecast a rise in energy consumption, an increase in greenhouse gas (GHG) emissions and a stronger dependence on imported energy sources and raw materials, the policy requires – on the grounds of securing supply and reducing energy dependency as much as for combating global climate change – a reduction of greenhouse gas emissions and of the share of fossil fuels in energy consumption.

Further important challenges for the realignment of the energy system are long-term job creation and security and the increase in added value through innovative development of new technologies and services in the areas of energy efficiency, conversion technologies and energy sources.

In preparing the Austrian Energy Strategy, energy services and thereby consumption and final energy are viewed as the starting point for consideration.

The 2009 energy status report of the Federal Ministry of Economy, Family and Youth, based on energy statistics and the analysis of useful energy by the Austrian Statistics Office, form the basis of the provided data. The 2009 energy status report is attached to the documents.

Energy consumption

Final energy consumption has increased steadily in Austria in the past. This growth concerns most sectors, all categories of use and all energy sources (with the exception of coal). Final consumption of energy has almost doubled since 1970 and amounted to 1,106 PJ in January 2005. In the breakdown of consumption, mobility has the largest share with 35.83 %, followed by space heating, cooling and hot water systems in buildings with 30.44 %. A share of 16.20 % of final energy consumption is attributed to energy-intensive enterprises. Small and medium-sized enterprises, households and agriculture consumed 17.53 % in 2005.

The area of mobility thus determines the largest share of final energy consumption in Austria, the largest share of which is caused by road traffic (primarily motorised private transport and goods traffic). Despite additives from biogenic fuels, petroleum products are by far the dominant energy source. Domestic resources therefore only cover a small share resulting in a high dependence on imports from non-European markets and states.

A diversified energy mix is used in Austria to provide space heating, which reflects the development of the urban framework. In urban areas, it is mostly district heating and natural gas that are supplied. In rural areas, more biomass is used in addition to fuel oil. Significant increases can also be observed in heat pumps and solar thermal energy. Coal generally only plays a minor role in this sector. A share is also allocated to electric heating, which operates as circulating-air heating, or radiant heating and the use of electric boilers for heating water. A sharp increase in energy consumption was also observed in recent years through the additional installation of cooling systems for buildings.

Energy consumption in the areas of production, services, commercial applications and agriculture is characterised by the respective industries, enterprises and applied technologies, and strongly diversified. Household appliances and furnaces dominate the power consumption of households. The most significant categories of use for enterprises are electrical drives and process heating.

Energy-intensive enterprises are already now included for the most part in the European Emissions Trading Scheme (ETS), and have access to an international carbon market.

The final consumption of energy represents the energy sources (= energy products) which are ultimately directly provided to energy consumers. A partly relatively energy-consuming transformation and refining process is nevertheless still necessary beforehand for many energy sources in order to get from the primary energy, which is provided in the form of gross national

consumption, to the final product (e.g. electric current, which has been obtained from the primary energy hydroelectric power, or petrol, which has been distilled from crude oil in the refinery). In 2005 the final consumption of energy amounted to 1106.3 PJ, whereas gross domestic consumption was 1446.5 PJ. The difference is attributed mainly to conversion losses, the 'refinement' of the primary energy into a secondary source of energy, as well as the energy sector's own consumption, losses in transmission, but also non-energy consumption (e.g. consumption in the chemical industry as a raw material).

Energy supplies

The gross domestic consumption of energy in Austria amounted to 1,446.5 PJ in the 2005 base year, reached its record maximum 1,464 PJ in 2006 and fell slightly in 2007 to 1,421 PJ. Gross domestic consumption is also dominated by fossil fuels in Austria. Of particular importance for the Austrian energy supply, with a total of 23.3 % in 2005 and 26.9 % in 2007, is the very high share of renewable energies in gross domestic consumption. Other renewable energy sources (such as firewood, biogenic fuels (whether solid, liquid or gaseous), combustible waste and ambient heat) are already the most significant sources of renewable energy, accounting for a 16.1 % share in gross domestic consumption, followed by hydroelectric power (including the foreign trade balance with electrical energy) with a share of 10.8 %. The Austrian Statistics Office is planning to clarify the share of renewable energy sources in final energy consumption in the coming weeks.

Petroleum products dominate consumption among fossil fuels. The use of natural gas is particularly rising in energy production and industry. The share of coal is declining. The dependency of Austria's energy supply on imports (net import tangent = ratio of import balance to gross domestic consumption) amounts to the present total of 68.8 %. Coal and oil in particular have disproportionally high import quotas.

