























competences of the energy, construction, physical planning, water management, forestry, state property management, etc.

For the construction of a plant generating electricity from renewable energy sources it is necessary to obtain several documents. Prior approval for the construction of a generation facility and decisions on the eligible producer status granting and the contract on purchasing of electricity is resolved through adoption of the remaining two implementing regulations pursuant to the Energy Act and the Electricity Market Act (Ordinance on the Usage of Renewable Energy Sources and Cogeneration, OG 67/07, and Ordinance on the Obtaining of the Eligible Electricity Producer Status, OG 67/07).

The status of eligible producer secures the purchasing of the total electricity produced (Article 8 of the Electricity Market Act), i.e. the Transmission System Operator or the Distribution System Operator is obliged to ensure purchasing of the total electricity produced from eligible producers as provided for in the prescribed conditions.

Rules on costs and fees for connection to the grid and reinforcements are published in the form of the Ordinance on the Amount of the Fee for the Connection to the Power Line and for the Increase in Terminal Load (OG 28/06) and the Decision on the Amount of the Fee for the Connection to the Power Line and for the Increase in Terminal Load (OG 52/06).

As it could be understood from the description of RES and biogas legal framework, biogas is not described by legislation specifically but as one of the renewable energy sources. As such, it has special attention in feed-in tariff system only.

Apart of the legislative framework on RES, biogas is mentioned in several other legal documents.

The Regulation on Management of By-products of Animal Origin (OG 56/06) in Annex VI describes special conditions that an object for production of biogas and compost has to fulfil.

The Ordinance of Biofuels Quality (OG 141/05) recognises biogas as one type of motor vehicle fuel with prescribed properties if placed on market. The Law on Gas Market (OG 40/07) allows biogas injection into the gas grid if it is possible both technically and safe transport through the gas system of the gases in question. However, there are no necessary sublaws to implement it.

Furthermore, Waste Management Plan 2007-2015 (OG 85/07) that foresees Waste Management Centers (WMC) which will be located far from inhabited area and will provide place for several activities for waste handling prior to its final disposal. Among those activities there is “energy exploitation of certain fractions of waste” and is stated as one of main parts of WMC (zone for collection and utilization of biogas).

Nitrate directive is not transposed in the national legislation yet, although there are some indications that it could occur in the near future. So far, the amounts of animal manure to be disposed on the land are regulated by storage capacity in farms in conventional agriculture whereas the Law on Organic Agriculture adopts the maximum amount of 170 kg of nitrates per hectare.

## 4.2. Support Instruments

The Ordinance on Minimal Share of Electricity from Renewable Energy Sources and Cogeneration which Production is Incentivized (OG 33/07) states, in article 4, that the minimal share of RES-E to be incentivized amounts 5.8% (excluding large hydro) in total electricity consumption by 2010. RES-E production could be incentivized if the producer has gained the status of eligible producer. The Tariff System for the Production of Electricity from Renewable Energy Sources and Cogeneration (OG 33/07) defines the right of eligible electricity producers to the incentive price (in the form of feed-in tariffs) of electricity paid by the Market Operator (HROTE) for the supply of electricity produced from renewable energy sources and cogeneration. The tariff system further defines the obligation of the Distribution System Operator and Transmission System Operator to ensure the purchasing of all electricity produced by eligible producers.

*Table 1: Feed-in tariffs for electricity produced from RES in Croatia (HRK/kWh)*

RES type	≥1 MW	< 1 MW
Small hydro	0.69	0.42-0.69 (depending on produced electricity)
Wind	0.64	0.65
Biomass	0.95-1.20 (varies on biomass type)	0.83-1.04 (varies on biomass type)
Geothermal	1.26	1.26
Biogas,	1.20	1.04
Power plants on liquid biofuels	0.36	0.36
Landfill gas	0.36	0.36
Wave, tidal	0.60	0.50
Solar PV <10 kW	3.40	
10-30 kW	3.00	
>30 kW	2.10	

The given amounts of feed-in tariff are to be multiplied by correction factor that depends on the share of domestic component of the project. The variation is between 100% for more than 70% share of domestic component to 93% for less than 45% share of domestic component. The share of domestic component is determined by the Ministry.

