Republic of Croatia Ministry of Finance	CARDS	LGA REPORT		
		Version: 4	Date: 13 May 2008	Pages: 81

RELEEL

APPROXIMATION OF EU RENEWABLE ENERGY LEGISLATION AND ENERGY EFFICIENCY LABELLING

REPUBLIC OF CROATIA

Legal Gap Analysis Report

Croatian national legislation and EU acquis related to promotion of renewable energy sources and cogeneration

May 2008

Consortium of:

iC consulenten ZT GesmbH
Kaiserstrasse 45
1070 Vienna, Austria
tel. +43 (1) 521 69-0
fax +43 (1) 521 69-75
a.helbl@ic-vienna.at

a member of iC group

May 2008

M:\27_ENE\07136_CROATIA_RENEW_ENERG3\5_ARBEIT\REPORTS\PROGRESSREPORT1\080506_PROGRESSREPORT_I.DOC

CONTENT

APPENDIX

Annex 1 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.

Annex 2 Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat-demand in the internal market and amending Directive 92/42/EEC.

Annex 3 Community guidelines on state aid for environmental protection (2001/C 37/03), Status: January 2008

TABLES

FIGURES

ABBREVIATONS AND TRANSLATIONS

English	Croatian
Act on Regulation of Energy Activities	Zakon o regulaciji energetskih djelatnosti
CERA Croatian Energy Regulation Authority	HERA Hrvatska energetska regulatorna agencija
Croatian energy market operator	HROTE Hrvatski operator tržišta energije
DSO Distribution System Operator	ODS Operator distribucijskog sustava
EC ECJ Electricity Market Act	Zakon o tržištu električne energije
Energy Act	Zakon o energiji
MoELE Ministry of Economy, Labour and Entrepreneurship	MINGORP Ministarstvo gospodarstva, rada i poduzetništva
OG Official Gazette	Narodne novine
Ordinance on attaining the status of eligible electricity producer	Pravilnik o stjecanju povlaštenog proizvođača električne energije
Ordinance on the use of renewable energy sources and cogeneration	Pravilnik o korištenju obnovljivih izvora energije i kogeneracije
Regulation on fees for promoting electricity production from renewable energy sources and cogeneration	Uredba o naknadama za poticanje proizvodnje električne energije iz obnovljivih izvora energije i kogeneracije
Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised	Uredba o minimalnom udjelu električne energije proizvedene iz obnovljivih izvora energije i kogeneracije čija se proizvodnja potiče
Tariff system for the production of electricity from renewable energy sources and cogeneration	Tarifni sustav za proizvodnju električne energije iz obnovljivih izvora energije i kogeneracije
TSO Transmission System Operator	OPS Operator prijenosnog sustava

1. INTRODUCTION

1.1 PRELIMINARY REMARKS

The task of this legal gap analysis report is to examine the extent of compliance of the Croatian legal system with the acquis communautaire in the field of renewable energy and cogeneration. This legal gap analysis report focuses on the regulations set out by the

- 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 (Appendix 1)

and the

- Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat-demand in the internal market and amending Directive 92/42/EEC (Appendix 2)

Furthermore this report concerns the compliance with EU primary law, especially the regulations on state aid law set out by Art 87 seq EC and the effective Community guidelines on State aid for environmental protection (2001/C 37/03; Appendix 3), since this rules are of imminent importance for every state-induced support scheme and constitute an indispensable and not neglect able part of the relevant legal framework of the EU.

For the sake of clarity it has to be pointed out, that the report does not cover the most recent discussions on these issues on European level (Climate Action) which was presented by the European Commission on 23rd January 2008 and is yet in discussion. However, the basic legal structure of funding and promoting of renewable energy and cogeneration will not be changed by these intentions.

1.2 GENERAL REMARKS ON EUROPEAN SUPPORT SCHEMES

Apart from this the European Commission communicated already in 2005 a report for “The support of electricity from renewable energy sources” [COM (2005) 627 final].

Basic statements of the European Commission concerning support schemes are:

- Feed-in tariffs exist in most of the Member States. These systems are characterised by a specific price, normally set for a period of around several years that must be paid by electricity companies, usually distributors, to domestic producers of green electricity. The additional costs of these schemes are paid by suppliers in proportion to their sales volume and are passed through to the power consumers by way of a premium on the kWh end-user price. These schemes have the advantages of investment security, the possibility of fine tuning and the promotion of mid- and long-term technologies. On the other hand, they are difficult to harmonise at EU level, may be challenged under internal market principles and involve a risk of over funding, if the learning-curve for each RES-E technology is not build in

as a form of digression over time. A variant of the feed-in tariff scheme is the fixed-premium mechanism currently implemented in Denmark and partially in Spain. Under this system, the government sets a fixed premium or an environmental bonus, paid above the normal or spot electricity price to RES-E generators.

- Under the green certificate system, currently existing in Sweden, the United Kingdom, Italy, Belgium and Poland, RES-E is sold at conventional power-market prices. In order to finance the additional cost of producing green electricity, and to ensure that the desired green electricity is generated, all consumers (or in some countries producers) are obliged to purchase a certain number of green certificates from RES-E producers according to a fixed percentage, or quota, of their total electricity consumption/production. Penalty payments for non-compliance are transferred either to a renewables research, development and demonstration (RD&D) fund or to the general government budget. Since producers/consumers wish to buy these certificates as cheaply as possible, a secondary market of certificates develops where RES-E producers compete with one another to sell green certificates. Therefore, green certificates are market-based instruments, which have the theoretical potential, if functioning well, of ensuring best value for investment. These systems could work well in a single European market and have in theory a lower risk of over-funding. However, green certificates may pose a higher risk for investors and long-term, currently high cost technologies are not easily developed under such schemes. These systems present higher administrative costs.

- Pure tendering procedures existed in two Member States (Ireland and France). However, France has recently changed its system to a feed-in tariff combined with tendering system in some cases and Ireland has just announced a similar move. Under a tendering procedure, the state places a series of tenders for the supply of RES-E, which is then supplied on a contract basis at the price resulting from the tender. The additional costs generated by the purchase of RES-E are passed on to the end consumer of electricity through a specific levy. While tendering systems theoretically make optimum use of market forces, they have a stop-and-go nature not conductive to stable conditions. This type of scheme also involves the risk that low bids may result in projects not being implemented.

- Systems based only on tax incentives are applied in Malta and Finland. In most cases (e.g. Cyprus, the UK and the Czech Republic), however, this instrument is used as an additional policy tool.

Additionally, further steps have been described in 2007 with announcing a "Renewable Energy Roadmap – Renewable energies in the 21st century: building and more sustainable future"[1]. The European Commission has therein formulated guiding principles for policy as follows:
Policy shall

- be based on long term mandatory targets and stability of the policy framework,
- include increased flexibility in target setting across sectors,
- be comprehensive, notably encompassing heating and cooling,

[1] COM (2006) 848 final.

- provide for continued efforts to remove unwarranted barriers to renewable energies deployment,
- take into consideration environmental and social aspects,
- ensure cost-effectiveness of policies, and
- be compatible with the internal energy market.

Additionally, relating promotional policies and flanking measures are of high importance for Member States' implementation. Within that topic Member States shall be required to propose and strengthen legal provisions to remove any unreasonable barrier to the integration of renewable energy sources in the EU energy system. In close context to this provision Member States are also required to enable a better integration of renewable energy sources into the power grid.

With special aim on Member States and/or regional authorities European Commission claims to

- ensure that authorisation procedures are simple, rapid and fair with clear guidelines for authorisation including as appropriate, appointing one-stop authorisation agencies responsible for coordinating administrative procedures related to renewable energy sources;
- improve pre-planning mechanisms whereby regions and municipalities are required to assign suitable locations for renewable energies;
- integrate renewable energies in regional and local plans.

Referring results on the track to meet with common European targets have lately been presented by the "Green Paper follow-up action - Report on progress in renewable electricity" (COM (2006) 849 final).

1.3 REFERENCE TO THE AUSTRIAN SITUATION

In Austria the implementation of promotion of renewable energy sources as well as cogeneration has been made primarily and recently by the Austrian Renewable Energy Act ["Bundesgesetz, mit den Neuregelungen auf dem Gebiet der Elektrizitätserzeugung aus erneuerbaren Energieträgern und auf dem Gebiet der Kraft-Wärme-Kopplung erlassen werden (Ökostromgesetz), Austrian Federal Law Gazette Nr 149/2002 as amended by Nr 10/2007] and subordinate by-laws.

At the same time referring regulations within existing Austrian market rules and technical and organisational rules for the energy (electricity) market have been implemented to the Ökostromgesetz and subordinate regulations, especially including relevant General Terms and Conditions for RES ("AB-ÖKO").

Since the Croatian system is strongly oriented to the Austrian and German system the report also points out relevant experiences from the Austrian and German point of view especially with regard to the communication with European Commission and structural problems.

2. CROATIAN LEGISLATION – OVERVIEW OF CURRENT STATUS

2.1 INTRODUCTION

As said before this report focuses on the description of the Croatian legislative framework relevant for promotion of renewable energy sources and high efficient cogeneration.

It has to be emphasised that renewables and cogeneration are covered by the same legislative acts, thus many aspects regulating their use for electricity production, such as the licensing procedure and the procedure for awarding the incentive price, are more or less identical.

The legislative framework for the production of electricity from renewable energy sources and cogeneration in Croatia is comprised in the Energy Act (OG 68/01, 177/04, 76/07), the Electricity Market Act (OG 177/04, 76/07) and the Act on Regulation of Energy Activities (OG 177/04, 76/07) as well as accompanying implementation regulations. In this introduction, we will discuss the main determinants stated in the primary legislation, while secondary legislation will be discussed in the following sub-chapters.

2.2 PRIMARY LEGISLATION

The main legal source for the Croatian energy sector is the Energy Act, which stipulates positive attitude towards hereby analysed issues. Specifically, Article 14(1) states that, “the use of renewable energy sources and cogeneration is in the interest of the Republic of Croatia”. Article 14(2) defines, that the Ordinance on the use of renewable energy sources and cogeneration, issued by the Minister, regulates the renewable energy sources used in the production of energy as well as the conditions and possibilities for their use. This includes planning, administrative procedures, registration of projects and facilities concerning renewable energy sources, registration of eligible producers and other fundamental issues for the use of renewable energy sources. According to Article 28(3) the Government determines the fees for promoting electricity production from renewable energy sources and cogeneration and adopts the tariff system for the production of electricity from renewable energy sources and cogeneration.

The field of renewables and cogeneration is also regulated by the Electricity Market Act. Article 8 of the Electricity Market Act stipulates that, any energy undertaking or any other legal or physical person generating electricity and heat with high efficiency in a single plant and uses waste or renewable energy resources in an economically viable way in compliance with environmental protection, may gain the status of eligible producer. A detailed elaboration of groups of plants using renewable energy sources for electricity production and cogeneration plants for which a project holder or producer may acquire the status of eligible producer are prescribed in the Ordinance on the use of RES and cogeneration. The status of eligible producer shall be acquired on the basis of a decision to be issued by the Croatian energy regulatory agency (HERA) in accordance with the requirements for attaining the status of eligible producer prescribed by the Minister.

Eligible producers, with the exception of hydro power plants exceeding 10 MW of capacity, may claim an incentive price based on the tariff system for the generation of electricity from renewable energy sources and cogeneration. Before granting the status of eligible producer, it is necessary to attain the preliminary decision for attaining the status of eligible producer from HERA in accordance to the regulation specified above. The fee for incentivising renewable energy resources and cogeneration shall be collected from the suppliers of both tariff and eligible customers by the market operator (HROTE). Article 26(4) stipulates, that the Government shall prescribe by regulation a minimum share of electricity produced from renewable energy sources and cogeneration, which shall be assumed by each energy undertaking supplying electricity, taking into account the potential of each individual renewable energy source and cogeneration as well as environmental protection.

Furthermore according to Article 30(1) the market operator (HROTE) is responsible for entering into contracts with all suppliers for the purpose of, ensuring a minimum share of electricity produced from renewable energy sources and cogeneration, collecting fees for incentivising renewable energy sources and cogeneration from the suppliers, entering into contracts with eligible producers entitled to incentive prices, settlements, collection and allocation of funds from the fee for incentivising renewable energy sources and cogeneration to producers of electricity from renewable energy sources and cogeneration based on the contracts entered into.

Penal provisions for energy undertakings failing to take over a minimum share of electricity from renewable energy sources and cogeneration are prescribed in the Article 38(1) and could range from 10.000 to 50.000 HRK.

Articles 16 and 19 set out the obligation of TSOs/DSOs to submit data to market operator (HROTE) concerning the electricity from eligible producers for the purpose of accounting and giving assurance on the origin of electricity with regard primary energy source.

According to the Act on Regulation of Energy Activities, HERA is responsible for issuing the decision for approving the status of eligible electricity producers.

2.3 GENERAL SECONDARY LEGISLATION

Based on the determinants provided for in the three main legislative acts described above, the following secondary legislation relevant for renewable energy sources and cogeneration in Croatia were issued, adopted and enforced:

- Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07)
- Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07)
- Tariff system for the production of electricity from renewable energy sources and cogeneration (OG 33/07)
- Ordinance on the use of renewable energy sources and cogeneration (OG 67/07)
- Ordinance on attaining the status of eligible electricity producer (OG 67/07)

The regulation on fees for promoting electricity production from renewable energy sources and cogeneration regulates the manner of disposing of, the amounts, the calculation, the collection, the distribution and the payment of incentive fees for promoting electricity production from plants using renewable energy sources and from cogeneration plants. According to Articles 3 seqq of the regulation, the collected funds are used to cover incentive prices to eligible producers for the energy delivered and finance tasks performed by the market operator (HROTE) in the system for renewables and cogeneration as well as to cover the costs pertaining to the balancing of the electric power system incurred by deviations in the values of planned and actually produced electricity from plants of eligible producers entitled to an incentive price. The calculation and payment of these funds is carried out by the market operator (HROTE) pursuant to the provisions of the Rules on balancing the electric power system. Article 6 defines the amounts of the fees for years 2007 to 2010. Every year the fee should increase. However, in 2008 the government decided not to raise the fee in order not to additionally burden consumers. According to Article 9, the incentive fee shall be paid by the electricity buyer (tariff buyer and eligible buyer). Electricity suppliers must separately indicate the amount of the total incentive fee to their buyers in the bill for the sold electricity.

The Ordinance on the use of renewable energy sources and cogeneration defines planning, administrative procedures, registration of projects, plants and eligible producers concerning renewables and cogeneration, and other issues significant for the use of renewable energy sources and cogeneration.
The Ordinances distinguish RES plants and separate them into two groups (Article 4): up to and including 1 MW and higher than 1 MW. The first group is comprised of solar (the following distinction is made: ≤ 10 kW; > 10 kW and ≤ 30 kW; > 30 kW), hydro, wind, biomass (a distinction is made between biomass form forestry and agriculture and biomass from wood processing industry), geothermal, biogas (from agriculture crops, organic residues and residues from agriculture and food processing industry) power plants, power plants on liquid bio fuels, on landfill gas and on gas from sewage treatment as well as other RES plants (waves, tide). The other group (higher than 1MW) is comprised of all previous mentioned RES plants, excluding solar power plants.

The Ordinance (Article 5) also defines cogeneration technologies and distinguishes between cogeneration plants up to and including 1 MW (micro (≤ 50 kW) and small-scale (>50 kW and ≤ 1 MW) CHP) and higher than 1 MW (medium-scale (≤ 35 MW) and large-scale (> 35 MW))). Cogeneration technologies are (a) combined cycle gas turbine with heat recovery, (b) steam backpressure turbine, (c) steam condensing extraction turbine, (d) gas turbine with heat recovery, (e) internal combustion engine, (f) micro turbines, (g) Stirling engines, (h) fuel cells, (i) steam engines, (j) organic Rankine cycles, (k) any other type of technology or combination thereof representing simultaneous generation of thermal and electrical/mechanical energy in a single process.

The Ordinance defines the licensing procedure, which is in general the same for cogeneration and renewables. It also specifies in more details requirements for wind power projects, concerning narrow and wide location of power plants. In order to be inscribed in the register of projects, it is necessary to obtain the preliminary energy approval from the MoELE (Article 9(1)). With the preliminary energy approval, the following rights are obtained: inscription into the register, examination of potentials in the research area and settlement of property and legal issues on the area owned by the Republic of Croatia. The project holder is obliged to

commence with the inspection of the location within 6 months and to apply for a location licence within 36 months following the issuance of the preliminary energy approval. After obtaining the location licence, the project holder requires energy approval from MoELE Plants up to 30 kW are not required to attain preliminary energy approval and the inscription in the Register is made according to energy approval. Plants which are not connected to the grid or RES plants for thermal energy production do not require preliminary energy or energy approval (Article 15). After obtaining the energy approval, the project holder is obliged to obtain the construction licence within 12 months (Article 20). The procedure for attaining the status of eligible producer follows.

The Ordinance on attaining the status of eligible electricity producer establishes the conditions for acquiring the status of eligible electricity producer which may be acquired by a project holder or producer who in a single generation plant simultaneously produces electricity and heat, uses waste or renewable energy sources for electricity production in an economically viable manner in compliance with environmental protection. Article 2 of the Ordinance sets up the methodology for determination of primary energy savings for cogeneration plants based on the useful heat demand and states that, in order to attain the status of eligible producer, micro and small-scale CHP have to provide primary energy savings (PES>0), while medium- and large-scale CHP have to provide at least 10% PES (Article 4). The status is based on the decision of HERA. Prior to the construction of the plant, the project holder attains the preliminary decision, which is valid for two years. The plant must be constructed during the validity period. The decision for attaining the status of eligible producer is obtained from HERA, for which the following requirements must be met: usage licence, contract on the grid use, technical description of the plant, description on measurement equipment with the attest of their accuracy, monthly and annual electricity production plans for average meteorological conditions and possible monthly deviations from electricity production.

2.4 SPECIFIC REGULATIONS ON PROMOTION OF CO-GENERATION

The regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised lays down the target of national policy in the field of cogeneration and prescribes the minimum share of cogeneration which electricity supply undertakings are obliged to supply in the structure of electricity offered to end buyers. According to Article 1(3) this does not relate to electricity generated from cogeneration plants falling within the category of public heating plants which produce electric and thermal energy for sale and not for their own purposes. Article 4(2) determines that until 31 December 2010, the minimum share of electricity produced from cogeneration plants, whose production is incentivised, and which is delivered into the transmission or distribution networks, shall amount to 2 % of the total electricity consumption. The market operator (HROTE) is responsible for determining the share of electricity that individual suppliers are obliged to assume in proportion to their share, expressed in percentages, in the total electricity supply in the Republic of Croatia, according to the Article 7(2).

According to the tariff system for the production of electricity from renewable energy sources and cogeneration, the right to an incentive price is granted to electricity producers that obtain the decision on acquiring the status of eligible electricity producer and that concluded a contract on the purchase of electricity with

the market operator (HROTE). The incentive price differs depending on the installed electric power of the plant – the distinction is made between micro (≤ 50 kW), small scale (> 50 kW and ≤ 1 MW), medium scale (>1 MW and ≤ 35 MW) and large scale (> 35 MW).

The Ordinance on the use of renewable energy sources and cogeneration defines the cogeneration technologies and distinguishes cogeneration plants according to the installed electric power in the same manner as Tariff system. The licensing procedure is unified for projects on cogeneration and renewable sources and is described in the introduction.

The Ordinance on attaining the status of eligible electricity producer provides for additional definitions relevant for cogeneration that are not defined in other legislative acts. The Ordinance defines that only cogeneration plants achieving primary energy savings can be awarded with the eligible producer status.

These savings for micro and small cogenerations have to be larger then zero, while for cogeneration with power larger them 1 MW, these savings have to be at least 10% (Article 4).

2.5 SPECIFIC LEGISLATION ON PROMOTION OF RENEWABLE ENERGY SOURCES

The regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised lays down the target of national policy in the field of renewables usage and prescribes the minimum share of renewables as well as which electricity suppliers are obliged to supply in the structure of electricity offered to end buyers. According to Article 1(3) this does not relate to electricity generated from hydro power plants with installed power exceeding 10 MW. Article 4(1) determines that until 31 December 2010, the minimum share of electricity produced from plants using renewable sources whose production is incentivised shall amount to 5.8 % of the total electricity consumption. The market operator (HROTE) is responsible for determining the share of electricity that individual suppliers are obliged to assume in proportion to their share, expressed in percentages, in the total electricity supply in the Republic of Croatia.

According to the tariff system for the production of electricity from renewable energy sources and cogeneration, the right to an incentive price is given to electricity producers which have obtained the decision on acquiring the status of eligible electricity producer and that have concluded a contract with the market operator (HROTE) on the purchase of electricity. The incentive price differs depending on the installed electric power of the plant – the distinction is made between plants up to and including 1 MW and plants exceeding 1 MW.

The Ordinance on the use of renewable energy sources and cogeneration defines the renewable energy sources that are used in the production of energy, distinguishing between plants above and including 1 MW and exceeding 1 MW. The Ordinance gives special attention to wind power plants and requires that in wind power plant projects, the narrow and wide area of the plant is defined and dully marked in the topographic map. The narrow area is defined as an area in which the noise emission from wind power plants is limited to the legally prescribed level and in which complementary activities are permitted (agriculture,

traffic etc.). The wide area is the area around wind power plant location required for undisturbed operation of the constructed plant. The Ordinance also determines the necessary size of the inspection area for wind power plants.

The Ordinance on attaining the status of eligible electricity producer explains the necessary procedures that are, in general, common for renewables and cogeneration and which are briefly explained in the introduction

2.6 CURRENT LEGISLATION APPLICABLE

The table below summarises all legislative acts which regulate renewable energy sources and cogeneration in the Republic of Croatia.

Table 1: Table on relevant Croatian RES and CHP legislation

Name of legislative act	RES-E and Cogeneration field covered	Date of implementation
Energy act (OG 68/01, 177/04, 76/07)	General interest for and promotion of RES and cogeneration	July 2001, amendments December 2004, amendments July 2007
Electricity Market Act (OG 177/04, 76/07)	Status of eligible producer, collection and distribution of fees, compliance with minimal target, guarantees of origin	December 2004, amendments July 2007
Act on regulation of energy activities (OG 177/04, 76/07)	Status of eligible producer	December 2004, amendments July 2007
Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07)	Collecting funds and incentives for producers of electricity from RES and cogeneration	1st July 2007
Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07)	Minimum share of RES and cogeneration, which energy supply undertakings are obliged to supply in the structure of energy offered to end buyers	1st July 2007
Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07)	Feed-in tariffs for electricity produced from RES and cogeneration	1st July 2007
Ordinance on the use of renewable energy sources and cogeneration (OG 67/07)	Conditions and possibilities for RES and cogeneration use: planning, administrative (licensing) procedures, a register of projects and eligible producers	1st July 2007
Ordinance on attaining the status of eligible electricity producer (OG 67/07)	Types of RES and cogeneration that can attain the status of eligible producer, and procedure for attaining the status	1st July 2007

3. COMPATIBILITY WITH EU STATE-AID REGULATIONS

3.1 ACQUIS COMMUNAUTAIRE OF THE EUROPEAN UNION

3.1.1 Prohibition of State Aid (Art 87 Sec 1 EC)

Article 87 (1) EC states as follows:

Save as otherwise provided in this Treaty, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the common market.

That Article is commonly dissected into four component parts:

- there must be an ”aid”;
- it must be ”granted by a Member State or through State resources in any form whatsoever”;
- it must “distort or threaten to distort competition by favouring certain undertakings or the production of certain goods”;

Article 87 Abs 1 EC does not apply to so-called de-minimis-aid. There is no requirement to notify the European Commission of such aid.

According to Article 2 of the Commission Regulation (EC) No 1998/2006[2], aid which is granted to companies within three fiscal years does not fall within the scope of Article 87 Sec 1 EC, if the amount does not exceed € 200.000. However, only “trans-parent aid” is qualified for such exemption.

3.1.2 Definition of „State Aid“

Article 87 EC provides for a widely construed definition of state aid [3]. Thus, state aid includes all positive monetary and non-cash benefits as well as all other measures that would be deemed suitable to, in various ways, decrease any burdens which a company would usually have to bear [4]. Initially, one needs to differentiate between “Aid Schemes“ and “Individual Aid“: Aid scheme shall mean any act on the basis of which, without further implementing measures being required, individual aid awards may be made to undertakings defined within the act in a general and abstract manner and any act on the basis of which aid which is not linked to a specific project may be awarded to one or several undertakings for an indefinite period of time and/or for an indefinite amount [5]. Individual aid shall

[2] Commission Regulation (EC) No 1998/2006 of 15 December 2006 on the application of Articles 87 and 88 of the Treaty to de minimis aid. The Commission Regulation No1998/2006 shall apply from 1 January 2007 until 31 December 2013.

[3] *Aicher* in Aicher/Holoubek/Korinek, Gemeinschaftsrecht und Wirtschaftsrecht (2000), 228; *Eilmansberger/Herzig/Jaeger/Thyri,* Materielles Europarecht (2005), 312.

[4] *Eilmansberger/Herzig/Jaeger/Thyri,* Materielles Europarecht (2005) 314; EuGH 29.6.1999, Rs C-256/97 (*DMT*), Rz 19.

[5] Article 1 lit d Council Regulation (EC) No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 of the EC Treaty.

mean aid that is not awarded on the basis of an aid scheme and notable awards of aid on the basis of an aid scheme[6]. This difference is significant for the review procedure of the European Commission and the admissibility of the aid. If individual aid is granted on the basis of a notified aid scheme, the aid may have to be reclaimed. It must be noted, that an ex post allowance is not permissible [7].

3.1.3 "Granted by the State or through State resources"

The prerequisite of "statehood" or the "granting by means of state funds" does not require that the state itself allocates funds. There solely has to be an actual or potential burden of the state budget.[8] Companies under private law and institutions under public law are assigned to the state when granting state aid, if the state has influence on their activities.[9]

For the element regarding "granting by means of state funds" , the scope of application of Article 87 Sec 1 EC is extended from "public legal entities" to "legal entities that solely have state funds at their disposal and are otherwise not qualified as public legal entities".[10]

According to the continuing case law of the European Court of Justice, the differing between "statehood" und "granting by means of state funds" does not signify, "that all advantages granted by a State, whether financed through State resources or not, constitute aid but is intended merely to bring within that definition both advantages which are granted directly by the State and those granted by a public or private body designated or established by the State". [11] In the case "*PreussenElektra*", the European Court of Justice had to assess the obligation of a private electricity distributor to purchase electricity from renewable energy sources at determined minimum rates. In the opinion of the European Court of Justice, this does not lead to the indirect or direct transfer of state resources to the companies which produce the electricity. For this reason „the obligation imposed on private electricity supply undertakings to purchase electricity produced from renewable energy sources at fixed minimum prices does not involve any direct or indirect transfer of State resources to undertakings which produce that type of electricity".[12]

State aid may also be determined in cases of "parafiscal duties". These are duties that have a fixed dedicated purpose at the time they are levied [13], such as e.g. standard surcharges on electricity tariffs, TV and radio license fees, duties

[6] Article 1 lit e Council Regulation (EC) No 659/1999.
[7] Case C-368*/04* (*Transalpine Ölleitung in Österreich GmbH, Planai-Hochwurzen-Bahnen GmbH und Gerlitzen-Kanzelbahn-Touristik GmbH & Co KG*), 5 October 2006.
[8] *Eilmansberger/Herzig/Jaeger/Thyri,* Materielles Europarecht (2005), 327; cp Case C-379/98 (*PreussenElektra*), 13 March 2001, paragraph 58.
[9] Case C-72/91 *(Sloman Neptun*), 17 March 1992, paragraph 21; *Aicher* in Aicher/Holoubek/Korinek (Hrsg), Gemeinschaftsrecht und Wirtschaftsrecht (2000) 238.
[10] *Sutter* in Mayer, Kommentar zu EU- und EG-Vertrag (2005), Art 87 paragraph 23.
[11] Case C-379/98 (*PreussenElektra AG*), 13 March 2001, paragraph 58.
[12] Case C-379/98 (*PreussenElektra AG*), 13 March 2001, paragraph 59.
[13] *Jaeger*, Rechtsfolgen beihilferechtlicher Abgabenbefreiungen, Zugleich eine Besprechung der Urteile Laboratoires Boiron (EuGH) und Österreichischer Altlastenbeitrag (VwGH), wbl 2006, 541; cP opinion of advocate general Stix-Hackl 7 November 2002, Case C-34/01 and C-38/01 (*Enirisorse SpA*), paragraph 167 and opinion of advocate general Stix-Hackl 28 November 2004, Case C-128/03 und C-129/93 (*AEM SpA*), paragraph 40.

pertaining to slaughters, permanent and binding dedications of parts of the general chamber-, branch-, or product duties of marketing campaigns. [14]

Should individual companies enjoy relief or are all companies obligated to pay, yet are these resources solely intended for the benefit of a certain market segment, the levying may be legally problematic in regard to state aid. [15]

3.1.4 Preferential Treatment for Companies or Lines of Production

According to Article 87 Sec 1 EC, state aid can be granted to single companies or entire lines of production. The crucial factor is not the formal recipient of the aid, but the actual beneficiary. [16]
A measure is deemed selective, when an individual company or a group of companies, according to specified criteria, receives a benefit. „The deciding factor should not be the purpose of the benefit, but instead the beneficiary effect of such measure". [17] For the application of the selectivity criteria, the scope of beneficiaries must not be described by name; a generic description shall suffice. [18]
According to the case law of the European Court of Justice, selectivity is determined by whether or not a measure is suitable to „benefit certain companies or lines of production over other companies, who are in a similar factual and legal position in regard to the objective of the measure in question". [19] However, such prerequisite of selectivity is not applicable where the measure „does in fact constitute a benefit for the beneficiary, but is justified by the nature or the general purpose of the system, to which it belongs". [20]

3.1.5 Benefit of the Beneficiary

A benefit does not exist where the recipient of state resources renders a consideration in the interest of the general public and which is equivalent to the received performance. [21]

The equivalency between performance and consideration is determined by the European Commission via the "private investor" tests. State aid is not assumed in case of a normal business transaction that is subject to terms and conditions under which a market-orientated private investor would have concluded such investment to the same amount. [22] Should, however, the beneficiary company receive a benefit which it would otherwise not have attained under normal market conditions, such benefit is deemed state aid. The application of the „private investor"-tests are problematic in regard to services of general public interest. Since

[14] Vgl *Jaeger*, Rechtsfolgen beihilferechtlicher Abgabenbefreiungen, Zugleich eine Besprechung der Urteile Laboratoires Boiron (EuGH) und Österreichischer Altlastenbeitrag (VwGH), wbl 2006, 541.
[15] *Sutter* in Mayer, Kommentar zu EU- und EG-Vertrag (2005), Art 87 Rz 24.
[16] *Sutter* in Mayer, Kommentar zu EU- und EG-Vertrag (2005), Art 87 Rz 31.
[17] *Bär-Bouyssière* in Schwarze (Hrsg), EU-Kommentar (2000), Artikel 87 EGV Rz 36.
[18] *Sutter* in Mayer, Kommentar zu EU- und EG-Vertrag (2005), Art 87 Rz 38.
[19] Case C-75/97 (*Belgien/Kommission*), 17 June 1999, paragraph 28 to 31 and Case C-143/99 *(Adria-Wien Pipeline GmbH und Wietersdorfer und Pekauer Zementwerke*), 8 November 2001, paragraph 41.
[20] Case C-143/99 *(Adria-Wien Pipeline GmbH und Wietersdorfer und Pekauer Zementwerke*), 8 November 2001, paragraph 42.
[21] Case C-280/00 (*Altmark Trans*), 24 July 2003, paragraph 83.
[22] Cp Case T-25/99 (*CETM/Kommission*), 29 September 2000, 29.9.2000 39; Case C-303/88 (*ENI-Lanerossi*), 21 March 1991, paragraph 21; cp *Kahl*, Der öffentliche Personennahverkehr auf dem Weg zum Wettbewerb (2005), 308 ff.

the private sector would usually not render such services and because market-economic terms and conditions commonly do not apply in such cases, there is usually no „market".[23]

In case a service is rendered in the general public interest, the European Court of Justice has determined a reasonable remuneration. [24] Such remuneration is to be determined by an economic analysis, accounting for all factors which a company would have to consider for the determination of the fee under normal market conditions. [25] However, the assessment is to be made entirely on economic assumptions.

3.1.6 Distortion of Competition

An actual and potential impairment of competition exists, "where state aid changes the course of competition".[26]

In general, any kind of aid is suitable to improve the situation on a benefited market. The competition may be distorted in cases where a company is operating within a national market and at the same time is in competition with products from other member states, or where the company sells most of its products outside of the common market. [27]

3.1.7 Propensity to affect trade between Member States

The prerequisite for an affect on trade is the existence or future establishment of cross-boarder commerce.

The trade between member states may be affected where products of beneficiaries are subject to intra-community trade.

3.1.8 Notification (Art 88 EC) and Repayment of prohibited State Aid

The consequence of a qualification of a benefit as state aid pursuant to Article 87 Sec 1 EC, is the obligation to notify the European Commission according to Article 88 EC: Article 88 Sec 3 Line 1 EC stipulates the general obligation of the member states to inform the Commission of grants or alterations regarding state aid (so-called „Review Notification"). In must be pointed out, that the Member State concerned shall not put its proposed measures into effect until the procedure has resulted in a final decision. (Art 88 Sec 3 Line 3 EC, "Prohibition on Enforcement"). This prohibition is directly applicable and individual businesses have the opportunity to invoke this regulation before national authorities. The European Court of Justice is of the opinion, that a grant application which violates the Prohibition of Enforcement shall be inoperative. [28] However, as long as an allowance is possible, this shall not lead to the measure being null and void, but only

[23] Cp *Eilmansberger/Herzig/Jaeger/Thyri,* Materielles Europarecht (2005), 325 mwN.
[24] Case C-280/00 (*Altmark Trans*), 24 July 2003, paragraph 87.
[25] Case C-39/94 (*SFEI*), 11 July 1996.
[26] *Bär-Bouyssière* in Schwarze (Hrsg), EU-Kommentar (2000), Artikel 87 EGV Rz 38.
[27] *Bär-Bouyssière* in Schwarze (Hrsg), EU-Kommentar (2000), Artikel 87 EGV Rz 38.
[28] Case C-354/90 (*Fédération Nationale du Commerce Extérieur des Produits Alimentaires*), 21 November 1991, paragraph 12.

to a provisional ineffectiveness that can be healed by the subsequent allowance of the aid. [29]

Should the European Commission render no legal objections and allow the intended aid, the individual granting of such aid in the scope of the allowed aid scheme does not need to be notified anymore and can by enforced accordingly.