In the production of energy, a higher degree of self supply can be achieved primarily by using hydroelectric power but also through wind energy and the use of biomass. Domestic production in 2005 amounted to 64,283 GWz. In recent years however, due to the increase in power consumption Austria has become a net importer of electricity. Depending on water supply, up to 10 % of its needs are imported from Europe. The production of energy from fossil thermal power has also significantly increased in recent years, in which fuels, natural gas and coal predominate.

Lastly, in 2009 – based on existing experts' reports and assessments – the technical and economic potentials of different forms of renewable energy sources were ascertained and brought together

on the basis of known technology at present. The studies revealed a potential of 422 to 492 petajoule (PJ) of final energy in 2020. Compared to the 296 PJ produced in 2005, this represents an additional effective potential of 126 to 196 PJ; up to an additional 25 PJ in the area of water power, up to 91 PJ in the area of bioenergy, and up to an additional 80 PJ for other renewable sources of energy.This additional potential will combine the areas of electricity (up to 66 PJ), heating (up to 97 PJ) and fuel (up to 33 PJ). The possible potential must be evaluated on the basis of predicted demand and all defined objectives of the Austrian Energy Strategy that are feasible.

The Austrian Institute for Economic Research (WIFO) has quantified in relevant research the cost of concrete measures to achieve the targets for renewable energy. In the process the aim for shares in primary energy consumption was established and the, also already in a 'baseline scenario', immediate development of sources of renewable energy considered. One such evaluation gives a target of approx. 34 % renewable energy in primary energy consumption and 10 % biofuels by 2020, an increase in demand of approx. 180 PJ for renewable energy (10 PJ biofuels, approx 100 PJ heating from biomass and 65 PJ of electricity from biomass). On the basis of assumptions made, in 2020 yearly costs relating to the investment and promotion of green electricity and for the loss of petroleum tax amount to 2.6 billion. If measures concentrate on the biomass/heat sector and a potential of 100 PJ in this area is exhausted, then yearly costs sink to 300 million in 2020. The basis of the WIFO publication was the gross domestic consumption and not the gross final energy consumption now required for the purpose of the EU directive. Furthermore, these studies estimated that the increase from 23 % to 45 % in the share of renewable energy is achieved exclusively through the additional use of biomass.

Greenhouse gas emissions

In the present 2009 climate change report, greenhouse gas emissions trends are analysed and compared with the objectives of the Austrian climate strategy. In addition, the report offers an outlook for Austrian greenhouse gas emissions until 2020 in line with the legal obligations under the European Union's climate and energy package. In 2007 Austria's greenhouse gas emissions amounted to 88.0 million tonnes of CO_2-equivalent emissions. This is 11.3 % above the 1990 level. Between 2006 and 2008 there was a 3.9 % reduction of GHG emissions. The main producers of waste in 2008 were the industry and manufacturing sectors, transport, energy supply, as well as space heating and other commercial applications. In the industry and energy supply sectors around 80 % of emissions are caused by businesses that are subject to emissions trading.

EU climate and energy package

The climate and energy package adopted by the Heads of State and Government in 2007 aimed to achieve for 2010:

- a minimum reduction of 20 % of greenhouse gases (30 % for an international agreement) compared to 1990,
- a 20 % share of renewable energies in total consumption (a sub-goal is the increase in the share of renewable energy sources to 10 % of the energy used in transport through the use of more efficient biogenic fuels and electric mobility),
- 20 % more energy efficiency.

Austria also undertakes, in accordance with the European Union's climate and energy package adopted in December 2008, to:

- increase the share of renewable energy sources in the gross final energy consumption to 34 % by 2020,
- simultaneously reduce its greenhouse gas emissions in sectors that are not subject to emissions trading by at least 16 % by 2020 from 2005 emissions (for sectors covered by the EU Emissions Trading Scheme, an EU-wide reduction of greenhouse gases by 21 % from 2005 has been decided upon. A path is also provided here),
- increase energy efficiency by 20 % by 2020 as opposed to a business-as-usual scenario.

The biggest sector polluters of greenhouse gases in sectors outside emissions trading are transport and the sector for space heating and warm water in buildings. The linear reduction path for Austrian greenhouse gas emissions is strictly defined from 2013.

This legal, economic and ecological context makes the need for action clear. An energy strategy for Austria must therefore ensure that these objectives are reached by 2020 and set the agenda beyond 2020, thereby covering the entire energy system as well as incorporating international markets and availability of resources.

2 Objectives

The objective of the Austrian Energy Strategy is to develop a sustainable energy system which makes energy services available for private consumption as well as for businesses in the future whilst implementing EU rules. Security of supply, environmental impact, cost effectiveness, social compatibility and competitiveness have been fixed as core objectives in the Austrian Energy Strategy.