The amounts of the feed-in tariff for each designated renewable energy source are to be updated for retail consumer prices index for the current year. Apart of the gains from the feed-in tariff, the same Ordinance prescribes fee for the producer to be paid to the local community for all plants that have installed capacity larger than 1 MW in amount of 0.01

HRK/kWh (the amount is to be corrected for retail consumer prices index for the current year).

Once gained the status of eligible producer allows signing the agreement between HROTE and producer of RES-E for the period of 12 years.

Other financial mechanisms for private investors in biogas are concentrated in two institutions: Croatian Bank for Reconstruction and Development (HBOR) and Environmental Protection and Energy Efficiency Fund (FZOEU - Fond za zaštitu okoliša i energetske učinkovitost).

HBOR is currently offering two products related to renewable energy sources utilisation:

- 1) Loan Programme for the Financing of Projects of Environmental Protection, Energy Efficiency and Renewable Energy Resources
- 2) Loan Programme for the Preparation of Renewable Energy Resources Projects

Loan Programme for the Financing of Projects of Environmental Protection, Energy Efficiency and Renewable Energy Resources is designated to units of local and regional self-government: municipalities, cities, counties and the City of Zagreb, if they comply with existing legal regulation. Acceptable borrowers can also be utility companies and other legal entities or natural persons that have entered into an agreement with HBOR on the implementation of the Loan Programme. The goal and the purpose of the loan should be at least one of the following: improving waste dumping sites, encouraging the prevention and reduction of waste generation, managing and recycling waste, and reducing the loss of valuable waste components, encouraging clean production, preventing or reducing waste generation, and minimising emissions in the manufacturing process, protecting and preserving biological and landscape diversity, implementing national energy programmes, encouraging the use of renewable energy resources (sun, wind, biomass, etc.) encouraging sustainable construction, encouraging cleaner transport technologies, promoting other projects of environmental protection, energy efficiency and renewable energy resources.

Loans are intended for investments in fixed asset (initial funding, land plots, buildings, equipments) and devices and permanent current assets. In general, HBOR will finance up to 75% of the estimated investment value, without VAT included with grace period up to 2 years and repayment period up to 12 years, including grace period. Interest rates differ from 4%p.a. for borrowers investing in a region of special state concern or the islands, borrower belonging to SMEs, borrower having proven their competitiveness by successful sales figures in domestic and/or foreign markets to 6% p.a. for all other borrowers or the interest rate may be agreed as 3-month EURIBOR+2%b.p. annually. If the Environmental Protection and Energy Efficiency Fund approve the interest subsidy, the above interest rate shall be reduced by 2% or by the amount of the approved subsidy.

The Loan Programme for the Preparation of Renewable Energy Resources Projects is part of the GEF/IBRD Trust Fund Grant (hereinafter: the Grant) to the Republic of Croatia for the implementation of the Renewable Energy Resources Project, published within the Decree on the Global Environmental Facility Trust Fund Grant Agreement between the Re-

public of Croatia and the International Bank for Reconstruction and Development for the renewable energy resources project (OG – International Agreements, No. 4/2006).

The basic goal of the Grant is to promote economically and ecologically sustainable renewable energy resources market in the Republic of Croatia and to create a stimulating environment for investments in projects of renewable energy resources utilisation.

Loans are granted for the preparation of renewable energy resources projects, including biomass, small hydroelectric plants (up to 10 MW), geothermal and solar energy (wind energy projects are not included into this Programme). The preparation of public and private sector projects will be financed out of loan funds. Loans are intended for the financing of preliminary design documents within the framework of renewable energy resources utilisation. Loan funds can be utilised for the financing of: on-site research activities, environmental impact studies, documentation for obtaining a location permit, final design, investment study, documentation for obtaining a construction permit other permits, decisions, consents and documentation in compliance with the provisions regulating the energy sector.

Up to 50% of total eligible costs of preliminary design documents, in general up to USD 150,000 may be financed with a 4% p.a. interest rate. Eligible as final borrowers are utility companies, companies, craftsmen, units of local and regional government and other legal entities. Bullet loan repayment is due 12 months after the expiry of the disbursement period or upon the financial completion of the project. The repayment amount is calculated in USD and collected in HRK equivalent amount calculated at the selling exchange rate of the Croatian National Bank on the date of payment.

Once per year, FZOEU calls for tenders for financing renewable energy sources projects for which national bodies and companies are eligible.

