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Sustainable development and the liberalisation of the energy market

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PRELIMINARY EXPLANATORY MEMORANDUM

Report to be examined by the Committee on Sustainable Development on 20 March 2002 with the view to its transmission for examination and adoption by the Members of the Standing Committee to the Mini-Session of the Congress on 21 March 2002.

* *Objections to the Standing Committee procedure must reach the Chief Executive of the Congress a clear week before the meeting of the Standing Committee; if 5 members object, the report will be submitted to the Plenary Session.*

Les éventuelles objections à l'examen en Commission permanente doivent parvenir au Directeur exécutif du Congrès une semaine avant la réunion de la Commission permanente ; si 5 membres du Congrès présentent des objections, le rapport sera soumis à la session plénière.

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1. Introduction

The European Union is one of the largest energy consuming regions in the world. In 1997, it consumed 1407 Mtoe, about 15% of total world primary energy consumption. The contribution of electricity and gas together reached 67% of total consumption in 1997. Although examined as a whole region, the European Union is in fact marked by contrasts, ranging from countries with cold climates such as those in Scandinavia to those with milder climates in the Mediterranean. Similarly, there are substantial differences in national gross production and in income levels. All of these factors result in widely differing patterns of living standards and energy consumption.

Energy is a very important element of economic activity and social welfare. For example, in times of increasing prices for petrol, national governments fear a possible recession, and discussions and strikes are breaking out.

Deregulation of the energy market is an international trend. Countries like the USA have been fully deregulated for many years. With the deregulation in the EU Member States the European accession countries automatically must initiate the same process.

In the past, there was no trade of electricity and gas between the Member States of the EU and often no competition even within the Member States except for certain countries like the UK and the Scandinavian countries, which started the liberalisation process before the adoption of the Directive. Electricity and gas generation, transmission and distribution were dominated by monopolies. Consumers inevitably had no choice of electricity supply, and no guarantee for service standards. Furthermore, opening national markets to competition in the past led to significant price differences in different countries and even within individual Member States.

Deregulation means the opening up of some segments of the industry to competition. Privatisation legislation is encouraging a distinction between the operations of producing and transporting energy. While distributive monopolies mostly remain intact, customers can choose between different, competing producers of energy. The common rules for the internal market of electricity are relevant for the generation, transmission and distribution of electricity.

The creation of a single energy market based on open and competitive markets represents a great challenge for the European Union.

The introduction of full competition in energy supply means the traditional monopoly suppliers are a thing of the past. The monopoly will be confined to transmission and distribution functions, individual companies, as well as the market as a whole, will be subject to constant change.

Now it is the customer who decides as in many other areas what he or she wants to buy and at what price.

Over the last years, very important steps have been taken to create a single energy market for the EU. Following the unanimous adoption of the electricity Directive 96/92/EC in December 1996, its implementation has been now completed in almost all Member States. The Directive

lays down rules for allowing real competition between electricity producers, while allowing an increasing number of consumers free choice of their electricity suppliers. While providing for the liberalisation of the electricity markets, it gives special emphasis to public services by providing the mechanisms to pursue public service considerations in the context of a competitive market.

The Directive providing an internal market for natural gas was adopted on 22 June 1998. EU member states were supposed to implement it by August 2000. It provides for the gradual opening of the natural gas market to competition over a ten year period to reach 33% of the total gas consumption.

These Directives have provided the foundations for the creation of a single energy market. They have transformed the conditions under which electricity and gas trade will be carried out in the future with a view towards significant price reductions across the EU. According to the EU Commission they should also lead to enhanced efficiency, to improved security of supply and to enhanced competitiveness of the European industry competing in the world markets.

The opening of energy markets in Europe modifies the general framework of economic activity, modes of organisation and ways of thinking. Our energy future is being determined under the influence of Community directives relating to electricity and to gas. It is also being shaped by national legislation, which is being progressively put into place in different countries of the European Union and in other European countries such as those of Central Europe. These will affect the conditions under which policies for energy efficiency, for the development of renewable energy and for combating climate change are to be implemented.

2. The deregulation directive and accompanying policies

In the last three years of the millennium, the European Union adopted a series of measures:

- the Electricity Directive;
- the Gas Directive which are already transposed into national law of EU member states and serve as a guide to those countries which hope to become members of the EU;
- a resolution of the EU Council on the application of the Kyoto agreement, i.e. the reduction of 8% in the emission of greenhouse gases by 2010 ;
- a resolution of the EU Council for the promotion of combined heat and power; it fixes as a guideline the objective of doubling the contribution of cogeneration to 18% in the whole of the community by 2010 and to promote district heating and cooling networks;
- the White Paper on renewable energy, which fixes as an objective the doubling of the share of renewable energy to 12% in the energy balance of the EU by 2010;
- the 5th Framework Programme for Research and Technological Development which devotes one theme in particular to „Energy, Environment and Sustainable Development“;
- action plan to improve energy efficiency.

Rarely – and probably never – have so many European decisions, so many crucial political decisions in the energy field been taken in such a short frame of time. This means that all these objectives have to be reached in the context of a deregulated market in which the criterion of the client's final choice is likely to focus more unilaterally on the „price“ aspect.

To be able to reach all the goals in the frame of a deregulated electricity market, national laws like the new German „feed-in-law“ are indispensable.