However, should the case arise in which the intended aid for an individual company cannot be enforced within the scope of an allowed aid scheme, the individual aid will once again require notification. If, on the other hand, the Commission should deny new state aid, any concluded agreements linked to the granting of the aid are, at least in regard to the elements determining the aid, partly null and void (§ 879 ABGB). [30]

3.1.9 Reclaiming illegally granted State Aid

Should the European Commission render a negative decision, illegally granted state aid is to be reclaimed from the beneficiary. If the member state does not take action to reclaim the aid, the European Commission can bring an action against the member state for contract violation pursuant to Article 88 Sec 2 Line 2 EG. [31] The decision on the reclaiming of the granted aid includes the aid itself as well as the interest accrued from the point at which the aid was at the disposal of the recipient until the point of repayment (Art 14 Regulation 659/1999). The reclaim is subject to the national procedures of the respective member states. Whereas the order of the European Commission to reclaim the aid is addressed at the member states, the aid is nonetheless to be repaid to the institution responsible for actually granting the aid. In order to avoid potential evasions, the European Commission has expanded the tar-gets for reclamation to include third parties. The European Commission has identified cases in which essential assets of the original beneficiary had been transferred to third parties, thereby detracting the beneficiary of liability funds, as evasions of the repayment obligation. Hence, the aid was reclaimed from the recipient of the assets. [32]

In regard to the element of evasion, the Commission implies „that the purchasing company now draws all the benefits of the aid by continuing the business operation of the original company with the help of the transferred production assets".

3.1.10 Compatibility of the Austrian Green Electricity Act with EU state aid regulations

The Austrian Green Electricity Act entered into force on the January 1, 2003 („*Ökostromgesetz 2003*") and was amended inter alia in 2006 („*Ökostromgesetz 2006*"). Following the Ökostromgesetz 2003, the eco-balance group representa-

[29] *Rebhahn*, Beihilfen- und Subventionsrecht in Raschauer, Österreichisches Wirtschaftsrecht[2], paragraph 841; *Eilmansberger*, Die Zivilrechtsfolgen gemeinschaftsrechtswidriger Beihilfegewährung in Koppensteiner, Österreichisches und europäisches Wirtschaftsrecht, Teil 8/2 – Staatliche Beihilfe (2000), 81.
[30] Cp *Sutter* in Mayer, Kommentar zu EU- und EG-Vertrag (2005), Art 88 paragraph 72.
[31] *Aicher*, Gemeinschaftsrecht und österreichisches Beihilfenrecht in Aicher/Holoubek/Korinek, Gemeinschaftsrecht und Wirtschaftsrecht (2000),249.
[32] *Koenig/Kühling*, Art 88 EGV in Streinz, EUV/EGV (2003), Rz 31; cp European Commission 8 July 1999 (*Gröditzer Stahlwerke GmbH*); European Commission 22 June 2000 (*CDA Albrechts GmbH).*

tives ("Ökobilanzgruppenverantwortliche") were obliged to purchase eco-energy from eligible producers at the prices as determined by Federal Minister of Economics and Labour („Feed-in Tariffs").

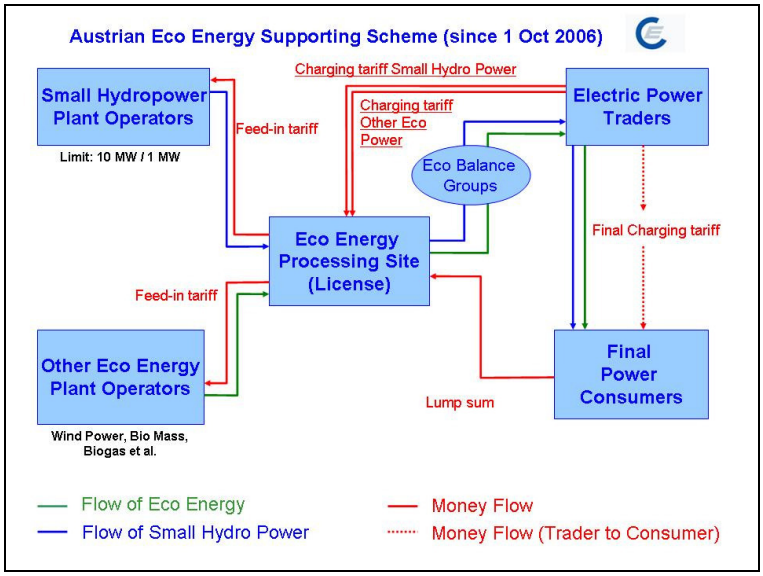
In return, the eco-balance group representatives allocated the purchased eco-energy to such electricity traders that were committed to purchase the allocated energy at the determined transfer price. The difference between the feed-in tariff for supported eco-energy and the transfer price was balanced by a nation-wide uniform support fee, which was levied from the final customers according to their energy consumption.

The eco-balance group representatives are made up of three high-voltage grid operators (APG, TIRAG and VKW Übertragungsnetz AG). All three grid operators are by majority owned by public authorities.

With the Ökostromgesetz 2006, the eco-balance group representatives were replaced by the Eco-Energy Processing Site ("*Ökostromabwicklungsstelle*"), which is henceforth responsible for the purchase and sale of supported eco-energy. Before an Eco-Energy Processing Site is able to operate, it requires a license from the Federal Minister of Economics and Labour.

With regard to the issuance of a licence, the provisions on the tender for a concession (in the following "license") for the supply of services are applicable. The Eco-Energy Processing Site is subject to the review by the Austrian Court of Audit. In 2006, the Eco-Energy Processing Centre AG (OeMAG) was awarded a license for the operation of an Eco-Energy Processing Site. Since January 1, 2007, the final customer has to pay a "measuring-point lump sum" ("Zählpunktpauschale") instead of a nation-wide uniform support fee irrespective of consumption. The amount of this measuring-point lump sum is contingent on the grid level to which the final customer is connected. Since October 1, 2006, the mechanism for provision can be illustrated as follows:

Figure 1: Austrian Eco Energy Support Scheme



3.1.11 State aid control for the Austrian "Ökostromgesetz" by the European Commission

In a decision rendered by the European Commission on the July 4, 2006, it was concluded that the system of provision according to the Ökostromgesetz 2003 and 2006 [33] (as illustrated above), must be regarded as state aid pursuant to Article 87 Sec 1 EC.

The qualification as state aid was justified by the fact that the beneficiaries were producers of eco-energy who would generate proceeds from the transfer tariffs, which they would otherwise not by able to attain on the market. Furthermore, some of the beneficiaries were operating in lines of production which involved trading between member states; hence the provision mechanism had the potential to distort competition.

The European Commission also determined "aid by public authorities" as an element of offence in regard to the transfer price paid by the electricity traders, due to the fact that a clearing site, namely the eco-balance group representatives and Eco-Energy Processing Site, had "control" over the purchase price. According to the Green Electricity Act 2003 and 2006, the purchase prices would be, unlike in the case of "PreussenElektra", controlled by a clearing site:[34] The eco-balance group representatives were commanded or owned by the State. Because the Eco-Energy Processing Site required a license to operate, could prohibit the exercising of an operation and was placed under the review of the Austrian Audit Court ("Rechnungshof"), it was deemed to be under State influence. According to the case law of the European Court of Justice, resources controlled by public enterprises are always qualified as State resources. As a result of the state-control over the eco-balance group representatives and the Eco-Energy Processing Site, the prices determined by these institutions to be paid by electricity traders for supported eco-energy, amounted to being within the public domain. [35] Hence "PreussenElektra" does not apply to the Austrian support scheme of renewable energy. Even though the nation-wide uniform support fee was being paid by all consumers, the fee was nonetheless levied and distributed by state-controlled institutions. According to the opinion of the European Commission, the State was legally empowered to assert control over these resources. The fiscal character was also underlined by the measuring-point lump sum, which was levied irrespective of eco-energy consumption.

Ultimately, the European Commission approved the aid of certain enterprises for the increased feed-in tariff in regard to supported eco-energy. [36]

[33] Cp European Commission – July 4, 2006, State Aid NN 162/A/2003 und N 317/A/2006 – Austria Support of electricity production from renewable sources under the Green Electricity Act (feed-in tariffs), C (2006)2955 fin, 2.
[34] European Commission – July 4, 2006, State Aid NN 162/A/2003 und N 317/A/2006 – Austria Support of electricity production from renewable sources under the Green Electricity Act (feed-in tariffs), C (2006)2955 fin, 12.
[35] European Commission – July 4, 2006, State Aid NN 162/A/2003 und N 317/A/2006 – Austria Support of electricity production from renewable sources under the Green Electricity Act (feed-in tariffs), C (2006)2955 fin, 12.
[36] European Commission – July 4, 2006, State Aid NN 162/A/2003 und N 317/A/2006 – Austria Support of electricity production from renewable sources under the Green Electricity Act (feed-in tariffs), C(2006)2955 fin, 15.

3.2 APPLICATION OF EU-STATE-AID REGULATIONS ON CURRENT CROATIAN LEGISLATION

3.2.1 General survey over current Croatian state aid legal basis

General provisions on state aid are regulated under the State Aid Act (OG 140/05) and Regulation on State Aid (OG 150/05). As defined in Article 3 of the State Aid Act, the state aid shall mean any actual and potential expenditures or decreased revenue of the state granted in any form whatsoever by the aid provider, which distorts or threatens to distort competition by favouring certain aid beneficiaries, insofar as it may affect the international commitments undertaken by the Republic of Croatia arising under the Stabilisation and Association Agreement between the Republic of Croatia and the European Communities and their Member States (OG 14/2001, 14/2002, 1/2005 and 7/2005). Save as otherwise provided by the State Aid Act, state aid in any form whatsoever, which distorts or threatens to distort competition by favouring certain aid beneficiaries, insofar as it may affect the international commitments undertaken by the Republic of Croatia is prohibited.

Within environmental protection field the Decision on Announcing the State Aid Environment Protection Rules (OG 98/07) transfers into Croatian legal system the Community guidelines on State aid for environmental protection (OG 037). The Government of the Republic of Croatia has enacted the above mentioned environment protection rules which shall determine the content, procedure and necessary elements of assessment of compatibility of state aid. No other state aid rules within environ-mental protection field that concerns electricity production from renewable energy sources and cogeneration are currently in force.

3.2.2 Croatian tariff system

The regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07) prescribes that all electricity buyers; tariff buyers and eligible buyers – shall pay an Incentive fee to the market operator (HROTE). The Market Operator sells **all** REC/cogeneration (green) electricity produced to **all** suppliers in Croatia and, accordingly, every customer (electricity buyer) gets his/her (ideal/proportional) part of that electricity. This support mechanism works as follows[37]: electricity buyers pay Incentive fees to its electricity suppliers from whom the Market Operator (HROTE) collects it and delivers it, in a form of an Incentive price, to the eligible producers[38]. The market operator (HROTE) pays the eligible producer an incentive price in accordance with the respective tariff system. The **Incentive price** is paid partially from the **Incentive fee funds** and partially from the selling RES/cogeneration electricity to all suppliers. Electricity suppliers as well as eligible producers can be private companies. Elec-

[37] Methods of collecting, computing and paying the Incentive fee are regulated in Article 8 and 9 of the Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07).
[38] The Eligible Producer is, pursuant to Article 3 of the Energy Act: "an energy undertaking or other legal or physical person who produces electricity and heat in a co-generation plant, or uses waste or renewable energy ,resources in economically viable manner in compliance with environmental protection, whereas the Energy Market Act and Ordinance on attaining the status of eligible electricity producer (OG 67/07) regulates that constitutive element for attaining the status of eligible producer shall be a resolution on attaining the status of eligible producer issued by HERA..

tricity suppliers are obliged to take over from Market Operator (HROTE) all electricity produced from RES/cogeneration whose production is incentivised.[39]

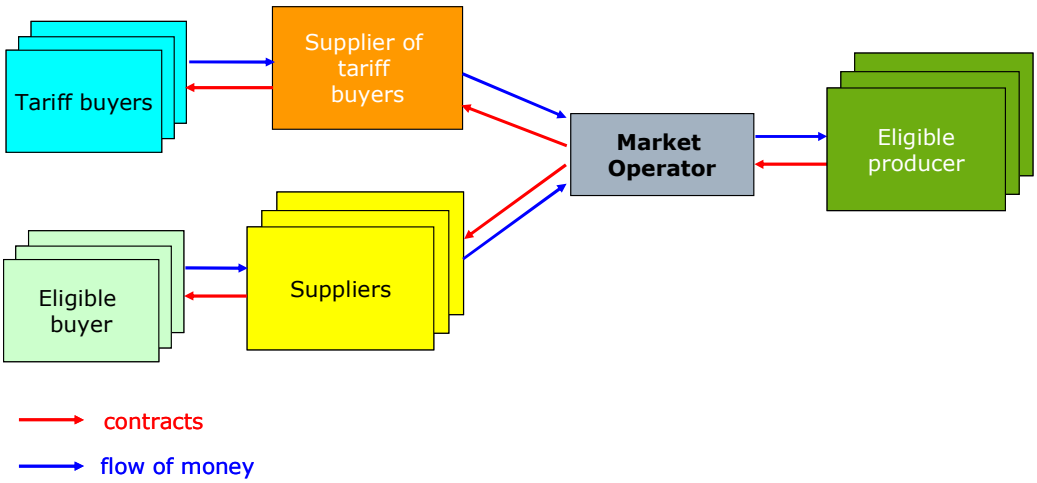
The obligation of electricity suppliers to take over certain amount of electricity produced by Eligible producer (from RES and by cogeneration) triggers the obligation of the TSO and the DSO to take over the whole amount of electricity produced by the eligible producer, as provided in Article 8 par. 7 of the Electricity Market Act. TSO and DSO are only taking-over electricity and are not allowed to trade with the electricity (Electricity Market Act, Article 17). Both, TSO and DSO are public companies.

Electricity suppliers that supply tariff customers operate as public companies rendering public services whereas electricity suppliers that supply eligible customers operate as a private companies.[40] The market operator (HROTE) as legal entity is established in a form of a limited liability company under the designation: "Croatian energy market Ltd". Its founder is the Republic of Croatia and it operates under the supervision of HERA. The Market Operator (HROTE) performs activities of organizing the electricity market as a public service and is financed according to the governmental Decision on fees for electricity market organization (OG 94/2007), as proposed by the MoELE.

It is clear that the Market Operator (HROTE) has a key role in collection, calculation and distribution of the Incentive fee for RES-E. Once a month, the Market operator (HROTE) delivers to each electricity supplier an itemised invoice specifying the total amount of funds that the electricity supplier is obliged to pay to the Market operator (HROTE) under the item of Incentive fees. Actually, the electricity suppliers are transferring the Incentive fee (which fee is paid to them by the electricity buyers) to the Market operator (HROTE).

The role of the market operator (HROTE) can be described with the picture below.

Figure 2: Scheme of the Role of the Croatian Market Operator



[39] Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07) regulates amount of RES/cogeneration electricity which is obliged to purchase Market and, furthermore, to take over the electricity supplier.
[40] Energy Market Act distinguishes in Article 3 what energy activities shall be performed as market activities, and as regulated activities.

By the 15th of each calendar month, the TSO and the DSO shall submit to the market operator (HROTE) data on the total electricity calculated and delivered to the buyers in the previous month expressed in kWh for every individual supplier of electricity. On the basis of the delivered data, the market operator (HROTE) determines the total amount of its claims towards each individual electricity supplier under the item of Incentive fees.

As described above, the incentive fee is an additional amount of money indicated on the electricity bills issued by the electricity supplier. Electricity suppliers must separately indicate the amount of the total Incentive fee in the bill they deliver to their buyers for the sold electricity. The price of the Incentive fee is laid down by the regulation on fees for promoting electricity production from renewable energy sources and co-generation (OG 33/07, and amended by OG 133/07) enacted by the Government of Republic Croatia [41].

The eligible producers shall be entitled to receive incentive price on the basis of an energy purchase contract concluded with the market operator (HROTE). It has to be pointed out that the market operator (HROTE) may conclude energy purchase con-tracts with the Eligible producers for as long as total electricity production from RES and cogeneration has not reached threshold prescribed in Regulation on the mini-mum share of electricity produced from renewable energy sources and cogeneration whose production (OG 33/07).[42] This provision indicates that the Croatian Incentive fee (support) system is subject to a limited duration.

The ratio of the above described Incentive fee support system is to support RES/cogeneration electricity production by way of bridging the gap between the market price and long term marginal costs of RES/cogeneration electricity production.

This support system may be categorised as a 'feed-in tariff' system since the Eligible producers are entitled to receive Incentive price (feed-in tariff) whereas the amount of the Incentive price to be paid to him is regulated by the Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07) and it depends on:

- the "type of the electricity plant" (whether it is RES or cogeneration plant as well as what type of RES and/or cogeneration the respective plant is using);
- the amount of produced electricity from respective RES and/or cogeneration plant;
- "the portion of domestic component in the RES/cogeneration project" [43].

Criteria for estimating the "portion of domestic element in the RES/cogeneration project" [44] shall be defined by the MoELE. As of end of January 2008 the respec-

[41] Additional amount on electricity bills due to Incentive fee for year 2007 was 0,0089 kn per kilowatt-hour (kn/kWh) + VAT (i.e. 0,011 kn/kWh including VAT). Until year 2010 the incentive fee will be:
for year 2008: 0,0089 kn/kWh (same as in year 2007, as amended by OG 133/07),
for year 2009: 0,0271 kn/kWh + VAT,
for year 2010: 0,0350 kn/kWh + VAT.

[42] This is stipulated in Art 13 of Tariff system for the production of electricity from renewable energy sources and cogeneration

[43] Article 4 of the Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07) in detail describes all herein generally mentioned tariff elements.

tive Ministry has made only a draft of the respective Criteria. In short the Portion of Domestic Element depends on whether any element of the "RES/cogeneration project" is produced within the Republic of Croatia as well as whether the services connected whit the 'RES/cogeneration project' are given within the Republic of Croatia. The Portion of Domestic Element constitutes a "corrective factor" in calculating the Incentive price; i.e. the higher the Portion of Domestic element, the higher is the Incentive price.

3.2.3 Legal Qualification of Croatian support system

The funding of the Croatian feed-in- tariff system is base on two pre-conditions:

- Incentive fee: all electricity buyers are obliged to pay the Incentive fee to theirs electricity suppliers and;
- Electricity Purchase Obligation: the market operator (HROTE) is obliged to purchase RES/cogeneration electricity produced by Eligible producers for an Incentive price.

3.2.4 Incentive fee

The legal nature of the Incentive fee may be defined as a levy since it implies payment obligation imposed by law on all electricity buyers. Namely, the Incentive fee is a 'supplement on the electricity price used for stimulating the RES/cogeneration electricity production, expressed in HRK/kWh' (Art. 2 of the Tariff system for the production of electricity from renewable energy sources and cogeneration OG 33/07). The higher electricity consumption the higher shall be the Incentive fee. However, the Incentive fee may not be considered as a price for RES/cogeneration electricity purchase since it is a 'supplement on the electricity price' and thus payable regardless on whether the electricity buyers are purchasing RES/cogeneration electricity, what displays its very fiscal nature, which is possible only by powers of State. Under our understanding, the fact that in Croatia each electricity buyer de facto is buying an ideal portion of the RES/cogeneration electricity is not relevant for legal nature of the Incentive fee since it is a 'supplement on the electricity price' and not a purchase price for this electricity.

The incentive fee is paid by all electricity buyers, raised by electricity suppliers and transferred to the market operator (HROTE), who is finally obliged to pay the Incentive price (made out of the Incentive fee funds) to the eligible producers. The Croatian state exercises control on the "Incentive fee funds" since these funds are transferred and channelled via the state controlled market operator (HROTE) pursuant to the laws enacted by the State.

Another issue is whether the proceeds of such levies constitute State resources. Long lasting jurisprudence has established three criteria for the proceeds of such levies to constitute State resources: [45]

[44] The *"RES/cogeneration project"* is defined in Article 2 par. 2 of the Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07) as: *"preparation, construction, building, and management of a plant that is using RES and cogeneration".*

[45] Case C-78/66, Steinke&Weinling, judgment of 22.03.1977, [1977] ECR 599, as indicated in the European Commission decision on 04.07.2006., State Aid NN162/A/2003 and N317/A/2006 – Austria Support of electricity

- the levy must be imposed by the State;
- its proceeds must be allocated to a body designated by the state (this body does not have to be State owned, not do the proceeds have to become the property of the State);
- the proceeds must be used to give an advantage to certain undertakings.

It is clear that these three criteria are fulfilled since:

- the Incentive fee is imposed by State, through law and respective by-laws,
- the Incentive fee proceeds are poured into the market operator (HROTE), which is body designated by the State (as shall be more in detail explained hereunder),
- the proceeds give advantage to 'certain undertakings' that are defined as Eligible Producers.

The final criteria for verifying whether a (parafiscal) levy has the nature of State aid was given in the "Pearle" ruling which says that, "*the proceeds must be used in a way which is prescribed by the Sate (this rules out cases where the use of the proceeds are decided by companies themselves, maybe even if the State later on enshrines the result of their choice).*" [46] The Incentive fee funds are used and can be used only in a way prescribed by State in relevant laws and applicable governmental regulations (as described above).

Therefore, based on the above mentioned ECJ rulings, the reasoning of which is embodied in the Commission decision on Austrian feed-in tariff system, the funding of the Croatian support mechanism through levy involves State resources.

3.2.5 Electricity purchase obligation

The Croatian Incentive fee support system works as a feed-in tariff system since it is based on obligation of market operator (HROTE) to purchase RES/cogeneration electricity produced by eligible producers (incentivized RES/cogeneration electricity production) and on obligation of electricity suppliers to take over this electricity. Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07) sets out rules on defining: i) period of time during which and; ii) amount of RES/cogeneration electricity that Market operator (HROTE) is obliged to purchase. Hence, the feed-in sys-tem implies guarantied income to the eligible Producer since the market operator (HROTE) is obliged to pay the Incentive price for all "incentivized RES/cogeneration electricity production" that Eligible Producer has produced.

3.2.6 Legal qualification of market operator (HROTE)

The market operator (HROTE)'s core obligation is, as its name indicates, to organise the electricity market. The market operator (HROTE) provides its activities

production from renewable sources under the Austrian Green Electricity Act (feed-in tariffs); hereinafter: "Commission decision on Austrian feed-in tariff system.", under reference 11, p. 11.

[46] Case C-345/02 Pearle BV and others, judgment of 15.07.2004, [2004], ad quoted in the Commission decision on Austrian feed-in tariff system.

as a public service. The State exercises control over the Market operator (HROTE) on the basis of the following instruments:

- Market operator (HROTE)'s founder is Republic of Croatia,
- Market operator (HROTE) works under the supervision of Croatian Energy Regulatory Agency (HERA) whose founder is Republic of Croatia and is responsible to the Croatian Parliament, [47]
- financing of the market operator (HROTE) is based on a fee that is determined by the Croatian Government at the proposal of the Ministry of Economy, Labour and Entrepreneurship, according to the Decision on fee for electricity market organization (OG 94/2007),
- obligation of the Market operator (HROTE) to purchase RES/cogeneration electricity produced by the Eligible producers (electricity purchase obligation) as well as its obligation to manage and allocate the Incentive fee funds, as set in the relevant laws and Governmental Regulations [48]

In the "Stardust Marine" judgement[49] the ECJ decided that sources under control of public undertakings are always State resources provided that measures involving these resources are imputable to the State. The market operator (HROTE)'s purchase obligation is stipulated in the law and in the respective governmental regulations [50] and is thus imposed by the State and therefore is imputable to the State.[51] Furthermore, 'imputability to the State' of the Incentive fee funds may be deducted from the fact that these funds are channelled via the State controlled market operator (HROTE) to the eligible producers. Finally, the incentive fee is used to favour specific enterprises (the Eligible producers).

The fact that the market operator (HROTE) is not a "public undertaking" but a commercial company founded by the Republic of Croatia in accordance with the Act on the Commercial Companies may not be relevant (at least for the ECJ) in considering whether market operator (HROTE) is a state controlled body, since the notion of public undertaking is extensively defined and is not depended on its form or ownership.[52] Namely, State control over market operator (HROTE) is established by (previously described and named) laws and regulations which determine in detail the position, rights and obligation of Market operator (HROTE) within subject Incentive fee scheme.

3.2.7 Conclusion

The Croatian support system is structured, as shown above, on a parafiscal obligation of all electricity buyers to pay an incentive fee which could be, based on the EU jurisprudence, defined as a levy. Furthermore the market operator (HROTE) is paying, partially out of the incentive fee funds, an Incentive price to

[47] Art. 29 par. 2 of Electricity Market Act and Article 7 of the Act on regulation of energy activities
[48] Relevant laws: Electricity Market Act and Energy act and Regulations: Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07); Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07); Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07); Ordinance on the use of renewable energy sources and cogeneration (OG 67/07).
[49] Case C-482/99, France vs. Commission, judgment of 16.05.2002, [2002] ECR I-04397.
[50] Ibid.
[51] This conclusion is base on the Commission decision, see supra note 48, par. 50-52, p. 10.
[52] See Pearl ruling, at supra, note 46.

the eligible producers. This support mechanism, according to the EU jurisprudence, involves State re-sources. Specifically, the incentive fee funds become the "State resources" once they are poured into the Market operator (HROTE), which is a State controlled undertaking, since "resources under the control of public undertaking are always state re-sources"', as the ECJ regularly states.[53]

Whether this support mechanism constitutes a state aid pursuant to Article 87 (1) EC is mostly a factual question since Article 87 EC provides for a set of conditions which should be met as to classify certain measure as a state aid measure. Under Article 70 of the Stabilisation and Association Agreement concluded between Croatian and EU (OG 14/01; SAA), in connection with Article 2 of the Regulation on State Aid, the EU acquis as well as EU jurisprudence can be applied as an 'interpretative instrument' for interpretation of ambiguities in Croatian law and, also, in circumstances of legal gaps. The Croatian Competition Agency is the competent to apply Croatian State Aid rules and, if and when required, the EU acquis and EU jurisprudence to scrutinise any case under its inspection.
According to the Article 7 of the Regulation on State Aid, an aid measure constitutes state aid if all conditions listed below are satisfied:

- the measure concerned involves any actual and potential expenditures or decreased revenue of the Republic of Croatia, local or regional self-government units, or of any other legal entities granting or ad Ministering state aid within the meaning of the State Aid Act - the state resource condition;
- the measure concerned is selective and thus constitutes an economic advantage for the particular aid beneficiary or a group of aid beneficiaries in the market – selectivity condition;
- the measure concerned distorts or may distort competition – distorting competition condition; and
- it affects trade between the Republic of Croatia and European Communities – affecting international trade condition .

The Croatian Competition Agency (CCA) is competent to decide, on the basis of an indebt assessment, whether the subject Incentive fee scheme fulfils these conditions. The State resource condition is a pre-condition in assessing whether certain measures may be deemed as a state aid measure. As already mentioned, the CCA may, while (and if) examining the subject of the Incentive Fee support mechanism, apply the EU jurisprudence in examining the nature of this Support mechanism. However, it is in the sole competence of the CCA to decide whether it shall rely on the above-mentioned EU Commission decision (it is not the ECJ ruling as of yet) and the therein stated conclusion, based on the "Stardust Marine" judgment, saying that "resources under control of public undertaking are always State resources". In any case, it is in the competence of the CCA to decide whether the Incentive fee funds poured into Market operator (HROTE) are State resources.

Only if the CCA decides that all above quoted 'state aid conditions' are fulfilled, the Croatian support system may be deemed State aid, in which case the Market opera-tor (HROTE) shall be an Aid Provider who is transferring the state resources to the eligible Producers. If the CCA's opinion would be that the subject support scheme constitutes a state aid measure, the Environment Protection Rules should be applied. Our assessment hereunder is conditional since it de-

[53] See "Stradust Marine" ruling, supra, note 53.

pends on whether the support scheme constitutes a state aid measure, which is solely the CCA competence to decide.

Within the environmental protection field, the Decision on Announcing the State Aid Environment Protection Rules (OG 98/07) literally transfers into Croatian legal sys-tem the Community guidelines on State aid for environmental protection. If the subject support scheme on the promotion of cogeneration and RES (fee-in tariff system) constitutes state aid, it has to be further examined whether this Support scheme is in line with the abovementioned Decision on Announcing the State Aid Environment Protection Rules. It is questionable whether a portion of domestic element violates Croatian laws and/or its international obligations as well whether it violates the EU rules on fundamental freedom. However, the EU acquis regarding the fundamental freedoms is still not (directly) applicable in the Croatian legal system.

3.2.8 Possible consequences and probability of breaching EU acquis on state aid regulations

CCA has not scrutinised the subject support mechanism yet. If the CCA would assess this scheme as state aid, the CCA may, according to Article 14 (2) of the State Aid Act, grant an ex post authorisation of state aid if and when it finds that the state aid in question is compatible with the state aid rules. The ex post authorisation of the Agency may lay down particular conditions and time limits subject to which the state aid in question may be implemented. If the Portion of Domestic Element is not compatible with the Croatian state aid principles or with the EU state aid acquis, CCA may demand its obliteration. However, if Portion of Domestic Element does not violate (any) state aid provisions but, rather, the SAA provisions[54] or other relevant Croatian international obligation (for example, WTO agreements), the Croatian Constitution Court may, in the latest instance, decide upon this issue.

[54] The SAA introduces the concept of 'fundamental freedom' in respect with the EU entities. Though, under our understanding, the EU Treaty concept of '4 freedoms' is not directly applicable in Croatia.

4. DIRECTIVE ON THE PROMOTION OF COGENERATION

4.1 INTRODUCTION

Cogeneration is a technique to produce electricity and heat in a single process. It ensures that electricity is produced in a process where a very high part of the energy content of a fuel is utilised. When electricity is separately produced, around half of the energy within the fuel is lost. Cogeneration is comprised of a process with two products: electricity and heat – or more specifically - electricity and heat at conditions, where the heat can be utilised either for industrial purposes or for heating of buildings.

Cogeneration is not a specific technology, since a number of different technologies fulfil the criteria of cogeneration. Cogeneration is not linked to one type of fuel – all kinds of fuels can be utilised for cogeneration. In the context of this Directive, co-generation is linked to the combustion of fuels.

4.2 THREE CORNERSTONES OF THE DIRECTIVE

The Directive relies on the three following cornerstones:

- The relationship to the internal energy market, notably the electricity market;
- A harmonised definition of high efficiency cogeneration;
- A common understanding of the term “useful heat demand”

4.2.1 A common definition of high efficiency cogeneration

4.2.1.1 Directive

Cogeneration is qualified as such via a two-step procedure. The first procedure involves the isolation of the cogeneration process and the identification of the amount of electricity and heating coming from the cogeneration process. Step two involves the calculation of the primary energy savings obtained in comparison to the production of the same amount of heat and electricity in separate productions, e.g. heat from a heat-only boiler and electricity from a conventional power-station. If energy-savings are above 10 %, the cogeneration is qualified as “high efficiency”.

An alternative method for the qualification as cogeneration is the bypassing of the first step and the direct calculation of primary energy savings. Again, if the primary energy savings are above 10 %, the process is regarded as “high efficiency”. The problem with this method is that it allows the conveyance of a small fraction of non-cogenerated electricity into the category of high-efficiency cogeneration and thereby into possible economic support.

When comparing cogenerated and the separately produced heat and electricity, there is a need to define reference efficiency values of the separate productions. High reference values make it difficult to reach the 10 % value; low reference values will water down the ambition to reach real energy savings. The reference ef-

ficiency values for the separate production of heat and electricity shall be harmonised and be based on scientific studies. The final values shall be approved by the cogeneration Committee.

4.2.1.2 Croatian legislation – general implementation comments

The cogeneration sector in the Republic of Croatia has developed in light of the ever increasing need for heat and processing steam in industry, and the increase in heat consumption in regional heating systems. Today, the total production of electricity in cogeneration plants is at the level of 2600 GWh per year. Of this amount, approximately 1800 GWh can be considered cogeneration electricity according to the criteria stipulated in Annex II of Directive 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC. As such, the share of cogeneration electricity in production accounts for approximately 13.5%, and for about 10.6% in total electricity consumption. The share of cogeneration plants producing steam and hot water for industry and heating is greater than 70%. With more than 700 MWe installed capacity for the production of electrical energy (public steam plants 494 MWe, industrial cogeneration 219 MWe), cogeneration plants account for about 16% of total production capacities in the Croatian electrical energy sector.

The legislative framework for cogeneration in Croatia is closely aligned with the EU acquis. The general provisions of primary and secondary legislation regarding co-generation are described in the Section II of this document.

The application of the aforementioned subordinate legislation began on July 1, 2007. This subordinate legislation envisages the promotion of electricity production of 400 GWh in 2010, which in the structure of overall electricity consumption by the end of 2010, will represent about 2% highly efficient cogeneration that is incentivised. Ac-cording to Article 9 of the Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07), in 2007 the annual percentage of electricity produced from high efficient cogeneration that is eligible for incentives is set to be 0.6% of total electricity delivered to the electricity grid. The first year for which the progress will be determined and this percentage calculated, is 2008.

The definition of “high efficiency cogeneration” is stated in Article 2 of the Electricity Market Act: “High efficiency cogeneration” is defined as cogeneration based on useful heat demand and primary energy savings. “Useful heat demand” is defined in Article 2 of the Ordinance on attaining the status of an eligible electricity producer, as heat produced in the cogeneration process, used in technological processes, heating processes or secondary cooling processes (trigeneration), not exceeding an economically justifiable demand or a demand that could otherwise not be satisfied by an alternate source of thermal energy. The same Article of the Ordinance defines “primary energy savings” as the relative savings of fuel energy utilisation in relation to the equivalent production in separate reference plants. These definitions are completely in line with the method of qualification of high efficiency cogeneration as stipulated in Directive 2004/8/EC. The Ordinance prescribes the manner in which to attain the status of an eligible electricity producer and the criteria for highly efficient cogeneration in line with Directive 2004/8/EC and Commission Decision 2007/74/EC of 21 December 2006, establishing harmonised efficiency reference values for separate production of electricity and heat in application of Directive 2004/8/EC.

4.2.1.3 Table of regulations applicable on cogeneration within Croatian legislation

This table provides an overview of the legislation regulating the promotion of co-generation in Croatia in chapter II:

Table 2: Table of Croatian CHP regulations

Title of legislative act	Cogeneration field covered	Date of implementation
Energy act (OG 68/01, 177/04, 76/07)	General interest for and promotion of cogeneration	July 2001., amendments December 2004, amendments July 2007
Electricity Market Act (OG 177/04, 76/07)	Status of eligible producer, collection and distribution of fees, compliance with minimal target, guarantees of origin	December 2004, amendments July 2007
Act on regulation of energy activities (OG 177/04, 76/07)	Status of eligible producer	December 2004, amendments July 2007
Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07)	Collecting funds and incentives for producers of electricity from RES and cogeneration	1st July 2007
Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07)	Minimum share of cogeneration, which energy supply undertakings are obliged to supply in the structure of energy offered to end buyers	1st July 2007
Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07)	Feed-in tariffs for electricity produced from cogeneration with differentiation according to installed power and higher and lower daily tariff items	1st July 2007
Ordinance on the use of renewable energy sources and cogeneration (OG 67/07)	Conditions and possibilities for cogeneration use: planning, administrative (licensing) procedures, a register of projects and eligible producers	1st July 2007
Ordinance on attaining the status of eligible electricity producer (OG 67/07)	Types of cogeneration technologies that can attain the status of eligible producer, and procedure for attaining the status Definitions of annual consumption of primary energy for the operation of a cogeneration plant, total annual heat/electricity production in cogeneration, useful heat produced in a cogeneration plant in the cogeneration process, power to heat ratio, primary energy savings, overall and average efficiency of heat/electricity production in cogeneration, electrical efficiency of a reference power plant (values), heat efficiency of a reference boiler room (values)	1st July 2007

4.2.1.4 Current issues – existing deficits in relation to EU-acquis in general

The following Article-by-Article analysis reveals that there are not many deficits of Croatian cogeneration legislation in comparison to EU acquis. The main deficits are expressed by the insufficient definition of the guarantees of origin systems and lack of reports on the national potential for highly efficient cogeneration. Details are concretised below:

4.2.2 A common understanding of the term "useful heat demand"

Cogeneration is the bonding of production of heat and electricity. It is of vital importance to ensure that the produced electricity and heat meet real demands. The electricity can be inserted into a market place and sold where it is needed. The heat, however, can not easily be transported or stored and therefore the cogeneration process must be based in time and place of a real demand for heat. The real demand for useful heat is the corner stone of efficient cogeneration, because if the produced heat does not meet real demand, the advantages of cogeneration disappear. Furthermore, the promotion of cogeneration should not lead to encouragement of in-creased heat-consumption.