The principal direction of the strategy must be the improvement in energy efficiency and the increase of the share of renewable energies.

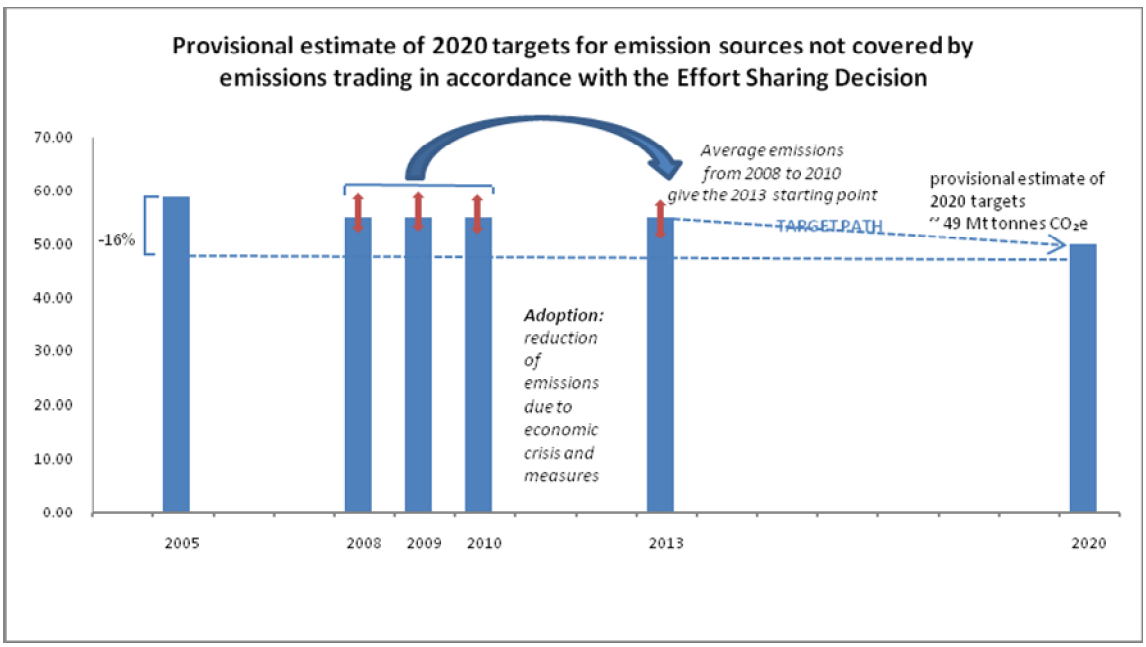
Innovation, technology development and user-fair products play a significant role in the realignment. For a highly-developed country it is of particular importance to take a leading role in innovation, research and development, switch to new technologies and thereby develop new markets across the world. The energy strategy should thus also act as an engine for the whole economy as well as secure and create long-term skilled jobs.

Europe and Austria also need a paradigm shift towards an integrated sustainable climate and energy policy while taking account of economic, environmental and social aspects.

In addition to Austria's ambitious objectives for the promotion of renewable energies, the reduction of greenhouse gas emissions creates just as great a challenge to domestic energy and environmental policy ([1]).

The preliminary target estimates for greenhouse gas emissions that are not subject to the Emissions Trading Scheme are provided in the following graphs:

([1]) It should be noted that decisions on an international climate regime for after 2012, which will be made at the Climate Change Conference in Copenhagen at the end of 2009 or thereafter, could lead to a tightening of EU reduction targets for greenhouse gas emissions and result in an adaptation of the EU climate and energy package. This concerns the reduction target for emissions trading as well as the target for greenhouse gas emissions in sectors outside emissions trading and could thus also require the energy strategy to be adapted.



The improvement in energy efficiency and achievement of the share for renewable energy sources are therefore closely linked with greenhouse gas emission reductions and should always be considered together. International commitments, economic considerations, security of supply, environmental protection and resource conservation define a field of tension in which the Austrian Energy Strategy should be developed.

The electricity supply industry and industry covered by the EU Emissions Trading Scheme have no effect on the achievement of the 16% reduction target for greenhouse gases. System-relevant issues which cross the board and the security-of-supply objective are unaffected by it. The energy consumption of facilities within the EU Emissions Trading Scheme does however impact on the achievement of the 34% target (share of renewable energy in gross final energy consumption).