3. Electricity market opening to eligible customers

In 1951 in Paris, the operating authorities of the European power grid decided to form the Union for the Coordination of Transmission and Production of Electricity (UCTPE), to increase the reliability of supplies. What is now the UCTE currently links the transmission system operators of France, Italy, the Netherlands, Belgium, Luxembourg, Spain, Portugal, Denmark, Austria, Switzerland and Germany to a European grid which operates according to common standards.

In the wake of the privatisation of the electricity market, the interconnecting lines between the national grids are no longer used exclusively to guarantee supplies. They now also facilitate Europe-wide trade in electricity across national frontiers.

The so-called CENTREL countries (Poland, Slovakia, the Czech Republic and Hungary) are also linked up to the UCTE.

In the EU Member States

The internal electricity market needs to be established gradually in order to enable the industry to adjust in a flexible and ordered manner to its new environment and to take into account the different ways in which electricity systems are organised at present.

European single market guidelines for electricity have triggered a liberalisation of these supply markets, which have taken on different forms and dimensions in the various Member States. The differences are also a result of the distinct structures and openings in the national markets.

From 2005, European consumers should be completely free to choose their electricity supplier. That is the goal of the European Energy Commission.

Initially, at least 35% of the electricity market in the fifteen EU member states was to have been liberalised by 2003. The background to the Commission's plan is that while many countries have opened up their electricity markets more than was foreseen, in some countries many small businesses are placed at a disadvantage by the fact that opening up of the markets varies.

In order to remove such distortions of competition, and make it easier for electricity concerns that do not operate their own supply network to have access to the grid, the EU Commission is planning to issue a new directive.

The majority of EU member states have now met and exceeded the guidelines for liberalisation as dictated by the electricity directive. The Directives do not impose a rigid system on all Member States. They rather provide the framework for the creation of a single market while leaving Member States a wide degree of discretion to adopt the system which is best suited to their particular circumstances.

This section gives an overview on barriers and the time schedule towards the opening of the electricity market in all EU member states. In most countries the market is opening gradually, whereas big consumers of energy are enabled to choose their supplier first. The currently relevant threshold differs from country to country.

State of liberalisation in early 2001:

Germany, Finland, Sweden and Great Britain have already completely liberalised their electricity markets (100%).

In Belgium (33%), consumers of more than 10 GWh (the equivalent of a large hospital) will be free to choose their electricity suppliers by 2003.

Italy (30%) aims to reduce the consumption threshold to 9 GWh in 2002.

Austria (27%) wants the electricity market to be completely free from 2001 and Denmark from 2003 - the Danish figure is currently about 90%.

In contrast France, Greece, Ireland and Portugal are the only countries to settle for the minimum target in the EU directive. In these countries, the share of the market opened to competition ranges from just 26 to 30%.

Degree of market opening in:

- Netherlands 33%
- Spain 42%
- Luxembourg 45%

Austria

The Elektrizitätswirtschafts- und –organisationsgesetz (“EWOG”), which has entered into force on 19 February 1999, provides for a gradual market opening, including final customers and distributors. The electricity market should be 100% open from 1 October 2001.

Belgium

Directive 96/92/EC gives Belgium an extra year within which to effect the transposition. However, the Government aims to push the legislation through as soon as possible.

At least 25% of distributors' purchases will be eligible by 2007, and all by 2010. The eligibility of final consumers connected to the distribution network will be decided by the Regions. Electricity imports may be banned or restricted up to 2006 if the market of the exporting Member State has been opened up to a lesser degree than the Belgian market and if the eligible customer is not recognised as eligible under the legislation of the other Member State.

Denmark

The Danish electricity market is regulated through the Electricity Supply Act (ESA), which entered into force on 1 January 1998. A decision to open the market 100%, at the latest by the end of 2002, has been taken by this agreement. By permitting all distributors to purchase freely, the electricity market is already opened indirectly up to 90% for competitors

Finland

Since 1 January 1997 all consumers can choose freely their supplier. The introduction of the load profile method in 1998 implies that small consumers can now change electricity supplier without investing in new metering equipment. Long term contracts between producers and distributors dominate the market. In 1996, the daily turnover on the Finnish electricity pool, EL-EX, accounted for only 1 - 2% of the electricity consumed in Finland. The Finnish market is becoming more integrated in the Nordic market and the objective is to merge EL-EX with Nordpool. In June 1998, Nordpool commenced operations in Finland by making Finland a price region of its own within the Nordic spot market.

France

Final consumers are eligible above a certain threshold set by decree (around 40 GWh per site) within the limits of the minimum degree of opening of the market set by the Directive (26% in 1999). Also eligible are independent producers, authorised suppliers and non-nationalised distributors, to ensure that supplies to their eligible customers are guaranteed.

Germany

The German energy law opened immediately 100% of the market on 29 April 1998. All final customers, all distributors and other agents are eligible customers in the sense of the Directive.

Greece

From February 2001, with the exception of non-interconnected islands, all consumers above 100 GWh annual consumption are free to choose their supplier: The eligible customers will represent the minimum market opening as defined in the Directive 96/92/EC. The supply of electricity to eligible customers and concerning PPC to non-eligible customers will be permitted only to those who have been granted a supply license. The license will be granted by the Minister for Development in consultation with the Regulatory authority.

Ireland

The eligible consumers (above 4 GWh per year) represent 28% of the market opened up to competition and this figure will be increased to 32% by 2003. The Minister can make an order enlarging the degree of market opening.