As already stated, "useful heat demand" is defined as heat produced in the cogeneration process, used in technological processes, heating processes or secondary cooling processes (tri-generation) which do not exceed an economically justifiable demand, or a demand that could otherwise not be satisfied by an alternate source of thermal energy. This definition does not lead to increased heat consumption. The details of the definition will be explained throughout the following Article-by-Article examination.

4.3 ARTICLE BY ARTICLE EXAMINATION / SPECIAL TOPICS

4.3.1 Article 1: Purpose

4.3.1.1 Applicable EU-acquis

The purpose of the Directive is to create the framework to promote cogeneration and in doing so, takes into consideration some local conditions, notably the difference in climate and economic conditions. The references to "increased energy inefficiency" and improved "security of supply" were included as it became evident that cogeneration as such was not the target. The actual target was yielding cogeneration of good quality.

However, when it comes to production of cogeneration, the conditions, under which high efficiency cogeneration can be provided, are not equal in the EU and two aspects are mentioned already in Article 1. Climate conditions have an impact, since the overall efficiency of a cogeneration plant depends amongst other factors on the ambience temperature. In a cold climate it is easier to reach high efficiencies than in a hot climate. The other aspect concerns economic conditions. In a well-developed economy the technology is more advanced in comparison to a less developed economy. Both aspects are treated in connection with a determination of reference values for separate production of electricity and heat

as described in the Commission decision of 21 December 2006, establishing harmonised efficiency values for separate production of electricity and heat in application of Directive 2004/8/EC.

4.3.1.2 Current Croatian legislation on topic

According to Article 14(1) of the Energy Act, the use of renewable sources and co-generation is in the interest of the Republic of Croatia. Article 14(3) defines the financial framework for the promotion of renewables and cogeneration and determines that it shall be adopted in a special regulation: the Act on production, distribution and supply of thermal energy and the Act on Environmental Protection and Energy Efficiency fund as well as the Act on state aids.

Article 2 of the Ordinance on the use of renewable energy sources and cogeneration states that, by using renewables and cogeneration in the interests of the Republic of Croatia, determined by the Strategy of energy sector development (OG 38/02), legislation and regulations for the energy activities are being achieved, especially in sense of a long term decrease of the energy import dependence, efficient use of energy and decreased environmental impact of fossil fuels, creation of new work places and development of entrepreneurship in the energy sectors, enhancing development of new technologies and domestic economy in a whole, diversification of energy production and increased security of energy supply.

Climate and economic conditions are taken into account in the Ordinance on attaining the status of eligible producer through determination of reference values for separate electricity production set out in the Annex III. This annex lists the table of reference for power plant efficiencies depending on the year of construction and standard (ISO) climate conditions. Correction of electrical efficiency is determined according to the difference between the annual average temperature of the location and the temperature defined by the standard ISO environmental status. Correction is based on the official data of the Meteorological and Hydrological Service of the Republic of Croatia (for the meteorological station closest to the location of a cogeneration plant).

Based on the above comparison, the provisions of Article 1 of the Directive are fully implemented into Croatian legislation. Hence, **there are no legal gaps**.

4.3.2 Article 2: Scope

The Directive applies to cogeneration as defined in Article 3 and cogeneration technologies as listed in the Annex I of the Directive.

4.3.3 Article 3: Definitions

4.3.3.1 Applicable EU-acquis

Article 3 provides for several definitions. It is important to underline that these definitions are only mandatory in the context of the implementation of the Directive. Other definitions can be applied in relation to other initiatives in Member

States as it is stated in recital 16. Directive 2004/8/EC must be applied in close connection with Directive 2003/54/EC on the internal electricity market and Directive 2001/77/EC on the promotion of electricity from renewables.

4.3.3.2 Current Croatian legislation on topic

The definitions regarding cogeneration are given in the Energy Act (OG 68/01, 177/04, 76/07), the Electricity Market Act (OG 177/04, 76/07), the Act on Production, Distribution and Supply of Thermal Energy (OG 42/05), the Ordinance on use of renewable energy sources and cogeneration (OG 67/07), the Ordinance on attaining the status of an eligible electricity producer (OG 67/07) and the Tariff system for the production of electricity from renewable energy sources and cogeneration (OG 33/07) .

In Article 3 of the Energy Act, "cogeneration" is defined as the simultaneous generation of thermal and electrical energy in a single process.

Articles 2(2) point 13 of the Electricity Market Act defines "high efficiency cogeneration" as cogeneration that is based on useful heat demand and primary energy savings.

Article 2(2) point 4 of the Act on Production, Distribution and Supply of Thermal Energy defines "cogeneration units" as plants, in which thermal and electrical energy is simultaneously generated in a single process.

Article 3(2) point 3 of the Ordinance on use of renewable energy sources and cogeneration provides a more detailed explanation of a cogeneration unit. It is defined as a plant in which cogeneration is performed. Additionally, a cogeneration unit can include parts of the plant in which cogeneration is not being performed (e.g. peak boilers or systems for additional incineration) if they create one unique whole with the cogeneration plant. Point 4 in Article 3(2) of the Ordinance defines "high efficiency cogeneration" as cogeneration based on useful heat demand and primary energy savings (same as Electricity Market Act). Article 5 defines the cogeneration technologies and divisions of cogeneration units according to the installed power, so that units up to and including 50 kWe are referred to as micro cogenerations, while small scale cogenerations are defined as those where the installed power does not exceed 1 MWe and is above 50 kWe. It also defines medium-scale cogenerations (installed electric power > 1 MWe and ≤ 35 MWe) and large-scale cogenerations (installed electric power > 35 MWe).

Further definitions are described in the Article 2(2) of the Ordinance on attaining the status of an eligible electricity producer. Point 10 defines "useful heat demand" as heat produced in the cogeneration process, used in technological processes, heating processes or secondary cooling processes (tri-generation), which does not exceed an economically justifiable demand. Economically justifiable demand is the demand that does not exceed the demand which would otherwise be satisfied by an alternate source of thermal energy. Point 11 defines "electricity from cogeneration" as electricity generated in a cogeneration process, expressed in MWh and defined according to the set of formulas. These formulas will be analysed in details in the chapter relating to the compliance with Annex II of the Directive. Point 11 also introduces the "power to heat ratio", which is defined according to different types of cogeneration units. Point 12 defines "overall efficiency" as the annual sum of useful heat output and electricity production di-

vided by the fuel input used for heat and electricity produced in the cogeneration process. In the point 13 it is stipulated, that where a cogeneration plant generates mechanical energy, the annual value of electricity produced from cogeneration may be increased by an additional element representing the amount of electricity which is equivalent to that of the useful mechanical energy. Points 16 and 17 define the efficiency of a reference power plant and of a reference boiler room. Electrical efficiency of a reference power plant is determined depending on the type of fuel used and the year of construction of a cogeneration plant, taking into account average climate conditions and avoided losses from the transmission and distribution of electricity. Heat efficiency of a reference boiler room is determined depending on the type of utilised fuel and the use of waste heat.

4.3.3.3 Text comparison – EU regulation vs. Croatian regulation

Table 3: Text comparison Article 3

Provisions and demands of the Article 3 of the Directive 2004/8/EC	Provisions of Croatian legislation	Compatibility between the Croatian and EU legislation	Comment
(a) cogeneration shall mean the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy	Energy Act (OG 68/01, 177/04, 76/07) Article 3, point 6: Cogeneration - the simultaneous generation in one process of thermal and electrical energy	Partially complies	Mechanical energy can be taken into account according to the Ordinance on attaining the status of eligible producer (Article 2(2) point 13)
(e) 'back-up electricity' shall mean the electricity supplied through the grid in whenever the cogeneration process is disrupted, including maintenance periods, or out of order	/	Not relevant	No such definitions in the Croatian legislation
(f) 'top-up electricity' shall mean the electricity supplied through the electricity grid in cases where the electricity demand is grater then the electrical output of the cogeneration process	/	Not relevant	No such definitions in the Croatian legislation

4.3.3.4 Explanatory comments on gaps

The main legal gap identified during the analysis of definitions from the Directive and in the Croatian legislative acts, is in the definition of cogeneration. In Croatian legislation, the part of possible production of mechanical energy is not part of the basic definition. However, this omission is corrected in the Article 2(2) point 13 of the Ordinance on attaining the status of an eligible electricity producer. It is stipulated, that where a cogeneration plant generates mechanical energy, the annual value of electricity produced from cogeneration may be increased by an

additional element representing the amount of electricity which is equivalent to that of the useful mechanical energy.

Regarding back-up and top-up electricity definitions, they do not appear in any legislative acts relating to cogeneration promotion in this form. However, these terms are clear in a technical sense and are used in the Article 8 of the Directive, which was appropriately implemented into Croatian legislation. Please refer to the analysis on the compliance with Article 8 further in the text.

4.3.4 Article 4: Efficiency criteria of cogeneration

4.3.4.1 Applicable EU-acquis

The Directive introduces the concept of high efficiency cogeneration or in plain words "good quality cogeneration". It is done via a combination of

- the definition in Article 3, saying that high efficiency cogeneration must meet the criteria set out in Annex III,
- the establishment of harmonised efficiency reference values for separate production of electricity and heat in Article 4 and finally
- the criteria and the formula for calculation in Annex III, in which the reference values for the efficiency of separate productions are likely to the calculation of primary energy savings.

It is a cornerstone of the Directive, that from 21 February 2006 onwards, high efficiency cogeneration is defined based on a common harmonised definition. The real impact of the Directive will be that, from the said date, it is probably mandatory to apply the definition of high efficiency cogeneration to economic support according to the guidelines for state aid for environmental protection that are now in the process of revision.

The criteria are not set out as a minimum efficiency requirement, but it is brought into operation, whenever as a Member State wants to provide economic support covered by the state aid regulations.

4.3.4.2 Current Croatian legislation on topic

The Ordinance on attaining the status of an eligible electricity producer (OG 67/07) sets out the criteria for highly efficient cogeneration pursuant to Directive 2004/8/EC Annex III and Commission Decision 2007/74/EC of 21 December 2006 establishing harmonised efficiency reference values for separate production of electricity and heat in application of Directive 2004/8/EC.

Article 2(2) point 15 of the Ordinance defines primary energy savings (PES) as the relative savings of fuel energy utilisation in relation to the equivalent production in separate reference plants defined by the formula:

$$PES = 1 - \frac{1}{\frac{\eta_e}{\eta_{ref.e}} + \frac{\eta_t}{\eta_{ref,t}}}$$

whereas:
ηe - average annual efficiency of electricity production in a cogeneration plant
ηt - average annual efficiency of useful heat production in a cogeneration plant
ηref,e - electrical efficiency of a reference power plant
ηref,t - heat efficiency of a reference boiler room

The average annual efficiency of electricity production in a cogeneration plant, ηe, is defined as annual electricity from cogeneration divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration (Article 2(2) of the Ordinance, point 13). Average annual heat efficiency in a cogeneration plant, ηt, is defined as annual heat output from cogeneration divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration (Article 2(2) of the Ordinance, point 14). Note, that fuel input used for calculation of efficiency refers only to the use of fossil fuels and is based on the lower calorific value of the fuel (Article 2(2), point 2).

In Annex III of the Ordinance, the reference values for separate electricity production are stated, while in the Annex IV of the Ordinance, the reference values for separate heat production are listed. They are completely aligned (exactly the same) with the reference values described in Annex I and Annex II of the Commission Decision 2007/74/EC. Annex III of the Ordinance also gives the correction factors for avoided grid losses and correction factors relating to climatic situations that are equal to Annex IV and Annex III respectively of the Commission Decision 2007/74/EC.

According to the Article 5(d) of the Ordinance, medium- and large-scale cogeneration plants can be awarded with the status of eligible producer when they achieve primary energy savings of at least 10%. According to Article 5(c) of the Ordinance, micro and small-scale cogeneration plants can be awarded with the status of eligible producer when they achieve primary energy savings. These determinants fully comply with the requirements of the Directive 2004/08/EC provided for in the Annex III, section (a).

Based on the above comparison, the provisions of the Article 1 of the Directive are fully implemented into Croatian legislation, i.e. **there are legal no gaps**.

4.3.5 Article 5: Guarantee of Origin of electricity from high-efficiency cogeneration

4.3.5.1 Applicable EU-acquis

The Guarantee of Origin is established as a parallel to the Guarantee of Origin of electricity from renewables. The Directive states, that the right to claim a Guarantee of Origin is limited to the producer of the cogenerated electricity. This is a limitation different to the RES-E Directive, in which this right is not established. Furthermore, the Directive does not define who should be responsible to cover the costs of such a system. It is thus up to the Member States to assign a role of the Guarantee of Origin in a national context. The reasoning behind the Article is that, the market for electricity from high-efficiency cogeneration, just like a green

electricity market, could be constituted on the basis of support mechanisms. Support mechanisms, however, are still regarded a national issue.

Concerning Article 5 (1), Member States are granted six months to implement the harmonised efficiency reference values for separate production. If the Commission, via the Committee, is not able to adopt harmonised reference values before 21 Au-gust 2005, Member States are not obliged to establish a system to ensure that the origin of electricity produced from high efficiency cogeneration can be guaranteed until six months after such values are finally adopted.

In parallel to electricity from renewables, the Guarantee of Origin cannot be regarded as a tradable certificate. The reason for this explicit distinction is that the tradable certificate implies a support system based on market principals. This would again imply a harmonised public support system and such a step was supported by any Member State. The Commission will study the co-existence of national support pro-grams, but a harmonised system seems rather distant.

Pursuant to Article 5 (2), Member States are permitted in form of a ministry or agency, to take up the role as competent body themselves. However, Member States are also permitted to appoint another body to supervise the issue of the Guarantee of Origin.

Comparable with Directive 2002/77/EC, Article 5 (6) contains the word “should” in connection with the mutual recognition by the Member States of relevant Guarantees of Origin in connection with cogeneration. The word “should” is again used in a normative text, indicating the hesitation amongst Member States to be subject of imported cogenerated electricity that may claim support. The point is that the Member States most likely cannot reject the validity of a Guarantee of Origin issued by an-other Member State. Therefore, if a Member State has established a support scheme for electricity solely based on the presence of a valid Guarantee of Origin, then this Member State will also face difficulties in rejecting a request for support based on a foreign guarantee of origin. However, according to (4) of Article 5, it seems legitimate to limit the support to domestic production. No foreign producer of cogenerated electricity has until now challenged this limitation in Court.

Finally, it has to be pointed out that Member States have to provide the necessary analyses and to publish a report with the results concerning national potentials for high-efficiency cogeneration. There are no legally binding actions to be taken by Member States based on the results of the analysis. However, it is a basic right of initiative for the Commission to propose any action based on national reports.

4.3.5.2 Current Croatian legislation on topic

According to Article 16 of the Electricity Market Act (OG 177/04, 76/07), the TSO shall be responsible for submitting accounting data on the electricity taken over from the eligible producers connected to the transmission network to the Market operator (HROTE) for the purpose of settling accounts and giving guarantees on the origin of electricity with regard to the primary energy source. Article 19 stipulates that the DSO shall be responsible for submitting accounting data on the electricity taken over from the eligible producers connected to the distribution system to the Market operator (HROTE) for the purpose of settling accounts and giv-

ing guarantees on the origin of electricity with regard to the primary energy source.

4.3.5.3 Text comparison – EU regulation vs. Croatian regulation

The table below lists the most important provisions of the Directive regarding guarantees of origin and compares them to Croatian legislation.

Table 4: Text comparison Article 5

Provisions and demands of the Article 5 of the Directive 2004/8/EC	Provisions of Croatian legislation	Compatibility between the Croatian and EU legislation	Comment
1. Member States shall ensure that the origin of electricity produced from high-efficiency cogeneration can be guaranteed according to objective transparent and non-discriminatory criteria laid down by each Member State. They shall ensure that this GoO of the electricity enable producers to demonstrate that the electricity they sell is produced for high efficiency cogeneration and **is issued to this effect in response to a request from the producer**.		Does not comply	Croatian legislation does neither prescribe the content of GoO nor the procedure of issuing GoO to the producer upon their request.
2. Member States may designate one or more competent bodies, independent of generation and distribution activities, to supervise the issue of the guarantee of origin referred to in paragraph 1.	**Electricity Market Act** (OG 177/04, 76/07) **Article 16, Article 19** The TSO/DSO shall be responsible for the following… sending accounting data on the electricity taken over from the eligible producers connected to the transmission network to the Market operator (HROTE) for the purpose of settling accounts and giving assurance on the origin of electricity with regard to the primary energy source	Partially complies	Note that guarantees of origin are stipulated in the Electricity Market Act, and it can be understood that Market operator (HROTE) is in charge for GoO. However, this should be defined more precisely – the competent body for issuing GoO should be legally designated.

5. A guarantee of origin shall: - specify the lower calorific value of the fuel source from which the electricity was produced, specify the use of the heat generated together with the electricity and finally specify the dates and places of production, - specify the quantity of electricity from high efficiency cogeneration in accordance with Annex II that the guarantee represents, - specify the primary energy savings calculated in accordance with Annex III based on harmonised efficiency reference values.	/	Partially complies	Provisions of Annex II and Annex III are implemented into Croatian legislation thorough Ordinance on attaining the status of eligible producer. The content of report which TSO/DSO is obliged to submit to Market operator (HROTE) is subject to the special agreement between Market operator (HROTE) and TSO/DSO, as stipulated in the Electricity Market Rules (OG 135/06). There is no such agreement, hence it is not exactly defined what data are required for GoO.

4.3.5.4 Explanatory comments on gaps

1) HERA should – in future – be the relevant regulatory body for Guarantees of Origin. HERA is an autonomous, independent and non-profit public institution which regulates energy activities in the Republic of Croatia. HERA's obligations, authorities and responsibilities are based on the Act on the Regulation of Energy Activities, the Energy Act and other acts regulating specific energy activities.

2) The issue of "Guarantees of Origin" has nonetheless not been completely legally defined in Croatia. However, as demonstrated under point b), there is a clear obligation for TSO/DSO to deliver data to Market operator (HROTE) on the electricity taken over from the eligible producers. Article 22 of the Electricity Market Rules (OG 135/06) stipulates that TSO/DSO is obliged to conclude an agreement with Market Operator (HROTE), which will regulate mutual relations and obligations. This agreement shall, according to Article 23 of the Electricity Market Rules, also contain the mode of delivering measurement and accounting data on electricity taken over from eligible producers for purposes of settling accounts and giving guarantees on the origin. There is no publicly available documentation on the existence or content of such agreement.

Furthermore, the Directive in Article 5(1) stipulates that Member States shall ensure that the GoO is issued to the producer upon their request in order to demonstrate that the electricity they sell is produced from high efficient cogeneration. In Croatian legislation, this is not prescribed in any legal act. Also, the content and purpose of the GoO is not legally defined in Croatia. Therefore there is a legal gap regarding the GoO in Croatian legislation.

3) Croatia has established a special support system for electricity produced for high efficient cogeneration. It is called **feed-in tariff** system, the legal basis of

which is the Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07), in which the incentive prices are defined according to the in-stalled power of the plant (the distinction is made between micro cogenerations <= 50 kW, small-scale >50 kW and <= 1 MW, medium-scale >1 MW and <= 35 MW, and large-scale cogeneration units >35 MW).

4) It is assumed that guarantees of origin will be prescribed by special by-laws based on the recommendations of the RELEEL project. For the time being, the question on the acceptance of foreign Guarantees of Origin in Croatia cannot be answered.

4.3.6 Article 6: National potentials for high efficiency cogeneration

4.3.6.1 Applicable EU-acquis

Article 6 obliges Member States to perform analyses concerning national potentials for high-efficiency cogeneration. The analysis lined out under Article 6 (2) should display possible improvements of the actual cogeneration policy. Whether it leads to actual steps is a sole political decision and the Commission has no legal instruments to coerce a Member State to establish a ascertained promotional policy in this area.

Finally, the periodic report under Article 6 (3) will allow the Commission to judge whether there is a need for further action on this field. Specific contents of the report are mentioned in recital 3.

4.3.6.2 Current Croatian legislation on topic

Article 6 obliges Member States to establish an analysis of national potentials for high efficient cogeneration and to monitor and evaluate the progress every four years. However, this obligation does require implementation into legislative acts. Thus, it is **not the subject of the legal gap analysis**. However, it has to be noted that MoELE has initiated the study of potentials for high efficient cogeneration in Croatia, the completion of which is envisaged for 2008.

4.3.7 Article 7: Support schemes

4.3.7.1 Applicable EU-acquis

The question of support schemes is a very delicate one. Recital 24 makes a clear reference to the guidelines on state aid for environmental protection, in which cogeneration is explicitly mentioned as supportable if the conversion efficiency is particularly high. Due to the Directive, this term will probably be defined as “high efficiency cogeneration as defined in Directive 2004/8/EC” in the future.

Recital 25 states that no support should be granted, if there is no economically justifiable demand for heat or cooling. The background of this recital is probably found in the past, where cogeneration has received unjustified support. This led to fictional or true stories about “paper-factories” that did not produce paper, but only subsidised cogenerated electricity.

It has to be pointed out, that at the current stage, the issue of achieving full harmonisation of the cogenerated electricity market was not even part of the decision-making process.

Pursuant to Article 7(1), Member States are obliged to ensure that support is based on the term of "useful heat demand" and on primary energy savings. The second half of the paragraph was developed so cogeneration could not become a "free way" to increase the energy consumption.

Article 7(2) clarifies, with reference to Articles 87 and 88 of the Treaty, that the national support mechanisms comply with state aid regulations and must be in accordance with and no hindering of the internal market. The reference to Articles 6 and 174 of the Treaty means that the Commission, in its evaluation of the national sup-port mechanisms, must take subsidiarity into consideration as well as the environ-mental impact of the support. The following reporting obligation of the Commission [Article 7(3)] is very similar to the Article 4(2) in Directive 2004/77/EC, although the cogeneration version is without an explicit obligation to present proposals, if necessary. However, the Commission has the right of initiative, so that – if it considers it appropriate –, it can propose further harmonisation.

4.3.7.2 Current Croatian legislation on topic

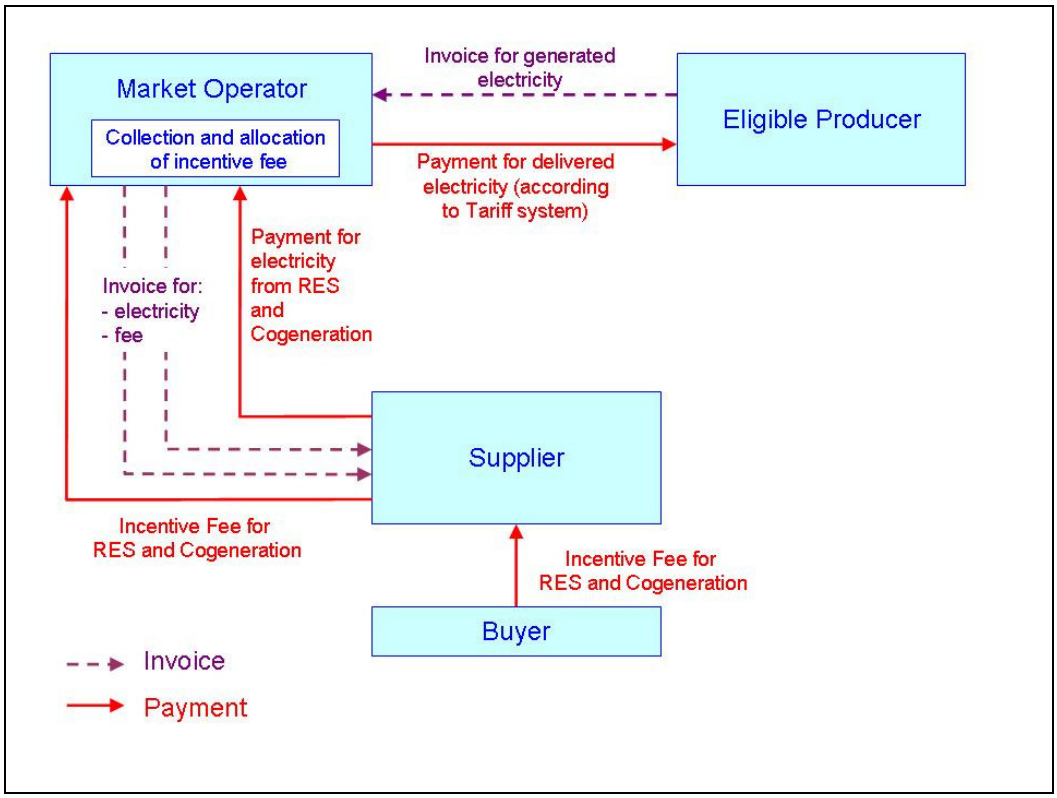
The support scheme is based on the Tariff system for the production of electricity from renewable energy sources and cogeneration and the Regulation on fees for promoting electricity production from renewable energy sources and cogeneration. The right to an incentive price, as defined in the Article 3 of the Tariff system, shall be acquired by the electricity producer using cogeneration for the production of electricity, provided that, the electricity producer has obtained the decision on acquiring the status of eligible electricity producer pursuant to Article 8(2) of the Electricity Market Act and has concluded a contract on the purchase of electricity with the Market operator pursuant to Article 30(1), subparagraph 9 of the Electricity Market Act. For co-generation producers, the eligibility status is obtained if cogeneration units achieve primary energy savings (PES) of at least 10%, and for micro and small-scale cogeneration units, these savings must exist (according to the Ordinance on attaining the status of eligible electricity, Article 4(c) and (d)).

The funding for an incentive is collected through a special fee (incentive fee) paid by all electricity buyers (tariff buyers and eligible buyers) as determined by the Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (Article 9(1)). The incentive fee represents a supplement to the electricity price charged to tariff buyers or to eligible buyers (Article 9(2) of the Regulation). According to the Article 8, the Market operator (HROTE) is obliged to collect the incentive fee from suppliers of both tariff and eligible buyers, pursuant to Article 30(1) of the Energy Market Act. Market operator (HROTE) calculates and allocates the funds collected from the incentive fees among the eligible producers on the basis of the contracts on the purchase of the electricity pursuant to Article 30(1) of the Electricity Market Act. The Market operator (HROTE) shall pay the incentive price to the eligible producer (subsequent to the conclusion of the contract) for the delivered electricity once a month. The basis for payment is the data of total electricity delivered into the electric power system in the previous month, which TSO/DSO is obliged to deliver to Market operator by

the 15th of each calendar month. Pursuant to Article 15 of the Tariff system, the electricity delivered into the system is expressed in kWh for each individual eligible producer. Once a month, the Market operator (HROTE) shall submit to each electricity supplier an itemised invoice specifying the total amount of funds that the electricity supplier is obliged to pay to the Market operator (HROTE) under the item of incentive fees, based on the data provided by TSO and DSO on the total electricity calculated and delivered to the buyers in the previous month, expressed in kWh for every individual supplier of electricity (Articles 16 and 17 of the Tariff system). Electricity suppliers must separately indicate the amount of the total incentive fee in the bill they deliver to their buyers (Article 9(3) of the Regulation).

The support scheme, including the indication of invoice procedure and money flow and main actors, is described in the figure below.

Figure 3: Scheme of Support and Cash flow and Main actors



In this manner, the support scheme (based on the useful heat demand and primary energy savings) is established in Croatia.

4.3.8 Article 8: Placing electricity from cogeneration on the internal energy market

4.3.8.1 Applicable EU-acquis

The (Second) Electricity Directive is trying to create a level playing field for the internal electricity market. Transparency and non-discriminations are co-principals in set-ting out rules for the market. Small and distributed electricity producers had

in the early phases of the electricity market met unfair restrictions because of reluctance and obstruction from established grid operators, which were often originally part of the same companies as the large electricity producers, to provide them fair network access. However, the Second Electricity Directive should, via requirements with respect to unbundling and non-discrimination, pave the way to remove these types of barriers against increased use of cogeneration. Nevertheless, a few issues remain to be dealt with in this Directive and notable Article 8, which concerns “electricity grid system and tariff issues”.

4.3.8.1.1 Article 8 (1)

Electricity from cogeneration shall be treated exactly as electricity from renewables as outlined in the specific Articles of Directive 2001/77/EC.

4.3.8.1.2 Article 8 (2)

Article 8 (2) intends to protect small (industrial) cogeneration producers. Market experience show that very low prices are being paid for the surplus electricity sold to the grid and very high buy-back prices were needed to top-down or back-up. Publication of tariffs ensures transparency and the Electricity Directive guarantees the non-discrimination. The paragraph is needed for those customers, which are still bound to the old regime and are not yet an eligible customer and thereby are not allowed to find an electricity supplier on the market, who could deliver on reasonable conditions. Because of the legal situation concerning eligible customers from July 2007 onwards, this paragraph will consequently only have a possible impact on micro-cogeneration in household size.

4.3.8.1.3 Article 8 (3)

Cf. Article 8 (3).

4.3.8.2 Current Croatian legislation on topic

1) Concerning the topic of “Eligible Consumers”, Article 3 paragraph 22 of the Croatian Energy Act defines “eligible customer” as “consumer who acquires this status by law and can freely select from whom to buy energy.

Article 31 and 32 of the Electricity Market Act details rules on an eligible customer. We will underline only the most important norms on an eligible customer. An eligible customer may freely choose his electricity supplier. As of the day of entry into force of the Electricity Market Act (23rd December 2004), all customers with annual consumption above 20 GWh and all customers directly connected to the transmission system shall obtain the status of eligible customers, while the dynamics of further opening of the electricity market shall be as follows:

- 01 July 2006 for customers with consumption exceeding 9 GWh,
- 01 July 2007 for entrepreneurs,
- 01 July 2008 for all customers.

Annual consumption based on when a customer becomes eligible, refers to all metering points.

An eligible customer shall not lose his status for as long as he maintains the level of consumption on the basis of which he obtained the status of eligible customer. An eligible customer shall, after obtaining his status, choose a supplier within 6 months, while in that period he is entitled to electricity supply by the company performing the public service obligation, pursuant to the tariff system for electricity supply which does not include eligible customers.

2) Concerning the liberalisation of the Croatian Energy Market, the dynamics of the electricity market opening are defined in Article 31(2) of the Electricity Market Act (OG 177/04, 76/07). The electricity market is currently open for all customers with annual electricity consumption greater than 9 GWh, which accounts for 25% of the total consumption in the Republic of Croatia.

The electricity market for all customers in the category of entrepreneurs has been opened as of 1 July 2007, while full market opening is planned as of 1 July 2008.

3) The Provisions of Article 7(1), (2) and (5) of the Directive 2001/77/EC must also apply to high efficient cogeneration. These provisions are concerned with a non-discriminatory approach to the grid, i.e. that TSO and DSO guarantee the transmission and distribution of the electricity produced from high efficient cogeneration. This issue is regulated in Article 8 (6) of the Electricity Market Act, stating that TSO or DSO is obliged to take over all electricity produced by eligible producer. When dispatching generating installation, both TSO and DSO are obliged to take over total electricity production from eligible producers according to Article 16 and 19 respectively. These provisions of the Electricity Market Act are identical to the provisions provided for in Article 7(1) of the Directive 2001/77/EC. Provisions of this Directive stated in the Article 7(2) and (5) concern the technical conditions and the bearing of costs for grid connections of new producers. These provisions are regulated in Croatia by the General Conditions of Electricity Supply (OG 14/06) and Ordinance on charges for connection to the network and for increase in connected power (OG 28/06). According to the Article 5(1) of the General Conditions, the expenses for grid connection are borne by the applicant for the grid connection (customer or producer). According to the Article 5(3), the investor of the grid connection is TSO or DSO. Furthermore, according to the Article 15 of the General Conditions, TSO or DSO is obliged to develop and attain all documentation necessary for the connection, insurance of technical conditions in the grid, building the connection, equipping the measurement point, performing necessary testing, performing the connection and necessary replacements of the connection, except in the case when replacement is required or caused by the buyer or producer.

4) Article 8(2) ensures that the tariffs for the purchase of electricity to back-up or top-up electricity generation are set out on the basis of published tariff and terms and conditions. It has to be emphasised, that in Croatia, a transparent tariff system for electricity generation, transmission, distribution and supply is enforced (OG 143/06). However, taking into account the current stage of electricity market liberalisation in Croatia, this provision is only relevant for micro-cogeneration in household size.

Based on the above analysis, the provisions of Article 8 of the Directive are fully implemented into Croatian legislation. Hence, **there are no legal gaps.**

4.3.9 Article 9: Administrative procedures

4.3.9.1 Applicable EU-acquis

Because of the multiple application of cogeneration in respect of its size and type, it is important to examine all administrative procedures in order to remove any unfair restrictions against further exploitation of cogeneration. The obligation is on Member States to streamline administrative procedures and remove barriers. However, this Article also provides co generators or potential co generators with an explicit reference to contest any lengthy or burdensome procedure that they may encounter.

It should also be pointed out in this context, that the Electricity Internal Market Directive 2003/54/EC deals with the authorisation procedure for new electricity production capacity in its Article 6. This Article obliges Member States to establish authorisation procedures in a transparent and non-discriminatory way. Especially in Article 6 (3), it is stated that "… authorisation procedures for small and/or distributed generation take into account their limited size and potential impact". Article 9 obliges Member States to check whether or not the established procedures fulfil the requirements of the Electricity Directive and to what extent procedures are designed to promote co-generation.

4.3.9.2 Current Croatian legislation on topic

Croatia has established administrative procedures for electricity producers from RES and cogeneration. They are based on the Ordinance on use of renewable energy sources and cogeneration (OG 67/07).

Based on the Article 14 of the Energy Act, the registration of projects and plants using renewables and cogeneration and of eligible producers is established.

In order to inscribe in the register, potential project holders must attain the preliminary energy approval from MoELE according to the Article 9(1) of the Ordinance on use of renewable energy sources and cogeneration. Article 10(1) of the Ordinance states that by being granted the preliminary energy approval, the potential producer acquires the following rights:

- registering in the Register of RES projects and eligible producers (in the following text: the Register)
- investigation of RES potentials within the limits of the investigation area
- arranging asset and legal rights on the land in the ownership of the Republic of Croatia.

According to Article 10(2), the potential producer is obliged to start with the RES potential investigation within 6 months after the issuance of the preliminary energy approval and to submit proof of these activities to the MoELE. Failing to do so will result in the deletion from the Registry. This, of course, does not apply to cogeneration producers. Within 36 months of the date of preliminary approval finality, the potential producer is obliged to submit requests for issuing the location license to the MoELE. Article 11 of the Ordinance defines an extensive list of documents that have to be enclosed in the request for issuing the preliminary en-

ergy approval. According to the Article 16(1), the preliminary energy approval is valid for 48 months after the finality of the preliminary approval for the facilities that require the location licence, and 18 months for those that do not need the location permit (according to the Physical Planning and Construction Act (OG 76/07)). According to the Article 15, there is no need for preliminary energy approval for plants with installed power up to 30 kW and the inscription in register is performed on the basis of the energy approval. Grids not connected to plants and plants for thermal energy production from renewables, do not require preliminary energy or energy approval.