3 Strategy – towards the objectives

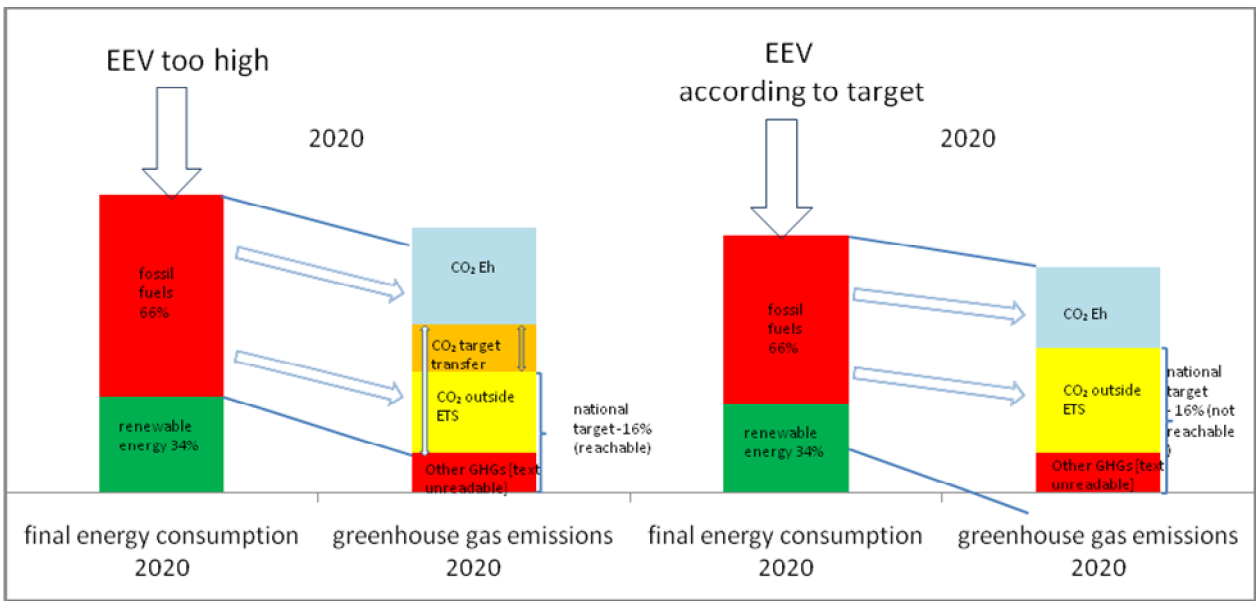
Based on the strategy's three pillars of security of supply, energy efficiency, and renewable energy, the Austrian Energy Strategy pursues the following direction: an improvement in energy efficiency at all stages of the provision and use of energy.

Security of supply and crisis prevention for all energy sources must also be increased and aimed at the highest possible degree of self supply and cost effectiveness.

In order that the demand for services be met in a way that is compatible with EU objectives, it is necessary to combat the present trend of steadily increasing energy consumption. It is therefore essential to fix a target for final energy consumption in 2020.

Based on current studies, research projects and scenario simulations, Austrian specialist institutions the Austrian Energy Agency, e-control and the Federal Environmental Agency have jointly recommended a target for 2020. A range of current economic works, but also policy-strategic documents such as the white paper on energy policy of social partners, were consulted in the process. To achieve the objectives of the Austrian Energy Strategy the specialist institutions regard a **stabilisation of final energy consumption** on the basis of consumption in 2005 to be an indispensable basis.

The diagrams illustrate the importance of the final energy consumption target for reaching the targets for renewable energy and greenhouse gas emissions outside the emissions trading scheme:



For the 2020 objectives, this means:

- the target for the required volume of renewable energy sources can be derived,
- a significant and quantifiable contribution fuel mix taking into account the supply side is provided in order to able to achieve the required reduction of greenhouse gas emissions,
- security of supply is improved and the dependence on imported energy sources falls,
- the extent and intensity of environmental interventions tend to reduce with falling energy consumption,
- economic effects in terms of innovation, technology development and environmental technologies are generated, affecting growth and employment positively.

This target for the final consumption of energy sets a measurable level of energy-efficiency policy measures and defines the minimum level for the development of renewable energy sources. The year 2005 should be taken as the base year since this is also the reference year for EU targets. In total, final energy consumption was 1,106 PJ in 2005. For 2020 the following objective is to be formulated:

The target for final energy consumption in Austria in 2020 is 1,100 PJ.

The sector benchmarks for 2020 that have emerged from the analysis of the specialist institutions should serve as a guideline for Austrian Energy Strategy working groups when drafting measures.

Working groups are selected for the most important current and future energy-policy topics and represent on one side the four main consumption sectors construction, households/business/services/agriculture, energy-intensive enterprises and mobility, and on the other side the various energy-supply sectors.