Italy

Since January 2000, eligibility is guaranteed for all final customers with a minimum consumption of 20 GWh for final customers and consortium and groups of customers (with a minimum consumption of 1 GWh for each member of the consortium). This represents a market opening of at least 35% of the Italian market. As from January 2002 the new threshold for final customers and consortium is fixed at 9 GWh, a market opening of at least 40% of the Italian market.

Luxembourg

Since 1999, opening of the market reaches 45%, which will meet the requirements of the Directive up to 2006. Under the new law, the Minister has the possibility of opening up the market further by designating additional eligible customers.

The Netherlands

Since the 1st of January 1999 all consumers are eligible who have an available electrical capacity of more than 2 MW per connection. Customers of over 20 GWh are eligible in any event. This represents one third of the electricity customers. As from the 1st of January 2002 all consumers are eligible who have a total maximum transmission value of more than 3· 80 A. This, together with step 1, represents two thirds of the electricity customers. As from the 1st of January 2007 all electricity consumers in the Netherlands will be free to choose their electricity supplier.

Portugal

Since the 15th of February 1999 consumers with an annual consumption of 9 GWh are eligible. They represent 25% of national electricity consumption. The 8% free parcel of the distributors has to be added to this.

Spain

The Spanish electricity market is gradually developing towards full competition. The threshold for eligible customers, has already been reduced to 1 GWh/year, representing 42% of the market or 8274 eligible customers. In 2007, or even earlier, all consumers will be considered as eligible.

Sweden

The electricity market in Sweden has been liberalised since 1 January 1996 and Sweden, therefore, only needed to adapt existing legislation slightly in order to transpose the Electricity Directive. The bulk of the trading in electricity is, however, still pursued under the terms of long-term agreements concluded before the market was liberalised. Approximately 20% of the trade occur through sales on the Nordpool Exchange. The introduction of the load profile method in 1999 implies that small consumers can now change electricity supplier without investing in new metering equipment.

UK

The UK consists mainly of 3 separate and differently organised electricity markets:

- England and Wales
- Scotland
- Northern Ireland

The electricity market systems were created by the entry into force of the Electricity Act in 1990 and achieved a 100% market opening in 1999. It is largely in line with the Electricity Directive, which can, thus, be regarded as implemented.

Electricity sources in the EU

Share of different energy sources in total energy generated (percentage)

Country	Nuclear energy	Coal, oil, gas, wood	Hydro-electric	Renewable energy
Belgium	55.2	44.3	0.5	-
Denmark		86.8	-	13.2
Germany	29.7	64.6	4.1	1.6
Finland	31.2	33.3	22.0	13.5
France	75.7	10.8	13.5	-
Greece	-	90.9	8.9	0.2
Great Britain	26.8	70.0	2.0	1.2
Ireland	-	94.7	4.8	0.5
Italy	-	78.6	19.0	2.4
Luxembourg	-	13.4	83.3	3.3
Netherlands	4.1	92.6	0.1	3.2
Austria	-	31.2	68.8	-
Portugal	-	64.9	34.8	0.3
Sweden	45.8	4.5	47.8	1.9
Spain	30.1	47.7	20.8	1.4
15 EU countries	34.3	50.2	13.8	1.7
Norway	-	0.7	99.3	-
Switzerland	40.3	3.1	56.6	-

Source: Eurelectric; eurostat; VDEW

In the other European countries

Moreover, the step by step opening of the Central and Eastern European power grid to EU customers and internal electricity trade will prepare the compliance of the accession countries with the directive of electricity liberalisation.

The traditional electricity industries in this region were vertically integrated monopolies controlled by central governments. But reforms of the structure, ownership, and regulation have started. Several of the countries have attempted to reform their electricity industries, motivated in part by the desire to ensure availability of the foreign funds needed for upgrades and expansion and motivated by the expectation to join the EU soon. The Czech Republic has been actively pursuing the upgrading and modernisation of its electric power sector to meet rising internal demand and EU environmental standards, mainly by encouraging foreign investment. Construction of the Temelin nuclear plant has lagged far behind the original construction schedule and completion costs are mounting steeply. Environmental activists and others have opposed the project mainly due to its Soviet-era design, judged to be well below current western nuclear safety standards. Croatia plans to improve efficiency and capacity in its electricity power sector by attracting foreign investors and spinning-off non-core

businesses. Hungary has also sought foreign investment to modernise its electricity sector. In December 1997, the state privatisation agency sold 61% ownership stakes in two power companies to two consortia, one foreign and one domestic.

The following examples are typical for the accession countries. They currently observe the transformation of a centralised system into a free market system, both as far as the national economy is concerned and in the energy field.

Czech Republic

One of the main objectives of their energy policy since the early 1990's has been to introduce competition in the energy sector. At the beginning of 2000 the government submitted the proposed new Energy Act and Energy Efficiency Act for discussion in Parliament. The proposed Energy Act anticipates gradual opening of markets to competition in such a manner that by 2007 100% of final electricity market and by 2008 33% of gas market will be open for competition. This means that in 2007 all electric power consumers, including households, should have the right to choose the supplier.

Poland

The transition to a deregulated electricity market runs up against a series of obstacles – legal, material resources, financial, social etc. The most important among these is without doubt the mentality of the population – as much the suppliers as the consumers. The level of energy consciousness among the population is very low.

4. The opening of the gas market

The adoption of the Gas Directive represents another major step for the creation of a single energy market in the European Union. Member States in August 2000 had to open up their markets to competition for consumers representing at least 20 % of their gas market. Member States have transposed the Directive into their national laws. Several Member States will not limit the opening of their gas market to the minimum thresholds established by the Gas directive.