Location permits are issued according to the Physical Planning and Construction Act (OG 76/07) by the county authorities on whose territory the planned facility is to be built.

Following the issuance of the location permit, the potential producer is obliged to submit the request for issuing energy approval from the MoELE, based on the Article 17 of the Ordinance.

According to the Article 21(2), the potential producer is obliged to obtain the building permit and deliver it to MoELE within 12 months after the finality of the energy approval. Failing to do so, results in the deletion from the registry.

With the issued building permit licence (regulated by the Planning and Construction Act (OG 76/07) and in jurisdiction of the Ministry of environmental protection, physical planning and construction (MoEPPPC)), the potential producer submits to the Croatian Energy Regulatory Agency (HERA) the application for granting a preliminary decision on acquiring the status of eligible producer, according to the Article 7 of the Ordinance on attaining the status of eligible producer (OG 67/07). The period of validity of a preliminary decision is two years (Article 8(1)). Within the period of two years from the date of finality of the preliminary decision, the potential producer (project holder) is obliged to construct the electricity generation plant and submit the application for the granting of the decision (Article 8(2)). HERA is obliged to deliver the preliminary decision to the Ministry, Market operator (HROTE), transmission system operator and distribution system operator within 8 days from the date it becomes legally valid (Article 8(5)).

With the preliminary decision granting the status of eligible producer, the potential producer (project holder) can submit the request for concluding the energy purchase contract to the Market operator (HROTE), according to the Article 9 of the Tariff sys-tem for the production of electricity from renewable energy sources and cogeneration (OG 33/07). The following shall be enclosed in the request for concluding the contract:

- Preliminary contract or the contract on the connection to the electric power network,
- Preliminary decision on the acquisition of the status of eligible producer.

The contract on the purchase of electricity shall be concluded within 60 days from the day the complete request was received and shall apply as of the date when the decision on acquiring the status of eligible producer becomes final.

According to the Article 9 of the Ordinance on use of renewable energy sources and cogeneration, the potential producer (project holder) who constructed a plant

submits the application for granting of the status of eligible producer to HERA. According to the Article 9(2), the decision on granting the status of eligible producer is valid for a period of 12 years, Pursuant to the Article 9(4) of the Ordinance , the following documents must be submitted with the application:

- the permit to carry out the energy activity of electricity production, where the obligation of obtaining a permit is prescribed,
- a legally valid use permit, where the obligation of obtaining a use permit is prescribed,
- the network use contract,
- a technical description of the constructed plant with a description of the technological process and the conditions of use of the plant,
- a report on installed metering devices with the scheme of metering points and the method of measurement implementation as well as the certificate on accuracy of metering devices,
- monthly and annual electricity production plans under average meteorological conditions, expected monthly variations in electricity production,

The described procedure is summarised in the scheme below.

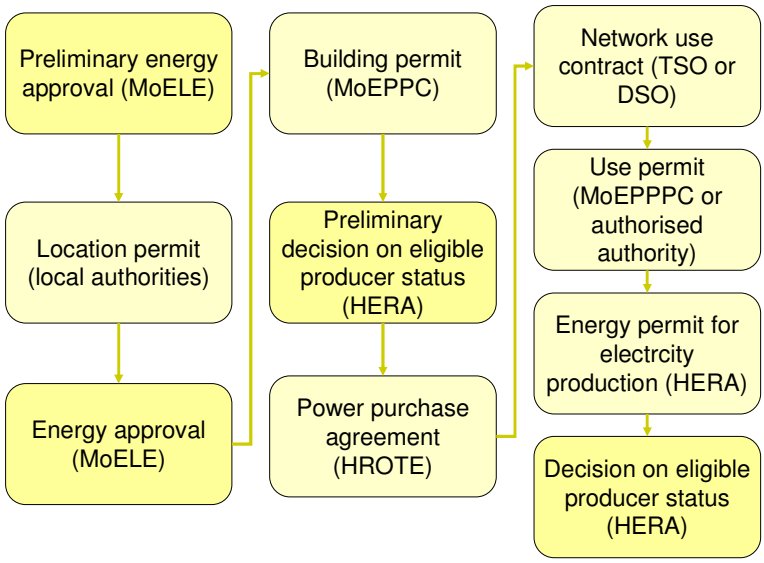


Figure 4: Scheme of Administrative Procedure

By establishing a precise and transparent administrative procedure, the provisions of Article 9 of the Directive 2004/8/EC are taken into account by the Croatian legislation; hence **there are no identified legal gaps.**

4.3.10 Article 10 and 11: Reporting obligations and Commission Reporting

See Articles 10 and 11.

4.3.11 Article 12: Alternative calculations

4.3.11.1 Applicable EU-acquis

The calculation methods to define what "high efficiency cogenerated electricity" is are stated in Annexes II and III of the Directive. The main issue that needed to be re-solved in agreement between the Commission, the Council and the European Parliament, was the fact that calculation methods for cogeneration processes have al-ready been well developed in several Member States and are the basis of well de-signed promotion policies that Member States do not want to give up as a result of forced European harmonisation. It is not possible to identify one specific calculation method as the only correct method. The Directive establishes a convention assigning one method as main reference to be used whenever any given production of cogeneration is considered high-efficiency cogeneration. However, some alternatives have been permitted:

The first exemption from the standard approach is limited in time with a maximum of five years. Instead of applying the formula in Annex II (b), more precisely, to remove non-cogenerated parts of the production, a Member State can use an alternative method. The relevant value of this Article is that Member States can apply an existing calculation formula as assistance until 2010 instead of being forced to amend an existing scheme. If a Guarantee of Origin is issued in a Member State, it must, how-ever, be issued in accordance with the primary rules. Also, statistics must be calculated applying the main method.

The alternative allows Member States to accept a given process as "high efficiency cogeneration", if the whole process (including some non-cogenerated parts) meets the criteria for primary energy savings. If production also includes non-cogenerated electricity production, the efficiency of this fraction of the production will be less than 50 – 60 %. Since the overall efficiency of a cogeneration process is typically above 70 %, such a non-cogeneration part will reduce the average overall efficiency. Consequently, it is fair to say, that if the whole production meets at least 10 % primary energy savings, the embedded cogeneration-process must provide more than 10 % primary energy savings. The non-cogenerated electricity production is a "burden" for the real cogeneration-process and this burden will continue to pull down the overall efficiency and primary energy savings. The risk within this method is that the new cogeneration-unit with overall efficiency of 90 % in cogeneration-mode and perhaps 50 % electric efficiency in electricity-only mode, will be able to carry along large electricity production and still be characterised as high efficiency. The limitation for larger units above 25 MW that they must also meet the criteria of at least 70 % of overall efficiency, narrows the span for manoeuvre. Again, for this alternative, the principal method must be applied for purposes of issuing a Guarantee of Origin and for statistics.

Using the alternative of Article 12(3), a Member State is permitted not to calculate primary energy savings from a given production, provided that, on average and on a national basis, cogeneration production within a Member State meets the efficiency criteria. This alternative allows a Member State to prove, on an annual basis, that a certain volume of cogeneration-production as a whole can be regarded as high-efficiency cogeneration. Again, in this paragraph, it is required to use the calculation of Annex II and III when issuing a Guarantee of Origin and for statistical purposes.

4.3.11.2 Current Croatian legislation on topic

Croatia applies the "main method" calculation scheme, as demonstrated in the Article 2 of the Ordinance on attaining the status of an eligible electricity producer (OG 67/07). Thus, the alternative calculations are not applied in Croatia and will therefore not be discussed any further.

However, it has to be noted that Article 2(2) point 11 of the Ordinance on attaining the status of eligible producer stipulates, that cogeneration units with an electrical capacity larger then 25 MW and with overall efficiency larger then 70% can be qualified as high efficiency cogenerations without using the calculation methods to exclude non-cogeneration production.

4.3.12 Articles 13, 14, 15 and 16: Review, Committee procedure, transposition, amendment to Directive 92/42/EEC

See Articles 13, 14, 15 and 16.

4.3.13 Annex I

4.3.13.1 Applicable EU-acquis

Annex I identifies the technologies providing cogeneration. It is the basic understanding that cogeneration can be produced through a variety of technologies. The real impact of this diversification of technologies occurs in Annex II, because the technologies (a) combined circle gas turbine with heat recovery, and (c) steam condensing, extraction turbine, have the features of scaling up and down the ratio between electricity and heat through operation. The technologies (a) and (c) are valuable, be-cause they can increase the electricity production on behalf of the heat production and vice versa. Other technologies are completely “heat-driven”, meaning that the electricity production is completely linked to heat-production. For those technologies, electricity production will fall to zero if there is no heat demand. Identification of technology (a) and (c) is required, because these technologies have the possibility to produce electricity without producing useful heat. This option is valuable for the electricity system, but producing electricity without useful heat is not considered cogeneration.

A power plant without heat production is often called “condensing production” and especially technologies (a) and (c) represent the risk of “smuggling on board” non-cogenerated electricity on the “pureness of cogeneration”. The overall efficiency thresholds in Annex II aimed to catch such attempts to “smuggle on board” non-CHP electricity.

Since only electricity production results in efficiencies in the range of 40 – 45 % and since cogeneration overall efficiencies often reach levels of 70 – 90 %, it is obvious that any given installation with the option to operate in full cogeneration mode at i.e. 85 % could produce a share of non-cogenerated electricity and still meet the overall efficiency requirements of 75 % or 80 %. On the other hand, the thresholds of 75 % and 80 % would limit the possibilities to “smuggle on board” non-cogenerated electricity.

The list of technologies does not explicitly include nuclear installations. It was never intended to include nuclear installations, because it is impossible to judge the efficiency of a nuclear installation in the context of this Directive. The amount of primary energy savings are calculated in comparison to a cogeneration-process and separate production based on the same fuel. It is not possible to identify separate production of heat based on nuclear and consequently it is not possible to label electricity from a nuclear power station as electricity from co-generation. On the other hand it has been disclosed that in some of the new Member States, nuclear power stations actually deliver heat for district heating. The Commission is supposed to provide guidelines on how to deal with this subject.

4.3.13.2 Current Croatian legislation on topic

Articles 5 of the Ordinance on use of renewable energy sources and cogeneration defines "cogeneration technologies" as (a) combined cycle gas turbine with heat recovery, (b) steam backpressure turbine, (c) steam condensing extraction turbine, (d) gas turbine with heat recovery, (e) internal combustion engine, (f) micro turbines, (g) Stirling engines, (h) fuel cells, (i) steam engines, (j) organic Rankine cycles, (k) any other type of technology or combination of thereof representing simultaneous generation in a single process of thermal and electrical/mechanical energy.

Based on the above definition, the provisions of the Directive's Annex I are fully implemented into Croatian legislation. Hence, **there are no legal gaps.**

4.3.14 Annex II

4.3.14.1 Applicable EU-acquis

Annex II provides for a method to be used to isolate cogenerated parts of a given production. Using this annex, it is possible to "slice-off" or to exclude non-cogenerated parts of the energy production of a given unit. In addition, the annex defines how the amount of cogenerated electricity displayed on the Guarantee of Origin has to be calculated. Finally, the method of the annex has to be applied to provide statistics. This wording specifies that the determination of the amount of electricity from cogeneration must be based on a data from real operation and not on data from the test-labs of the manufacturer. Concerning micro-cogeneration, where the installations could be mass-produced units, it is clear that an obligation of a mandatory on-site inspection would be out of proportion. For those installations it is relevant to ask for a type-certification of the specific installation. This provision paves the way for the approval of a CE-marked micro-cogeneration-appliance as a producer of high efficiency cogeneration in accordance with the Directive.

Concerning (a), its wording explicitly determines that the cross electricity production is the basis for the calculations. The amount of electricity for own-consumption does not, however, affect the calculation. This definition maximises the output from the installation and allows the producers to label the cross output as "electricity from co-generation" and to buy necessary electricity to cover the own consumption from the grid.

The alternative to this approach would have been to consider the net-electricity production. For electricity producers selling the whole production to the grid, "net production" is equal to "sold to the grid". However, all installations measure the output from the generator, so for these installations there are no extra costs. For industrial installations, where the whole or a share of the production is used internally, it would be more costly to use the net solution. This approach would have required industrial installations to install meters to measure not only the amount of electricity sold to the grid but also the amount of electricity used internally at the production. These extra costs were regarded as considerable. The market will still impose and incentive to minimise the own-consumption, because a reduction of own consumption would in-crease the amount of kWh offered at the market-place.

The higher number for combined cycles a) and for extraction plants c) is due to those installations' generally higher efficiencies, but also because these technologies are able to produce electricity as cogeneration or non-cogeneration and the production can be switched throughout the operation to produce more or less in "cogeneration mode". When an extraction plant is operated in cogeneration mode, the overall efficiency is as high as up to 90 %. Operated in non-cogeneration mode, the overall efficiency is at a much lower level of 35 to 45 %. If the annual overall efficiency is above 80 %, it is an indication of a nearly constant operation in cogeneration mode. Consequently, all produced electricity will be accepted as cogenerated electricity.

It is important to remember that this definition is not meant to be a scientifically accurate value of electricity from cogeneration. The rational for having this threshold is to establish a pragmatic and easy way to identify the amount of electricity, which can be regarded as electricity from cogeneration within reasonable limits. The value of 80 % is a pragmatic compromise. On the other hand, it will allow a less efficient installation to qualify as long as they really are operated in cogeneration mode. On the other hand, it allows the most efficient installations to include a small fraction of non-cogenerated electricity in the amount of electricity from cogeneration.

The other technologies (ii) are generally less efficient and the electricity production more closely linked to the heat-production. This means that, if there is a lower heat demand, the operation of installation must be adjusted to a lower load factor and will lead to a decreased electricity production as well.

Concerning (b), the power to heat ratio (C) is a technical factor specific to each installation. The power to heat ratio expresses how much electricity the installation is capable of producing on the basis of one unit of useful heat. This ratio is specific for each installation and can generally be determined from real operation. A high power to heat ratio is regarded as preferable, because electricity is the most valuable product.

If a given installation fails to comply with the threshold values of 75 % or 80 % respectively, it is not a certainty that the production cannot qualify as high efficiency cogeneration.

Paragraph (c) introduces a special option, because in some industrial processes such as paper manufacturing, a part of the energy from the fuel is recovered as chemically banded, energy within a product (black liqueur). Since this amount of

energy is not measured as energy output (heat or electricity), it would appear as a loss and consequently reduce the overall efficiency. However, this is approach would not be equitable and therefore this amount of energy is subtracted from the fuel-input and left outside the calculation of overall efficiency.

Pursuant to (d) and according to the definition in Article 3 (k), "power to heat ratio" shall mean the ratio from electricity from cogeneration and useful heat when operating in full cogeneration mode using operational data of the specific unit. It is, however, acceptable to determine the power to heat ratio at a lower capacity, but still in full CHP-mode. The power to heat ratio is not a completely constant value for a given installation at all capacities. However, it is a reasonable assumption. The provision in Annex II (d) provides for the option to use the operation point with the highest possible power-two-heat ratio.

4.3.14.2 Current Croatian legislation on topic

Annex II of the Directive is implemented into Croatian legislation through Article 2(2) point 11 of the Ordinance on attaining the status of eligible electricity producer. Point 11 (a)(i) and (ii) of the Ordinance are literally the equivalent of the corresponding paragraphs of the Directive's Annex II. However, the Croatian Ordinance has an additional provision (a)(iii), which states that in cogeneration plants with capacity above 35 MW, electricity production from cogeneration shall be considered equal to the total annual electricity production of the plant measured at the outlet of the main generators if an annual overall efficiency is at a level equal or higher than 70 %. This is compatible with the provision of the Directive's Article 12(2), according to which co-generation units larger then 25 MW can be defined as high efficient if their overall efficiency is above 70%.

Point 11 (b) in Article 2(2) of the Ordinance completely implements paragraph (b) of the Directive's Annex II. It is prescribed that the calculation of electricity from co-generation must be based on the actual power to heat ratio, C. For micro-cogenerations the calculation may be based on certified values. If the actual power to heat ratio is not known, the default values prescribed in the table, may be used.

Paragraph (c) of Annex II of the Directive is not implemented into Croatian legislation. However, since paragraph (c) states that the share of energy content recovered in chemicals and recycled **can (not must!)** be subtracted from the fuel input before the overall efficiency, this is not considered as a legal gap.

Based on the above analysis, the provisions of Annex II of the Directive are fully implemented into Croatian legislation. Hence, **there are no legal gaps**.

4.3.15 Annex III

4.3.15.1 Applicable EU-acquis

This annex describes the "main method" to determine whether a given production of cogeneration can be regarded as high-efficiency cogeneration.

The general principal is that high efficiency cogeneration must provide at least 10 % of primary energy savings compared to separate production. For a given production of heat and electricity, both from a cogeneration process, the method compares the fuel-input to the cogeneration process with the necessary fuel input to produce the same amount of heat and electricity in two separate productions. The separately produced heat must be produced in a heat-only boiler and the electricity at a power-only installation. The efficiencies of these separate productions, against which the co-generation is tested, are very important for the result of this comparison. If the heat-only boiler is one with low efficiency and the power-plant likewise is very insufficient, it is rather easy to qualify. If the efficiency values of the separate productions are very high, it will be difficult to qualify.

Concerning (a), it must be pointed out that for smaller cogeneration units the threshold value is 0 %, meaning that as long as the types of units provide positive primary energy savings, they can be regarded as high efficient.

Concerning (b), the formula chosen in the Directive is known as the “Flemisch Formula “ and focuses on the reduction of fuel input coming from the use of co-generation.

For further technical details on how each value must be calculated, see specific guidelines to be issued by the Commission.

It is, however, at this stage important to stress that the calculation is made on the process and qualifies the output as high efficiency cogeneration. Electricity from high efficiency cogeneration can be a supported using the regulations for state aid for environmental purposes. Annex III (c) of the Directive states that, if a Member State chooses to use the method in Article 12 (2) as the qualification route to high efficiency cogeneration, it is basically the same formula to be used, but is used before slicing off any non-cogenerated electricity shares. As the over-all efficiency of the en-tire process will be lower, if there is a share of electricity-only production within the “black-box”, it will be more difficult to qualify via this route than using the main method via Annex II as first step. If a given production qualifies, it allows the Member State to provide it with some kind of economic support. However, if a Guarantee of Origin is issued, the amount of electricity from cogeneration must be calculated in accordance with Annex II.

4.3.15.2 Current Croatian legislation on topic

Article 4 paragraphs (d) and (c) of the Ordinance on acquiring the status of eligible electricity producer define that, cogeneration plants , which achieve primary energy savings of at least 10% (PES 0.10) and small scale and micro-cogeneration plants, which provide primary energy savings (PES > 0), can be awarded with the status of the eligible producer. This is aligned with the provision of paragraph (a) of Annex III of the Directive.

Article 2(2) point 15 of the Ordinance defines “primary energy savings” (PES) as the relative savings of fuel energy utilisation in relation to the equivalent production in separate reference plants defined by the following formula:

$$PES = 1 - \frac{1}{\frac{\eta_e}{\eta_{ref.e}} + \frac{\eta_t}{\eta_{ref,t}}}$$

whereas:

η_e average annual efficiency of electricity production in a cogeneration plant

η_t average annual efficiency of useful heat production in a cogeneration plant

$\eta_{ref,e}$ electrical efficiency of a reference power plant

$\eta_{ref,t}$ heat efficiency of a reference boiler room

Note that this is aligned with the methodology in paragraph (b) of the Annex III of the Directive.

The alternative calculation in Annex III (c) is not applied in Croatian legislation.

Based on the above analysis, the provisions of Annex III of the Directive are fully implemented into Croatian legislation. Hence, **there are no legal gaps.**

4.3.16 Annex IV

This annex presents specifications on how to establish the analyses of national potential for high efficiency cogeneration. The Commission will present a set of guide-lines for Member States.

4.3.16.1 Applicable EU-acquis

See descriptions above.

4.3.16.2 Current Croatian legislation on topic

Annex IV will follow in the drafting of the report on national potentials for highly efficient cogeneration. Drafting of the national potential for highly efficient cogeneration is envisaged for 2008.

Note that Article 6 of the Directive does not require the legal implementation, thus its provisions and the provisions of Annex IV are not subject of the legal gap analysis.

5. DIRECTIVE ON THE PROMOTION OF ELECTRICITY FROM RENEWABLE ENERGY SOURCES

5.1 INTRODUCTION

5.1.1 EU-acquis

Commencing with the opening of the internal electricity markets by Directive 96/92/EC, it was eminent and felt that “green electricity” should also find its place in such an internal market. At the same time, the EU declared its clear wish to further expand the share of electricity from renewable energy sources (RES) in order to take an important step towards the meeting of the EU's climate change commitments, set and accepted at Kyoto.

In fact, the main contents of the Directive can be summarised as four main elements:

- Member States are required to take the necessary measures to ensure that the level of RES-E develops in conformity with the energy and environmental objectives undertaken at national as well as Community level.
- The Commission believes that it should remain an objective that in the medium term prices of RES-E should be reduced and the penetration of RES-E should be increased in the internal market. At the same time, support schemes of all sources of electricity will be evaluated by the Commission. Therefore, the Directive puts an obligation on the Commission to monitor the application of support schemes in favour of generators of electricity from renewables as well as conventional energy sources in Member States and, no later than five years after the entry into force of this Directive, to present the report on the experience gained in this respect.
- The Directive requires Member States to introduce a system for the Certification of Origin of RES-E.
- The directive foresees a number of accompanying measures intended to create a level playing field and to facilitate the penetration of RES-E in the internal electricity market, notably regarding administrative procedures and good system issues.

Important definitions are laid down in Article 2 of the Directive. The basic definition of RES E, adopted for the purposes of the Directive, is described as electricity generated from renewable non-fossil energy sources and notably

- wind,
- solar,
- geothermal,
- wave,
- tidal,
- biomass
- landfill gas
- sewage treatment plant gas
- biogases, and
- hydro-electric

installations without a restriction as regards capacity. Thus, Member States can, with all the above-mentioned sources, meet the obligations contained in the Directive with respect to national targets for consumption of electricity from renewable sources of electricity (Article 3), the issuing of Guarantees of Origin of electricity from renewable energy sources (Article 6), administrative procedures (Article 7) and grid system is-sues (Article 8). It has to be pointed out that the Commission has consistently held the position, that large hydro is clearly a renewable energy source. At the same time, the Commission has also found that large hydro is in general competitive and does not need particular support.

Further definitions are stated for

- biomass (lit b)
- electricity produced from renewable energy sources (lit c) and
- consumption of electricity (lit d)

Targets and methods of implementing the Directive and its requirements for the Member States are flexible. Articles 3 (1) and 3(2) and recitals 5 and 6 state, that all Member States must take the necessary steps to ensure that the consumption of RES-E is developed in line with the targets of the Directive. The Member States are therefore obliged to set themselves national indicative targets. However, these targets should be compatible with their Kyoto-commitments and, even more importantly, take into account the values in the annex of the Directive as explicitly required in the first intent of Article 3 (2). So far, all Member States have notified their targets to the Commission and all of them have confirmed the values that are listed in the annex. It is important to note that the EU also requires new Member States to meet Directive's targets. However, the national indicative targets are set out in the respective Accession Treaty and as these are bilaterally agreed before the accession, these new Member States (until now) did not need to notify these targets according to Article 3 (2).

Finally, all Member States are required to comply with firm national report requirements so as to label a steady overview over the implementation and achievement of the targets.

5.1.2 Current Croatian legislation on topic

It has to be emphasised, that all legislative acts and regulations listed in the table in chapter 2.2.b2) for cogeneration also apply to renewable energy sources. There are no separate acts for renewables and cogeneration.

The general provisions of primary and secondary legislation regarding cogeneration are already given in the Section II of this document. The application of the aforementioned subordinate legislation began on 1 July 2007. It intends to promote electricity production of 1140 GWh in 2010, which in the structure of overall electricity consumption will represent about 5.8% electricity from renewables that is incentivised by the end of 2010.

According to Article 9(1) of the Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07), the annual percentage of electricity produced from renewable sources that is eligible for incentives is, for the year 2007, set to 1.7% of total electricity delivered to electricity grid. The first year for which the progress

will be determined and this percentage calculated, is 2008. According to Article 1(3), this Regulation does not apply to electricity generated from hydro power plants with installed power exceeding 10 MW. However, large hydro power plants can be awarded the status of eligible producer, according to the Article 4(b) of the Ordinance on attaining the status of eligible electricity producer (OG 67/07) and Article 4 of the Ordinance on use of renewable energy sources and cogeneration (OG 67/07). Regardless of the status of eligible producers, hydro power plants are not entitled to incentives. This is also confirmed in Article 4(1) of the Tariff system for the production of electricity from renewable energy sources and co-generation (OG 33/07), in which only hydro power plants with installed capacity of up to 10 MW are entitled to the incentive power purchase price (incentive electric-ity price). The treatment of large hydro power plants in Croatian legislation is, thus, completely aligned with the EU acquis.

The definition of relevant “renewable energy sources” is provided for in the En-ergy Act (OG 68/01, 177/04, 76/07), Article (3). “Renewable energy sources” are defined as energy sources that are preserved in nature and are fully or partially renewed, especially energy of water streams, wind energy, solar energy, bio-fuels, biomass, bio-gas, geothermal energy, wave energy, tidal energy, landfill gas, sewage treatment plant gas. “Biomass” is defined as biodegradable fraction of products, waste and residues from agriculture (including vegetable and animal substances), floristries and wood industries as well as the biodegradable fraction of industrial and municipal waste, the utilisation of which is permitted for energy production. The conditions for eligible producers using renewable energy sources in combination with other energy sources are defined in Article 7(1) and (2) of the Tariff system. Specifically eligible producers of electricity from plants using re-newable energy sources in combination with other energy sources shall be enti-tled to the incentive price only for the part using renewable energy sources. This right may be granted only where there is proof of origin of produced electricity (type of sources) by means of separate measurement points. Article 7(3) and (4) further specify conditions for eligible producers of electricity using co-combustion of biomass and fossil fuels in electricity generation plants. They shall be entitled to the incentive price prescribed for the eligible producer of electricity from bio-mass power plants where the energy share of fossil fuels does not exceed 10% of the total energy value of used fuel. Eligible producers of electricity, using co-combustion of biomass and fossil fuels with energy share exceeding 10% in co-generation, shall be entitled to the incentive price for cogeneration plants. These provisions of Croatian regulations are aligned with the definition of electricity pro-duced from renewable energy sources. The national indicative target is set out in Article 1(2) of the Regulation on the minimum share of electricity produced from renew-able energy sources and cogeneration whose production is incentivised, as a share in the total (gross) electricity consumption.

5.2 SUPPORT SCHEMES

5.2.1 EU-acquis

In the EU there are currently a range of different support systems operational that can be broadly classified into four groups:

- Feed-in tariffs;
- Green certificates;
- Tendering systems;
- Tax incentives.

Concerning **feed-in tariffs**, it has to be pointed out that they are typically characterised by a specific price, normally set for a period of around several years, which must be paid by electricity companies, usually distributors, to domestic producers of green electricity. The additional costs of these schemes are paid by suppliers in proportion to their sales volume and are passed onto electricity consumers by way of a premium on the kWh end-user-price. These schemes guarantee investment security and the possibility of amendments and the proportion of mid- and long-term technologies. On the other hand, they are difficult to harmonise at EU-level, may be challenged under EU-internal market principals and involve a risk of over-funding when the learning-curve for each RES-E technology is not built in as a form of price decrease over time.

Under the **Green Certificate Systems** currently existing in Sweden, the UK, Italy, Belgium and Poland, RES-E is sold at conventional power-market prices. In order to finance the additional cost of producing green electricity and to ensure that desired green electricity is generated, all consumers (or in some countries producers) are obliged to purchase a certain number of Green Certificates of RES-E producers according to a fixed percentage or quota of their total electricity consumption/production. Penalty payments for non-compliance are transferred either to a renewable research, development and demonstration (RD & D) fund or to the general government budget. Since producers/ consumers wish to buy these certificates as cheaply as possible, a secondary market for Green Certificates develops where RES-E producers compete with one another to sell the certificates. Therefore, Green Certificates are market-based instruments, which have the theoretical potential, if functioning well, of ensuring best value for investments. These systems could work well in a single European market and have in theory a lower risk of over-funding. However, Green Certificates may pose a higher risk for investors and long-term currently high cost technologies are not easily developed under such schemes. These systems also present higher administrative costs.

Pure tendering processes existed in Ireland and France. France, however, has recently seen changes to feed-in tariffs. Under a tendering procedure, the state places a series of tenders for the supply of RES-E, which is then supplied on a contract basis at the price resulting from the tender. The additional costs generated by the purchase of RES-E are passed to the end-consumer of electricity through a special levy. While tendering processes theoretically make optimum use of market forces, they have a stop-and-go nature not conductive to stable conditions. Furthermore, this type of scheme also involves the risk that low bids may result in projects not being implemented.

Systems based only on **tax incentives** are applied in Malta and Finland. This instrument is mostly applied as an additional policy tool.

5.2.2 Current Croatian legislation on topic

The legal basis for the RES-E support scheme is provided for in Article 14(3) of the Energy, which prescribes that the financial framework for promotion of the renewables and cogeneration will be established by special regulation: Act on production, distribution and supply of thermal energy, Act on Environmental Protection and Energy Efficiency Fund and Act on state aids. Article 8(1) of the Electricity Market Act stipulates that electricity producers, which produce electricity from renewable sources, can be awarded with the status of eligible producer, if the conditions defined in the ordinance on attaining the status of eligible electricity producer are fulfilled. Furthermore, Article 8(3) of the Electricity Market Act excludes large hydro power plants (over 10 MW) from the incentive support scheme.

According to the Article 8(5) of the Electricity Market Act, Croatia has established a special support system for electricity produced for renewable energy sources. It is called **feed-in tariff** system, the legal basis being the Tariff system for the production of electricity from renewable energy sources and cogeneration (OG 33/07), in which the incentive prices are defined according to the installed power of the plant (distinction is made between plants below and above 1 MW) and according to the renewable sources used. The right to an incentive price, as defined in Article 3 of the Tariff sys-tem, shall be acquired by the electricity producer using renewables for the production of electricity provided that the electricity producer has obtained the decision on acquiring the status of eligible electricity producer pursuant to Article 8(2) of the Electricity Market Act and concluded a contract with the Market operator (HROTE) on the purchase of electricity pursuant to Article 30(1), subparagraph 9 of the Electricity Market Act.

The specificity of the Croatian Tariff system for RES-E is that the tariff items can be further corrected using the prescribed correction factors determined by the percent-age of the domestic components used in the project, pursuant to the Article 4(3) of the Tariff system. The share of the domestic component is determined by the MoELE. If it is 60% or more, the producer gets the full price specified in the Tariff systems, while for a 45% share and less the correction factor is 0.93. For shares between 45 and 60% the correction factor is calculated using the equation:

$$percentage \times 7/1500 + 0.72.$$

Furthermore, according to the Article (5) of the Tariff system, the amount of the incentive price for electricity produced in plants using renewable energy sources during the validity of the contract for the purchase of electricity, shall be adjusted annually for the retail price index in a way in which the incentive price for the previous calendar year is multiplied with the annual retail price index for the previous calendar year, that is:

$$CGoie = CGoie\ -1 \bullet ICMGoie\text{-}1$$

whereas:

CGoie is the incentive price for the current calendar year.

CGoie-1	is the incentive price for the previous calendar year.
CMGoie-1	is the annual retail price index according to official data from the Central Bureau of Statistics for the previous calendar year.
Goie	is the year index.

Article 7 of the Tariff system also sets out the regulations for plants using only partially renewable energy sources. These kinds of producers can obtain the incentive price only for the share of electricity produced from renewables, the origin of which has to be proved by separate measurement points. For co-firing (biomass and fossil fuel), the incentive price will be paid to eligible producer only if the share of fossil fuel is below 10%. If it is above 10%, the eligible producer shall be entitled to the incentive price defined for cogeneration. The Market operator (HROTE) will conclude power purchase agreements with eligible producers using solar energy and hydrogen fuel cells until its total installed power in Croatia reaches 1 MW each.

The eligible producer of electricity shall realise the right to the incentive price by concluding the power purchase contract with the market operator (HROTE) (Article 8 of the Tariff system). Pursuant to the Article 9 of the Tariff system, for the purpose of concluding the contract, the energy undertaking shall submit to the Market operator (HROTE), in writing, the request for concluding the contract on the purchase of electricity with the following documents enclosed:

- Preliminary contract or the contract on the connection to the electric power network,
- Preliminary decision on the acquisition of the status of eligible producer.

According to the Article 10 of the Tariff system, the contract is concluded for a time period of 12 years.

The status of eligible producer is issued by the Croatian Energy Regulatory Agency according to the procedure specified in the ordinance on attaining the status of an eligible electricity producer (OG 67/07).

The Market operator (HROTE) shall engage in concluding power purchase contracts with eligible energy producers at an incentive price until the total planned production of electricity from plants using renewable energy sources plants reaches the mini-mum share of electricity determined by the Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised, pursuant to the Article 13(1) of the Tariff system.

The funding for an incentive is collected through a special fee (incentive fee) paid by all electricity buyers (tariff buyers and eligible buyers) and determined by the Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07). The incentive fee represents a supplement to the electricity price charged to tariff buyers or to eligible buyers.

The funding for an incentive is collected through the special fee (incentive fee) paid by all electricity buyers (tariff buyers and eligible buyers) as determined by the Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (Article 9(1)). The incentive fee represents a supplement to the electricity price charged to tariff buyers or to eligible buyers (Article 9(2) of the Regulation). According to the Article 8, the Market operator (HROTE)

is obliged to collect the incentive fee from tariff buyers' suppliers and from eligible buyers' suppliers pursuant to Article 30(1) of the Energy Market Act. Market operator (HROTE) calculates and allocates the funds collected from the incentive fees among the eligible producers on the basis of the contracts on the purchase of the electricity pursuant to Article 30(1) of the Electricity Market Act. Market operator (HROTE) shall pay the incentive price for the delivered electricity to the eligible producer of electricity (with which it has concluded the contract on the purchase of electricity) once a month. This payment is based on the data of total electricity delivered into the electric power system in the previous month delivered by the TSO or DSO by the 15th of each calendar month, and expressed in kWh for each individual eligible producer (according to the Article 15 of the Tariff system). Once a month, the Market operator (HROTE) shall deliver to each electricity supplier an itemised invoice specifying the total amount of funds. The electricity supplier is then obliged to pay to the Market operator (HROTE) under the item of incentive fees. This shall be based on the data provided by TSO and DSO on the total electricity calculated and delivered to the buyers in the previous month ex-pressed in kWh for every individual supplier of electricity (Articles 16 and 17 of the Tariff system). Electricity suppliers must separately indicate the amount of the total incentive fee in the bill they deliver to their buyers for the sold electricity (Article 9(3) of the Regulation).

There are no deviations from the EU acquis identified in the Croatian legislation and support scheme for RES-E.

5.2.3 Obvious gaps between Croatian legislation on topic and EU acquis

The gaps between Croatian legislation and EU acquis on the use of renewable energy sources for electricity production include the definition of national indicative tar-get and organisation of guarantees of origin system. The Article-by-Article analysis described hereafter explains these gaps in detail.