It should be noted that the estimated final energy benchmarks in the relative sectors are compared with consumption in 2005. In comparison with a continuation of existing trends from current business-as-usual scenarios until 2020, efficiency gains and a decoupling of economic performance and energy consumption must clearly be achieved.

Compliance with target values presents, according to the assessment of experts from specialised institutions, an ambitious but realistic path to achieving the objectives of the Austrian Energy Strategy

as well as the above-mentioned EU objectives. It should – as stated above – serve as a basis for measures to be developed in the separate working groups. Experts from the Federal Environmental Agency assume in their first assessment that with the stabilisation of final energy consumption and the simultaneous achievement of the 34 % target, the specifications from the Effort Sharing Decision can be reached ([2]).

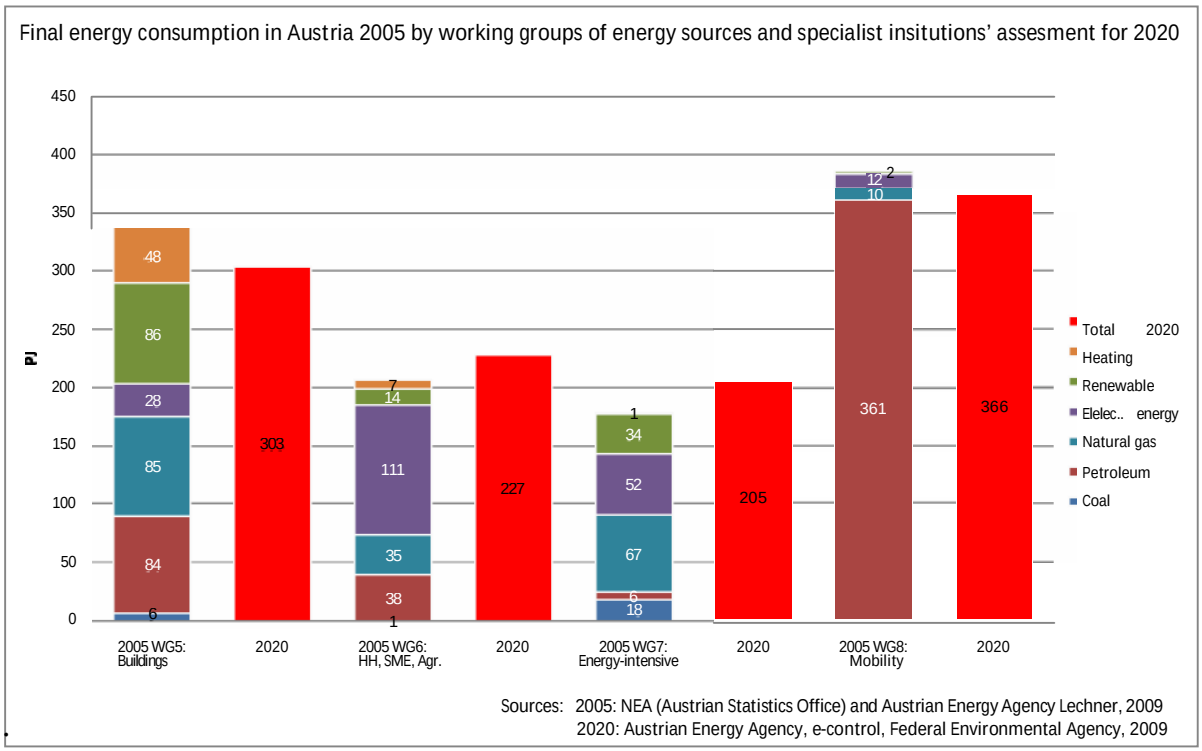
With a slight reduction of transformation losses, a final energy consumption of 1,100 PJ corresponds to a gross domestic consumption of approx. 1,400 PJ. An accurate evaluation of target achievement cannot be conducted until concrete measures have been proposed by the working groups.

		2005	Sector target	2020
		PJ	Per cent	PJ
Buildings	space heating, cooking; residential, tertiary and commercial buildings	337	- 10 %	303
Households, business, services, agriculture, commercial	without space heating and off-road mobility	206	+ 10 %	227
Energy-intensive enterprises	covers the sectors of iron&steel, chemicals, non-ferrous metals, stones&earth and glass, paper and printing, wood; without space heating	178	+ 15 %	205
Mobility	includes off-road equipment	385	- 5%	366
		1106		**1100**

([2]) These are however necessary for decreases in non-energy producing GHG emissions; this applies to, for example, agriculture and waste.