The United Kingdom has already totally liberalised its gas market since May 1998, on the basis of a system of fixed tariffs for access (Regulated TPA). Ireland has opened the market for customers consuming more than 25 million m³ per year. In Germany, since April 1998 all customers are legally free to choose their supplier on the basis of a Negotiated TPA system. Spain has adopted in October 1998 a new legislative framework that will permit it to progressively liberalise all the market in 2013, with a first 46% of the market already opened since 1998. In Belgium a law should be adopted shortly opening 46,7% of the gas market to competition. The Netherlands has liberalised 45% of the market by 2000 and is planning to open it completely in 2007.

It is already possible to calculate that, as for electricity, the liberalisation of the gas market is becoming a reality throughout all Europe.

5. Trends in a deregulated market

From energy supply to energy service or from "regulation push" to "market pull"

Liberalisation sets off a "forward integration" of companies into more profitable business fields, i.e. plant construction companies move towards electricity production; producers and suppliers of electricity (and of natural gas), as well as producers of appliances, components and control systems move towards the services market - the value chain is being extended to include customers' actual "energy-related" requirements. RWE estimates, for example, that the European market for energy and energy services will grow from currently DM 800 billion to DM 1,000 billion, and aims for a share of 15%.

Of course, supply companies will continue to exist and to do what they have done so far - namely, sell kilowatt hours of electricity and cubic meters of natural gas; in the long run, however, they are under pressure to increase their share in a stagnating market (at least in the electricity sector), and they are increasingly being reduced to a producer or broker/trader function, which is without doubt necessary. This development is not "typical of electricity", but may be observed in all competition-oriented markets such as those for food, clothes and PCs; anything is possible from bulk business to delicatessen with home delivery, to custom-made products or individual system solutions (the higher margins can be found in the latter areas). If energy suppliers do not move into this business area, others will step in, as practice shows.

There are more energy services than is commonly believed - third-party financing is only a small component. Services can naturally be provided in all areas where energy is supplied and used - i.e. along the entire value chain. Examples are system services for frequency stabilisation in the network or the supply of electrical compensation energy, or the maintenance and repair of gas compressor stations by third parties rather than by the owner (or operator) of these facilities. But often, the term energy services is used to refer only to services supplied by third parties in order to meet the actual needs of consumers - both in households and in industry and trade - for space and water heating, ventilation, cooling, mobility, lighting, process heat, mechanical work, etc.

This third party, the energy service company (ESCO), provides the "energy consumer", who is not interested in the use of energy itself but rather in the benefit achieved by it, with the required energy services, such as a certain level of temperature in flats or offices, or a certain quality (defined by pressure, temperature and amount) of process steam at a certain price. The ESCO's customer is only interested in the energy services themselves and does not care what technology or energy source is used to supply them.

Instead of ESCO (energy service company), the term "contracting" is frequently used (especially in connection with "outsourcing"), but often also "third-party financing". While "outsourcing" describes an essential element of the realisation of the energy services approach (the supply of energy services is delegated to a third party), the use of the term "third-party financing" often misleadingly limits or reduces the range of services provided by ESCOs.

Using an ESCO which offers the entire range of services has the following advantages for the user :

- There is no requirement for capital.
- The technical and financial risks connected with the investments are transferred to the ESCO (the amount paid to the ESCO is made dependent on the savings which can be achieved).
- The user has a contact person who has the required technical and financial know-how
- Energy Efficiency!

Local and regional authorities have a vested interest in energy efficiency because they own or rent considerable building space, and energy bills typically represent one to two percent of their total budget. Local and regional authorities are also responsible for the health, well-being, and productivity of those who live within their borders and work, within their buildings. Despite the energy component comprising a small proportion of their total budget, in absolute terms it can be quite significant, as the following example shows :

In Berlin there are about 6,000 public buildings (10 million square metres). The energy costs run about DM 400 million per year. To retrofit the entire stock of public buildings would require an additional 1 billion DM. Against this background, solutions were designed which cost little and bring high benefits, the so called. "energy partnership". This model comprises the exploitation of the energy saving potential through third party financing. The result of this pilot project exceeded all expectations. The core of the project is as follows: external partners take on management of a number of buildings. Their job is to modernise the energy system to reduce energy costs and, at the same time, help us to preserve the environment and to save money. Already four pools of buildings have been established. The overall savings potential is about 20 to 25%.

Independent Regulator

In the future, the correct implementation of the Gas Directive by Member States and monitoring the operation of the Electricity Directive in practice will be among the top priorities of the Union. It is vital to ensure that these rules are equally and fairly applied by the establishment of efficient regulatory mechanisms.

This regulatory role will be carried out in partnership between national regulators, competition authorities, and the European Commission. The Electricity Directive itself requires the Member States to set up a dispute settlement authority, independent of electricity companies. However, most Member States have chosen to establish an independent regulator, immediately and on a day-to-day basis independent of, but ultimately responsible to, Government.

The regulatory bodies have a major impact on the operation of the energy system, have available an organisation, skills and powers which enables them to ensure that it is not only the competition rules that are respected, but also the provisions relating to the environment and energy efficiency. These bodies should also be open to consumers and to local and regional authorities.

As far as possible, local and regional authorities should set up a municipal regulatory board for electricity distribution before a national regulatory body is put in place. This would strengthen the exertion of influence of the local and regional authorities and would be also an additional source of income.

Energy Prices

In almost every European country prices for eligible customers are falling significantly. A counterexample to this is Poland where prices increased as a reaction to their new energy law.