5.3 ARTICLE BY ARTICLE ANALYSIS – SPECIAL TOPICS

5.3.1 Article 3: Targets

5.3.1.1 Applicable EU-acquis

Article 3 (4) of the Directive makes reference to the annex of the Directive and in Article 3 (4), the figure of 22,1 % is stated as "…the indicative share of electricity produced from renewable energy sources in the total renewable consumption by 2010." Additionally, Member States' (national) indicative targets shall be consistent with the global target of 12 % of gross national energy consumption by 2010.

In this respect, the title and subtitle of the annex refers to electricity produced from renewable energy sources.

In this context, relevant footnotes made in the annexes have to be taken into consideration, whereby especially footnote (***) has been highly controversial. There are legal scholars that have argued that there is a contradiction between this footnote and Article 3 (4), where the share of RES-E in total consumption is

mentioned as well as with the definition of consumption in Article 2. However, both Articles and foot-notes still indicate the same conclusion: The targets were calculated by dividing national production by national total consumption; in case of import and export, the production figure will be adopted. Without import or export for RES-E, the figure of production would be the same as for consumption. If import and export is taken into ac-count for RES-E, then these should fulfil the requirements established by the Com-mission and mentioned under section 5 in order to avoid double counting. A Member State can only include the contribution from imports from another Member State, if the exporting state has expressively accepted and dated on a Guarantee of Origin, that it will not use the specified amount of renewable energy to meet its own targets and has thereby also accepted that this electricity can be counted towards the importing Member State's target.

5.3.1.2 Current Croatian legislation on topic

RES targets in Croatia are set out in the Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07). This subordinate legislation envisages the promotion of electricity production of 1140 GWh in 2010, which in the structure of overall electricity consumption by the end of 2010 will represent about 5.8% electricity from renewables that is incentivised. Note that, a crucial part in the definition of this target is the formulation "*that is incentivised*". This means, that the target is set only for so called "new renewables", which excludes large hydro power plants (above 10 MW).

5.3.1.3 Text comparison – EU regulation vs. Croatian regulation

Table 5: Text comparison Article 3

Provisions and demands of the Article 3 of the Directive 2001/77/EC	Provisions of Croatian legislation	Compatibility between the Croatian and EU legislation	Comment
2. … MS shall adopt and publish a report setting national indicative targets for future consumption of electricity produced from renewable energy sources in percentage of electricity consumption…	**Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised** (OG 33/07) **Article 4(1)** (1) Until 31 December 2010 the minimum share of electricity produced from plants using renewable sources of energy **whose production is incentivised** shall amount to 5.8 % of the total electricity consumption.	Partially complies	The target is set only for renewable energy sources whose use is entitled to incentive price. The target does not include the electricity production from large hydro power plants.

5.3.1.4 Explanatory comments on gaps

However, the Directive does not specify that a target should be set for renewables whose utilisation is incentivised. It requires a determination of national indicative tar-get for all renewables as defined in Article 2. Thus, since the Croatian target only determines the target for those renewables that are entitled for incentives, it is not completely consistent with the requirements of the Directive. On the other hand, such a definition of the target makes it easier to monitor the success of the support scheme. It has to be noted, that Croatia produces approximately 50% of electricity from existing, mainly large hydro power plants (depending on hydrological conditions in specific year), i.e. from renewable energy sources. Thus, the indicative target, as required by the Directive, should take into account this share.

5.3.2 Article 5: Guarantees of Origin:

5.3.2.1 Applicable EU-acquis

It is considered favourable to provide a system of Guarantees of Origin in order to permit trade to take place in RES-E effectively. In these systems, purchasers are guaranteed certainty on whether or not electricity acquired is produced from renew-able sources, even if they are more expensive than market prices for conventional electricity. However, it has to be pointed out that during the negotiating process of the Directive, the original wording of "Certificate of Origin" was replaced by "Guarantees of Origin" in order to avoid any confusion with "Green Certificates" which are tradable proofs of production of green electricity.

For the time being, it has been agreed that each Member State shall be responsible for issuing the guarantees to RES-producers in its territory. Article 5 (1) therefore grants full freedom to Member States to organise their certification system. It is also evident that only certificates need to be delivered at request. This means, that in those Member States that do not establish a general system, only the producers that identify opportunities for extra profits in green electricity or that intend to trade this electricity in other Member States will ask for these certificates. Use of these certificates for statistical purposes is made difficult by this degree of freedom.

International bodies dealing with the issuing of guarantees of origin such as AIB and RECS have made attempts to achieve a more general certification system based on a common data base and clear rules for the redemption of theses certificates. How-ever, it has to be pointed out that Article 5 (2) states, that regarding the organisation of submission of the Guarantees of Origins, the Member States have the freedom to have one or more supervising bodies. The original Commission proposal aimed at an obligation to install a single body for this issue. This non-harmonised approach is the result of different existing practices in Member States.

The content of the Guarantees of Origin, when submitted, is indicated with some precision. It shall specify the energy sources from which the electricity is generated. For hydro-electricity, there is an obligation to mention the capacity, but there is no precise distinction between small and large hydro (e.g. more or less than 10 MW as in the original Commission proposal). It is the role of the Member

States to determine which type of hydro they prefer to support, subject to the general state aid rules.

Article 5 (4) states, that the Member States should mutually recognise the Guarantees of Origin Certificates. Of particular importance in this paragraph is the word "should", which is somewhat unusual in a normative text and must be viewed as a political compromise. It therefore appears like there is only a moral obligation of Member States to recognise the guarantees and moreover they are supposed to limit this mutual recognition to the elements of (3) i.e. proof of origin, date and quantity. However, the refusal of any guarantee must be based on objective criteria and the Commission may intervene. In practise this means, that Guarantees of Origin will be recognised. In conjunction with recital 10 it is clarified, that Member States which apply a quota system can only demand purchase of nationally produced RES-E and that imported RES-E does not necessarily benefit from support. It needs to be mentioned that these two limitations were added to the original Commission proposal to potentially prohibit the function of an internal market of RES-E.

Articles 5 (5) and (6) contain regulations on broad and special reporting obligations for Member States. Concerning reporting obligations, it has to be mentioned that ac-cording to Article 6 of Directive 2003/54/EC, adopted after Directive 2001/77/EC, Member States are required to implement the scheme for the disclosure of the fuel mix and selected environmental indicators on electricity sold to final consumers. This provision is being regarded as an important measure in order to meet the objective of consumer transparency as it covers the whole electricity sector, not only the electricity from renewable energy sources. National Guarantees of Origin can therefore facilitate the implementation of electricity disclosure, but it is does require that all Guarantees of Origin are harmonised.

5.3.2.2 Current Croatian legislation on topic

According to Article 16 of the Electricity Market Act (OG 177/04, 76/07), the TSO shall, for the purpose of settling accounts and giving guarantees on the origin of electricity with regard to the primary energy source, be responsible for submitting ac-counting data on the electricity taken over from the eligible producers connected to the transmission network to the Market operator (HROTE). Article 19 stipulates the same responsibility for the DSO.

5.3.2.3 Text comparison – EU regulation vs. Croatian regulation

The table below lists the most important provisions of the Directive regarding guarantees of origin and compares them to Croatian legislation.

Table 6: Text comparison Article 5

Provisions and demands of the Article 5 of the Directive 2001/77/EC	Provisions of Croatian legislation	Compatibility between the Croatian and EU legislation	Comment
1. Member States shall ensure that the origin of electricity produced from RES can be guaranteed as such according to objective transparent and non-discriminatory criteria laid down by each Member State. They shall ensure that a GoO **is issued to this effect in response to a request**.		Does not comply	Croatian legislation does neither prescribe the content of GoO nor the procedure of issuing GoO to the producer upon their request.
2. Member States may designate one or more competent bodies, independent of generation and distribution activities, to supervise the issue of the guarantee of origin referred to in paragraph 1.	**Electricity Market Act** (OG 177/04, 76/07) **Article 16, Article 19** The TSO/DSO shall be responsible for the following… sending accounting data on the electricity taken over from the eligible producers connected to the transmission network to the Market operator (HROTE) for the purpose of settling accounts and giving assurance on the origin of electricity with regard to the primary energy source	Partially complies	Note that guarantees of origin are stipulated in the Electricity Market Act, and it can be understood that Market operator (HROTE) is in charge for GoO. However, this should be defined more precisely– the competent body for issuing GoO should be legally designated.
3. A guarantee of origin shall: - specify the energy source from which the electricity was produced, specifying the dates and places of production, and in case of hydroelectric installations, indicate the capacity - serve to enable producers of electricity from renewable energy sources to demonstrate that the electricity they sell is produced from RES within the meaning of this Directive	**Electricity Market Rules** (OG 135/06) **Article 22** TSO and DSO are obliged to conclude an agreement with Market operator (HROTE), which will regulate their mutual obligations. **Article 23** The agreement for the Article 22 shall contain … the mode of delivering measurement and accounting data on electricity taken over form eligible producers for purposes of settling accounts and giving guarantees on the origin…	Partially complies	The content of report which TSO/DSO is obliged to submit to Market operator (HROTE) is subject to the special agreement between Market operator (HROTE) and TSO/DSO, as stipulated in the Electricity Market Rules (OG 135/06). There is no such agreement, hence it is not exactly defined what data are required for GoO.

5.3.2.4 Explanatory comments on gaps

The issue of "Guarantees of Origin" still requires a precise legal definition in Croatia. However, as demonstrated under point b), there is a clear obligation to TSO/DSO to deliver data to Market operator (HROTE) on the electricity taken over from the eligible producers. Article 22 of the Electricity Market Rules (OG 135/06) stipulates that TSO/DSO is obliged to conclude an agreement with Market operator (HROTE) in order to regulate mutual relations and obligations. This agreement shall, according to Article 23 of the Electricity Market Rules, also contain the mode of delivering measurement and accounting data on electricity taken over from eligible producers for purposes of settling accounts and giving guarantees on the origin. There are is no publicly available documentation on the existence or content of such agreement.

5.3.3 Article 6: Administrative and planning procedures

5.3.3.1 Applicable EU-acquis

In this respect, Article 6 of the electricity Directive provides the basic rules, notably that were an authorisation procedure is followed, the rules need to be objective and non-discriminatory. It should be noted, that these rules are in many cases a heritage from conventional energies and therefore not well adapted to renewable producers. The decentralised nature and the large range of sizes of RES-E installations complicate the process of authorisation; renewable energy projects can vary from a few kW in size in the case of solar photovoltaic plants on a residential building, to up to 200 MW in the case of large wind parks and biomass plants.

Until now, and with due regard to subsidiarity, it has been decided not to adopt specific common harmonised rules in this area. It was nonetheless felt, that an effort to make progress in this area was necessary. Already the first Directive 96/92/EEC on electricity in the internal market contemplates the importance of objectiveness, transparency and non-discrimination regarding RES-E. In this context, recital 20 has to be noticed, which states that the specific structure of the renewable energy sources sec-tor should be taken into account, especially when reviewing the administrative procedures for obtaining permission to construct plants producing electricity from renew-able energy sources. Article 6 additionally foresees that regulatory and non-regulatory barriers for the increase in electricity production from renewable energy sources shall be reduced. Thus, procedures should be streamlined at an appropriate administrative level and rules should be objective, transparent and non-discriminatory taking into account particularities of the various renewable energy source technologies. Measures taken by the Member States shall be reported referring to (1), so as to indicate the status achieved by each Member States concerning methods mentioned above.

According to Article 6 (3), the Commission has the role of controlling the existence of barriers, but also of disseminating the best practises in all Member States. In the last communication on support schemes adopted on 7 December 2005, the Commission identified administrative barriers that can be classified into three basic categories:

- A large number of authorities involved aggravated by a lack of coordination between them,
- long lead times needed to obtain necessary permits and
- RES insufficiently taken into account in spatial planning.

For this reason, the communication then goes on to recommend five specific actions:

- One-stop authorisation agencies should be established to take charge of processing authorisation applications and providing assistance to appliance;
- Clear guidelines for authorisation procedures should be established by Member States with a clear attribution of responsibilities. Authorisation procedures must be based on objective, non-discriminatory criteria.
- Member States should establish pre-planning mechanisms in which regions and municipalities are required to assign locations for the different renewable energies.
- Lighter procedures should be created for small projects;
- Guidance should be given on the relationship with European Environmental Legislation.

5.3.3.2 Current Croatian legislation on topic

5.3.3.2.1 General implementation in Croatian legislation

Croatia has established administrative procedures for electricity producers from RES and cogeneration. They are based on the Ordinance on use of renewable energy sources and cogeneration (OG 67/07).

Pursuant to Article 14 of the Energy Act, the registration of projects and plants using renewables and cogeneration and of eligible producers is established.

In order to inscribe in the register, potential project holders must attain the preliminary energy approval from the Ministry of Economy, Labour and Entrepreneurship (MoELE) according to the Article 9(1) of the Ordinance on use of renewable energy sources and cogeneration. Article 10(1) stipulates that by granting the preliminary energy approval, the potential producer acquires the following rights:

- inscription in the Register of RES projects and eligible producers (in the following text: the Register)
- investigation of RES potentials within the limits of the investigation area
- arranging asset and legal rights on the land in the ownership of the Republic of Croatia.

According to Article 10(2), the potential producer is obliged to commence with the RES potential investigation and to submit proof to the MoELE within 6 months. Failing to do so, will result in the deletion from the Registry. Within 36 months of the date of preliminary approval finality, the potential producer is obliged to submit a request for issuing the location license and submit proof to the MoELE. Article 11 of the Ordinance defines the extensive list of documents that need to be enclosed with the re-quest for issuing the preliminary energy approval. According

to the Article 16(1), the preliminary energy approval is valid for 48 months after the finality of the preliminary approval for the facilities that require the location licence and 18 months for those that do require the location permit (according to the Physical Planning and Construction Act (OG 76/07)). According to the Article 15, there is no need for preliminary energy approval for plants with installed power up to 30 kW, and the inscription in register is done on the basis of the energy approval. For plants not connected to the grid and plants for thermal energy production from renewables, there is no need for preliminary energy or energy approval.

The location permit is issued according to the Physical Planning and Construction Act (OG 76/07) by the county authorities on whose territory the construction of the facility is planned.

Following the issuance of the location permit, the potential producer is obliged to submit the request for issuing energy approval from the MoELE, pursuant to the Article 17 of the Ordinance.

According to the Article 21(2), the potential producer is obliged to obtain the building permit and deliver it to the MoELE within 12 months after the finality of the energy approval. Failing to do so, results in the deletion from the registry.

Using the issued building permit licence (regulated by the Planning and Construction Act (OG 76/07) and within the jurisdiction of the Ministry of environmental protection, physical planning and construction (MoEPPPC)), the potential producer, pursuant to Article 7 of the Ordinance on attaining the status of eligible producer (OG 67/07), submits to the Croatian Energy Regulatory Agency (HERA) the application for granting a preliminary decision on acquiring the status of eligible producer, The period of validity of a preliminary decision is two years (Article 8(1)). Within the period of two years from the date of finality of the preliminary decision, the potential producer (project holder) is obliged to construct the electricity generation plant and submit the application for the granting of the decision (Article 8(2)). HERA is obliged to deliver the preliminary decision to the Ministry, Market operator (HROTE), transmission system operator and distribution system operator within 8 days from the date it becomes legally valid (Article 8(5)).

With the preliminary decision granting the status of eligible producer, the potential producer (project holder) can submit the request for concluding the power purchase contract to the Market operator (HROTE), according to the Article 9 of the Tariff sys-tem for the production of electricity from renewable energy sources and cogeneration (OG 33/07). The following documents shall be enclosed in the request for concluding the contract:

- Preliminary contract or the contract on the connection to the electric power network,
- Preliminary decision on the acquisition of the status of eligible producer.

The contract on the purchase of electricity shall be concluded within 60 days from the day the complete request was received and shall apply as of the date when the decision on acquiring the status of eligible producer becomes final.

According to the Article 9 of the Ordinance on the use of renewable energy sources and cogeneration, the potential producer (project holder) who constructed a plant, submits to HERA the application for granting the status of eligi-

ble producer. According to Article 9(2), the decision is valid for a period of 12 years. Pursuant to the Article 9(4) of the Ordinance, it is necessary to submit the following documents with the application:

- the permit to carry out the energy activity of electricity production, where the obligation of obtaining a permit is prescribed,
- a legally valid use permit, where the obligation of obtaining a use permit is pre-scribed,
- the network use contract,
- a technical description of the constructed plant with a description of the technological process and the conditions of use of the plant,
- a report on installed metering devices with the scheme of metering points and the method of measurement implementation as well as the certificate on accuracy of metering devices,
- monthly and annual electricity production plans under average meteoro-logical conditions, expected monthly variations in electricity production,

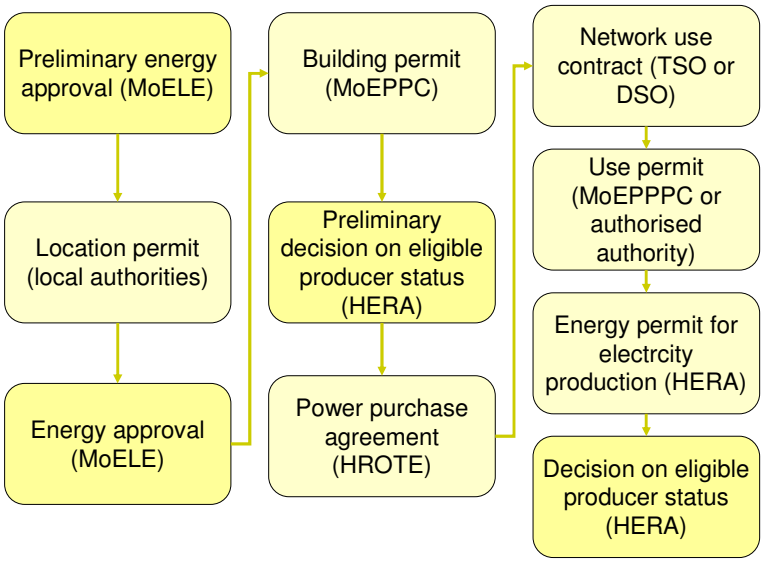
The described procedure is summarised in the scheme below.
By establishing an ascertained and transparent administrative procedure, the provisions of Article 5 of the Directive 2001/77/EC is evidently considered by the Croatian legislation; hence there are no identifiable legal gaps.

5.3.3.2.2 Responsible authorities and administrative procedures in case of appeals

The Energy Act (Article 17) states that the party who was refused an approval (or licence) for carrying out specific energy activities can appeal to the Ministry of Economy, Labour and Entrepreneurship (MoELE). Any party that can prove legal interest may challenge the MoELE decision at the Administrative court.

The Administrative Dispute Act (OG 77/92) ensures judicial protection and legal-ity empowering any individual or legal entity who deems that his rights or interest have been violated by an administrative act, to institute an administrative dispute. Administrative disputes are decided by the Administrative Court of Croatia.

Figure 5: Scheme of Administrative and Planning Procedure



5.3.4 Article 7: Grid system issues

5.3.4.1 Applicable EU-acquis

Producers of electricity from renewable energy sources must be certain that they can feed-in the produced electricity to the transmission grid. This is of particular importance for RES-E, often being a small project and thus economically vulnerable to-wards interruptions in feeding-in the electricity. Therefore, the Directive contains in Article 7 (1), a provision whereby Member States shall take the necessary measures to ensure that transmission system operators and distribution system operators in their territory grant priority access to the transmission and distribution grid for RES-E, insofar, as the operation of the national electricity system permits. This applies e.g. in case the grid capacity is too low to enable all electricity producers to feed-in electricity and also in case, where grid capacity is high enough, but the offered supply is higher than the demand. In such cases , transmission system operators shall give priority to RES-E. However, in some Member States (e.g. in the UK), there is a general system of guaranteed access, which in the case of no access provides for financial compensation, which is allowed by recital 21.

Other paragraphs of Article 7 deal with the costs of connection and transparency of cost calculation, which are extremely important issues for RES-E producers. It has to be taken into consideration that connection costs may considerably increase the total necessary investment and inhibit the development of installations. Since grid infra-structure was mainly built when the electricity sector was publicly owned and has been designed to deal with large power plants situated near mines and rivers or near the main centres of consumption, renewable electricity generation is typically not situated in the same locations as conventional electricity - production has, in general, a different scale of generation.

Hence, RES-E can in particular be confronted with a lack of sufficient grid capacity. In many Member States, the grid next to optimal general generation places

presents weaknesses and new or upgraded power lines maybe necessary. Therefore, the Directive intends that Member States to put in place a legal framework or require transmission system operators and distribution system operators to set up and publish their standard rules relating to the baring of cost of connections and grid reinforcements, which are necessary to integrate new RES-E producers. The sharing of expenses of system installations must be clearly determined between all producers benefiting from them (recital 22).

In this connection, it has to be pointed out, that Article 7 (2) of the Directive does not suggest as a general rule, that the connection costs of RES-E generators should be borne by the grid operators to facilitate deployment of RES-E installations. However, (3) of Article 7 suggests (but not legally obliges) that Member States should require this and also the Commission report, adopted in December 2005, recommends that the costs associated with grid infrastructure development should be covered by grid operators. To function properly, the internal market in electricity has to provide a level playing field for all existing and potential producers of electricity. This requires that charges placed on RES-E generators related to the grid-system, correctly reflect the economic costs and benefits associated with the connection in order to avoid that connection and grid-system costs become unfairly prohibitive.

It did not seem appropriate to set mandatory rules on cost sharing with regard to the connection and other grid system costs at a European level. However, the compliance with some general principals should be ensured at Member States' level.. Firstly, that the full costs and benefits associated with the connection of a new RES-E installation should be made transparent, and secondly, that where appropriate, legal frameworks should ensure that fees on transmission and distribution reflect the benefits to the grid-system, such as avoided or postponed reinforcement or direct use of low-voltage grid.

In addition, the charging of distribution and transmission fees shall be cost-reflective in line with the Directive on electricity internal market. In addition to that, the Directive on RES-E includes an important recommendation for renewable energies: These fees shall not discriminate RES-E and in particular renewable electricity produced in peripheral regions, such as islands and regions of low population.

Pursuant to Article 7 (7), Member States must report on the measures taken to facilitate access to the grid of electricity from renewable energy sources and also consider the measures to be taken to facilitate access to the grid system for electricity generated by renewable energy sources. These measures shall include the possible introduction of two-way metering. The Commission shall report on the grid system issues in December 2005 and subsequently every five years and has done so for the first time in its report of 7 December 2005. Currently, the degree of transparency is still varying considerably between Member States. A lot of work still needs to be done on transparency for cost sharing of associating grid costs. The grid can work as a barrier for the development of renewable energies, the existence of dominant utilities and vertical integration worsens the situation.

The Commission is treating different complaints regarding the possible bad implementation of this Article international legislation. This Article on grid systems together with Article 6 (administrative procedures) are the two major legal issues for com-plaints from European citizens.

5.3.4.2 Current Croatian legislation on topic

Provisions of Article 7(1), (2) and (5) of the Directive 2001/77/EC are concerned with the non-discriminatory approach to the grid, i.e. that TSO and DSO guarantee the transmission and distribution of the electricity produced from renewables. This issue is regulated in Article 8 (6) of the Electricity Market Act, stating that TSO or DSO is obliged to take over all electricity produced by eligible producer. When dispatching generating installations, both TSO and DSO are obliged to take over total electricity production from eligible producers, according to Article 16 and 19 respectively. These provisions of the Electricity Market Act have fully implemented the provisions of Article 7(1) of the Directive 2001/77/EC.

Articles 7(2), (4) and (5) of the Directive are concerned with the technical conditions and the bearing of costs for grid connections of new producers. These provisions are regulated in Croatia by the General Conditions of electricity supply (OG 14/06), Ordinance on charges for connection to the network and for increase in connected power (OG 28/06) and the Decision on the amount of charge for connection to the electric network and for increase in connected power (OG 52/06). According to the Article 5(1) of the General Conditions, the costs of charges for grid connections are borne by the applicant for grid connection (customer or producer). According to the Article 5(3) of the General Conditions, the investor of grid connection is TSO or DSO. Further-more, according to the Article 15 of the General Conditions, TSO or DSO is obliged to develop and attain all documentation necessary for connection, insurance of technical conditions in the grid, building the connection, equipping the measurement point, performing necessary testing, performing connection and replacing the connection when necessary, except in the case when replacement is required or caused by the buyer or producer.

For eligible producers, the charge for connection to the electric network and for in-crease in connected power is comprised of the costs for creating technical conditions in the network and costs of the connection to the grid construction, pursuant to the Article 26 of the Ordinance on charges for connection to the network and for increase in connected power (OG 28/06). The charge for connection is the share of the financing of the conditions and the share in creation of technical conditions in the network. In case of quality network conditions, there is a possibility of low or no connection costs.

According to the Article 23 of the Electricity Market Act, the TSO or DSO can reject access to the grid due to limited technical or operational capacities of the network. The producer, who was rejected network connection, can submit the complaint to the Croatian Energy Regulatory Agency, which solves the disputes and whose decision is final.

The producer pays the costs of network connection according to the cost estimation, which is defined in the Ordinance on charges for connection to the network and for increase in connected power (OG 28/06).

In general and according to Article 8(1) of the ordinance on charges for connection to the network and for increase in connected power, the network connection construction costs include: elaboration for optimal technical solutions for connection constructions except of the LV and MV networks, technical and investment documentation, acquiring the right for construction and use of the connection, acquiring the necessary permits for construction, construction works (material

and equipment), equipping the connection point with measurement devices (except for the producer!), necessary testing and actual connection to the grid. According to the Article 8(2), costs for the creation of technical conditions include: elaboration on optimal technical solutions for connection constructions except of the LV network, technical and investment documentation; acquiring the right for the use of the plant; acquiring the necessary permits for construction, construction works (material and equipment), necessary testing and commissioning of the plant. According to Article 26 of the Ordinance on charges for connection to the network and for increase in connected power, the producer is obliged to cover all expenses of the creation of technical conditions if the connection point is in the LV or MV network. For connection to the HV network, the producer covers the part of the costs according to the ratio of the producer's installed power and thermal capacity of the line or nominal power of the transformer. The costs are determined by the TSO or DSO according to the elaboration on optimal technical solution for the network connection. The competence for the elaboration is within the scope of the TSO or DSO, and is paid by the producer.

The transparency of transmission and distribution fees is ensured by the tariff system for electricity generation, transmission, distribution and supply and are enforced (OG 143/06).

5.3.5 Article 8: Reporting requirements

See Article 8.

6. EXECUTIVE SUMMARY

Croatia's energy sector is regulated by various national laws and corresponding by-laws, whereas the fundamental primary legal sources are the Energy Act, the Electricity Market Act and the Act on Regulation of Energy Activities. Accrued from these primary sources are a wide range of secondary legislative acts dealing specifically with the promotion of renewable energy sources and co-generation. The purpose of this summary will be to summarize fundamental legal issues and provide a succinct overview of the most significant legislative gaps in Croatian legislation in comparison to the existing an relevant EU acquis.

6.1 COMPATIBILITY WITH EU STATE-AID REGULATIONS

The EU regulates State aid in Article 87 Sec 1 EC. The EU-State aid rules were put in place to protect the free market by ensuring that state resources do not distort competition or give an unfair advantage. State aid is considered to be any advantage given by a State to an undertaking in their domestic economy where such an aid may benefit particular industrial sectors or individual undertakings and affect trade in the European Union. Deciding whether a State aid measure exists and whether it is covered by an approval is generally a facile procedure. However, some established schemes are more complex and require the undertaking of a risk assessment.

In order to qualify as state-aid under EU law, a measure must fulfil certain preconditions. According to Article 87 Sec 1 EC, in order to qualify as an aid measure, the aid must be granted by the State or through State resources and be deemed selective. Furthermore, the measure must hold the potential to benefit the beneficiary and distort competition. As a last prerequisite, the measure needs to affect existent trade between Member States or future establishments of cross-boarder commerce.

When analysing the compliance of Croatian energy legislation to the EU common market rules pertaining to state-aid, an arguable concern must be placed on the legal commitment of Croatian electricity buyers, tariff buyers and eligible buyers to pay an Incentive Fee to the Market operator (HROTE), the founder of which is the Republic of Croatia. Under this Croatian tariff system, electricity buyers pay incentive fees to electricity suppliers from whom the Market operator (HROTE) collects it and delivers it, in a form of an incentive price, to the eligible producers. The system is based on the obligation of Market operator (HROTE) to purchase RES/cogeneration electricity produced by eligible producers and on the obligation of electricity suppliers to assume this electricity. Since the Croatian support system is structured on a parafiscal obligation of all electricity buyers to pay an incentive fee, this could, in a European context, be defined as a levy.

Because the incentive Fee is paid to the state controlled Market operator (HROTE), there may be an argument that subsequent payment of the incentive price may come from State resources. It must be noted, that although the EU Commission, based on the "Stardust Marine" ruling, has held that "resources under control of public under-takings are always State resources", any Croatian national authority would not bound to abide to the EU-Commission decision. This was specifically stated on the Austrian support scheme, which could be compared to the Croatian system. Anyway, it could be possible that the "Preusse-

nElektra" ruling applies on the Croatian system, al-though the EU Commission recently seems to uphold a more restrictive view.

Whether the Croatian support mechanism may hold the potential to constitute a state aid measure pursuant to Article 87 (1) EC is of course a factual question, since Croatia is not a member of the European Union. For the time being, Croatian State aid rules, namely the State Aid Act (OG 140/05) and the Regulation on State Aid (OG 150/05) could be applicable to the support scheme, which rules are harmonised with the EU acquis. Any assessment undertaken would require a detailed subsumption of the scheme under all Croatian state aid criteria. Such a procedure would be solely in the competency of the Croatian Competition Agency (CCA). It must be noted, that a preliminary assessment on this issue must be regarded as highly ambiguous, since any attribution of EU-state aid regulations to the Croatian support scheme would be theoretical at best. The question of whether the Croatian support scheme has the potential to fulfil all criteria, in particular distort competition, cannot assessed without a detailed market analysis.

Within the environmental protection field, the Decision on Announcing the State Aid Environment Protection Rules (OG 98/07) literally transfers into Croatian legal sys-tem the Community guidelines on State aid for environmental protection. If the subject support scheme on promotion of cogeneration and RES (fee-in tariff system) constitutes a state aid, it has to be examined further in a next step, if the regulations are in line with the environmental aid guidelines. This could be the case, if the extent of the funding does not go further as stated in the guideline however funding of a portion of domestic element does not comply with the EU acquis. Therefore we recommend checking this point again during the accession process and the negotiations with the EU-Commission.

6.2 COMPATIBILITY WITH THE EU DIRECTIVE ON THE PROMOTION OF COGENERATION

Cogeneration is a technique allowing the production of heat and electricity in a single process. The heat is in the form of high pressure water vapour or hot water. The Directive on the promotion of cogeneration has been implemented into Croatian legislation via the aforementioned primary legislation as well as the following secondary legislative acts:

- Regulation on fees for promoting electricity production from renewable energy sources and cogeneration (OG 33/07);
- Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised (OG 33/07);
- Tariff system for the production of electricity from renewable energy sources and cogeneration (OG 33/07) ;
- Ordinance on the use of renewable energy sources and cogeneration (OG 67/07);
- Ordinance on attaining the status of eligible electricity producer (OG 67/07).

Croatia has implemented the purpose of the EU-Directive, which is the establishment of a transparent common framework in order to promote and facilitate the installation of cogeneration plants where demand for useful heat exists or is anticipated, taking into consideration local conditions and notable diversities in

climate and economic potentials. The definition of "cogeneration" in the EU-Directive is closely aligned with definition applied under Croatian legislation. Croatian legislation does, however, not provide for definitions of "back-up electricity" and "top-up electricity" as set out in the Directive. The basic definition of "cogeneration" does also not include the part of possible production of mechanical energy. However, this omission rectified in Article 2(2) point 13 of the Ordinance on attaining the status of an eligible electricity producer, where it is stipulated that where a cogeneration plant generates mechanical energy, the annual value of electricity produced from cogeneration my be increased by an additional element representing the amount of electricity which is equivalent to that of the useful mechanical energy.

Croatian legislation has assumed the EU criteria for high efficiency cogeneration including the harmonisation of efficiency reference values for separate production of electricity and in heat. In this respect, Croatia has implemented all the parameters of the EU Acquis in the Ordinance on attaining the status of an eligible producer (OG 67/07).

The main legal gap between EU-acquis and Croatian legislation in terms of the pro-motion of cogeneration exist within the scope of regulations dealing with the Guarantee of Origin. Under the Directive, Member States must ensure that the Guarantee of Origin of the electricity enables producers to demonstrate that the electricity they sell is produced from high efficiency cogeneration. The reason behind this regulation is that, the market for electricity from high-efficiency cogeneration, just like a green electricity market, could be constituted on the basis of support mechanisms. Support mechanisms, however, are still regarded a national issue.

On the basis of the EU-acquis, the Member States are responsible to assign a role to the Guarantee of Origin in a national context. Even though the Electricity Market Act mentions the Guarantee of Origin in its context, Croatian legislation neither prescribes the content or purpose of this guarantee, nor does it designate a competent authority to issue such guarantee upon request of the producer. Therefore this issue has not been implemented into Croatian legislation.

Another objective of the Directive is to ensure that Member States establish only support schemes that are based on the term of "useful heat demand" and on primary energy sources. In this respect, any implemented support mechanisms must comply with state-aid regulations and must be in accordance with the internal market.

Under the Directive, Member states are obliged to streamline administrative procedures and remove any barriers to contest any lengthy or burdensome administrative processes. Croatia has established administrative procedures for electricity producers from RES and cogeneration based on the Ordinance on use of renewable energy sources and cogeneration (OG 67/07). Article 14 of the Energy Act establishes the registration procedure for projects and plants using renewables and cogeneration and of eligible producers. The Croatian administrative procedures in this sector are deemed objective, transparent and non-discriminatory and in accord with the EU-acquis.

Croatian legislation is aligned with the EU-acquis in terms of calculations methods applied for the definition of "high efficiency cogenerated electricity" as stated in Annexes II and III of the Directive and has fully implemented the EU definitions

for “cogeneration technologies” as defined in Annex I of the Directive in the Ordinance on use of renewable energy sources and cogeneration (OG 67/07).

Concerning Annex II of the Directive, which provides for a method to be applied in order to isolate cogenerated parts of a given production by excluding non-cogenerated parts of the energy production of a given unit, Croatian legislation has implemented these methods in the Ordinance on attaining the status of eligible electricity producer (OG 67/07). In addition to the EU-acquis, the Croatian legislation includes an additional provision, whereby electricity production within cogeneration plants with capacity above 35 MW shall be considered equal to the total annual electricity production of the plant measured at the outlet of the main generators, if an annual overall efficiency is at a level equal or higher to 70%. This provision is deemed compatible to the provision of Article 12(2) of the Directive and is therefore in line with the EU-acquis. Paragraph (c) of Annex II, which stipulates an option for some industrial processes (e.g. paper manufacturing), has not been implemented into Croatian legislation. However, this provision is not deemed mandatory and its absence is therefore not considered a legal gap.

(c) Compatibility with the EU Directive on the promotion of electricity from renewable energy

It needs to be pointed out, that all legislative acts applicable to cogeneration also govern renewable energy sources. The legal gaps between the EU-acquis and Croatian legislation on the use of renewable energy sources for electricity production are primarily found in the definition of the term “national indicative target” and within the organisation of the system pertaining to the Guarantees of Origin.