The calculation of the share of renewable energy sources (RES) in accordance with the EU Directive on the use of renewable energy uses the gross final energy consumption as a basis. In addition to final energy consumption, the consumption and network losses of the electricity and district heating sectors themselves are added. According to the calculations of the Austrian Energy Agency and following the EU RES system these are in the region of 40 PJ.

The underlying base value for the calculation of the 34 % share thus amounts to approx 1,140 PJ for 2020. This should account for approx. 388 PJ of renewable energy in gross final energy consumption



In the various areas of consumption-related use (construction, mobility, business, industry, etc.) possibilities for increasing energy productivity and for reducing CO_2 emissions are considered. The discussions on implementing measures addressed on both the demand and supply side are the object of the energy strategy's process, in which the measures in the energy-policy fields of activity should be detailed.

Scope of the working groups and basis for assessments

Important points for the basis of assessments and the scope of the topics are listed below by the three specialised institutions. The studies and documents used are listed in the bibliography. A more detailed assessment and questions on target achievement are being compiled for the individual working groups:

Buildings

Scope of the working group

- Residential buildings, tertiary and business buildings, and public buildings are included.
- Content is focussed on building envelopes and space heating.
- For space heating, there is also the heating, hot water production, cooling systems for buildings and the related control systems.
- Power consumption for building equipment control systems in buildings is statistically assigned to the households and commercial applications working groups. With regard to contents, this topic should be dealt with in the buildings working group.
- Hot water is not fully represented in the analysis of useful energy. For residential and tertiary buildings this consumption is found under space heating. For commercial buildings, hot water is partly associated with process heating. With regard to content, the issue of hot water is dealt with in the Buildings Working Group.

Basis for the assessment

- Final energy consumption in the building sector has a high savings potential, which can be achieved particularly in the heating demand for space heating and hot water as well as cooling/air-conditioning.
- Appropriate technologies for the reduction of energy consumption are available and approved, and are already implemented in national and international guidelines or can be further adapted.
- This applies to new constructions and the renovation of existing buildings in the residential, commercial and tertiary building sector.

- The strongest reduction in heating demand in the medium term (by 2020) is expected due to the increased renovation rate of residential buildings.
- The additional space created – and thus consumption growth – in new constructions must be compensated for through far-reaching standards. An increasing population and the change in the urban framework must be taken into account in doing so.
- For tertiary buildings, which account for one third of the space heating demand and almost the entire cooling demand, substantial improvements in energy are required, especially as this building type has experienced a considerable increase in both final energy consumption and greenhouse gas emissions in recent years.
- Also essential for the increase in renovation rate is the identification and overcoming of non-financial obstacles to energy-saving renovation, such as the design of the investor-user system.

Households, businesses, agriculture, commercial applications

Scope of the working group

- The range of sectors included is in accordance with ÖNACE. Energy-intensive enterprises (see below) are assigned to the Energy-intensive Working Group.
- Private and public services are included in this working group
- Building-related energy consumption is not addressed
- Mobility inclusive of off-road equipment such as construction and agricultural machinery is not addressed.

Basis for the assessment

- This area is very heterogeneous. The requirements of the various sectors are very different – a common scenario is therefore difficult.
- Power consumption has the biggest share in this area with 50 %. The improvement of energy-efficiency in production and service processes as well as in households is viewed as the most important factor for ensuring at least a partial decoupling of economic performance and energy consumption.

- Due to an increasing amount of equipment and the further development of information technologies, a movement in the direction of electrical energy and an increase in power consumption are expected.
- The main legal framework is the EU framework directive on the energy-efficiency of appliances (EuP Directive) and its implementing guidelines.
- Through expectable growth – after the end of the current financial crisis – and the increasing equipment and further technology-driven processes, final energy consumption is expected to continue to increase until 2020. Compared to the development of recent years however, to restrict growth to 10 % a clear decoupling of economic performance and final energy consumption will be necessary.

Energy-intensive enterprises

Scope of the working group

- The working group includes the following sectors: iron and steel; chemicals; non-ferrous metals; stones; earth and glass; paper and printing; wood;
- Building-related energy consumption and mobility are not addressed

Basis for the assessment

Energy consumption in the energy-intensive sectors rose strongly in the final years of the economic boom. The use of renewable energy sources and power consumption in particular has risen disproportionally.

- An increase in final energy consumption by 15 % within 15 years means a partial decoupling of final energy consumption and production capacity. Energy efficiency must be further improved in any case.
- The use of industrial waste heat also in other sectors will play a significant role in the provision of space heating or in small-scale production processes.