### ***4.3. Market Reform & Investment Environment***

Croatia is one of the Contracting Parties in the Energy Community Treaty (Athens memorandum) by which is obliged to liberalize energy market as well as to transpose EU directives on promotion of RES-E (2001/77/EC) and biofuels (2003/30/EC). Full liberalisation of electricity market will occur on 1<sup>st</sup> of July 2008. Croatian utility company (HEP) is a public company that has unbundled its energy activities but still dominates in the electricity market.

Given the interest by both domestic and foreign companies, investment environment is positive while the eligible producer status procedure is still to be improved in sense of transparency and duration. So far, none of the renewable energy plants have gained the status. Three existing RES-E plants (2 wind power plants and 1 landfill gas plants) are having a special agreement for electricity sales. Nevertheless, the improvements are expected to occur in the near future.

#### 4.4. Comparison to EU policies

As a candidate country, Croatia is harmonizing national legislation with Acquis literary on daily basis. Table 2 provides findings from the *Report on the Implementation of the Acquis on Renewables in the Energy Community Contracting Parties* (EIHP, 2007).

**Table 2: Adaptation of EU policies in Croatia**

<i>Implementation status of the Directive 2001/77/EC in Croatia</i>				
<b>National indicative targets</b>	<b>Support schemes</b>	<b>Guarantee of origin</b>	<b>Administrative procedures</b>	<b>Grid system issues</b>
National targets set at 1.8% of the total electricity consumption for 2007 and 5.8% for 2010 <sup>10</sup>	Feed-in tariffs for various RES defined	Regulation partly in place, full implementation expected in future	Authorisation procedures for new RES plants defined in accordance with overall legislation	TSO/DSO obliged to ensure purchasing of RES electricity Rules on connection costs defined
<i>Implementation status of the Directive 2003/30/EC in Croatia</i>				
<b>National indicative targets</b>	<b>Monitor the effect of the use of biofuels in diesel blends above 5% by non-adapted vehicles</b>	<b>Public information</b>	<b>Support measures</b>	
Set at 5.75% by 2010	Regulation partly in place, needs to be completed	Measures will be defined	Not defined	

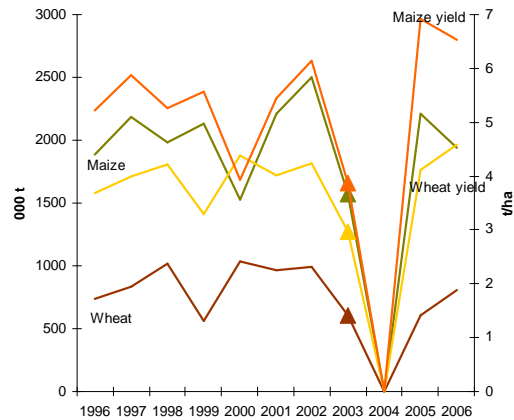
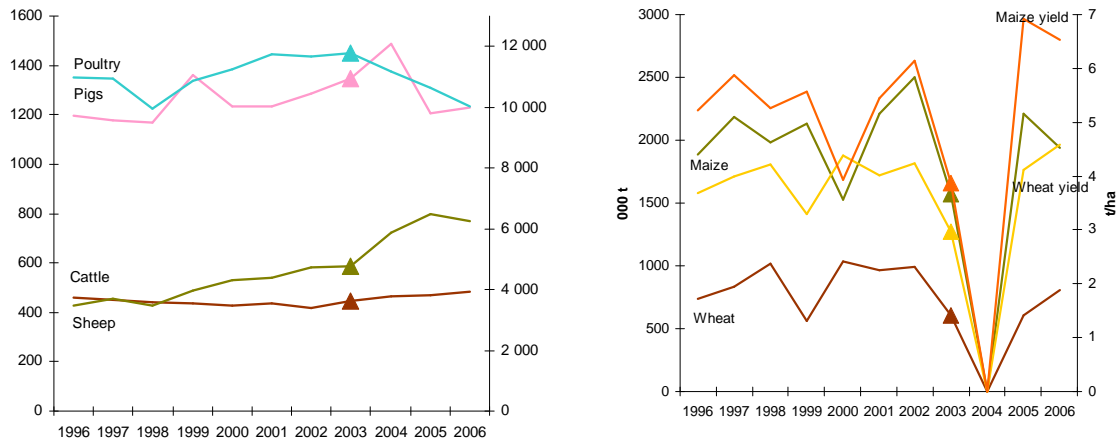
The Directive 2003/30/EC is partially transposed into the national legislation through the Energy Act (OG 66/2001, OG 177/2004, OG 76/07) and the Regulation on the quality of biofuels (OG 141/2005). The Directive will be aligned completely through the Biofuels Act in 2008.