According to the Directive, Member States shall adopt and publish a report setting out “national indicative targets” for future consumption of electricity produced from renewable energy sources (in percentage of electricity consumption). The Directive requires a determination of a “national indicative target” for all renewables as defined its Article 2. In this respect, the provisions of Croatian legislation are not completely aligned with the EU-acquis, because the applicable Croatian legislation (Regulation on the minimum share of electricity produced from renewable energy sources and cogeneration whose production is incentivised) does not include electricity production from large hydro power plants and only determines the target for those renewables which are entitled to incentives. This is considered a significant gap, since Croatia produces approximately 50% of electricity from existing, mainly large hydro power plants.

As is the case with cogeneration, Member States must ensure that the Guarantee of Origin from electricity from renewable energy can be guaranteed in accordance with objective, transparent and non-discriminatory procedures. Member States shall especially ensure that a Guarantee of Origin is issued to this effect upon a request by a producer. Again, this system has not been implemented into Croatian legislation. Croatia has not yet prescribed the content or purpose of this guarantee and has not yet designated a competent authority to issue such guarantee upon request of the producer. Therefore this issue has not been implemented into Croatian legislation.

In terms of setting up administrative procedures and removing barriers to contest any lengthy or burdensome administrative processes, Croatia applies the Ordinance on use of renewable energy sources and cogeneration (OG 67/07). The established procedures are deemed ascertained and transparent, whereby Article

5 of the Directive 2001/77/EC is considered by Croatian legislation. In addition, Croatian legislation provides a system of legal remedies and appeals. A decision by the Ministry of Economy, Labour and Entrepreneurship may be challenged by an applicant in front of the Administrative Court of Croatia.

Producers of electricity from renewable energy sources must be certain that they can feed-in the produced electricity to the transmission grid. This is of particular importance for RES-E, often being a small project and thus economically vulnerable to-wards interruptions in feeding-in the electricity. Therefore, the Directive contains pro-visions whereby Member States shall take the necessary measures to ensure that transmission system operators and distribution system operators in their territory grant priority access to the transmission and distribution grid for RES-E, insofar, as the operation of the national electricity system permits. The Directive also sets out provisions for costs of connectivity and transparency of cost calculation.

This issue is regulated in Croatian the Electricity Market Act, stating that TSO or DSO is obliged to take over all electricity produced by eligible producer. When dispatching generating installations, both TSO and DSO are obliged to take over total electricity production from eligible producers, according to Article 16 and 19 respectively. These provisions of the Electricity Market Act have fully implemented the provisions of Article 7(1) of the Directive 2001/77/EC.

Articles 7(2), (4) and (5) of the Directive are concerned with the technical conditions and the bearing of costs for grid connections of new producers. These provisions are regulated in Croatia by the General Conditions of electricity supply (OG 14/06), Ordinance on charges for connection to the network and for increase in connected power (OG 28/06) and the Decision on the amount of charge for connection to the electric network and for increase in connected power (OG 52/06). According to the Article 5(1) of the General Conditions, the cost of charges for grid connections is borne by the applicant for the grid connection (customer or producer). According to the Article 5(3) of the General Conditions, the investor of grid connection is TSO or DSO. Furthermore, according to the Article 15 of the General Conditions, TSO or DSO is obliged to develop and attain all documentation necessary for connection, insurance of technical conditions in the grid, building the connection, equipping the measurement point, performing necessary testing, performing connection and replacing the connection when necessary, except in the case when replacement is required or caused by the buyer or producer.

The General Conditions of electricity supply and the Ordinance on charges for connection to the network and for increase in connected power are general regulations, which do not distinguish different types of producers. These standard rules relate to grid connections, reinforcements and related costs. Anyway, in terms of grid system regulations, it is questionable, whether any legal gaps between the EU-acquis and Croatian legislation exist.

7. APPENDIX

Annex 1:

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.

Annex 2:

Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat-demand in the internal market and amending Directive 92/42/EEC.

Annex 3:

Community guidelines on state aid for environmental protection (2001/C 37/03) (Status: January 2008)

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

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission [1],

Having regard to the opinion of the Economic and Social Committee [2],

Having regard to the opinion of the Committee of the Regions [3],

Acting in accordance with the procedure laid down in Article 251 of the Treaty [4],

Whereas:

(1) The potential for the exploitation of renewable energy sources is underused in the Community at present. The Community recognises the need to promote renewable energy sources as a priority measure given that their exploitation contributes to environmental protection and sustainable development. In addition this can also create local employment, have a positive impact on social cohesion, contribute to security of supply and make it possible to meet Kyoto targets more quickly. It is therefore necessary to ensure that this potential is better exploited within the framework of the internal electricity market.

(2) The promotion of electricity produced from renewable energy sources is a high Community priority as outlined in the White Paper on Renewable Energy Sources (hereinafter referred to as 'the White Paper') for reasons of security and diversification of energy supply, of environmental protection and of social and economic cohesion. That was endorsed by the Council in its resolution of 8 June 1998 on renewable sources of energy [5], and by the European Parliament in its resolution on the White Paper. [6]

(3) The increased use of electricity produced from renewable energy sources constitutes an important part of the package of measures needed to comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and of any policy package to meet further commitments.

(4) The Council in its conclusions of 11 May 1999 and the European Parliament in its resolution of 17 June 1998 on electricity from renewable energy sources [7] have invited the Commission to submit a concrete proposal for a Community framework on access for electricity produced from renewable energy sources to the internal market. Furthermore, the European Parliament in its resolution of 30 March 2000 on electricity from renewable energy sources and the internal electricity market [8] underlined that binding and ambitious renewable energy targets at the national level are essential for obtaining results and achieving the Community targets.

(5) To ensure increased market penetration of electricity produced from renewable energy sources in the medium term, all Member States should be required to set national indicative targets for the consumption of electricity produced from renewable sources.

(6) These national indicative targets should be consistent with any national commitment made as part of the climate change commitments accepted by the Community under the Kyoto Protocol.

(7) The Commission should assess to what extent Member States have made progress towards achieving their national indicative targets, and to what extent the national indicative targets are consistent with the global indicative target of 12 % of gross domestic energy consumption by 2010, considering that the White Paper's indicative target of 12 % for the Community as a whole by 2010 provides useful guidance for increased efforts at Community level as well as in Member States, bearing in mind the need to reflect differing national circumstances. If necessary for the achievement of the targets, the Commission should submit proposals to the European Parliament and the Council which may include mandatory targets.

(8) Where they use waste as an energy source, Member States must comply with current Community legislation on waste management. The application of this Directive is without prejudice to the definitions set out in Annex 2a and 2b to Council Directive 75/442/EEC of 15 July 1975 on waste [9]. Support for renewable energy sources should be consistent with other Community objectives, in particular respect for the waste treatment hierarchy.

[1] OJ C 311 E, 31.10.2000, p. 320 and OJ C 154 E, 29.5.2001, p. 89.
[2] OJ C 367, 20.12.2000, p. 5.
[3] OJ C 22, 24.1.2001, p. 27.
[4] Opinion of the European Parliament of 16 November 2000 (OJ C 223, 8.8.2001, p. 294), Council Common Position of 23 March 2001 (OJ C 142, 15.5.2001, p. 5) and Decision of the European Parliament of 4 July 2001 (not yet published in the Official Journal). Council Decision of 7 September 2001.
[5] OJ C 198, 24.6.1998, p. 1.
[6] OJ C 210, 6.7.1998, p. 215.
[7] OJ C 210, 6.7.1998, p. 143.
[8] OJ C 378, 29.12.2000, p. 89.
[9] OJ L 194, 25.7.1975, p. 39. Directive as last amended by Commission Decision 96/350/EC (OJ L 135, 6.6.1996, p. 32).

Therefore, the incineration of non-separated municipal waste should not be promoted under a future support system for renewable energy sources, if such promotion were to undermine the hierarchy.

(9) The definition of biomass used in this Directive does not prejudge the use of a different definition in national legislation, for purposes other than those set out in this Directive.

(10) This Directive does not require Member States to recognise the purchase of a guarantee of origin from other Member States or the corresponding purchase of electricity as a contribution to the fulfilment of a national quota obligation. However, to facilitate trade in electricity produced from renewable energy sources and to increase transparency for the consumer's choice between electricity produced from non-renewable and electricity produced from renewable energy sources, the guarantee of origin of such electricity is necessary. Schemes for the guarantee of origin do not by themselves imply a right to benefit from national support mechanisms established in different Member States. It is important that all forms of electricity produced from renewable energy sources are covered by such guarantees of origin.

(11) It is important to distinguish guarantees of origin clearly from exchangeable green certificates.

(12) The need for public support in favour of renewable energy sources is recognised in the Community guidelines for State aid for environmental protection [1], which, amongst other options, take account of the need to internalise external costs of electricity generation. However, the rules of the Treaty, and in particular Articles 87 and 88 thereof, will continue to apply to such public support.

(13) A legislative framework for the market in renewable energy sources needs to be established.

(14) Member States operate different mechanisms of support for renewable energy sources at the national level, including green certificates, investment aid, tax exemptions or reductions, tax refunds and direct price support schemes. One important means to achieve the aim of this Directive is to guarantee the proper functioning of these mechanisms, until a Community framework is put into operation, in order to maintain investor confidence.

(15) It is too early to decide on a Community-wide framework regarding support schemes, in view of the limited experience with national schemes and the current relatively low share of price supported electricity produced from renewable energy sources in the Community.

(16) It is, however necessary to adapt, after a sufficient transitional period, support schemes to the developing internal electricity market. It is therefore appropriate that the Commission monitor the situation and present a report on experience gained with the application of national schemes. If necessary, the Commission should, in the light of the conclusions of this report, make a proposal for a Community framework with regard to support schemes for electricity produced from renewable energy sources. That proposal should contribute to the achievement of the national indicative targets, be compatible with the principles of the internal electricity market and take into account the characteristics of the different sources of renewable energy, together with the different technologies and geographical differences. It should also promote the use of renewable energy sources in an effective way, and be simple and at the same time as efficient as possible, particularly in terms of cost, and include sufficient transitional periods of at least seven years, maintain investors' confidence and avoid stranded costs. This framework would enable electricity from renewable energy sources to compete with electricity produced from non-renewable energy sources and limit the cost to the consumer, while, in the medium term, reduce the need for public support.

(17) Increased market penetration of electricity produced from renewable energy sources will allow for economies of scale, thereby reducing costs.

(18) It is important to utilise the strength of the market forces and the internal market and make electricity produced from renewable energy sources competitive and attractive to European citizens.

(19) When favouring the development of a market for renewable energy sources, it is necessary to take into account the positive impact on regional and local development opportunities, export prospects, social cohesion and employment opportunities, especially as concerns small and medium-sized undertakings as well as independent power producers.

(20) The specific structure of the renewable energy sources sector should be taken into account, especially when reviewing the administrative procedures for obtaining permission to construct plants producing electricity from renewable energy sources.

(21) In certain circumstances it is not possible to ensure fully transmission and distribution of electricity produced from renewable energy sources without affecting the reliability and safety of the grid system and guarantees in this context may therefore include financial compensation.

(22) The costs of connecting new producers of electricity from renewable energy sources should be objective, transparent and non-discriminatory and due account should be taken of the benefit embedded generators bring to the grid.

[1] OJ C 37, 3.2.2001, p. 3.

(23) Since the general objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the action, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. Their detailed implementation should, however, be left to the Member States, thus allowing each Member State to choose the regime which corresponds best to its particular situation. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Purpose

The purpose of this Directive is to promote an increase in the contribution of renewable energy sources to electricity production in the internal market for electricity and to create a basis for a future Community framework thereof.

Article 2

Definitions

For the purposes of this Directive, the following definitions shall apply:

(a) '*renewable energy sources*' shall mean renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases);

(b) '*biomass*' shall mean the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste;

(c) '*electricity produced from renewable energy sources*' shall mean electricity produced by plants using only renewable energy sources, as well as the proportion of electricity produced from renewable energy sources in hybrid plants also using conventional energy sources and including renewable electricity used for filling storage systems, and excluding electricity produced as a result of storage systems;

(d) '*consumption of electricity*' shall mean national electricity production, including autoproduction, plus imports, minus exports (gross national electricity consumption).

In addition, the definitions in Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market of electricity [1] shall apply.

[1] OJ L 27, 30.1.1997, p. 20.

Article 3

National indicative targets

1. Member States shall take appropriate steps to encourage greater consumption of electricity produced from renewable energy sources in conformity with the national indicative targets referred to in paragraph 2. These steps must be in proportion to the objective to be attained.

2. Not later than 27 October 2002 and every five years thereafter, Member States shall adopt and publish a report setting national indicative targets for future consumption of electricity produced from renewable energy sources in terms of a percentage of electricity consumption for the next 10 years. The report shall also outline the measures taken or planned, at national level, to achieve these national indicative targets. To set these targets until the year 2010, the Member States shall:

— take account of the reference values in the Annex,

— ensure that the targets are compatible with any national commitments accepted in the context of the climate change commitments accepted by the Community pursuant to the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

3. Member States shall publish, for the first time not later than 27 October 2003 and thereafter every two years, a report which includes an analysis of success in meeting the national indicative targets taking account, in particular, of climatic factors likely to affect the achievement of those targets and which indicates to what extent the measures taken are consistent with the national climate change commitment.

4. On the basis of the Member States' reports referred to in paragraphs 2 and 3, the Commission shall assess to what extent:

— Member States have made progress towards achieving their national indicative targets,

— the national indicative targets are consistent with the global indicative target of 12 % of gross national energy consumption by 2010 and in particular with the 22,1 % indicative share of electricity produced from renewable energy sources in total Community electricity consumption by 2010.

The Commission shall publish its conclusions in a report, for the first time not later than 27 October 2004 and thereafter every two years. This report shall be accompanied, as appropriate, by proposals to the European Parliament and to the Council.

If the report referred to in the second subparagraph concludes that the national indicative targets are likely to be inconsistent, for reasons that are unjustified and/or do not relate to new scientific evidence, with the global indicative target, these proposals shall address national targets, including possible mandatory targets, in the appropriate form.

Article 4

Support schemes

1. Without prejudice to Articles 87 and 88 of the Treaty, the Commission shall evaluate the application of mechanisms used in Member States according to which a producer of electricity, on the basis of regulations issued by the public authorities, receives direct or indirect support, and which could have the effect of restricting trade, on the basis that these contribute to the objectives set out in Articles 6 and 174 of the Treaty.

2. The Commission shall, not later than 27 October 2005, present a well-documented report on experience gained with the application and coexistence of the different mechanisms referred to in paragraph 1. The report shall assess the success, including cost-effectiveness, of the support systems referred to in paragraph 1 in promoting the consumption of electricity produced from renewable energy sources in conformity with the national indicative targets referred to in Article 3(2). This report shall, if necessary, be accompanied by a proposal for a Community framework with regard to support schemes for electricity produced from renewable energy sources.

Any proposal for a framework should:

(a) contribute to the achievement of the national indicative targets;

(b) be compatible with the principles of the internal electricity market;

(c) take into account the characteristics of different sources of renewable energy, together with the different technologies, and geographical differences;

(d) promote the use of renewable energy sources in an effective way, and be simple and, at the same time, as efficient as possible, particularly in terms of cost;

(e) include sufficient transitional periods for national support systems of at least seven years and maintain investor confidence.

Article 5

Guarantee of origin of electricity produced from renewable energy sources

1. Member States shall, not later than 27 October 2003, ensure that the origin of electricity produced from renewable energy sources can be guaranteed as such within the meaning of this Directive according to objective, transparent and non-discriminatory criteria laid down by each Member State. They shall ensure that a guarantee of origin is issued to this effect in response to a request.

2. Member States may designate one or more competent bodies, independent of generation and distribution activities, to supervise the issue of such guarantees of origin.

3. A guarantee of origin shall:

— specify the energy source from which the electricity was produced, specifying the dates and places of production, and in the case of hydroelectric installations, indicate the capacity;

— serve to enable producers of electricity from renewable energy sources to demonstrate that the electricity they sell is produced from renewable energy sources within the meaning of this Directive.

4. Such guarantees of origin, issued according to paragraph 2, should be mutually recognised by the Member States, exclusively as proof of the elements referred to in paragraph 3. Any refusal to recognise a guarantee of origin as such proof, in particular for reasons relating to the prevention of fraud, must be based on objective, transparent and non-discriminatory criteria. In the event of refusal to recognise a guarantee of origin, the Commission may compel the refusing party to recognise it, particularly with regard to objective, transparent and non-discriminatory criteria on which such recognition is based.

5. Member States or the competent bodies shall put in place appropriate mechanisms to ensure that guarantees of origin are both accurate and reliable and they shall outline in the report referred to in Article 3(3) the measures taken to ensure the reliability of the guarantee system.

6. After having consulted the Member States, the Commission shall, in the report referred to in Article 8, consider the form and methods that Member States could follow in order to guarantee the origin of electricity produced from renewable energy sources. If necessary, the Commission shall propose to the European Parliament and the Council the adoption of common rules in this respect.

Article 6

Administrative procedures

1. Member States or the competent bodies appointed by the Member States shall evaluate the existing legislative and regulatory framework with regard to authorisation procedures or the other procedures laid down in Article 4 of Directive 96/92/EC, which are applicable to production plants for electricity produced from renewable energy sources, with a view to:

— reducing the regulatory and non-regulatory barriers to the increase in electricity production from renewable energy sources,

— streamlining and expediting procedures at the appropriate administrative level, and

— ensuring that the rules are objective, transparent and non-discriminatory, and take fully into account the particularities of the various renewable energy source technologies.

2. Member States shall publish, not later than 27 October 2003, a report on the evaluation referred to in paragraph 1, indicating, where appropriate, the actions taken. The purpose of this report is to provide, where this is appropriate in the context of national legislation, an indication of the stage reached specifically in:

— coordination between the different administrative bodies as regards deadlines, reception and treatment of applications for authorisations,

— drawing up possible guidelines for the activities referred to in paragraph 1, and the feasibility of a fast-track planning procedure for producers of electricity from renewable energy sources, and

— the designation of authorities to act as mediators in disputes between authorities responsible for issuing authorisations and applicants for authorisations.

3. The Commission shall, in the report referred to in Article 8 and on the basis of the Member States' reports referred to in paragraph 2 of this Article, assess best practices with a view to achieving the objectives referred to in paragraph 1.

Article 7

Grid system issues

1. Without prejudice to the maintenance of the reliability and safety of the grid, Member States shall take the necessary measures to ensure that transmission system operators and distribution system operators in their territory guarantee the transmission and distribution of electricity produced from renewable energy sources. They may also provide for priority access to the grid system of electricity produced from renewable energy sources. When dispatching generating installations, transmission system operators shall give priority to generating installations using renewable energy sources insofar as the operation of the national electricity system permits.

2. Member States shall put into place a legal framework or require transmission system operators and distribution system operators to set up and publish their standard rules relating to the bearing of costs of technical adaptations, such as grid connections and grid reinforcements, which are necessary in order to integrate new producers feeding electricity produced from renewable energy sources into the interconnected grid.

These rules shall be based on objective, transparent and non-discriminatory criteria taking particular account of all the costs and benefits associated with the connection of these producers to the grid. The rules may provide for different types of connection.

3. Where appropriate, Member States may require transmission system operators and distribution system operators to bear, in full or in part, the costs referred to in paragraph 2.

4. Transmission system operators and distribution system operators shall be required to provide any new producer wishing to be connected with a comprehensive and detailed estimate of the costs associated with the connection. Member States may allow producers of electricity from renewable energy sources wishing to be connected to the grid to issue a call for tender for the connection work.

5. Member States shall put into place a legal framework or require transmission system operators and distribution system operators to set up and publish their standard rules relating to the sharing of costs of system installations, such as grid connections and reinforcements, between all producers benefiting from them.

The sharing shall be enforced by a mechanism based on objective, transparent and non-discriminatory criteria taking into account the benefits which initially and subsequently connected producers as well as transmission system operators and distribution system operators derive from the connections.

6. Member States shall ensure that the charging of transmission and distribution fees does not discriminate against electricity from renewable energy sources, including in particular electricity from renewable energy sources produced in peripheral regions, such as island regions and regions of low population density.

Where appropriate, Member States shall put in place a legal framework or require transmission system operators and distribution system operators to ensure that fees charged for the transmission and distribution of electricity from plants using renewable energy sources reflect realisable cost benefits resulting from the plant's connection to the network. Such cost benefits could arise from the direct use of the low-voltage grid.

7. Member States shall, in the report referred to in Article 6(2), also consider the measures to be taken to facilitate access to the grid system of electricity produced from renewable energy sources. That report shall examine, *inter alia*, the feasibility of introducing two-way metering.

Article 8

Summary report

On the basis of the reports by Member States pursuant to Article 3(3) and Article 6(2), the Commission shall present to the European Parliament and the Council, no later than 31 December 2005 and thereafter every five years, a summary report on the implementation of this Directive.

This report shall:

— consider the progress made in reflecting the external costs of electricity produced from non-renewable energy sources and the impact of public support granted to electricity production,

— take into account the possibility for Member States to meet the national indicative targets established in Article 3(2), the global indicative target referred to in Article 3(4) and the existence of discrimination between different energy sources.

If appropriate, the Commission shall submit with the report further proposals to the European Parliament and the Council.

Article 9

Transposition

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 27 October 2003. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such a reference on the occasion of their official publication. The methods of making such reference shall be laid down by the Member States.

Article 10

Entry into force

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Communities*.

Article 11

Addressees

This Directive is addressed to the Member States.

Done at Brussels, 27 September 2001.

For the European Parliament	*For the Council*
The President	*The President*
N. FONTAINE	C. PICQUÉ

ANNEX

Reference values for Member States' national indicative targets for the contribution of electricity produced from renewable energy sources to gross electricity consumption by 2010 (*)

This Annex gives reference values for the fixing of national indicative targets for electricity produced from renewable energy sources ('RES-E'), as referred to in Article 3(2):

	RES-E TWh 1997 (**)	RES-E % 1997 (***)	RES-E % 2010 (***)
Belgium	0,86	1,1	6,0
Denmark	3,21	8,7	29,0
Germany	24,91	4,5	12,5
Greece	3,94	8,6	20,1
Spain	37,15	19,9	29,4
France	66,00	15,0	21,0
Ireland	0,84	3,6	13,2
Italy	46,46	16,0	25,0 ([1])
Luxembourg	0,14	2,1	5,7 ([2])
Netherlands	3,45	3,5	9,0
Austria	39,05	70,0	78,1 ([3])
Portugal	14,30	38,5	39,0 ([4])
Finland	19,03	24,7	31,5 ([5])
Sweden	72,03	49,1	60,0 ([6])
United Kingdom	7,04	1,7	10,0
Community	338,41	13,9 %	22 % (****)

(*) In taking into account the reference values set out in this Annex, Member States make the necessary assumption that the State aid guidelines for environmental protection allow for the existence of national support schemes for the promotion of electricity produced from renewable energy sources.

(**) Data refer to the national production of RES-E in 1997.

(***) The percentage contributions of RES-E in 1997 and 2010 are based on the national production of RES-E divided by the gross national electricity consumption. In the case of internal trade of RES-E (with recognised certification or origin registered) the calculation of these percentages will influence 2010 figures by Member State but not the Community total.

(****) Rounded figure resulting from the reference values above.

([1]) *Italy* states that 22 % would be a realistic figure, on the assumption that in 2010 gross national electricity consumption will be 340 TWh. When taking into account the reference values set out in this Annex, Italy has assumed that gross national electricity production from renewable energy sources will attain up to 76 TWh in 2010. This figure includes the contribution of the non-biodegradable fraction of municipal and industrial waste used in compliance with Community legislation on waste management.
In this respect, the capability to reach the indicative target as referred to in this Annex, is contingent, *inter alia*, upon the effective level of the national demand for electric energy in 2010.

([2]) Taking into account the indicative reference values set out in this Annex, *Luxembourg* takes the view that the objective set for 2010 can be achieved only if:
— total electricity consumption in 2010 does not exceed that of 1997,
— wind-generated electricity can be multiplied by a factor of 15,

— biogas-generated electricity can be multiplied by a factor of 208,
— electricity produced from the only municipal waste incinerator in Luxembourg, which in 1997 accounted for half the electricity produced from renewable energy sources, can be taken into account in its entirety,
— photovoltaically generated electricity can be raised to 80 GWh, and

in so far as the above points can be achieved from the technical standpoint in the time allowed.

In the absence of natural resources, an additional increase in electricity generated by hydroelectric power stations is ruled out.

([3]) *Austria* states that 78,1 % would be a realistic figure, on the assumption that in 2010 gross national electricity consumption will be 56,1 TWh. Due to the fact that the production of electricity from renewable sources is highly dependent on hydropower and therefore on the annual rainfall, the figures for 1997 and 2010 should be calculated on a long-range model based on hydrologic and climatic conditions.

([4]) *Portugal*, when taking into account the reference values, set out in this Annex, states that to maintain the 1997 share of electricity produced from renewable sources as an indicative target for 2010 it was assumed that:
— it will be possible to continue the national electricity plan building new hydro capacity higher than 10 MW,
— other renewable capacity, only possible with financial state aid, will increase at an annual rate eight times higher than has occurred recently.

These assumptions imply that new capacity for producing electricity from renewable sources, excluding large hydro, will increase at a rate twice as high as the rate of increase of gross national electricity consumption.

([5]) In the *Finnish* action plan for renewable energy sources, objectives are set for the volume of renewable energy sources used in 2010. These objectives have been set on the basis of extensive background studies. The action plan was approved within the Government in October 1999.

According to the Finnish action plan, the share of electricity produced from renewable energy sources by 2010 would be 31 %. This indicative target is very ambitious and its realisation would require extensive promotion measures in Finland.

([6]) When taking into account the reference values set out in this Annex, *Sweden* notes that the possibility of reaching the target is highly dependent upon climatic factors heavily affecting the level of hydropower production, in particular variations in pluviometry, timing of rainfall during the year and inflow. The electricity produced from hydropower can vary substantially. During extremely dry years production may amount to 51 TWh, whereas in wet years it could amount to 78 TWh. The figure for 1997 should thus be calculated with a long-range model based on scientific facts on hydrology and climatic change.

It is a generally applied method in countries with important shares of hydropower production to use water inflow statistics covering a time span of 30 to 60 years. Thus, according to the Swedish methodology and based on conditions during the period 1950-1999, correcting for differences in total hydropower production capacity and inflow over the years, average hydropower production amounts to 64 TWh which corresponds to a figure for 1997 of 46 %, and in this context Sweden considers 52 % to be a more realistic figure for 2010.

Furthermore, the ability of Sweden to achieve the target is limited by the fact that the remaining unexploited rivers are protected by law. Moreover, the ability of Sweden to reach the target is heavily contingent upon:
— the expansion of combined heat and power (CHP) depending on population density, demand for heat and technology development, in particular for black liquor gasification, and
— authorisation for wind power plants in accordance with national laws, public acceptance, technology development and expansion of grids.

DIRECTIVE 2004/8/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 11 February 2004

on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission [1],

Having regard to the opinion of the European Economic and Social Committee [2],

Having regard to the opinion of the Committee of the Regions [3],

Acting in accordance with the procedure laid down in Article 251 of the Treaty [4],

Whereas:

(1) The potential for use of cogeneration as a measure to save energy is underused in the Community at present. Promotion of high-efficiency cogeneration based on a useful heat demand is a Community priority given the potential benefits of cogeneration with regard to saving primary energy, avoiding network losses and reducing emissions, in particular of greenhouse gases. In addition, efficient use of energy by cogeneration can also contribute positively to the security of energy supply and to the competitive situation of the European Union and its Member States. It is therefore necessary to take measures to ensure that the potential is better exploited within the framework of the internal energy market.

(2) Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 [5] establishes common rules for the generation, transmission, distribution and supply of electricity within the internal market in electricity. In this context, the development of cogeneration contributes to enhancing competition, also with regard to new market actors.

(3) The Green Paper entitled 'Towards a European strategy for the security of energy supply' points out that the European Union is extremely dependent on its external energy supplies currently accounting for 50 % of requirements and projected to rise to 70 % by 2030 if current trends persists. Import dependency and rising import ratios heighten the risk of interruption to or difficulties in supply. However, security of supply should not be conceived as merely a question of reducing import dependency and boosting domestic production. Security of supply calls for a wide range of policy initiatives aimed at, *inter alia*, diversification of sources and technologies and improved international relations. The Green Paper emphasised furthermore that security of energy supply is essential for a future sustainable development. The Green Paper concludes that the adoption of new measures to reduce energy demand is essential both in terms of reducing the import dependence and in order to limit greenhouse gas emissions. In its Resolution of 15 November 2001 on the Green Paper [6], the European Parliament called for incentives to encourage a shift towards efficient energy production plants, including combined heat and power.

(4) The Commission's Communication 'A Sustainable Europe for a better world — A European Union Strategy for Sustainable Development' presented at the Gothenburg European Council on 15 and 16 June 2001 identified climate change as one of the principal barriers to sustainable development and emphasised the need for increased use of clean energy and clear action to reduce energy demand.

(5) The increased use of cogeneration geared towards making primary energy savings could constitute an important part of the package of measures needed to comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and of any policy package to meet further commitments. The Commission in its Communication on the implementation of the first phase of the European Climate Change Programme identified promotion of cogeneration as one of the measures needed to reduce the greenhouse gas emissions from the energy sector and announced its intention to present a proposal for a Directive on the promotion of cogeneration in 2002.

(6) In its Resolution of 25 September 2002 on the Commission communication on the implementation of the first phase of the European Climate Change Programme [7], the European Parliament welcomes the idea of submitting a proposal to strengthen Community measures to promote the use of combined heat and power (CHP) and calls for prompt adoption of a Directive on the promotion of CHP.

---

[1] OJ C 291 E, 26.11.2002, p. 182.
[2] OJ C 95, 23.4.2003, p. 12.
[3] OJ C 244, 10.10.2003, p. 1.
[4] Opinion of the European Parliament of 13 May 2003 (not yet published in the Official Journal), Council Common Position of 8 September 2003 (not yet published in the Official Journal) and Position of the European Parliament of 18 December 2003 (not yet published in the Official Journal).
[5] OJ L 176, 15.7.2003, p. 37.
[6] OJ C 140 E, 13.6.2002, p. 543.
[7] OJ C 273 E, 14.11.2003, p. 172.

(7) The importance of cogeneration was also recognised by the Council Resolution of 18 December 1997 ([1]) and by the European Parliament Resolution of 15 May 1998 ([2]) on a Community strategy to promote combined heat and power.

(8) The Council in its Conclusions of 30 May 2000 and of 5 December 2000 endorsed the Commission's Action Plan on energy efficiency and identified promotion of cogeneration as one of the short-term priority areas. The European Parliament in its Resolution of 14 March 2001 on the Action Plan on energy efficiency ([3]) called on the Commission to submit proposals establishing common rules for the promotion of cogeneration, where this makes environmental sense.

(9) Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control ([4]), Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants ([5]) and Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste ([6]) highlight the need to evaluate the potential for cogeneration in new installations.

(10) Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings ([7]) requires the Member States to ensure that for new buildings with a total useful floor area of over 1 000 m^2, the technical, environmental and economic feasibility of alternative systems, such as cogeneration of heat and power, is considered and taken into account before construction starts.

(11) High efficiency cogeneration is in this Directive defined by the energy savings obtained by combined production instead of separate production of heat and electricity. Energy savings of more than 10 % qualify for the term 'high-efficiency cogeneration'. To maximise the energy savings and to avoid energy savings being lost, the greatest attention must be paid to the functioning conditions of cogeneration units.

(12) In the context of the evaluation of primary energy savings, it is important to take into account the situation of Member States in which the most of electricity consumption is covered by imports.

(13) It is important for transparency to adopt a harmonised basic definition of cogeneration. Where cogeneration installations are equipped to generate separate electricity or heat production, such production should not be specified as cogeneration for issuing a guarantee of origin and for statistical purposes.

(14) To ensure that support for cogeneration in the context of this Directive is based on the useful heat demand and primary energy savings, it is necessary to set up criteria to determine and assess the energy efficiency of the cogeneration production identified under the basic definition.

(15) The general objective of this Directive should be to establish a harmonised method for calculation of electricity from cogeneration and necessary guidelines for its implementation, taking into account methodologies such as those currently under development by European standardisation organisations. This method should be adjustable to take account of technical progress. Application of the calculations in Annexes II and III to micro-cogeneration units could, in accordance with the principle of proportionality, be based on values resulting from a type testing process certified by a competent, independent body.

(16) The definitions of cogeneration and of high-efficiency cogeneration used in this Directive do not prejudge the use of different definitions in national legislation, for purposes other than those set out in this Directive. It is appropriate to borrow in addition the relevant definitions contained in Directive 2003/54/EC and in 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 ([8]).

(17) Measuring the useful heat output at the point of production of the cogeneration plant underlines the need to ensure that advantages of the cogenerated useful heat are not lost in high heat losses from distribution networks.

(18) The power to heat ratio is a technical characteristic that needs to be defined in order to calculate the amount of electricity from cogeneration.

(19) For the purpose of this Directive, the definition of 'cogeneration units' may also include equipment in which only electrical energy or only thermal energy can be generated, such as auxiliary firing and after burning units. The output from such equipment should not be considered as cogeneration for issuing a guarantee of origin and for statistical purposes.

([1]) OJ C 4, 8.1.1998, p. 1.
([2]) OJ C 167, 1.6.1998, p. 308.
([3]) OJ C 343, 5.12.2001, p. 190.
([4]) OJ C 257, 10.10.1996, p. 26.
([5]) OJ L 309, 27.11.2001, p. 1.
([6]) OJ L 332, 28.12.2000, p. 91.
([7]) OJ L 1, 4.1.2003, p. 65.
([8]) OJ L 283, 27.10.2001, p. 33.

(20) The definition of 'small scale cogeneration' comprises, *inter alia*, micro-cogeneration and distributed cogeneration units such as cogeneration units supplying isolated areas or limited residential, commercial or industrial demands.

(21) To increase transparency for the consumer's choice between electricity from cogeneration and electricity produced on the basis of other techniques, it is necessary to ensure that, on the basis of harmonised efficiency reference values, the origin of high-efficiency cogeneration can be guaranteed. Schemes for the guarantee of origin do not by themselves imply a right to benefit from national support mechanisms.

(22) It is important that all forms of electricity produced from high-efficiency cogeneration can be covered by guarantees of origin. It is important to distinguish guarantees of origin clearly from exchangeable certificates.

(23) To ensure increased market penetration of cogeneration in the medium term, it is appropriate to require all Member States to adopt and publish a report analysing the national potential for high-efficiency cogeneration and to include a separate analysis of barriers to cogeneration in the report, and of measures taken to ensure the reliability of the guarantee system.

(24) Public support should be consistent with the provisions of the Community guidelines on State aid for environmental protection [1], including as regards the non-cumulation of aid. These guidelines currently allow certain types of public support if it can be shown that the support measures are beneficial in terms of protection of the environment because the conversion efficiency is particularly high, because the measures will allow energy consumption to be reduced or because the production process will be less damaging to the environment. Such support will in some cases be necessary to further exploit the potential for cogeneration, in particular to take account of the need to internalise external costs.

(25) Public support schemes for promoting cogeneration should focus mainly on support for cogeneration based on economically justifiable demand for heat and cooling.