Jobs

As a consequence of deregulation a significant number of jobs disappeared in the electricity sector. Within 10 years the energy suppliers in the UK reduced their staff for an average of 30-50%, whereas examples of up to 70% also exist.

Stock Exchange

For the organisation of the electricity market stock exchanges will arise. For the Scandinavian market they already exist with Nordpool for Norway/ Sweden and El-Ex for Finland. Furthermore, Poland created the first stock exchange for the Central and Eastern European market.

Trade between EU member states and other European countries

For legal reasons it is not possible to prevent energy imports from countries outside of the EU. Therefore the European Commission expects the following problems:

- Energy suppliers from EU member states will have more restrictions to sell internationally than suppliers from third countries.
- It may be attractive to produce electricity in third countries with lower environmental- and social standards.

The technical prerequisites for energy imports from third countries are quite good in some EU member states : Austria (up to 70%), Greece (48%), Germany (17%), Sweden, Finland, Denmark (10% each).

Economic obligations regarding public welfare

The opportunity of implementing these obligations has been used in all EU Member States, but in various intensities. The most important are the following :

- Obligation to accept and take green electricity (renewable energy, cogeneration)
- The duty to provide electricity to everybody (incl. the poor)
- To guarantee security of supply

6. Consequences for municipal utilities and other energy suppliers

Municipal utilities have to find and to define a new role under the new circumstances of the deregulated market. Local authority public utilities are for the most part small and medium-sized enterprises. Competition has strengthened an awareness that they are in a position to realise the specific opportunities open to them in order to maintain and improve their position in the single market. Like other competitive markets, there are mergers, take-overs, and even companies going out of business. Vertical disintegration has required monopoly utilities to separate their business functions and in some cases divest generation capacity. Consolidation, through mergers and acquisitions has occurred in the generation, distribution and supply sectors.

Horizontal integration is also becoming an important component; companies are merging and forming alliances on the retail side, increasing their size to become successful competitors in the newly liberalised markets (like the Energie-Netzwerk-Kommunal in Germany, an alliance of 100 municipal utilities or the regional network Lohengrin, an alliance of 6 municipal utilities in Southwest Germany). These alliances are working together in sales, marketing, services, as well as energy trading, the last activity together with international partners.

Current indications are that there will be a relatively small number of large multi-utilities, together with a number of smaller or niche players. In addition, gas and electricity supply markets will increasingly overlap. We are now in an intermediate phase, but we could already recognise that there is a trend back to monopolies. Most municipal utilities won't survive the current intermediate phase!

In a deregulated market suppliers will hardly take the financial risk of investing in large-scale centralised system because of insecure electricity sales. There should be a shift from centralised large-scale remotely-sited energy facilities to more decentralised units located closer to users, which use dispersed sources of energy. This would certainly be a positive development for climate protection.

Energy service companies must fulfil customer needs through a mixture of new demand and supply options. Energy must be sold in the form of commodities that the customer wants - efficient heating and cooling, lighting and power - not in kWh, but a full spectrum of energy services, including centralised and decentralised supply options and energy efficiency solutions. Energy services should be provided at the least cost, consistent with social, environmental and other objectives.

7. Consequences for climate protection

By acting at the demand-side at the local level, local and regional authorities have many tools at their disposal to influence local energy use. In some countries local governments exert even greater influence on energy use than national governments. By increasing energy efficiency and decreasing fossil fuel consumption in their communities local governments can improve air quality, create jobs, save money, and enhance the quality of life in their communities. However, in most countries the ability of local governments to pursue these opportunities is constrained by national policies that favour large-scale, centralised energy solutions and that subsidise carbon-based fuels.

Integrated energy planning must be promoted involving a participatory process in which all affected parties—including users, producers, workers, professionals, enterprises, and local, regional and national interest groups—take part and make decisions. Local authorities can set up "energy roundtables" within their Local Agenda 21 processes to provide a forum for expression of the various interests and to gather input from the relevant stakeholders. For smaller jurisdictions, which may not have the technical capacity and expertise for integrated energy planning, regional centres could be established to leverage technical, managerial, financial and program delivery capacity through partnerships.

Local and regional authorities should use their capacity to reduce local energy use, promote decentralised and renewable technologies, and reduce net greenhouse gas emissions.

During the times of the monopoly market emission calculations were much easier than today, because all energy data were retrievable through the monopolist. Now the same data has to be collected from many energy suppliers. Energy companies must not deny local and regional authorities access to energy data for their communities as a consequence of privatisation.

In the deregulated market municipal utilities have less money for climate protection measures available. They will have to concentrate on the those, which are economically profitable.

8. Consequences for „green energy“

The liberalisation of the European electricity and gas markets imposes both opportunities and risks for the achievements of environmental targets. The incomplete opening of the power markets come on top of an already disturbed power market that lives on more or less hidden subsidies for conventional fuels in various countries.

Lack of environmental framing of the observed deregulation may lead to increased problems for market penetration of clean technologies such as renewables and co-generation and may foster investors' insecurity. Far from having a level-playing field, these clean technologies will thus be even more marginalised by cheaper and written-off antiquated nuclear and fossil power. This is in complete contrast to international climate protection goals, EU policy goals, clean air legislation and nuclear safety regulations in both the EU and Eastern Europe.