## 5. Biogas contribution to national targets

In Croatia, biogas is the least explored renewable energy source as it greatly depends on the state of the art of the national agriculture. Croatian agriculture is still trying to grasp with market economy and war repercussions. In 1994, Croatia changed to net importing country of agricultural products. In 2003, Croatia was self-sufficient in 5 agricultural products only: wheat, sugar, maize, wine and eggs. The present ownership structure still largely reflects forty years long socialist system of government (dual system of large agrocombines and marginalised family owned husbandries) and the application of lax inheritance laws. According to the Agricultural Census 2003, there are 448 532 family farms, utilizing

<sup>10</sup> Data on national targets are presented as stated in the Regulation on a minimum share of electricity produced from renewable energy sources and cogeneration in the electricity supply, OG 33/07, which exclude large hydro power plants. No other official data regarding national targets for RES electricity are currently available.

853 196 ha of arable land and gardens, corresponding to an average farm size of 2.0 ha. Same data shows that three quarters of all family farms are smaller than 3 ha, but cultivate only 21% of all utilised agricultural land owned by the private sector. Business entities use much larger areas of the agricultural land, averaging to 159.2 ha. Figures below demonstrate lack of sufficient knowledge of agrotechniques and strong dependency of agriculture yield on weather conditions. The diamonds in figures mark the year of agriculture census in 2003, the last official data available for agriculture on disaggregated level.



**Figure 1: Livestock and poultry trends in Croatia (in 000)**      **Figure 2: Maize and wheat trends in Croatia (in 000)**

Source: Croatian Bureau of Statistics: Statistical Yearbook (2002-2007)

According to the CLC, there are 44 560 of milk suppliers out of which 96% has less than 15 milk cows. Majority of family farms (90.26%) keep less than 10 cattle, and only 9.74% more than 10. In order to change this unfavourable structure, Operational Programme for the Development of Livestock Production secures conditions for the establishment of new modern farms with the capacity of up to 100 cows. With the possibility of reaching higher competitiveness, such production units create a basis for meeting conditions set both in regard of environment as well as animal welfare. It is necessary to emphasise that some farmers will continue keeping a small number of animals on the farm. Specialized cattle breeding farms are not yet developed at a large scale. One third (32.4%) of the legal entities have up to 20 cows and two third (67.6%) of total 339 producers keep more than 20 cattle out of which 25.4% or 86 have more than 100 cattle.

In 2003, the average size of family holdings with pigs, or the average number of pigs per family holding, pursuant to the abovementioned data was 8 pigs, while the average number of pigs per legal entity was 464. In the producers structure the biggest limitation is the fact that 90% of production is represented by about 200 000 small producers. Less than 3 300 (1.5%) producers on family farms have more than 50 pigs. About 12 500 have 20 - 50 heads and out of this category of family farms it can be expected to grow up into commercial producers to some extent. From the category of family farms with 11 - 20 pigs can be divided farms ready to participate in commercial production, while the majority of more than 170 000 farms with less than 10 pigs are out of commercial production.



Continuing on the introduction from above, one could find estimates on biogas potential quoted from the official document (National Energy Programmes – BIOEN, 1998) as following: *Animal manure could deliver only a modest contribution to bioenergy in Croatia and cattle breeding have been on a steady decrease in the last years. A potential amount of biogas output has been calculated on the basis of the number of registered livestock as well as the average biogas yield per cattle unit both daily and annually. The actually exploitable part of the potential amount is estimated to be 20 percent of the total, due to a number of factors (dispersion of livestock, keeping small number of heads of cattle, keeping the cattle in the open), and it amounts to 2.0 PJ/year.*

*About 800 thousand tones of biomass residues (energy potential of about 11.4 PJ/year) from agriculture are currently available, with wheat and corn being the major agricultural crops. Agricultural residues have a significant energy potential in both Eastern Croatia and coastal zone.*

Apart of the quoted numbers, there has been little or no research devoted to investigate true biogas potentials with related locations.