(26) Member States operate different mechanisms of support for cogeneration at the national level, including investment aid, tax exemptions or reductions, green certificates and direct price support schemes. One important means to achieve the aim of this Directive is to guarantee the proper functioning of these mechanisms, until a harmonised Community framework is put into operation, in order to maintain investor confidence. The Commission intends to monitor the situation and report on experiences gained with the application of national support schemes.

(27) For the transmission and distribution of electricity from high-efficiency cogeneration, the provisions of Article 7(1), (2) and (5) of Directive 2001/77/EC as well as relevant provisions of Directive 2003/54/EC should apply. Until the cogeneration producer is an eligible customer under national legislation within the meaning of Article 21(1) of Directive 2003/54/EC, tariffs related to the purchase of additional electricity sometimes needed by cogeneration producers should be set according to objective, transparent and non-discriminatory criteria. Especially for small scale and micro-cogeneration units access to the grid system of electricity produced from high-efficiency cogeneration may be facilitated subject to notification to the Commission.

(28) In general, cogeneration units up to 400 kW falling within the definitions of Council Directive 92/42/EEC of 21 May 1992 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels [2] are unlikely to meet the minimum efficiency requirements therein and should therefore be excluded from that Directive.

(29) The specific structure of the cogeneration sector, which includes many small and medium-sized producers, should be taken into account, especially when reviewing the administrative procedures for obtaining permission to construct cogeneration capacity.

(30) Within the purpose of this Directive to create a framework for promoting cogeneration it is important to emphasise the need for a stabile economical and administrative environment for investments in new cogeneration installations. Member States should be encouraged to address this need by designing support schemes with a duration period of at least four years and by avoiding frequent changes in administrative procedures etc. Member States should furthermore be encouraged to ensure that public support schemes respect the phase-out principle.

(31) The overall efficiency and sustainability of cogeneration is dependent on many factors, such as technology used, fuel types, load curves, the size of the unit, and also on the properties of the heat. For practical reasons and based on the fact, that the use of the heat output for different purposes requires different temperature levels of the heat, and that these and other differences influence efficiencies of the cogeneration, cogeneration could be divided into classes such as: 'industrial cogeneration', 'heating cogeneration' and 'agricultural cogeneration'.

[1] OJ C 37, 3.2.2001, p. 3.

[2] OJ L 167, 22.6.1992, p. 17. Directive as last amended by Directive 93/68/EEC (OJ L 220, 30.8.1993, p. 1).

(32) In accordance with the principles of subsidiarity and proportionality as set out in Article 5 of the Treaty, general principles providing a framework for the promotion of cogeneration in the internal energy market should be set at Community level, but the detailed implementation should be left to Member States, thus allowing each Member State to choose the regime, which corresponds best to its particular situation. This Directive confines itself to the minimum required in order to achieve those objectives and does not go beyond what is necessary for that purpose.

(33) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June laying down the procedures for the exercise of implementing powers conferred on the Commission ([1]),

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Purpose

The purpose of this Directive is to increase energy efficiency and improve security of supply by creating a framework for promotion and development of high efficiency cogeneration of heat and power based on useful heat demand and primary energy savings in the internal energy market, taking into account the specific national circumstances especially concerning climatic and economic conditions.

Article 2

Scope

This Directive shall apply to cogeneration as defined in Article 3 and cogeneration technologies listed in Annex I.

Article 3

Definitions

For the purpose of this Directive, the following definitions shall apply:

(a) 'cogeneration' shall mean the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;

(b) 'useful heat' shall mean heat produced in a cogeneration process to satisfy an economically justifiable demand for heat or cooling;

(c) 'economically justifiable demand' shall mean the demand that does not exceed the needs for heat or cooling and which would otherwise be satisfied at market conditions by energy generation processes other than cogeneration;

(d) 'electricity from cogeneration' shall mean electricity generated in a process linked to the production of useful heat and calculated in accordance with the methodology laid down in Annex II;

(e) 'back-up electricity' shall mean the electricity supplied through the electricity grid whenever the cogeneration process is disrupted, including maintenance periods, or out of order;

(f) 'top-up electricity' shall mean the electricity supplied through the electricity grid in cases where the electricity demand is greater than the electrical output of the cogeneration process;

(g) 'overall efficiency' shall mean the annual sum of electricity and mechanical energy production and useful heat output divided by the fuel input used for heat produced in a cogeneration process and gross electricity and mechanical energy production;

(h) 'efficiency' shall mean efficiency calculated on the basis of 'net calorific values' of fuels (also referred to as 'lower calorific values');

(i) 'high efficiency cogeneration' shall mean cogeneration meeting the criteria of Annex III;

(j) 'efficiency reference value for separate production' shall mean efficiency of the alternative separate productions of heat and electricity that the cogeneration process is intended to substitute;

(k) 'power to heat ratio' shall mean the ratio between electricity from cogeneration and useful heat when operating in full cogeneration mode using operational data of the specific unit;

(l) 'cogeneration unit' shall mean a unit that can operate in cogeneration mode;

(m) 'micro-cogeneration unit' shall mean a cogeneration unit with a maximum capacity below 50 kW_e;

(n) 'small scale cogeneration' shall mean cogeneration units with an installed capacity below 1 MW_e;

(o) 'cogeneration production' shall mean the sum of electricity and mechanical energy and useful heat from cogeneration.

In addition, the relevant definitions in Directive 2003/54/EC, and in Directive 2001/77/EC shall apply.

Article 4

Efficiency criteria of cogeneration

1. For the purpose of determining the efficiency of cogeneration in accordance with Annex III, the Commission shall, in accordance with the procedure referred to in Article 14(2), not later than 21 February 2006, establish harmonised efficiency reference values for separate production of electricity and heat. These harmonised efficiency reference values shall consist of a matrix of values differentiated by relevant factors, including year of construction and types of fuel, and must be based on a well-documented analysis taking, *inter alia*, into account data from operational use under realistic conditions, cross-border exchange of electricity, fuel mix and climate conditions as well as applied cogeneration technologies in accordance with the principles in Annex III.

([1]) OJ L 184, 17.7.1999, p. 23.

2. The Commission shall, in accordance with the procedure referred to in Article 14(2), review the harmonised efficiency reference values for separate production of electricity and heat referred to in paragraph 1, for the first time on 21 February 2011, and every four years thereafter, to take account of technological developments and changes in the distribution of energy sources.

3. Member States implementing this Directive before the establishment by the Commission of harmonised efficiency reference values for separate production of electricity and heat referred to in paragraph 1, should, until the date referred to in paragraph 1, adopt their national efficiency reference values for separate production of heat and electricity to be used for the calculation of primary energy savings from cogeneration in accordance with the methodology set out in Annex III.

Article 5

Guarantee of origin of electricity from high-efficiency cogeneration

1. On the basis of the harmonised efficiency reference values referred to in Article 4(1), Member States shall, not later than six months after adoption of these values, ensure that the origin of electricity produced from high-efficiency cogeneration can be guaranteed according to objective, transparent and non-discriminatory criteria laid down by each Member State. They shall ensure that this guarantee of origin of the electricity enable producers to demonstrate that the electricity they sell is produced from high efficiency cogeneration and is issued to this effect in response to a request from the producer.

2. Member States may designate one or more competent bodies, independent of generation and distribution activities, to supervise the issue of the guarantee of origin referred to in paragraph 1.

3. Member States or the competent bodies shall put in place appropriate mechanisms to ensure that the guarantee of origin are both accurate and reliable and they shall outline in the report referred to in Article 10(1) the measures taken to ensure the reliability of the guarantee system.

4. Schemes for the guarantee of origin do not by themselves imply a right to benefit from national support mechanisms.

5. A guarantee of origin shall:

— specify the lower calorific value of the fuel source from which the electricity was produced, specify the use of the heat generated together with the electricity and finally specify the dates and places of production,

— specify the quantity of electricity from high efficiency cogeneration in accordance with Annex II that the guarantee represents,

— specify the primary energy savings calculated in accordance with Annex III based on harmonised efficiency reference values established by the Commission as referred to in Article 4(1).

Member States may include additional information on the guarantee of origin.

6. Such guarantees of origin, issued according to paragraph 1, should be mutually recognised by the Member States, exclusively as proof of the elements referred in paragraph 5. Any refusal to recognise a guarantee of origin as such proof, in particular for reasons relating to the prevention of fraud, must be based on objective, transparent and non-discriminatory criteria.

In the event of refusal to recognise a guarantee of origin, the Commission may compel the refusing party to recognise it, particularly with regard to objective, transparent and non-discriminatory criteria on which such recognition is based.

Article 6

National potentials for high-efficiency cogeneration

1. Member States shall establish an analysis of the national potential for the application of high-efficiency cogeneration, including high-efficiency micro-cogeneration.

2. The analysis shall:

— be based on well-documented scientific data and comply with the criteria listed in Annex IV,

— identify all potential for useful heating and cooling demands, suitable for application of high-efficiency cogeneration, as well as the availability of fuels and other energy resources to be utilised in cogeneration,

— include a separate analysis of barriers, which may prevent the realisation of the national potential for high-efficiency cogeneration. In particular, this analysis shall consider barriers relating to the prices and costs of and access to fuels, barriers in relation to grid system issues, barriers in relation to administrative procedures, and barriers relating to the lack of internalisation of the external costs in energy prices.

3. Member States shall for the first time not later than 21 February 2007 and thereafter every four years, following a request by the Commission at least six months before the due date, evaluate progress towards increasing the share of high-efficiency cogeneration.

Article 7

Support schemes

1. Member States shall ensure that support for cogeneration — existing and future units — is based on the useful heat demand and primary energy savings, in the light of opportunities available for reducing energy demand through other economically feasible or environmental advantageous measures like other energy efficiency measures.

2. Without prejudice to Articles 87 and 88 of the Treaty, the Commission shall evaluate the application of support mechanisms used in Member States according to which a producer of cogeneration receives, on the basis of regulations issued by public authorities, direct or indirect support, which could have the effect of restricting trade.

The Commission shall consider whether those mechanisms contribute to the pursuit of the objectives set out in Articles 6 and 174(1) of the Treaty.

3. The Commission shall in the report referred to in Article 11 present a well-documented analysis on experience gained with the application and coexistence of the different support mechanisms referred to in paragraph 2 of this Article. The report shall assess the success, including cost-effectiveness, of the support systems in promoting the use of high-efficiency cogeneration in conformity with the national potentials referred to in Article 6. The report shall further review to what extent the support schemes have contributed to the creation of stable conditions for investments in cogeneration.

Article 8

Electricity grid system and tariff issues

1. For the purpose of ensuring the transmission and distribution of electricity produced from high-efficiency cogeneration the provisions of Article 7(1), (2) and (5) of Directive 2001/77/EC as well as the relevant provisions of Directive 2003/54/EC shall apply.

2. Until the cogeneration producer is an eligible customer under national legislation within the meaning of Article 21(1) of Directive 2003/54/EC, Member States should take the necessary measures to ensure that the tariffs for the purchase of electricity to back-up or top-up electricity generation are set on the basis of published tariffs and terms and conditions.

3. Subject to notification to the Commission, Member States may particularly facilitate access to the grid system of electricity produced from high-efficiency cogeneration from small scale and micro cogeneration units.

Article 9

Administrative procedures

1. Member States or the competent bodies appointed by the Member States shall evaluate the existing legislative and regulatory framework with regard to authorisation procedures or the other procedures laid down in Article 6 of Directive 2003/54/EC, which are applicable to high-efficiency cogeneration units.

Such evaluation shall be made with a view to:

(a) encouraging the design of cogeneration units to match economically justifiable demands for useful heat output and avoiding production of more heat than useful heat;

(b) reducing the regulatory and non-regulatory barriers to an increase in cogeneration;

(c) streamlining and expediting procedures at the appropriate administrative level; and

(d) ensuring that the rules are objective, transparent and non-discriminatory, and take fully into account the particularities of the various cogeneration technologies.

2. Member States shall — where this is appropriate in the context of national legislation — provide an indication of the stage reached specifically in:

(a) coordination between the different administrative bodies as regards deadlines, reception and treatment of applications for authorisations;

(b) the drawing up of possible guidelines for the activities referred to in paragraph 1, and the feasibility of a fast-track planning procedure for cogeneration producers; and

(c) the designation of authorities to act as mediators in disputes between authorities responsible for issuing authorisations and applicants for authorisations.

Article 10

Member States' reporting

1. Member States shall, not later than 21 February 2006, publish a report with the results of the analysis and evaluations carried out in accordance with Articles 5(3), 6(1), 9(1) and 9(2).

2. Member States shall not later than 21 February 2007 and thereafter every four years, following a request by the Commission at least six months before the due date, publish a report with the result of the evaluation referred to in Article 6(3).

3. Member States shall submit to the Commission, for the first time before the end of December 2004 covering data for the year 2003, and thereafter on an annual basis, statistics on national electricity and heat production from cogeneration, in accordance with the methodology shown in Annex II.

They shall also submit annual statistics on cogeneration capacities and fuels used for cogeneration. Member States may also submit statistics on primary energy savings achieved by application of cogeneration, in accordance with the methodology shown in Annex III.

Article 11

Commission reporting

1. On the basis of the reports submitted pursuant to Article 10, the Commission shall review the application of this Directive and submit to the European Parliament and to the Council not later than 21 February 2008 and thereafter every four years, a progress report on the implementation of this Directive.

In particular, the report shall:

(a) consider progress towards realising national potentials for high-efficiency cogeneration referred to in Article 6;

(b) assess the extent to which rules and procedures defining the framework conditions for cogeneration in the internal energy market are set on the basis of objective, transparent and non-discriminatory criteria taking due account of the benefits of cogeneration;

(c) examine the experiences gained with the application and coexistence of different support mechanisms for cogeneration;

(d) review efficiency reference values for separate production on the basis of the current technologies.

If appropriate, the Commission shall submit with the report further proposals to the European Parliament and the Council.

2. When evaluating the progress referred to in paragraph 1(a), the Commission shall consider to what extent the national potentials for high-efficiency cogeneration, referred to in Article 6, have been or are foreseen to be realised taking into account Member State measures, conditions, including climate conditions, and impacts of the internal energy market and implications of other Community initiatives such as 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 ([1]).

If appropriate, the Commission shall submit further proposals to the European Parliament and Council, notably aiming at the establishment of an action plan for the development of high efficiency cogeneration in the Community.

3. When evaluating the scope for further harmonisation of calculation methods as referred to in Article 4(1), the Commission shall consider the impact of the coexistence of calculations as referred to in Article 12, Annex II and Annex III, on the internal energy market also taking into account the experiences gained from national support mechanisms.

If appropriate, the Commission shall submit further proposals to the European Parliament and Council aiming at further harmonisation of the calculation methods.

Article 12

Alternative calculations

1. Until the end of 2010 and subject to prior approval by the Commission, Member States may use other methods than the one provided for in Annex II(b) to subtract possible electricity production not produced in a cogeneration process from the reported figures. However, for the purposes referred to in Article 5(1) and in Article 10(3), the quantity of electricity from cogeneration shall be determined in accordance with Annex II.

2. Member States may calculate primary energy savings from a production of heat and electricity and mechanical energy according to Annex III(c), without using Annex II to exclude the non-cogenerated heat and electricity parts of the same process. Such a production can be regarded as high-efficiency cogeneration provided it fulfils the efficiency criteria in Annex III(a) and, for cogeneration units with an electrical capacity larger than 25 MW, the overall efficiency is above 70 %. However, specification of the quantity of electricity from cogeneration produced in such a production, for issuing a guarantee of origin and for statistical purposes, shall be determined in accordance with Annex II.

3. Until the end of 2010, Member States may, using an alternative methodology, define a cogeneration as high-efficiency cogeneration without verifying that the cogeneration production fulfils the criteria in Annex III(a), if it is proved on national level that the cogeneration production identified by such an alternative calculation methodology on average fulfils the criteria in Annex III(a). If a guarantee of origin is issued for such production then the efficiency of the cogeneration production specified on the guarantee shall not exceed the threshold values of the criteria in Annex III(a) unless calculations in accordance with Annex III prove otherwise. However, specification of the quantity of electricity from cogeneration produced in such a production, for issuing a guarantee of origin and for statistical purposes, shall be determined in accordance with Annex II.

Article 13

Review

1. The threshold values used for calculation of electricity from cogeneration referred to in Annex II(a) shall be adapted to technical progress in accordance with the procedure referred to in Article 14(2).

2. The threshold values used for calculation of efficiency of cogeneration production and primary energy savings referred to in Annex III(a) shall be adapted to technical progress in accordance with the procedure referred to in Article 14(2).

3. The guidelines for determining the power to heat ratio referred to in Annex II(d) shall be adapted to technical progress in accordance with the procedure referred to in Article 14(2).

Article 14

Committee procedure

1. The Commission shall be assisted by a Committee.

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its rules of procedure.

Article 15

Transposition

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 21 February 2006. They shall forthwith inform the Commission thereof.

([1]) OJ L 275, 25.10.2003, p. 32.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such a reference on the occasion of their official publication. The Member States shall lay down the methods of making such reference.

Article 16

Amendment to Directive 92/42/EEC

The following indent shall be added to Article 3(1) of Directive 92/42/EEC:

'— cogeneration units as defined in Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on useful heat demand in the internal energy market (*).

(*) OJ L 52, 21.2.2004, p. 50.'

Article 17

Entry into force

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Union*.

Article 18

Addressees

This Directive is addressed to the Member States.

Done at Strasbourg, 11 February 2004.

For the European Parliament	*For the Council*
The President	*The President*
P. COX	M. McDOWELL

ANNEX I

Cogeneration technologies covered by this Directive

(a) Combined cycle gas turbine with heat recovery
(b) Steam backpressure turbine
(c) Steam condensing extraction turbine
(d) Gas turbine with heat recovery
(e) Internal combustion engine
(f) Microturbines
(g) Stirling engines
(h) Fuel cells
(i) Steam engines
(j) Organic Rankine cycles
(k) Any other type of technology or combination thereof falling under the definition laid down in Article 3(a)

ANNEX II

Calculation of electricity from cogeneration

Values used for calculation of electricity from cogeneration shall be determined on the basis of the expected or actual operation of the unit under normal conditions of use. For micro-cogeneration units the calculation may be based on certified values.

(a) Electricity production from cogeneration shall be considered equal to total annual electricity production of the unit measured at the outlet of the main generators;

(i) in cogeneration units of type (b), (d), (e), (f), (g) and (h) referred to in Annex I, with an annual overall efficiency set by Member States at a level of at least 75 %, and

(ii) in cogeneration units of type (a) and (c) referred to in Annex I with an annual overall efficiency set by Member States at a level of at least 80 %.

(b) In cogeneration units with an annual overall efficiency below the value referred to in paragraph (a)(i) (cogeneration units of type (b), (d), (e), (f), (g), and (h) referred to in Annex I) or with an annual overall efficiency below the value referred to in paragraph (a)(ii) (cogeneration units of type (a) and (c) referred to in Annex I) cogeneration is calculated according to the following formula:

$$E_{CHP} = H_{CHP} . C$$

where:

E_{CHP} is the amount of electricity from cogeneration

C is the power to heat ratio

H_{CHP} is the amount of useful heat from cogeneration (calculated for this purpose as total heat production minus any heat produced in separate boilers or by live steam extraction from the steam generator before the turbine).

The calculation of electricity from cogeneration must be based on the actual power to heat ratio. If the actual power to heat ratio of a cogeneration unit is not known, the following default values may be used, notably for statistical purposes, for units of type (a), (b), (c), (d), and (e) referred to in Annex I provided that the calculated cogeneration electricity is less or equal to total electricity production of the unit:

Type of the unit	Default power to heat ratio, C
Combined cycle gas turbine with heat recovery	0,95
Steam backpressure turbine	0,45
Steam condensing extraction turbine	0,45
Gas turbine with heat recovery	0,55
Internal combustion engine	0,75

If Member States introduce default values for power to heat ratios for units of type (f), (g), (h), (i), (j) and (k) referred to in Annex I, such default values shall be published and shall be notified to the Commission.

(c) If a share of the energy content of the fuel input to the cogeneration process is recovered in chemicals and recycled this share can be subtracted from the fuel input before calculating the overall efficiency used in paragraphs (a) and (b).

(d) Member States may determine the power to heat ratio as the ratio between electricity and useful heat when operating in cogeneration mode at a lower capacity using operational data of the specific unit.

(e) The Commission shall, in accordance with the procedure referred to in Article 14(2), establish detailed guidelines for the implementation and application of Annex II, including the determination of the power to heat ratio.

(f) Member States may use other reporting periods than one year for the purpose of the calculations according to paragraphs (a) and (b).

ANNEX III

Methodology for determining the efficiency of the cogeneration process

Values used for calculation of efficiency of cogeneration and primary energy savings shall be determined on the basis of the expected or actual operation of the unit under normal conditions of use.

(a) *High-efficiency cogeneration*

For the purpose of this Directive high-efficiency cogeneration shall fulfil the following criteria:

— cogeneration production from cogeneration units shall provide primary energy savings calculated according to point (b) of at least 10 % compared with the references for separate production of heat and electricity,

— production from small scale and micro cogeneration units providing primary energy savings may qualify as high-efficiency cogeneration.

(b) *Calculation of primary energy savings*

The amount of primary energy savings provided by cogeneration production defined in accordance with Annex II shall be calculated on the basis of the following formula:

$$PES = \left(1 - \frac{1}{\frac{CHP\ H\eta}{Ref\ H\eta} + \frac{CHP\ E\eta}{Ref\ E\eta}} \right) \times 100\ \%$$

Where:

PES is primary energy savings.

CHP Hη is the heat efficiency of the cogeneration production defined as annual useful heat output divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration.

Ref Hη is the efficiency reference value for separate heat production.

CHP Eη is the electrical efficiency of the cogeneration production defined as annual electricity from cogeneration divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration. Where a cogeneration unit generates mechanical energy, the annual electricity from cogeneration may be increased by an additional element representing the amount of electricity which is equivalent to that of mechanical energy. This additional element will not create a right to issue guarantees of origin in accordance with Article 5.

Ref Eη is the efficiency reference value for separate electricity production.

(c) *Calculations of energy savings using alternative calculation according to Article 12(2)*

If primary energy savings for a process are calculated in accordance with Article 12(2) the primary energy savings shall be calculated using the formula in paragraph (b) of this Annex replacing:

'CHP Hη' with 'Hη' and

'CHP Eη' with 'Eη',

where:

Hη shall mean the heat efficiency of the process, defined as the annual heat output divided by the fuel input used to produce the sum of heat output and electricity output.

Eη shall mean the electricity efficiency of the process, defined as the annual electricity output divided by the fuel input used to produce the sum of heat output and electricity output. Where a cogeneration unit generates mechanical energy, the annual electricity from cogeneration may be increased by an additional element representing the amount of electricity which is equivalent to that of mechanical energy. This additional element will not create a right to issue guarantees of origin in accordance with Article 5.

(d) Member States may use other reporting periods than one year for the purpose of the calculations according to paragraphs (b) and (c) of this Annex.

(e) For micro-cogeneration units the calculation of primary energy savings may be based on certified data.

(f) *Efficiency reference values for separate production of heat and electricity*

The principles for defining the efficiency reference values for separate production of heat and electricity referred to in Article 4(1) and in the formula set out in paragraph (b) of this Annex shall establish the operating efficiency of the separate heat and electricity production that cogeneration is intended to substitute.

The efficiency reference values shall be calculated according to the following principles:

1. For cogeneration units as defined in Article 3, the comparison with separate electricity production shall be based on the principle that the same fuel categories are compared.
2. Each cogeneration unit shall be compared with the best available and economically justifiable technology for separate production of heat and electricity on the market in the year of construction of the cogeneration unit.
3. The efficiency reference values for cogeneration units older than 10 years of age shall be fixed on the reference values of units of 10 years of age.
4. The efficiency reference values for separate electricity production and heat production shall reflect the climatic differences between Member States.

ANNEX IV

Criteria for analysis of national potentials for high-efficiency cogeneration

(a) The analysis of national potentials referred to in Article 6 shall consider:
- — the type of fuels that are likely to be used to realise the cogeneration potentials, including specific considerations on the potential for increasing the use of renewable energy sources in the national heat markets via cogeneration,
- — the type of cogeneration technologies as listed in Annex I that are likely to be used to realise the national potential,
- — the type of separate production of heat and electricity or, where feasible, mechanical energy that high-efficiency cogeneration is likely to substitute,
- — a division of the potential into modernisation of existing capacity and construction of new capacity.

(b) The analysis shall include appropriate mechanisms to assess the cost effectiveness — in terms of primary energy savings — of increasing the share of high-efficiency cogeneration in the national energy mix. The analysis of cost effectiveness shall also take into account national commitments accepted in the context of the climate change commitments accepted by the Community pursuant to the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

(c) The analysis of the national cogeneration potential shall specify the potentials in relation to the timeframes 2010, 2015 and 2020 and include, where feasible, appropriate cost estimates for each of the timeframes.

Community guidelines on State aid for environmental protection

(2001/C 37/03)

A. INTRODUCTION

1. In 1994 the Commission adopted the Community guidelines on State aid for environmental protection [1], which expired on 31 December 1999. In accordance with point 4.3 of the guidelines, it conducted a review in 1996 and concluded that there was no need to make any amendments in the meantime. On 22 December 1999 it decided to extend the validity of the guidelines until 30 June 2000 [2]. On 28 June 2000 the Commission decided to extend the validity of the guidelines to 31 December 2000 [3].

2. Since the guidelines were adopted in 1994, action in the field of the environment has evolved at the initiative of the Member States and the Community and at world level, in particular following the adoption of the Kyoto Protocol. Member States are granting State aid more frequently in the energy sector, for example, and the aid they provide is frequently in forms which have been rather uncommon until recently, such as tax reductions and exemptions. New forms of operating aid are also on the increase. The Commission ought therefore to adopt new guidelines, which will be needed in order to familiarise Member States and firms with the criteria that it will apply in deciding whether or not aid measures planned by the Member States are compatible with the common market.

3. Under Article 6 of the EC Treaty, environmental policy objectives must be integrated into the Commission's policy on aid controls in the environmental sector, in particular with a view to promoting sustainable development. Accordingly, competition policy and environmental policy are not mutually antagonistic, but the requirements of environmental protection need to be integrated into the definition and implementation of competition policy, in particular so as to promote sustainable development [4].

4. However, taking long-term environmental requirements into account does not mean that all aid must be authorised. Consideration has to be given to the effects the aid may have in terms of sustainable development and full application of the 'polluter pays' principle. Some forms of aid certainly do satisfy these tests, particularly where they make it possible to achieve a high level of environmental protection while avoiding any conflict with the principle of the internalisation of costs. But other forms of aid, as well as having adverse effects on trade between Member States and on competition, may run counter to the 'polluter pays' principle and may hinder the establishment of a process of sustainable development. This might be the case, for example, where aid is designed merely to facilitate compliance with new mandatory Community standards.

5. The Commission's approach in these guidelines therefore consists in determining whether, and under what conditions, State aid may be regarded as necessary to ensure environmental protection and sustainable development without having disproportionate effects on competition and economic growth. This analysis must be carried out in the light of the lessons that can be drawn from the functioning of the 1994 guidelines and in the light of the changes in environmental policy that have occurred since then.

B. DEFINITIONS AND SCOPE

6. The concept of environmental protection: for the purposes of these guidelines, the Commission takes 'environmental protection' to mean any action designed to remedy or prevent damage to our physical surroundings or natural resources, or to encourage the efficient use of these resources.

   The Commission regards energy-saving measures and the use of renewable sources of energy as action to protect the environment. Energy-saving measures should be understood as meaning among other things action which enables companies to reduce the amount of energy used in their production cycle. The design and manufacture of machines or means of transport which can be operated with fewer natural resources are not covered by these guidelines. Action taken within plants or other production units with a view to improving safety or hygiene is important and may be eligible for certain types of aid, but it is not covered by these guidelines.

   The concept of the internalisation of costs: in these guidelines the 'internalisation of costs' means the principle that all costs associated with the protection of the environment should be included in firms' production costs.

   The 'polluter pays' principle: this is the principle that the costs of measures to deal with pollution should be borne by the polluter who causes the pollution.

   Polluter: a polluter is someone who directly or indirectly damages the environment or who creates conditions leading to such damage [5].

[1] OJ C 72, 10.3.1994, p. 3.

[2] OJ C 14, 19.1.2000, p. 8.

[3] OJ C 184, 1.7.2000, p. 25.

[4] The Commission also set out its commitment to integrating environmental policy into other policy areas in its working paper of 26 May 1999 entitled 'Integrating environmental aspects into all relevant policy areas' and in its report to the Helsinki European Council on integrating environmental concerns and sustainable development into Community policies (SEC(1999) 1941 final).

[5] Council Recommendation of 3 March 1975 regarding cost allocation and action by public authorities on environmental matters (OJ L 194, 25.7.1975, p. 1).

Prices to reflect costs: this principle states that the prices of goods or services should incorporate the external costs associated with the negative impact on the environment of their production and marketing.

Community standard: mandatory Community standard setting the levels to be attained in environmental terms and the obligation under Community law to use the best available techniques (BAT) ([6]) which do not entail excessive costs.

Renewable energy sources: renewable non-fossil energy sources, viz. wind energy, solar energy, geothermal energy, wave energy, tidal energy, hydroelectric installations with a capacity below 10 MW and biomass, where biomass is defined as products from agriculture and forestry, vegetable waste from agriculture, forestry and the food production industry, and untreated wood waste and cork waste ([7]).

Electric power generated from renewable energy sources: electric power generated by plant using only renewable energy sources, and that share of electric power generated from renewable energy sources in hybrid plant using traditional energy sources, in particular for contingency purposes ([8]).

Environmental tax: 'One likely feature for a levy to be considered as *environmental* would be that the taxable base of the levy has a clear negative effect on the environment. However, a levy could also be regarded as environmental if it has a less clear, but nevertheless discernible positive environmental effect. [. . .] In general, it is up to the Member State to show the estimated environmental effect of the levy [. . .].' ([9]).

7. Scope: These guidelines apply to aid ([10]) to protect the environment in all sectors governed by the EC Treaty, including those subject to specific Community rules on State aid (steel processing ([11]), shipbuilding, motor vehicles, synthetic fibres, transport, and fisheries), but excluding the field covered by the Community guidelines for State aid in the agriculture sector ([12]). These guidelines apply to fisheries and aquaculture, without prejudice to the application of the provisions set out in Council Regulation (EC) No 2792/99 of 17 December 1999 laying down the detailed rules and arrangements regarding Community structural assistance in the fisheries sector ([13]) and in the guidelines for examining State aid in the fisheries and aquaculture sector ([14]). State aid for R & D in the environmental field is subject to the rules set out in the Community framework for State aid for research and development ([15]). Similarly, the Commission considers that the characteristics of aid for environmental training activities do not justify such aid being treated separately, and it will therefore examine it in accordance with the provisions of Commission Regulation (EC) No 68/2001 of 12 January 2001 on the application of Articles 87 and 88 of the EC Treaty to training aid ([16]).

By virtue of Article 3 of Commission Decision No 2496/96/ECSC of 18 December 1996 establishing Community rules for State aid to the steel industry ([17]), aid for environmental protection in the steel industry will continue to be analysed in accordance with the Community guidelines on State aid for environmental protection published in Official Journal C 72 of 10 March 1994 until the expiry of the ECSC Treaty.

These guidelines do not apply to stranded costs, which will be dealt with separately ([18]). The Commission would point out that, by virtue of Commission Regulation (EC) No 69/2001 of 12 January 2001 on the application of Articles 87 and 88 of the EC Treaty to *de minimis* ([19]) aid, aid of not more than EUR 100 000 granted to a firm for a period of three years is not caught by Article 87. That Regulation does not, however, apply to agriculture, fisheries, and transport, nor to the sectors covered by the ECSC Treaty.

([6]) The concept of best available techniques was introduced into Community legislation by Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (OJ L 129, 18.5.1976, p. 23) and appeared again, in slightly amended form, in Council Directive 84/360/EEC of 28 June 1984 on the combating of air pollution from industrial plants (OJ L 188, 16.7.1984, p. 20). Council Directive 96/61/EEC of 24 September 1996 concerning integrated pollution prevention and control (OJ L 257, 10.10.1996, p. 26; 'the IPPC Directive') developed and confirmed this concept. The scope of the IPPC Directive covers industrial installations with a high pollution potential. The Directive has applied since November 1999 to new installations or existing installations which have undergone substantial changes. Existing installations must comply with the rules of the IPPC Directive by October 2007. Until that date the provisions of the two abovementioned directives relating to the concept of BAT continue to apply. As a rule, the concrete standards — i.e. the emission or consumption limit values based on the use of the best available techniques — are not set by the Community but by the national authorities.

([7]) This definition is contained in the Commission proposal for a Parliament and Council Directive on the promotion of electricity from renewable sources in the internal electricity market (OJ C 311 E, 31.10.2000, p. 320). Once the Directive has been adopted by Parliament and the Council, the Commission will apply the definition given in the final text.

([8]) Same observation as for footnote 7.

([9]) Environmental taxes and charges in the single market (COM(97) 9 final, 26.3.1997).

([10]) The purpose of these guidelines is not to discuss the concept of State aid, which derives from Article 87(1) of the EC Treaty and from the case law of the Court of Justice and the Court of First Instance.

([11]) Within the limits laid down in the second paragraph of point 7.

([12]) OJ C 28, 1.2.2000, p. 2.

([13]) OJ L 337, 30.12.1999, p. 10.

([14]) The Commission would point out that these guidelines concern only environmental aid, without prejudice to the applicability of other provisions governing State aid, subject to the limitations of the rules on combinations of aid in point 74 below.

([15]) OJ C 45, 17.2.1996, p. 5.

([16]) OJ L 10, 13.1.2001, p. 20.

([17]) OJ L 338, 28.12.1996, p. 42.

([18]) Stranded costs are costs which firms must bear because of commitments they made and are no longer able to honour as a result of the liberalisation of the sector in question.

([19]) OJ L 10, 13.1.2001, p. 30.

C. **POLICY FOR CONTROLLING STATE AID AND ENVIRONMENTAL POLICY**

8. During the 1970s and 1980s Community policy on the environment took an essentially corrective approach. The emphasis was on standards intended to reflect the main concerns of environmental policy.

9. The fifth action programme on the environment, entitled 'Towards sustainability' and adopted in 1993 ([20]), represents something of a break with that approach. It emphasises the need to conduct a long-term policy with the aim of promoting sustainable development. The objective is to reconcile on a lasting basis the development of the European economy with the need to protect the environment. Community action must no longer be limited to reacting to environmental problems but, as explicitly provided for in Article 6 of the EC Treaty as amended by the Treaty of Amsterdam, environmental protection requirements must be integrated into the definition and implementation of all Community policies and activities, and must foster the active involvement of socio-economic operators.

10. Article 174 of the Treaty also provides for Community policy to be based on the 'polluter pays' principle. The costs associated with protecting the environment should be internalised by firms just like other production costs. In order to implement this policy, the Community will have to use a series of instruments: regulation, and in particular the adoption of standards, but also voluntary agreements or economic instruments.

11. In 1996 the Commission drew up a progress report on the fifth action programme on the environment. The report states that the programme's overall strategy and objectives are still valid. There can be no doubt that progress has been made in integrating environmental and sustainability aspects into the other Community policies. However, what has still not occurred is a genuine change in attitude on the part of all the interested parties: policymakers, firms and the general public. It is important to develop the concept of shared responsibility for the environment and to make the general public aware of the issues at stake.