There are countries in which the present regulations will make any significant new impetus for green power production unlikely. Other countries (like Germany with their new feed-in law from Spring 2000), in turn, have created ambitious contexts with a view to sparking off a boom or safeguarding that the on-going boom will be continued. The range of models covers subsidies on feed-in tariffs which are to be paid exclusively or largely by the electricity utilities, as well as models where the government directly or indirectly pays virtually the entire grant, putting hardly any burden on the utilities.

If there are significant amounts to be fed into the national grids, this will lead to distortions in the cost and competitive situation among the utilities. Furthermore, there are countries allowing – or even encouraging – regional differentiation in their regulations, or differentiation between the different sources of energy and others aiming at a uniform solution for the entire country.

Between now and 2010, renewable energy's share of electricity generated should rise to 22%, thereby doubling. This is provided for in the EU Directive on Electricity from Renewable Energy Sources, which was approved by the European Parliament on 3 July 2001.

Every year, the member states will be required to set targets for renewable energy's share of their domestic consumption.

The new directive further guarantees that the various national models for the supply of electricity from

- wind power;
- solar power;
- biomass ;
- water power;

will remain operative for a transitional period of at least seven years.

National governments should follow the German example of their new energy law “Act on Granting Priority to Renewable Energy Sources” from May 2000 and should set up similar legislative frameworks.

The aim of such a legislative framework should be to contribute to increasing the competitiveness of electricity generated by renewables compared to electricity produced from fossil fuels and nuclear power. It should give the opportunity to each RES to improve its performance towards a market-developed technology. Otherwise, economically promising but not yet fully competitive technologies will lose the opportunity of penetrating the market.

German examples

The new EU directive affects Germany's electricity supply legislation. Under the legislation, electricity suppliers are required to feed electricity from alternative sources into the grid in exchange for a guaranteed minimum payment equivalent to € 0.091 per kilowatt hour.

Under the German Renewable Energy Act, until 2003 environmentally friendly energy will receive aid to the tune of around € 511,000,000.

Investment aid and guaranteed payment for supplies make it easier for alternative forms of energy to get established and at the same time satisfy the needs of sustained environmental protection. The European electricity directive explicitly recognises environmental protection objectives as justification for state aid that restricts competition.

On 11 July 2001, a timetable was set for the abandonment of nuclear energy in Germany. As a result, major political efforts are required to exploit potential savings and extend alternative energy sources.

Wind power

On 30 June 2001 there were a total of 10,049 wind power plants in Germany with an installed capacity of 6,916 MW, which makes it by far the leading wind power nation. These installations account for about 2% of the country's net electricity consumption. There are currently concrete plans for a number of offshore wind plants (8 North Sea and 2 Baltic) outside the twelve mile limit. Each plant is designed to have a total capacity of up to 1,000 MW.

Under the Renewable Energy Act, wind power from offshore plants should be supported as a matter of priority. Payment for the electricity supplied is guaranteed by law, so long as the installation is linked up to the grid by 2006.

Solar power

For the last two years, there has been a national programme of support for the use of solar energy for water heating or in photovoltaic systems (the "100,000 roofs programme"). Many local authorities give non-mandatory investment grants for private investors.

Biomass energy

Following conflicts over the threat to surface and groundwater posed by farmers spreading liquid and solid waste on their land, an increasing number of these farmers are going over to installing bioreactors. The biogas plants are fuelled by liquid and solid waste, the remains of

animal fodder and grass silage. The resulting gas is used to power generators to meet the farmers' own needs. Any surplus is fed into the public grid in exchange for payment.

Energy savings

The German government has laid down a timetable for abandoning nuclear energy. At the same time, it has decided to give long-term support to renewable forms of energy, such as wind and solar power and combined heat and power.

Experts predict that by 2030 sustainable energy (electricity from large offshore wind plants, biomass and geothermal energy) will account for between 15 and 20% of the electricity market.

To achieve the CO₂ emission-reduction targets set by the 1997 World Climate Conference in Kyoto and the follow-up conference in Bonn in 2001, the potential for energy saving must be exploited more fully. German industry has gone a considerable way towards optimising its electricity consumption, although a further 20% saving is still possible. In the case of private households, an additional reduction in electricity consumption of between 35 and 50% is forecast.

Electricity suppliers' price structure offers private households no incentive to economise on electricity/ energy consumption, in contrast to their large trade and industry customers.

In Germany, city and county councils are responsible for maintaining schools. As an incentive to energy saving, many local authorities have decided to allow schools to retain a large part of any financial savings achieved for their own purposes. This positive learning experience for pupils and schools - backed up by corresponding instruction on the global context - makes a significant contribution to winning over hearts and minds.

Cogeneration

In many places the deregulated privatisation of the energy market has resulted in significant energy price reductions that make energy efficiency and renewables seemingly no longer affordable. The development of the cogeneration of heat and power is currently at a standstill in many places because of the low prices on the electricity market.

In Germany, small and medium-scale cogeneration units are extremely cost-effective, ecological and economical. But given the low prices offered to the industry and private individuals, these cogeneration units are not as profitable as they used to be. Many of them have had to close down. Municipal utilities are at a disadvantage, because they are not able to compete with the cheap electricity now flooding the market. Short-term solutions have to be adopted through national and local policies.

The Swiss "Energierstadt" (energy town) award

In Switzerland, as an incentive to people to use renewable energy and help shape the future energy scene, and to encourage energy policies that achieve significant results, local authorities of any size that have introduced or decided on energy policy measures qualify for a special award - the "Energierstadt" mark.