## 6. Conclusions

Current RES-E legislation demonstrates difficulties in implementation but the responsible bodies are already engaged in improving it. In that sense, legislative framework for biogas and other RES penetration could be assessed as a temporary obstacle. Its removal would open the true development of the RES-E market due to the existing financial mechanisms both in shape of feed-in tariff system, loans and other supports.

Among RES, biogas especially suffers consequences of poor communication between different governmental bodies such as Ministry of Agriculture and Rural Development and Ministry of Economy, Labour and Entrepreneurship. Namely, biogas, as RES, is managed by Ministry of Economy from the point of energy utilisation while its feedstock originates from agriculture. On the other hand, bioenergy production from agricultural biomass is not incorporated in agriculture policy.

Difficulties in determining true biogas potential from publicly available data are focused in difference in data collection methodologies between the Croatian Bureau of Statistics and Eurostat. The only publicly available data that are linking agriculture production with corresponding locations in Croatia are from 2003. Unfortunately, those data are not updated today due to the pig plague in 2006 and 2007, avian flue alert in 2005-6 and failure of small-scale milk production farm project, together with constant problems of expensive and inefficient food production. In addition to that, ESRI data and maps for Croatia are not corresponding to the national NUTS administrative units adopted by Croatian Bureau of Statistics which make the data collection even more difficult.

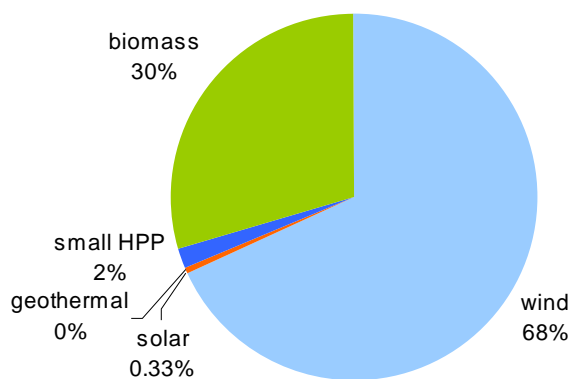
Apart of the energy legislation, biogas utilisation is related to spatial planning too. In that aspect, it is necessary to include in spatial plans descriptions of what the spatial prerequisites are that a biogas plant has to fulfil in order to obtain location and building permit.

Apart of the “agricultural” biogas, landfill gas utilisation for electricity production indicates greater potential especially in the current time of implementation of new waste man-

agement strategy. Biogas is mentioned as one of the waste management techniques but without any further elaboration. In that respect, stakeholders in waste management, especially local authorities should be introduced to the possibilities of utilisation of biogas from landfill gas.

Biogas plants or, as stated in the Regulation on Handling the By-products of Animal Origin (OG 56/06), object for production of biogas and compost, are well described in the Regulation. It allows animal by-products of Category 2 and 3 (animal manure classified as Category 2) plus waste originated from catering sector and households sector to be used as feedstock if meeting the required legal conditions.

National target of 5.8% of RES-E in 2010 has been estimated as 1 100 GWh (Energy Institute Hrvoje Požar, 2008). Energy Institute Hrvoje Požar has made a rough cost-benefit analysis given the potential, development phase of each RES source, technology and energy sector capacities (utility system characteristics). The possible RES portfolio in 2010 mostly focuses on wind energy (750 GWh) while some 330 GWh should be covered by biomass due to the legal limit for solar of 1 MW of installed capacity, occupancy of potential sites for small hydropower plants and geothermal electricity projects status.



**Figure 3: Projections for 2010 RES-E portfolio for Croatia**

Source: Energy Institute Hrvoje Požar, 2008

It is still not clear how much biomass and what types of it would generate 30% of the portfolio although the spotlight is placed on cogenerations on wooden biomass (at least 85% of biomass electricity) although biogas could contribute to that aim, too.

In addition, biogas exploitation indicates promising contribution in Kyoto Protocol targets, if incorporated in new Programme for Cattle Breeding Development where stakeholders could be informed and educated how to incorporate biogas in their farm development structure.