Mobility

Scope of the working group

- The entire private and public transport sector is covered. Passenger and goods traffic are included.
- Off-road equipment, agricultural machines as well as private and public fleets are included.

Basis for the assessment

- Final energy consumption in the area of mobility has recently risen strongly with an increasing dependence on imports of all energy sources used.
- The dependence on imports of petroleum can – only with great effort – be reduced through efficient biofuels produced in an environmentally-friendly way, the raw materials of which must to some extent be imported.
- New options of innovate chains and electric mobility offer great potential for reducing dependence on oil imports as well as CO• emissions. The coverage of consumption from renewable sources must therefore be assured.
- The mobility sector has a dominant influence on greenhouse gas emissions in sectors outside the emissions trading scheme (covered by the Effort Sharing Decision).
- A reduction of energy use in the mobility sector is therefore a key factor in achieving the strategy objectives.
- There is a range of equally effective and short-term measures available, such as scenario analyses show. Parallel to this, long-term change in the transport system in combination with innovative, coordinated spatial planning concepts is also necessary.

Supply side

The assessment of final energy consumption has been produced for the Consumption-side Working Group. Measures proposed in the working groups through changes in the demanded energy sources and energy forms will have an effect on the supply side. An accurate assessment of this fuel shift will not be made beforehand but should be an issue for the working groups and be presented when drafting measures.

Scenario comparison – business as usual

It should be noted that the estimated guide values for savings are compared with consumption in 2005. On behalf of the Ministry of Life to meet reporting obligations under monitoring mechanisms, two emissions scenarios have been assessed for greenhouse gases: 'with existing measures' (business as usual) and 'with additional measures'. They reflect no political or legal objectives, such as how the 34 % target for renewable energy sources should be achieved. The 'with existing measures' scenario includes measures implemented up to 8 August 2008. As a basis for the calculation of final energy consumption and GHG emissions, energy forecasts, amongst others, up to 2020 have been modelled by a consortium from WIFO, the Austrian Energy Agency, and the Energy Economics Group from the University of Technology in Vienna, and supplemented by Federal Environmental Agency assessments. For the presentation of the Austrian final energy consumption of individual sectors the relevant model results were consulted.

- Final energy consumption increases until 2020 to 1,310 PJ in the 'with existing measures' scenario.
- For 2020 the share of renewable energy sources in the gross final energy consumption is 28.7 % (excluding the non-renewable share of municipal waste).
- In terms of greenhouse gas emissions the base-line scenario shows an increase in greenhouse gas emissions to 98.1 million tonnes of CO_2-equivalent emissions. This represents an increase of 5.7 % from the base year.
- Greenhouse gas emissions in non-ETS sectors must be reduced by around 20 % in order to achieve the effort-sharing objective.

WIFO recently published in 2005 medium-term energy scenarios until 2020 for Austria (WIFO 2005). These reached assumptions about the economic environment, such as the growth of the Austrian industry sectors and international energy prices, as well as specific assumptions about the development of renewable energy sources in Austria.

For the described scenario 'with existing measures', an updated baseline scenario based on WIFO 2005 was adopted until 2020. With respect to the recently published 2020 energy scenarios by WIFO, adjustments in the economic input quantities were made, amongst others. In this scenario an oil price to the amount of $120/bbl was assumed.

4 General issues and evaluation criteria

The achievement of defined objectives of the Austrian Energy Strategy by 2020 and the approaches to them represent a realignment of the energy system. For this purpose a series of measures will be implemented in the coming years.

- These measures should be developed in the working groups and be the basis for a meaningful outcome of the strategy process. The measures proposed and formulated should be presented and evaluated following a verifiable procedure. The presented table provides the structure for the preparation and evaluation of these measures. No technology should be excluded (except the domestic generation of power from nuclear energy).
- In this open process between policy makers, social partners, interest groups, NGOs and businesses it is especially important to define which instruments are most suitable to achieve a specific objectives (e.g. incentives through subsidies; fiscal instruments; voluntary undertakings; regulations and standards; information; advice and awareness raising; regulative law). The aim is to formulate as precisely as possible programmes for the implementation of individual measures.
- Any factors which prevent or counteract the completion of a measure should be discussed and presented in order to gain more insight into implementation deficits.
- Many measures will cross over with other working groups – especially as regards consumption and supply. These interactions, synergies, inconsistencies and conflicts should be addressed and presented. Questions and comments to other working groups should be formulated as quickly as possible to be able to establish cross connections. Through an intensive and continuous exchange of information by working group leaders, a targeted synopsis will be possible.
- Typical cross-cutting issues such as research and development as well as education and training, advice and awareness-raising should be dealt with in each working group and summarised in Working Group 9, ‘Incentives and Regulation’.
- Which objectives in the research and development field are to be achieved by 2020? Which technologies should be established on the market?
- Many measures must be initiated now, even if they will only be effective after 2020. These approaches and visions beyond 2020 through to 2050 should be presented for discussion in each working group.