The policies of the authorities concerned are judged by their results. They have to meet criteria, which are set out in a standardised catalogue of measures. The results are compared with those of other "energy towns".

The catalogue of measures covers six important areas for energy policy:

1. Building and planning
2. Energy supply
3. Water/sewage treatment/waste heat
4. Traffic and transport
5. Public works
6. Internal organisation

The mark is awarded by an independent committee and publicised in the media. Award-winning local authorities can use the award with their names or to advertise themselves.

The UK Climate Change Levy

In 1992, the UK energy industry began the process of deregulation, which was completed in 1998. This means that all local and regional authorities are now able to choose not only who supplies their electricity, but how that electricity is generated. Therefore, all local authorities in the UK can now have all, or just some, of their electricity supplied from renewable sources. This has the twin benefits of enhancing the 'green image' of the local authority and promoting a sustainable industry locally. However, local authorities are constrained by their obligation to good management of public funds, in that they must ensure that goods are purchased at the best possible price. But with the introduction of the "climate change levy" it will be even possible to purchase significant quantities of green electricity, whilst still maintaining Best Value.

The Climate Change Levy (CCL), introduced in April 2001, was aimed to make green electricity a more financially viable option. The CCL will increase the price of both daytime and night-time electricity by 0.43p/kWh (which will rise year by year) with lower, yet significant, price rises on oil, gas and coal. The scheme is designed to be revenue-neutral, by recycling money through a 0.3 percent cut in employers' National Insurance contributions and by setting up a £150 million 'energy efficiency' fund. These NI reductions will reduce the impact on local authorities, as local authorities are employee rather than energy intensive. However, it has recently been announced that renewable energy (including green electricity bought from external sources) will be exempt from the levy. This will mean that in many cases (including the above two) it will be cheaper to buy CCL exempt electricity at a slight premium than it would be to buy conventionally produced electricity.

Finding the best deal for you

Although many electricity companies are now able to supply green electricity, not all supply green electricity in their areas. Additionally, the majority of companies charge a slight premium for the use of green electricity, ranging from a 5% increase per unit, to a set standing charge, to individually negotiated tariffs. Most companies guarantee that this 'green

premium' will not add to their profits, and will instead be channelled into either new renewable energy projects or local environmental initiatives.

In the UK the Energy Saving Trust and the Friends of the Earth monitor companies that supply green electricity and regularly publish information and tables to guide any purchases. The Energy Saving Trust act as an accrediting organisation and provide easy to use information, whereas the Friends of the Earth score each company on a range of issues, to come up with an overall environmental league table. Information could be also found on the Internet, the very best example so far is the independent Greenprices website (<http://www.greenprices.org>) which compares green energy offers in various countries.

In Leicester (UK) the Local Energy Agency already took advantage of these comparisons through their „Plug into Green Energy Campaign“. The energy agency offers impartial advice to customers who want to change their electricity supplier.

What could local and regional authorities do?

The City Council of Oakland, California, in June 2000 voted unanimously to have all of its municipal facilities powered solely by electricity from renewable energy sources. Oakland will buy roughly 9 megawatts of electrical power — enough to power 27 ,000 homes — for its city hall, administration buildings and street and traffic lights. Oakland's commitment to electricity from renewable sources makes it the world's largest municipal green power purchaser. If all goes according to plan, Oakland will be receiving 20 percent of its electricity from new renewable energy generators by 2004.

What is green energy, who sells which product, what are the sources, how is it certified, how much does it cost? The market for green energy is very confusing for potential customers, and consequently green energy isn't successful in the market.

Therefore a group of European NGOs, under the leadership of WWF, are currently working together on a European wide label for green electricity. With the new label potential customers will gain confidence to green electricity products. Of course every supplier will be able to certify his product(s).

The deregulated Energy Market creates new opportunities for rural businesses. In many countries such as Holland, Denmark and Germany, farmers are the main investors in wind turbines because of the financial stability provided by income from generating and selling electricity. In these countries many farmers have now moved on from supplying themselves with electricity and are now selling it in the market place. This way they are able to compensate financial losses in the trouble brewing agricultural business.

Last but not least, one should not forget that green electricity is always produced locally. Therefore the relevant local or regional authority always profits from the incoming taxes from green electricity suppliers.

9. Disadvantages of over-hasty liberalisation of the electricity market

Unfair competition in Europe

Only four countries have fully opened up their electricity markets, whereas eight are below the 35% level. Above all France, where virtually all the electricity is generated by the state undertaking EDF, is implementing the European directive only hesitantly. This is significantly delaying achievement of the goal of opening up domestic markets, and competition between European electricity suppliers is being distorted.

In Germany, liberalisation has resulted in falls in electricity prices of about 20% for private consumers and 50% for large customers. However, the opening up of the market has led to fierce price competition, resulting in dumping, mergers and company takeovers, plant closures and cheap electricity imports. Environmentally friendly electricity generation, local plant and a supply infrastructure close to the consumer are all under threat.

Electrical power supplies cannot be left to the discretion of the supplier. In accordance with the sustainability principle, it is unacceptable for the cheapest suppliers and the worst power installations to achieve success at the expense of the environment. The consumer has no way of distinguishing between "dirty" and "clean" electricity.

Further European correctives are necessary if the liberalisation of electricity markets is to be guided in the direction of sustainable development. They might include "certification" of electricity according to origin and form of production. This would very rapidly lead to the elimination of electricity generated by nuclear energy, or coal-fired plant, which do not meet our safety and environmental requirements.