## **Annex 1: EU Legislation and corresponding legal documents that are transposing *acquis* to the Croatian legislation either completely or partially or beyond the demands of the *acquis***

### Directives

#### **► DIRECTIVE 2000/76/EC**

“on the **incineration of waste**”

To prevent and limit negative environmental effects by emissions into air, soil, surface and ground-water, and the resulting risks to human health, from the incineration and co-incineration of waste.

- *Pravilnik o načinima i uvjetima termičke obrade otpada (NN 45/07)*  
*Regulation on ways and conditions for thermal waste processing (OG 45/07)*

#### **► DIRECTIVE 2001/77/EC**

„on the promotion of **electricity produced from renewable energy sources** in the internal electricity market“

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.

For the purposes of this Directive, the following definition applies: ‘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);

- *Tarifni sustav za proizvodnju električne energije iz obnovljivih izvora i kogeneracije (NN 33/07)*  
*Tariff system for the production of electricity from renewable energy sources and cogeneration (OG 33/07)*
- *Uredba o naknadama za poticanje proizvodnje električne energije iz obnovljivih izvora energije i kogeneracije (OG 33/07)*  
*Regulation on the fee for the promotion of the electricity production from renewable energy sources and cogeneration (OG 33/07)*
- *Pravilnik o korištenju obnovljivih izvora energije i kogeneracije (67/07)*  
*Ordinance on the usage of renewable energy sources and cogeneration (OG 67/07)*
- *Uredba o minimalnom udjelu električne energije proizvedene iz obnovljivih izvora energije i kogeneracije čija se proizvodnja potiče (NN 33/07)*  
*Regulation on a minimum share of electricity produced from renewable energy sources and cogeneration in the electricity supply (OG 33/07)*
- *Pravilnik o stjecanju povlaštenog proizvođača električne energije (NN 67/07)*  
*Ordinance on the obtaining of the eligible electricity producer status (OG 67/07)*

► **DIRECTIVE 2001/80/EC**

“on the **limitation of emissions of certain pollutants** into the air from large combustion plants”

This Directive shall apply to combustion plants, the rated thermal input of which is equal to or greater than 50 MW, irrespective of the type of fuel used (solid, liquid or gaseous).

- *Uredba o graničnim vrijednostima emisija onečišćujućih tvari u zrak iz stacionarnih izvora (NN 21/07)*  
*Ordinance on limitations of air pollutants emissions from stationary sources (OG 21/07)*

► **DIRECTIVE 2002/91/EC**

„on the **energy performance of buildings**“

The objective of this Directive is to promote the improvement of the energy performance of buildings within the Community, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.

Article 5 of the Directive is related to new buildings and is relevant to the use of biogas since Member States shall take the necessary measures to ensure that new buildings meet the minimum energy performance requirements referred to in Article 4. For new buildings with a total useful floor area over 1 000 m<sup>2</sup>, Member States shall ensure that the technical, environmental and economic feasibility of alternative systems such as:

- decentralised energy supply systems based on renewable energy,
- CHP,
- district or block heating or cooling, if available,
- heat pumps, under certain conditions,

is considered and is taken into account before construction starts.

- *Tehnički propis o uštedi toplinske energije i toplinskoj zaštiti u zgradama (NN 79/05)*  
*Technical regulations on heat energy savings and thermal protection in buildings (OG 79/05)*
- *Zakon o prostornom uređenju i gradnji (NN 76/07)*  
*Law on physical planning and construction (OG 76/07)*

► **DIRECTIVE 2003/30/EC**

„on the promotion of the use of **biofuels** or other renewable fuels for transport“

This Directive aims at promoting the use of biofuels or other renewable fuels to replace diesel or petrol for transport purposes in each Member State, with a view to contributing to objectives such as meeting climate change commitments, environmentally friendly security of supply and promoting renewable energy sources.

Upgraded biogas (biomethane) can be used as renewable transport fuel. For the purpose of this Directive, the following definitions are related to the biogas sector:

- ‘biofuels’ means liquid or gaseous fuel for transport produced from biomass;

- ‘biomass’ means 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;
  - ‘biogas’: a fuel gas produced from biomass and/or from the biodegradable fraction of waste, that can be purified to natural gas quality, to be used as biofuel, or wood-gas;
- *Uredba o kakvoći biogoriva (NN 141/05)*  
*Ordinance of Biofuels Quality (OG 141/05)*

► **DIRECTIVE 2003/55/EC**

“concerning common rules for the **internal market in natural gas** and repealing Directive 98/30/EC”

This Directive establishes common rules for the transmission, distribution, supply and storage of natural gas. It lays down the rules relating to the organisation and functioning of the natural gas sector, access to the market, the criteria and procedures applicable to the granting of authorisations for transmission, distribution, supply and storage of natural gas and the operation of systems.