12. In 1999 the Commission adopted a global assessment of the fifth action programme. The assessment noted that, although the programme raised awareness of the need for stakeholders, citizens and decision-makers in other sectors to pursue environmental objectives actively, less progress had been made overall in changing economic trends and modes of conduct which were harmful to the environment.

13. The assessment also noted that 'it is increasingly clear that damages to the environment have costs to society as a whole and, conversely, that environmental action can generate benefits in the form of economic growth, employment and competitiveness' and that 'the effective application of the "polluter pays" principle and the full internalisation of environmental costs onto polluters remains a critical process' ([21]).

14. The Commission's policy on the control of State aid for environmental purposes therefore needs to satisfy a double imperative:

(a) to ensure the competitive functioning of markets, while promoting the completion of the single market and increased competitiveness in firms;

(b) to ensure that the requirements of environmental protection are integrated into the definition and implementation of competition policy, in particular in order to promote sustainable development. The Commission here believes that internalisation of costs is a priority objective that can be achieved in various ways, including by way of instruments based on market laws or those based on a regulatory approach, these being the most effective tools for achieving the objectives described above.

15. Cost internalisation helps to ensure that prices accurately reflect costs in so far as economic operators allocate their financial resources on the basis of the prices of the goods and services they wish to buy. The progress report on the fifth programme emphasises that this aim has not been realised because prices do not reflect ecological costs. This in turn makes it more difficult to raise public awareness and promotes overexploitation of natural resources.

16. Ensuring that prices reflect costs at all stages of the economic process is the best way of making all parties aware of the cost of protecting the environment. Apart from its potentially adverse effects on trade and competition, State aid generally undermines that aim because it enables certain firms to reduce costs artificially and not to reveal the costs of environmental protection to consumers. In the long term, therefore, some forms of State aid run counter to the objectives of sustainable development.

17. The Community guidelines on State aid adopted by the Commission in 1994 form an integral part of this Community policy. In general, the 'polluter pays' principle and the need for firms to internalise the costs associated with protecting the environment would appear to militate against the granting of State aid.

18. Nevertheless, the guidelines state that aid can be justified in two instances:

(a) in certain specific circumstances in which it is not yet possible for all costs to be internalised by firms and the aid can therefore represent a **temporary second-best solution** by encouraging firms to adapt to standards;

([20]) OJ C 138, 17.5.1993, p. 1.

([21]) Europe's environment: what directions for the future? The global assessment of the European Community programme of policy and action in relation to the environment and sustainable development, 'Towards sustainability' (COM(1999) 543 final of 24.11.1999).

(b) the aid may also act as an **incentive** to firms to improve on standards or to undertake further investment designed to reduce pollution from their plants.

19. In the Community guidelines adopted in 1994, the Commission took the view that, in certain cases, total cost internalisation was not yet possible and that aid might be necessary on a temporary basis. The following changes have nevertheless taken place since 1994:

(a) since the adoption of the fifth action programme on the environment, which was already based on the 'polluter pays' principle and cost internalisation, firms have had seven years in which to adapt to the gradual application of the principle;

(b) the Commission's 1996 progress report on the fifth action programme and the 1999 evaluation report restate the need to provide for cost internalisation and to use market instruments in order to make significant progress in improving the environment;

(c) the use of market instruments and proper pricing is also advocated by the Kyoto Protocol on climate change.

20. The Commission's position is therefore that aid should no longer be used to make up for the absence of cost internalisation. If environmental requirements are to be taken into account in the long term, prices must accurately reflect costs and environmental protection costs must be fully internalised. Consequently, the Commission takes the view that aid is not justified in the case of investments designed merely to bring companies into line with new or existing Community technical standards. In its view, however, in order to address the special difficulties encountered by SMEs, it should be possible to grant them aid for adapting to new Community standards for a period of three years from the adoption of such standards. Aid may though be useful where it serves as an incentive to achieve levels of protection which are higher than those required by Community standards. This is the case when a Member State decides to adopt standards which are more stringent than the Community standards so as to achieve a higher level of environmental protection. It will also apply when a firm invests in environmental protection over and above the strictest existing Community standards or where no Community standards exist.

21. However, it has not been shown that aid has an incentive effect of this kind where it is designed merely to help firms to comply with existing or new Community technical standards. Such standards constitute the ordinary law with which firms must comply, and it is not necessary to provide them with aid in order to encourage them to obey the law ([22]).

Specific case of the energy sector and tax reductions

22. Since the guidelines were adopted in 1994, the energy sector has undergone major changes which need to be taken into consideration.

23. Certain Member States have adopted, are in the process of adopting or might consider adopting taxes the effects of which are conducive to environmental protection. In some cases, exemptions from or reductions in taxes are granted to firms in particular categories in order to avoid placing them in a difficult competitive situation. The Commission takes the view that such measures may constitute State aid within the meaning of Article 87 of the Treaty. However, the adverse effects of such aid can be offset by the positive effects of adopting taxes. Accordingly, if such exemptions are necessary to ensure the adoption or continued application of taxes applicable to all products, the Commission takes the view that they are acceptable, subject to certain conditions and for a limited period of time. This period may last for 10 years if the conditions are met. Thereafter, Member States will remain free to renotify the measures in question to the Commission, which could adopt the same approach in its analysis while taking into consideration the positive results obtained in environmental terms.

24. Member States have also taken action in recent years to promote the use of renewable sources of energy and combined heat and energy production, which has the encouragement of the Commission given the major advantages for the environment. The Commission therefore takes the view that, where measures to promote renewable sources of energy and the combined production of electric power and heat constitute State aid, they are acceptable subject to certain conditions. It must be certain, however, that such aid is not in breach of other provisions of the Treaty or secondary legislation.

D. **RELATIVE IMPORTANCE OF ENVIRONMENTAL AID**

25. The data in the eighth survey on State aid in the European Union in the manufacturing and certain other sectors ([23]) show that between 1996 and 1998 environmental aid accounted on average for only 1,85 % of total aid granted to the manufacturing and service sectors.

26. In the period 1994-1999 environmental aid was provided predominantly in the form of grants. Proportionally speaking, little use was made of the other forms of aid: low-interest loans, State guarantees, etc.

27. As to the sectors receiving aid, the period 1998-1999 saw an increase in aid for measures in the energy sector, whether in support of energy saving or to promote the use of new or renewable sources of energy, especially in the form of ecotaxes.

([22]) With the exception of SMEs, as provided for in point 20.

([23]) COM(2000) 205 final, 11.4.2000.

E. GENERAL CONDITIONS FOR AUTHORISING ENVIRONMENTAL AID

E.1. Investment aid

E.1.1. *Transitional investment aid to help SMEs adapt to new Community standards*

28. For a period of three years from the adoption of new compulsory Community standards, investment aid to help SMEs meet new standards may be authorised up to a maximum of 15 % gross of eligible costs.

E.1.2. *General conditions for authorising investment aid to firms improving on Community standards*

29. Investment aid enabling firms to improve on the Community standards applicable may be authorised up to not more than 30 % gross of the eligible investment costs as defined in point 37. These conditions also apply to aid where firms undertake investment in the absence of mandatory Community standards or where they have to undertake investment in order to comply with national standards that are more stringent than the applicable Community standards.

E.1.3. *Investment in energy*

30. Investments in energy saving as defined in point 6 are deemed equivalent to investments to promote environmental protection. Such investments play a major role in achieving economically the Community objectives for the environment ([24]). They are, therefore, eligible for investment aid at the basic rate of 40 % of eligible costs.

31. Investments in the combined production of electric power and heat may also qualify under these guidelines if it can be shown that the measures beneficial in terms of the protection of the environment because the conversion efficiency ([25]) is particularly high, because the measures will allow energy consumption to be reduced or because the production process will be less damaging to the environment. In this connection, the Commission will take into particular consideration the type of primary energy used in the production process. It should also be borne in mind that increased energy use from combined production of heat and power is a Community priority for the environment ([26]). Such investment may, therefore, be given aid at the basic rate of 40 % of eligible cost.

32. Investments to promote renewable sources of energy are deemed equivalent to environmental investments undertaken in the absence of mandatory Community standards. It should also be borne in mind that measures in support of renewable sources of energy are one of the Community's environmental priorities ([27]) and one of the long-term objectives that should be encouraged most. The rate of aid for investment in support of these forms of energy is therefore 40 % of eligible costs.

The Commission takes the view that renewable energy installations serving all the needs of an entire community such as an island or residential area should also benefit. Investments made in this connection may qualify for a bonus of 10 percentage points on top of the basic rate of 40 % of eligible costs.

The Commission considers that, where it can be shown to be necessary, Member States will be able to grant investment aid to support renewable energy, up to 100 % of eligible costs. The installations concerned will not be entitled to receive any further support.

E.1.4. *Bonus for firms located in assisted regions*

33. In regions which are eligible for national regional aid, firms may receive aid to promote regional development. To encourage them to invest further in the environment, it should be possible, where appropriate, to provide additional aid towards any environmental investment carried out in accordance with point 29 ([28]).

34. Consequently, in regions eligible for regional aid, the maximum rate of environmental aid applicable to eligible costs as defined in point 37 below is determined as follows.

In assisted regions the maximum rate of aid applicable is the higher of the following two options:

(a) either the basic rate for environmental investment aid, i.e. 30 % gross (standard system), 40 % gross (investments in energy saving, in renewable sources of energy or to promote the combined production of electric power and heat) or 50 % gross (investments in renewable sources of energy that supply an entire community), plus 5 percentage points gross in the regions covered by Article 87(3)(c) and 10 percentage points in the regions covered by Article 87(3)(a) ([29]);

([24]) Action plan to improve energy efficiency in the European Community (COM (2000) 247 final, 26.4.2000).

([25]) By 'conversion efficiency' is meant the ratio between the quantity of primary energy used to produce a secondary form of energy and the quantity of secondary energy actually produced. It is calculated as follows: electric energy produced + thermal energy produced/energy used.

([26]) Council Resolution of 18 December 1997 on a Community strategy to promote combined heat and power (OJ C 4, 8.1.1998, p. 1).

([27]) Council Resolution of 8 June 1998 on renewable sources of energy (OJ C 198, 24.6.1998, p. 1).

([28]) These bonuses are not available where the Member State grants investment aid in accordance with the third paragraph of point 32 (aid of up to 100 % of eligible costs).

([29]) Investments in assisted regions are eligible for investment aid if the conditions of the guidelines on regional State aid (OJ C 74, 10.3.1998, p. 9) are met.

(b) or the regional aid rate plus 10 percentage points gross.

E.1.5. ***Bonus for SMEs***

35. Where investments of the kind referred to in points 29 to 32 are carried out by small or medium-sized enterprises, an increase of 10 percentage points gross may be authorised ([30]). For the purposes of these guidelines, the definition of SMEs is that given by the relevant Community texts ([31]).

The above bonuses for assisted regions and SMEs may be combined, but the maximum rate of environmental aid may never exceed 100 % gross of the eligible costs. SMEs do not qualify for a double bonus either under the provisions applicable to regional aid or under those applicable in the environmental field ([32]).

E.1.6. ***The investments concerned***

36. The investments concerned are investments in land which are strictly necessary in order to meet environmental objectives, investments in buildings, plant and equipment intended to reduce or eliminate pollution and nuisances, and investments to adapt production methods with a view to protecting the environment.

Spending on technology transfer through the acquisition of operating licences or of patented and non-patented know-how may also qualify. But any such intangible asset must satisfy the following tests:

(a) it must be regarded as a depreciable asset;

(b) it must be purchased on market terms, from a firm in which the acquirer has no power of direct or indirect control;

(c) it must be included in the assets of the firm, and remain in the establishment of the recipient of the aid and be used there for at least five years. This condition does not apply if these intangible assets are technically out of date. If it is sold during those five years, the yield from the sale must be deducted from the eligible costs and all or part of the amount of aid must, where appropriate, be reimbursed.

([30]) This bonus is not available where the Member State grants investment aid in accordance with the third paragraph of point 32 (aid of up to 100 % of eligible costs).

([31]) Commission Recommendation 96/280/EC of 3 April 1996 concerning the definition of small and medium-sized enterprises (OJ L 107, 30.4.1996, p. 4).

([32]) Investments by SMEs are eligible for investment aid under the provisions of Commission Regulation (EC) No 70/2001 of 12 January 2001 on the application of Articles 87 and 88 of the EC Treaty to State aid for small and medium-sized enterprises (OJ L 10, 13.1.2001, p. 33).

E.1.7. ***Eligible costs***

37. Eligible costs must be confined strictly to the extra investment costs necessary to meet the environmental objectives.

This has the following consequences: where the cost of investment in environmental protection cannot be easily identified in the total cost, the Commission will take account of objective and transparent methods of calculation, e.g. the cost of a technically comparable investment that does not though provide the same degree of environmental protection.

In all cases, eligible costs must be calculated net of the benefits accruing from any increase in capacity, cost savings engendered during the first five years of the life of the investment and additional ancillary production during that five-year period ([33]).

For renewable energy, eligible investment costs are normally the extra costs borne by the firm compared with a conventional power plant with the same capacity in terms of the effective production of energy.

Where SMEs adapt to new Community standards, eligible costs include additional investments needed to attain the level of environmental protection required by those standards.

Where the firm is adapting to national standards adopted in the absence of Community standards, the eligible costs consist of the additional investment costs necessary to achieve the level of environmental protection required by the national standards.

Where the firm is adapting to national standards which are more stringent than the Community standards or undertakes a voluntary improvement on Community standards, the eligible costs consist of the additional investment costs necessary to achieve a level of environmental protection higher than the level required by the Community standards. The cost of investments needed to reach the level of protection required by the Community standards is not eligible.

Where no standards exist, eligible costs consist of the investment costs necessary to achieve a higher level of environmental protection than that which the firm or firms in question would achieve in the absence of any environmental aid.

([33]) If the investments are concerned solely with environmental protection without any other economic benefits, no additional reduction will be applied in determining the eligible costs.

E.1.8. ***Rehabilitation of polluted industrial sites***

38. Interventions made by firms repairing environmental damage by rehabilitating polluted industrial sites may come within the scope of these guidelines ([34]). The environmental damage concerned may be damage to the quality of the soil or of surface water or groundwater ([35]).

Where the person responsible for the pollution is clearly identified, that person must finance the rehabilitation in accordance with the 'polluter pays' principle, and no State aid may be given. By 'person responsible for the pollution' is meant the person liable under the law applicable in each Member State, without prejudice to the adoption of Community rules in the matter.

Where the person responsible for the pollution is not identified or cannot be made to bear the cost, the person responsible for the work may receive aid ([36]).

Aid for the rehabilitation of polluted industrial sites may amount to up to 100 % of the eligible costs, plus 15 % of the cost of the work. The eligible costs are equal to the cost of the work less the increase in the value of the land.

The total amount of aid may under no circumstances exceed the actual expenditure incurred by the firm.

E.1.9. ***Relocation of firms***

39. The Commission takes the view that as a rule the relocation of firms to new sites does not constitute environmental protection and does not therefore give entitlement to aid under these guidelines.

The granting of aid may, however, be justified when a firm established in an urban area or in a Natura 2000 designated area lawfully carries on an activity that creates major pollution and must, on account of this location, move from its place of establishment to a more suitable area.

All the following criteria must be satisfied at the same time:

(a) The change of location must be dictated on environmental protection grounds and must have been ordered by administrative or judicial decision.

(b) The firm must comply with the strictest environmental standards applicable in the new region where it is located.

A firm satisfying the above conditions may receive investment aid in accordance with point 29. The provisions of point 35 concerning the granting of a bonus for SMEs will apply.

In order to determine the amount of eligible costs in the case of relocation aid, the Commission will take into account the yield from the sale or renting of the plant or land abandoned, the compensation paid in the event of expropriation and the costs connected with the purchase of land or the construction or purchase of new plant of the same capacity as the plant abandoned. Account may also be taken of any other gains connected with the transfer of the plant, notably gains resulting from an improvement, on the occasion of the transfer, in the technology used and accounting gains associated with better use of the plant. Investments relating to any capacity increase may not be taken into consideration in calculating the eligible costs conferring entitlement to the granting of environmental aid.

If the administrative or judicial decision ordering the change of location results in the early termination of a contract for the renting of land or buildings, any penalties imposed on the firm for having terminated the contract may be taken into consideration in calculating the eligible costs.

E.1.10. ***Common rules***

40. Aid for investment to improve on Community standards or undertaken where no Community standards exist may not be granted where such improvements merely bring companies into line with Community standards already adopted but not yet in force. A firm may be given aid to enable it to comply with national standards which are more stringent than Community standards or where no Community standards exist only if it complies with the national standards by the final date laid down in the relevant national measures. Investments carried out after that date do not qualify ([37]).

E.2. **Aid to SMEs for advisory/consultancy services in the environmental field**

41. Advisory/consultancy services play an important part in helping SMEs to make progress in environmental protection. The Commission therefore takes the view that aid may be granted under the provisions of Regulation (EC) No 70/200138 ([38]).

([34]) The Commission would point out that rehabilitation work carried out by public authorities is not as such caught by Article 87 of the Treaty. Problems of State aid may, however, arise if the land is sold after rehabilitation at a price below its market value.

([35]) All expenditure incurred by a firm in rehabilitating its site, whether or not such expenditure can be shown as a fixed asset on its balance sheet, ranks as eligible investment in the case of the rehabilitation of polluted sites.

([36]) The person responsible for performing the work need not necessarily be the person responsible for the pollution in the meaning in which that expression is used here.

([37]) The rules set out in this point are without prejudice to point 28 concerning aid for SMEs.

([38]) Reference given in footnote 32.

E.3. **Operating aid**

E.3.1. ***Rules applicable to all operating aid to promote waste management and energy saving***

42. The following rules apply to two types of operating aid, namely:

(a) aid for the management of waste where such management is in line with the hierarchical classification of the principles of waste management ([39]);

(b) aid in the energy-saving field.

43. Where such aid is shown to be absolutely necessary, it should be strictly limited to compensating for extra production costs by comparison with the market prices of the relevant products or services ([40]). Such aid must also be temporary and, as a general rule, must be wound down over time, so as to provide an incentive for prices to reflect costs reasonably rapidly.

44. The Commission takes the view that firms should normally bear the costs of treating industrial waste in accordance with the 'polluter pays' principle. However, operating aid may be necessary where national standards are introduced which are more stringent than the applicable Community rules, or where national standards are introduced in the absence of Community rules, so that firms temporarily lose competitiveness at international level.

Firms receiving operating aid towards the treatment of industrial or non-industrial waste must finance the service provided in proportion to the amount of waste they produce and/or the cost of treatment.

45. All such operating aid is subject to a limited duration of five years where the aid is 'degressive'. Its intensity may amount to 100 % of the extra costs in the first year but must have fallen in a linear fashion to zero by the end of the fifth year.

46. In the case of 'non-degressive' aid, its duration is limited to five years and its intensity must not exceed 50 % of the extra costs.

([39]) Classification given in the Community strategy for waste management (COM(96) 399 final of 30.7.1996). In this communication, the Commission recalls that waste management is a priority objective for the Community in order to reduce the risks to the environment. The concept of waste treatment must be looked at from three angles: re-utilisation, recycling and recovery. Waste whose production is unavoidable must be treated and eliminated without danger.

([40]) The concept of production costs must be understood as being net of any aid but inclusive of a normal level of profit.

E.3.2. ***Rules applicable to all operating aid in the form of tax reductions or exemptions***

47. When adopting taxes that are to be levied on certain activities for reasons of environmental protection, Member States may deem it necessary to make provision for temporary exemptions for certain firms notably because of the absence of harmonisation at European level or because of the temporary risks of a loss of international competitiveness. In general, such exemptions constitute operating aid caught by Article 87 of the EC Treaty. In analysing these measures, it has to be ascertained among other things whether the tax is to be levied as the result of a Community decision or an autonomous decision on the part of a Member State.

48. If the tax is to be levied as the result of an autonomous decision on the part of a Member State, the firms affected may have some difficulty in adapting rapidly to the new tax burden. In such circumstances there may be justification for a temporary exemption enabling certain firms to adapt to the new situation.

49. If the tax is to be levied as the result of a Community directive, there are two possible scenarios:

(a) a Member State applies tax to certain products at a rate higher than the minimum rate laid down in the Community directive and grants an exemption to certain firms, which, as a result, pay tax at a rate which is lower but nevertheless at least equal to the minimum rate set by the directive. The Commission takes the view that, in those circumstances, a temporary exemption may be justified to enable firms to adapt to higher taxation and to provide them with an incentive to act in a more environmentally friendly manner;

(b) a Member State applies tax to certain products at the minimum rate laid down in the Community directive and grants an exemption to certain firms, which are thus subject to taxation at a rate below the minimum rate. If such an exemption is not authorised by the directive in question, it will constitute aid which is incompatible with Article 87 of the Treaty. If it is authorised by the directive, the Commission may take the view that it is compatible with Article 87 in so far as it is necessary and is not disproportionate in the light of the Community objectives pursued. The Commission will be specially concerned to ensure that any such exemption is strictly limited in time.

50. In general, the tax measures in question should make a significant contribution to protecting the environment. Care should be taken to ensure that the exemptions do not, by their very nature, undermine the general objectives pursued.

51. These exemptions can constitute operating aid which may be authorised on the following conditions:

1. When, for environmental reasons, a Member State introduces a **new tax** in a sector of activity or on products in respect of which no Community tax harmonisation has been carried out or when the tax envisaged by the Member State exceeds that laid down by Community legislation, the Commission takes the view that exemption decisions covering a 10-year period with no degressivity may be justified in two cases:

(a) these exemptions are conditional on the conclusion of agreements between the Member State concerned and the recipient firms whereby the firms or associations of firms undertake to achieve environmental protection objectives during the period for which the exemptions apply or when firms conclude voluntary agreements which have the same effect. Such agreements or undertakings may relate, among other things, to a reduction in energy consumption, a reduction in emissions or any other environmental measure. The substance of the agreements must be negotiated by each Member State and will be assessed by the Commission when the aid projects are notified to it. Member States must ensure strict monitoring of the commitments entered into by the firms or associations of firms. The agreements concluded between a Member State and the firms concerned must stipulate the penalty arrangements applicable if the commitments are not met.

These provisions also apply where a Member State makes a tax reduction subject to conditions that have the same effect as the agreements or commitments referred to above;

(b) these exemptions need not be conditional on the conclusion of agreements between the Member State concerned and the recipient firms if the following alternative conditions are satisfied:

— where the reduction concerns a Community tax, the amount effectively paid by the firms after the reduction must remain higher than the Community minimum in order to provide the firms with an incentive to improve environmental protection,

— where the reduction concerns a domestic tax imposed in the absence of a Community tax, the firms eligible for the reduction must nevertheless pay a significant proportion of the national tax.

2. The provisions in point 51.1 may be applied to existing taxes if the following two conditions are satisfied at the same time:

(a) the tax in question must have an appreciable positive impact in terms of environmental protection;

(b) the derogations for the firms concerned must have been decided on when the tax was adopted or must have become necessary as a result of a significant change in economic conditions that placed the firms in a particularly difficult competitive situation. In the latter instance, the amount of the reduction may not exceed the increase in costs resulting from the change in economic conditions. Once there is no longer any increase in costs, the reduction must no longer apply.

3. Member States may also encourage the development of processes for producing electric power from conventional energy sources such as gas that have an energy efficiency very much higher than the energy efficiency obtained with conventional production processes. In such cases, given the importance of such techniques for environmental protection and provided that the primary energy used reduces significantly the negative effects in terms of environmental protection, the Commission takes the view that total exemptions from taxes may be justified for a period of five years where aid is non-degressive. Derogations for 10 years may also be granted in accordance with the conditions set out in points 51.1 and 51.2.

52. Where an existing tax is increased significantly and where the Member State concerned takes the view that derogations are needed for certain firms, the conditions set out in point 51.1 as regards new taxes are applicable by analogy.

53. When the reductions concern a tax that has not been harmonised at Community level and when the domestic tax is lower than or equal to the Community minimum, the Commission takes the view that long-term exemptions are not justified. In this case, any exemptions granted must satisfy the conditions laid down in points 45 and 46 and must, in any event, be covered by an express authorisation to derogate from the Community minimum.

In all cases of reduction of tax, the Member State may grant operating aid in accordance with points 45 and 46.

E.3.3. *Rules applicable to operating aid for renewable energy sources*

54. As regards the production of renewable energy, operating aid will usually be allowable under these guidelines.

55. The Commission takes the view that such aid qualifies for special treatment because of the difficulties these sources of energy have sometimes encountered in competing effectively with conventional sources. It must also be borne in mind that it is Community policy to encourage the development of these sources of energy, notably on environmental grounds. Aid may be necessary in particular where the technical processes available do not allow energy to be produced at unit costs comparable to those of conventional sources.

56. Operating aid may be justified here in order to cover the difference between the cost of producing energy from renewable energy sources and the market price of that energy. The form of such aid may vary depending on the kind of energy involved and the support mechanism worked out by the Member State. Moreover, when studying cases, the Commission will take account of the competitive position of each form of energy involved.

57. Member States may grant aid for renewable energy sources as follows:

E.3.3.1. *Option 1*

58. In the renewable energy field, unit investment costs are particularly high and generally account for a significant proportion of firms' costs and do not allow firms to charge competitive prices on the markets where they sell energy.

59. In order to take better account of this market-access barrier for renewable energies, Member States may grant aid to compensate for the difference between the production cost of renewable energy and the market price of the form of power concerned. Any operating aid may then be granted only for plant depreciation. Any further energy produced by the plant will not qualify for any assistance. However, the aid may also cover a fair return on capital if Member States can show that this is indispensable given the poor competitiveness of certain renewable energy sources.

In determining the amount of operating aid, account should also be taken of any investment aid granted to the firm in question in respect of the new plant.

When notifying aid schemes to the Commission, Member States must state the precise support mechanisms and in particular the methods of calculating the amount of aid. If the Commission authorises the scheme, the Member State must then apply those mechanisms and methods of calculation when it comes to granting aid to firms.

60. Unlike most other renewable sources of energy, biomass requires relatively less investment but brings higher operating costs. The Commission will, therefore, be amenable to operating aid exceeding the amount of investment where Member States can show that the aggregate costs borne by the firms after plant depreciation are still higher than the market prices of the energy.

E.3.3.2. *Option 2*

61. Member States may grant support for renewable energy sources by using market mechanisms such as green certificates or tenders. These systems allow all renewable energy producers to benefit indirectly from guaranteed demand for their energy, at a price above the market price for conventional power. The price of these green certificates is not fixed in advance but depends on supply and demand.

62. Where they constitute State aid, these systems may be authorised by the Commission if Member States can show that support is essential to ensure the viability of the renewable energy sources concerned, does not in the aggregate result in overcompensation for renewable energy and does not dissuade renewable energy producers from becoming more competitive. With a view to verifying that these criteria are met, the Commission intends to authorise these aid systems for a period of ten years, after which it will have to be assessed whether the support measure needs to be continued.

E.3.3.3. *Option 3*

63. Member States may grant operating aid to new plants producing renewable energy that will be calculated on the basis of the external costs avoided. These are the environmental costs that society would have to bear if the same quantity of energy were produced by a production plant operating with conventional forms of energy. They will be calculated on the basis of the difference between, on the one hand, the external costs produced and not paid by renewable energy producers and, on the other hand, the external costs produced and not paid by non-renewable energy producers. To carry out these calculations, the Member State will have to use a method of calculation that is internationally recognised and has been communicated to the Commission. It will have to provide among other things a reasoned and quantified comparative cost analysis, together with an assessment of competing energy producers' external costs, so as to demonstrate that the aid does genuinely compensate for external costs not covered.

At any event, the amount of the aid thus granted to the renewable energy producer must not exceed EUR 0,05 per kWh.

Furthermore, the amount of aid granted to producers that exceeds the amount of aid resulting from option 1 must be reinvested by the firms in renewable sources of energy. It will be taken into account by the Commission if this activity also qualifies for State aid.

64. If Option 3 is to remain consistent with the general rules on competition, the Commission must be certain that the aid does not give rise to any distortion of competition contrary to the common interest. In other words, it must be certain that the aid will result in an actual overall increase in the use of renewable energy sources at the expense of conventional energy sources, and not in a simple transfer of market shares between renewable energy sources. The following conditions will therefore have to be met:

— aid granted under this option must form part of a scheme which treats firms in the renewable energy sector on an equal footing;

— the scheme must provide for aid to be granted without discrimination as between firms producing the same renewable energy;

— the scheme must be re-examined by the Commission every five years.

E.3.3.4. *Option 4*

65. Member States may still grant operating aid in accordance with the general rules governing such aid in points 45 and 46.

E.3.4. ***Rules applicable to operating aid for the combined production of electric power and heat***

66. The Commission takes the view that operating aid for the combined production of electric power and heat may be justified provided that the conditions set out in point 31 are met. Such aid may be granted to firms distributing electric power and heat to the public where the costs of producing such electric power or heat exceed its market price. In similar circumstances, operating aid may be granted in accordance with the rules in points 58 to 65. The decision as to whether the aid is essential will take account of the costs and revenue resulting from the production and sale of the electric power or heat.

67. Operating aid may be granted on the same conditions as for the industrial use of the combined production of electric power and heat where it can be shown that the production cost of one unit of energy using that technique exceeds the market price of one unit of conventional energy. The production cost may include the plant's normal return on capital, but any gains by the firm in terms of heat production must be deducted from production costs.

F. POLICIES, MEASURES AND INSTRUMENTS FOR REDUCING GREENHOUSE GASES

68. The Kyoto Protocol, signed by the Member States and by the Community, provides that the parties undertake to limit or reduce greenhouse gas emissions during the period 2008-2012. For the Community as a whole, the target is to reduce greenhouse gas emissions by 8 % of their 1990 level.

69. Member States and the Community, as parties to the Protocol, will have to achieve the greenhouse gas reductions by means of common and coordinated policies and measures ([41]), including economic instruments, and also by means of the instruments established by the Kyoto Protocol itself, namely international emissions trading, joint implementation, and the clean development mechanism.

70. In the absence of any Community provisions in this area and without prejudice to the Commission's right of initiative in proposing such provisions, it is for each Member State to formulate the policies, measures and instruments it wishes to adopt in order to comply with the targets set under the Kyoto Protocol.

71. The Commission takes the view that some of the means adopted by Member States to comply with the objectives of the Protocol could constitute State aid but it is still too early to lay down the conditions for authorising any such aid.

G. BASIS OF EXEMPTION FOR ALL PROJECTS EXAMINED BY THE COMMISSION

72. Subject to the limits and conditions set out in these guidelines, environmental aid will be authorised by the Commission pursuant to Article 87(3)(c) of the EC Treaty for 'aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest'.

73. Aid to promote the execution of important projects of common European interest which are an environmental priority and will often have beneficial effects beyond the frontiers of the Member State(s) concerned can be authorised under the exemption provided for in Article 87(3)(b) of the EC Treaty. However, the aid must be necessary for the project to proceed, and the project must be specific, well defined and qualitatively important and must make an exemplary and clearly identifiable contribution to the common European interest. When this exemption is applied, the Commission may authorise aid at higher rates than the limits laid down for aid authorised pursuant to Article 87(3)(c).

H. OVERLAPPING AID FROM DIFFERENT SOURCES

74. The aid ceilings stipulated in these guidelines are applicable irrespective of whether the aid in question is financed wholly or in part from State resources or from Community resources. Aid authorised under these guidelines may not be combined with other forms of State aid within the meaning of Article 87(1) of the Treaty or with other forms of Community financing if such overlapping produces an aid intensity higher than that laid down in these guidelines.

([41]) For details of common and coordinated policies and measures see in particular 'Preparing for Implementation of the Kyoto Protocol' (COM(1999) 230 of 19.5.1999).

In the case of aid serving different purposes and involving the same eligible costs, the most favourable aid ceiling will apply.

I. 'APPROPRIATE MEASURES' WITHIN THE MEANING OF ARTICLE 88(1) OF THE EC TREATY

75. Acting under Article 88(1) of the Treaty, the Commission will propose the following appropriate measures to the Member States in respect of their existing systems of aid.

76. In order to enable it to assess any substantial amounts of aid granted under authorised schemes and to decide whether such aid is compatible with the common market, the Commission will propose, as an appropriate measure under Article 88(1) of the Treaty, that Member States should notify it in advance of any individual case of investment aid granted under an authorised scheme where the eligible costs exceed EUR 25 million and where the aid exceeds the gross grant equivalent of EUR 5 million. Notification will be given by means of the form of which a model is shown in the Annex.

77. The Commission will also propose, as an appropriate measure under Article 88(1), that Member States should bring their existing environmental aid schemes into line with these guidelines before 1 January 2002.

78. The Commission will ask the Member States to confirm within one month of receipt of the proposed measures referred to in points 75 to 77 that they agree to the proposals. In the absence of any reply, the Commission will take it that the relevant Member State does not agree.

79. The Commission would point out that, with the exception of aid classed as *de minimis* aid under Regulation (EC) No 69/2001 ([42]), these guidelines do not affect the obligation incumbent on Member States under Article 88(3) of the Treaty to notify any aid schemes, any changes to those schemes and any individual aid granted to firms outside the framework of authorised schemes.

80. The Commission intends to ensure that any authorisation for a future scheme complies with these guidelines.

J. APPLICATION OF THE GUIDELINES

81. These guidelines will become applicable when they are published in the *Official Journal of the European Communities*. They will cease to be applicable on 31 December 2007. After consulting the Member States, the Commission may amend them before that date on the basis of important competition policy or environmental policy considerations or in order to take account of other Community policies or international commitments.

82. The Commission will apply these guidelines to all aid projects notified in respect of which it is called upon to take a decision after the guidelines are published in the Official Journal, even where the projects were notified prior to their publication.

In the case of non-notified aid, the Commission will apply:

(a) these guidelines if the aid was granted after their publication in the *Official Journal of the European Communities*;

(b) the guidelines in force when aid is granted in all other cases.

K. INTEGRATION OF ENVIRONMENTAL POLICY INTO OTHER STATE AID GUIDELINES

83. Article 6 of the Treaty states that:

> 'Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.'

When the Commission adopts or revises other Community guidelines or frameworks on State aid, it will consider how those requirements can best be taken into account. It will also examine whether it would not be expedient to ask the Member States to provide an environmental impact study whenever they notify it of an important aid project, irrespective of the sector involved.

([42]) OJ L 10, 13.1.2001, p. 30.

ANNEX

ADDITIONAL INFORMATION ORDINARILY TO BE SUPPLIED WHEN NOTIFYING STATE AID FOR ENVIRONMENTAL PURPOSES UNDER ARTICLE 88(3) OF THE TREATY

(Schemes, cases of aid granted under an approved scheme, and one-off aid measures)

To be attached to the general questionnaire in Section A of Annex II to the Commission letter to Member States of 2 August 1995 on notifications and standardised annual reports:

1. Objectives.

   Detailed description of the objectives of the measure, and of the type of environmental protection it is intended to promote.

2. Description of the measure.

   Detailed description of the measure and of the recipients.

   Description of the total costs of the investments involved and of the eligible costs.

   If the measure in question has already been applied in the past, what environmental results have been obtained?

   If the measure is a new one, what environmental results are anticipated, and over what period?

   If the aid is to be granted towards an improvement on standards, what are the standards applicable, and in what way does the measure allow an appreciably higher level of environmental protection to be achieved?

   If the aid is to be granted in the absence of mandatory standards, please give a detailed description of the way.