Incentives for renewable energy

Unrestrained price competition (with the establishment of new monopolies in the electricity market: in Germany, the two biggest companies, E.on and RWE, control about 70% of production) also creates new problems for environmental and climate protection. The rock-bottom prices in the conventional energy generation sector inhibit the development of renewable energy. Installations using environmentally-friendly combined heat and power, with, for instance, municipal facilities producing electricity and heat at the same time, have been shutting down because they cannot compete with the dumpers.

Corresponding long-term support, which is consistent with the European electricity directive, should be used to prevent adverse developments of this kind and incentives should be introduced to encourage the development of alternative energy sources such as wind, water and solar power, biomass and geothermal energy and so on.

The conflict between services of general interest and total competition

The liberalisation of the energy market has sometimes led to negative side-effects of competition. So far, directives have taken insufficient account of the fact that electricity and gas (and according to future EU plans, also drinking water) are essential services, or services of general interest.

A Commission communication of 20 September 2000 on services of general interest in Europe states that services of general economic interest occupy a special place and that the European Union and its member states have a responsibility to ensure that the rules governing operation of such services allow them to perform their function.

The communication describes provision of services of general interest as a key element in the European model of society. Such provision and the essential services principle are recognised as Community policy goals carrying the same weight as the competition principle.

The Commission also makes it clear that defining these essential services of general economic interest is the responsibility not only of the member states but also of regional and local authorities.

The need to improve the directive

The electricity directive introduces competition based on three elements:

- freedom of production
- free access to the system
- freedom to build direct lines.

The directive only sets out certain minimum standards; the member states have wide discretion as to how and in what form it should be implemented.

In the case of electricity, as of gas, there is a choice between:

- third party access to the system based on published and standardised prices (controlled access to the system); and
- a system based on negotiations between the parties (negotiated access).

Unlike most other member states, in the case of electricity (and gas) Germany has opted for negotiated access to the system. This has resulted in certain anti-competitive developments. The federal competition authorities have threatened to take measures against the energy supply undertakings if access to the system is impeded or refused. At the same time, the authorities have called on parliament to establish an official regulatory body with immediate decision making powers.

Current discussions in the relevant committee reflect these concerns. The committee sees a need for improvements in terms of fair, non-discriminatory access to the system. On the one hand this should be achieved through effective regulations for separating:

- the system,
- production, and
- sales.

On the other hand, a national regulatory authority should be established with binding powers. Similarly, some kind of regulator should be introduced at the European level. The committee justify this recommendation on the basis of experience to date.

10. Outlook

The employment effects of the liberalisation of the electricity and gas markets will need to be addressed by Member States and the Union in co-operation with social partners.

The establishment of energy prices that reflect the true costs of energy (internalising external costs) is crucial to efficient energy use and the further introduction of renewables. Also important is the reform of subsidies for energy and of fiscal policies to ensure consistency between economic and environmental objectives, including the further introduction of carbon taxation in order to shift the composition of fuels to non-fossil sources.

Within such a framework of supportive macro-policies, local governments can and should make use of a number of mechanisms, including:

- innovative approaches to self-financing such as revolving energy efficiency funds and third party financing (energy service contracting),
- aggregated purchases of advanced energy-saving products and renewable technologies to promote their demand and bring costs down,
- economic measures such as taxes and fees to internalise the full costs of energy consumption.

National governments should give priority in their public infrastructure investments to local projects locally that reduce energy use, save money, create jobs, stimulate the economy locally, and make communities more liveable.

Partnerships, Procurement

Possibilities for partnerships to promote energy efficiency are endless, between national, regional, and local levels of government, private enterprises, financial institutions, associations, unions, networks, citizens groups and various combinations of the above.

Joint technology procurement in the form of buyers clubs and joint ventures can stimulate demand for new technological solutions. Establishing networks of committed institutions (e.g. cities, companies) and providing recognition for best practices can be a motivation for action. Sustained and targeted stakeholder information campaigns such as ICLEI's Ecoprocurement Initiative can change misconceptions among consumers about energy services and sources, and their related costs in financial and environmental terms.

Exchanges of Experience

Specialised networks of local authorities such as ICLEI's "Cities for Climate Protection" Campaign have a very important role to play here as intermediaries: we can encourage exchanges between local and regional authorities, keep them informed and provide logistic support in organising exchanges and encounters. Furthermore such a network serves as a lobbying instrument, e.g. for the promotion of energy efficiency.

International co-operation is necessary to help share ideas, learn from national experience, and build confidence among stakeholders. In the globalised world, with a growing decentralisation of power and expansion of the private sector role, co-operation becomes even more crucial.

An integrated strategy is needed that involves all levels of government, all sectors of the society, in both the industrialised and developing countries to meet the challenge of the rapid growth of energy demand and growing threat of climate change. The strategy must consist of pursuing efficient production processes and reducing waste, using fuels more efficiently, and relying more on renewable energies.

Concerted efforts must be made to ensure the environmental integrity of the Kyoto Protocol and its early ratification.

Local and regional authorities should integrate their energy and environment policy as a fundamental component of their policies for urban development, economic development and employment.

In times of energy monopolies, many municipalities financed their public transport through their municipal utility. Because profit decreases in the deregulated market, solutions are needed to support public transport.

Local and regional authorities should explore their opportunity to create an energy agency.

For climate protection managers in local and regional authorities technical skills are getting less important. On the other hand, personal competence in communication, co-operation, marketing and in chairing meetings is essential in a deregulated market environment.