The rules established by this Directive for natural gas, including liquefied natural gas (LNG), also applies to biogas and gas from biomass or other types of gas in so far as such gases can technically and safely be injected into, and transported through, the natural gas system.

Since this directive was introduced, biogas industry has been working to obtain a priority for biogas feed-in into the pipeline system, analogous to EEG in Germany. In Germany it is possible to feed biogas into the natural gas system.

- *Zakon o tržištu plina (NN 40/07)*  
*Law on Gas Market (OG 40/07)*

► **DIRECTIVE 2003/87/EC**

„establishing a scheme for **greenhouse gas emission allowance trading** within the Community and amending Council Directive 96/61/EC“

This Directive establishes a scheme for greenhouse gas emission allowance trading within the Community (hereinafter referred to as the ‘Community scheme’) in order to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner.

► **DIRECTIVE 2004/8/EC**

„on the promotion of **cogeneration** amending Directive 92/42/EEC“

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.

Cogeneration technologies covered by this Directive 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) 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)

- *Pravilnik o korištenju obnovljivih izvora energije i kogeneracije (67/07)*  
*Ordinance on the usage of renewable energy sources and cogeneration (OG 67/07)*
- *Tarifni sustav za proizvodnju električne energije iz obnovljivih izvora i kogeneracije (NN 33/07)*  
*Tariff system for the production of electricity from renewable energy sources and cogeneration (OG 33/07)*
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- *Pravilnik o stjecanju povlaštenog proizvođača električne energije (NN 67/07)*  
*Ordinance on the obtaining of the eligible electricity producer status (OG 67/07)*

► **DIRECTIVE 2006/12/EC**

„on waste“

For the purposes of this Directive ‘waste’ shall mean any substance or object in the categories set out in Annex I of this directive (e.g. industrial waste, agricultural waste, waste from households, etc.) which the holder discards or intends or is required to discard. However, gaseous effluents emitted into the atmosphere, animal carcasses and the following agricultural waste (faecal matter and other natural, non dangerous substances used in farming) and waste waters, with the exception of waste in liquid form are excluded from this directive since these materials are covered by other directives.

The directive requests Member States to take appropriate measures to encourage the prevention or reduction of waste production and its harmfulness, in particular by:

- (i) the development of clean technologies more sparing in their use of natural resources;
- (ii) the technical development and marketing of products designed so as to make no contribution or to make the smallest possible contribution, by the nature of their manufacture, use or disposal, to increasing the amount or harmfulness of waste and pollution hazards;

(iii) the development of appropriate techniques for the final disposal of dangerous substances contained in waste destined for recovery;

It also requests Member States to take appropriate measures to encourage

- (i) the recovery of waste by means of recycling, reuse or reclamation or any other process with a view to extracting secondary raw materials; or
- (ii) the use of waste as a source of energy.

- *Zakon o otpadu (NN 178/04, 111/06, 110/07, 60/08)*  
*Law on Waste (OG 178/04, 111/06, 110/07, 60/08)*

► COUNCIL DIRECTIVE 86/278/EEC

“on the protection of the environment, and in particular of the soil, when **sewage sludge** is used in agriculture”

The purpose of this Directive is to regulate the use of sewage sludge in agriculture in such a way as to prevent harmful effects on soil, vegetation, animals and man, thereby encouraging the correct use of such sewage sludge.

- *Pravilnik o gospodarenju muljem iu uređaja za pročišćivanje otpadnih voda kada se mulj koristi u poljoprivredi (NN 38/08)*  
*Regulation on management of sludge from waste water treatment facilities when the sludge is used in agriculture (OG 38/08)*
- *Pravilnik o zaštiti poljoprivrednog zemljišta od onečišćenja štetnim tvarima (NN 15/92)*  
*Regulation on protection of agricultural land against pollution of various matters (OG 15/92)*

► COUNCIL DIRECTIVE 91/676/EEC

„concerning the protection of waters against pollution caused by **nitrates** from agricultural sources“

This Directive has the objective to reduce water pollution caused or induced by nitrates from agricultural sources and to prevent further such pollution.