Objectification of measures in the energy sector Procedure	Measure
Does the proposed measure concern the increase in energy efficiency or the increase in the share of renewable energy?	
Benefit of the measure in terms of energy (final energy PJ)	
Calculation method	
Benefit of the measure: for the reduction of greenhouse gas emissions (Mt CO_2-equivalent) – estimate	
Feasibility (by when)?	
Effectiveness of the measure (from when and for how long)?	
Which fuel shifts will the measure cause? (Impact of consumption change on supply side)	
Financing	
How much funding is needed (EUR)	
Who should cover the financial requirements (mix: public, private, etc.)	
Which is the most suitable instrument for success (subsidies, fiscal instruments, voluntary agreements, information, regulative law, competition law, state aid law, etc.)	
Possible obstacles to be overcome	
Evaluation of resources (business and economic)	
Ratio million EUR/PJ; investment costs and running costs	
Accepted payback period	
Ratio EUR/ t CO_2-equivalent and year	
Effectiveness of measure in terms of greenhouse gas reduction (from when and for how long)	
Cost effectiveness (business – impact on competition, impact on SMEs, etc.) – qualitative and quantitative where possible	
Cost effectiveness (economic – jobs, economies of scale, technology development, impact on competition, distrubutive impacts, economic returns, regional added value, etc.) - qualitative	
Possible obstacles to be overcome	
Which existing measures should be adapted and/or removed?	

Other impacts	
Impact on other working groups and areas	
Positive and negative impacts on other environmental areas (air pollution, biodiversity, waste, etc.)	
Social impact	
Impact on security of supply	
Are evaluations of measures within the context of the EU? (Obstacles and support)	
Research and development needs for this measure	
Awareness raising for this measure	
Education and training	
Consumer perspective (benefits and products offered)	
Business perspective	
Setting the course or effect of measures beyond 2020	
How can an optimal coordination between national, regional and local levels be achieved?	
Other	

5 Organisation and procedure

Organisational

Three fixed dates per working group are scheduled for now. This does not however prevent individual working groups from arranging additional sessions for all members or for individual persons.

Furthermore, informal sessions with regard to content will also be held with working group leaders in order to facilitate an overall picture of the findings from the various working groups. Every working group shall be responsible for inviting other specialists or stakeholders at the request of members to take part in discussions.

Session procedure

- Written invitations are issued by brainbows around 14 days in advance
- The agenda is set at the suggestion of brainbows in consultation with representatives from both ministries (and the expert leading the working group). For non-agreements a resolution follows in the strategy coordination
- Discussion papers introduced by members of the working group and external stakeholders are submitted in writing in the sessions and where possible previously edited by brainbows (and the expert leader) in coordination with the two ministries.
- Sessions will be held where meeting rooms are available, in the ministries or at the location of working group members.
- The compilation of records of results is carried out by brainbows. Results are distributed in coordination with both ministries. Contents are requested to be in writing.
- Result papers are compiled in working groups which present the best possible expert input for the whole strategy, but are not immediately adopted. The proposed measures are evaluated from a legal and financial perspective by Working Group 9 and the specialist institutions and experts from the ministries.
- In any case no one will be overruled, all suggestions submitted in writing will be dealt with and discussed; no majority decision will be given, only recommendations for strategy coordination.
- Efforts will be made to evaluate and quantify most of the measures suggested according to various criteria (see grid). This should take place firstly by the working groups and in a secondary step by the specialist institutions.

6 Bibliography

Primary documents used for the general basis paper.

Title	Who (institution and authors)	Published
Austria's Energy Status 2009	Austrian Federal Ministry of Economy, Family and Youth (BMWFJ); Department IV – Energy and Mining	May 2009
Erneuerbare Energie 2020 - Potenziale und Verwendung in Österreich	BMWFJ	May 2009
Grünbuch Energieeffizienz - Maßnahmenvorschläge zur Steigerung der Energieeffizienz	E-Control on behalf of the Austrian Federal Government	2008
EE-Pot: Abschätzung der Energieeffizienz-Potenziale in Österreich bis zum Jahr 2020	Sponsor: The Federal Ministry for Labour and Economics (BMWA) Authors: Austrian Energy Agency; Michael Sattler (overall direction),	April 2008
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