With the aim of providing for all waters a general level of protection against pollution, Member States shall, within a two-year period following the notification of this Directive:

- (a) establish a code or codes of good agricultural practice, to be implemented by farmers on a voluntary basis, which should contain provisions covering at least the items mentioned in Annex II A of the Directive, and (b) set up where necessary a programme, including the provision of training and information for farmers, promoting the application of the code(s) of good agricultural practice.

Furthermore, Member States shall submit to the Commission details of their codes of good agricultural practice and the Commission shall include information on these codes in the report referred to in Article 11. In the light of the information received, the Commission may, if it considers it necessary, make appropriate proposals to the Council.

- *Pravilnik o dobroj poljoprivrednoj praksi o korištenju gnojiva (NN 56/08)*  
*Regulation on good agricultural practice on manure utilisation (OG 56/08)*



► COUNCIL DIRECTIVE 96/61/EC

“concerning **integrated pollution prevention and control**”

The purpose of this Directive is to achieve integrated prevention and control of pollution arising from the activities listed in Annex I. It lays down measures designed to prevent or, where that is not practicable, to reduce emissions in the air, water and land from the abovementioned activities, including measures concerning waste, in order to achieve a high level of protection of the environment taken as a whole, without prejudice to Directive 85/337/EEC and other relevant Community provisions.

- *Zakon o zaštiti okoliša (NN 110/07)*  
*Law on environmental protection (OG 110/07)*

► COUNCIL DIRECTIVE 1999/31/EC

“on the **landfill** of waste”

The EU Landfill Directive represents a step change in the way we dispose of waste in this country and sets demanding targets to reduce the amount of biodegradable municipal waste that is landfilled. These targets are:

- By 2010 to reduce biodegradable municipal waste landfilled to 75% of that produced in 1995
  - By 2013 to reduce biodegradable municipal waste landfilled to 50% of the produced in 1995
  - By 2020 to reduce biodegradable municipal waste landfilled to 35% of that produced in 1995.
- *Pravilnik o načinima i uvjetima odlaganja otpada, kategorijama i uvjetima rada za odlagališta otpada (NN 117/07)*  
*Regulation on ways and conditions of waste disposal, categories and working conditions for landfills (OF 117/07)*
  - *Plan gospodarenja otpadom u Republici Hrvatskoj u periodu od 2007. do 2015. godine (NN 85/07)*  
*Waste Management Plan 2007-2015 (OG 85/07)*

Regulations

► REGULATION (EC) No 1774/2002

“laying down **health rules concerning animal by-products** not intended for human consumption”

This Regulation lays down animal and public health rules for (a) the collection, transport, storage, handling, processing and use or disposal of animal by-products, to prevent these products from presenting a risk to animal or public health, and (b) the placing on the market and, in certain specific cases, the export and transit of animal by-products and those products derived therefrom referred to in Annexes VII and VIII of the Regulation.

This Regulation also includes catering waste if it is destined for use in a biogas plant or for composting. It was amended by several new Commission Regulations including also issues on biogas:

- COMMISSION REGULATION (EC) No 808/2003



- COMMISSION REGULATION (EC) No 668/2004
  - COMMISSION REGULATION (EC) No 92/2005
  - COMMISSION REGULATION (EC) No 93/2005
  - COMMISSION REGULATION (EC) No 416/2005
  - COMMISSION REGULATION (EC) No 181/2006
  - COMMISSION REGULATION (EC) No 208/2006
  - COMMISSION REGULATION (EC) No 2007/2006
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- *Pravilnik o načinu postupanja s nusproduktima životinjskog podrijetla koji nisu za prehranu ljudi (NN 56/06)*  
*Ordinance on ways of handling of the by-products of animal origin not intended for human consumption (OG 56/06)*

► **REGULATION (EC) No 2003/2003**

“relating to **fertilizers**”

This Regulation shall apply to products which are placed on the market as fertilisers designated ‘EC fertiliser’. This includes only mineral and synthetic fertilizers and does not cover fertilizers from anaerobic fermentation residues.

- *Zakon o gnojivima i poboljšivačima tla (NN163/03, 18/07)*  
*Law on fertilizers and soil enhancers (OG 163/03, 18/07)*