

Table 5.3: Total Lifetime Releases from Selected Technologies

Technology (2005-2010)	GC/kWh*	t.Equivalent to GCO <sub>2</sub> /kWh**
Lignite	228	836
Coal	206	755
Natural Gas	105	385
Biomass	8-17	29-62
Wind	3-10	11-37
Nuclear	3-6	11-22

\*Grams of Carbon per kilowatt hour of electricity produced.

\*\* Grams of Carbon Dioxide per kilowatt hour of electricity produced.

Source: OECD Nuclear Energy Agency.

5.105 Some respondents to the Energy Review consultation questioned nuclear's credentials as a net producer of low carbon energy, particularly in relation to the availability of high quality uranium ore. Lower grade ores will require more energy to make fuel for nuclear power stations, which could increase the lifecycle carbon emissions from nuclear power. However, it is not expected that high-grade resources will be depleted in the foreseeable future<sup>52</sup>. This view is endorsed by the International Atomic Energy Agency (IAEA) and NEA; none of the planned new mining projects are of significantly lower grade ores than that currently mined<sup>53</sup>. As such, we can have confidence that the estimates of the lifecycle emissions from nuclear will remain comparable with wind power, a view highlighted by the Sustainable Development Commission<sup>54</sup>.

#### Nuclear contributes to increased diversity of energy supplies

5.106 Nuclear currently provides around 20% of the country's electricity needs and a significant proportion of its baseload capacity. However, most of our existing nuclear power stations are scheduled to close over the coming two decades. In the absence of new nuclear build or life extensions to existing nuclear plant, the nuclear share of generation will decline sharply by the 2020s. Much of our coal generating capacity is also likely to face closure over this period. We expect a substantial increase in renewable capacity by then. However, central projections indicate that based on the existing market framework, many of the closing power stations would be replaced with gas-fired power stations. This would increase our dependence on imported gas. By 2020, electricity generated by gas would probably be around 55%.

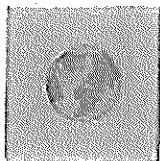
5.107 There is a possibility of extensions to the scheduled lives of some existing nuclear plant. However, this is uncertain, and will remain so for some years. Any life extensions would help mitigate the decline in low carbon generation in the period towards the end of the next decade. However, it is less clear and certain that life extensions would have a significant impact on the amount of nuclear capacity operating in the 2020s.

52 Sustainable Development Commission *The Role of Nuclear in a Low Carbon Economy – "Paper 8 Uranium Resource Availability"*.

53 Information from IAEA member states submitted to IAEA/NEA for "*Uranium 2005: Resources, Production and Demand*", aka "Red Book".

54 Sustainable Development Commission *The Role of Nuclear in a Low Carbon Economy – "Paper 2 Reducing CO<sub>2</sub> Emissions – Nuclear and the Alternatives"*.

ADEME



Agence de l'Environnement  
et de la Maîtrise de l'Énergie

## NOTE DE CADRAGE SUR LE CONTENU CO<sub>2</sub> DU KWh PAR USAGE EN FRANCE

14 janvier 2005

### 1. Le contexte

Le calcul du contenu en carbone de l'électricité représente en France un enjeu important pour l'évaluation des actions dans le domaine de la lutte contre le changement climatique. Si pour bon nombre de pays, cette question ne soulève pas de difficulté majeure, elle est complexe à démêler dans notre pays compte tenu de la spécificité du secteur électrique français.

En effet, en France, les émissions de CO<sub>2</sub> de l'électricité à la production varient fortement selon que l'on considère la moyenne annuelle sur l'ensemble des moyens de production France, les émissions des seuls parcs hydrauliques et nucléaires (sans émissions), ou la production du parc de centrales au charbon (de l'ordre de 900 gCO<sub>2</sub>/kWh). Ceci conduit de fait, en France, à des variations holo-saisonnnières importantes du contenu en CO<sub>2</sub> du kWh livré sur le réseau, tandis que dans les autres pays européens, cette dispersion est limitée dans la mesure où la production d'électricité à partir de centrales thermiques à combustibles fossiles représente une partie importante de la production en base.

De plus, dans la mesure où les moyens émetteurs (centrales thermiques à flamme) fonctionnent en « terme de bouclage » de l'équilibre offre-demande France, la moyenne nationale varie assez sensiblement en fonction des conditions de température et des caractéristiques de fonctionnement du parc. Après avoir tendanciellement diminué depuis 1990, le contenu en CO<sub>2</sub> de l'électricité évolue désormais dans une fourchette de 60 à 120 gCO<sub>2</sub>/kWh, bien en-deçà de la moyenne européenne (environ 340 gCO<sub>2</sub>/kWh).

En conséquence, l'approche, par un seul indicateur, du contenu CO<sub>2</sub> moyen du kWh français s'est révélée insuffisante, et la volonté d'un certain nombre d'acteurs a été d'utiliser des contenus CO<sub>2</sub> différenciés par usage.

Cependant sur le réseau, les électrons sont totalement indifférenciés. Ainsi, la question consistant à rechercher la centrale de production qui alimente tel utilisateur n'a pas de sens d'un point de vue physique. Le calcul d'un contenu en CO<sub>2</sub> par usage relève donc nécessairement de simplifications méthodologiques et de conventions, qu'il convient de bien expliciter pour en connaître les limites et éviter d'en faire un sujet de controverses.

Cette problématique, et plus particulièrement la question du contenu en CO<sub>2</sub> du chauffage électrique fait partie des sujets retenus dans les conventions entre l'ADEME et EDF. Dans ce cadre, un consensus a émergé entre les deux partenaires pour élaborer conjointement une méthodologie d'évaluation du contenu CO<sub>2</sub> du kWh par usage ainsi que pour publier des résultats communs.

## 2. La méthode

Un travail commun a donc été entrepris entre l'ADEME et EDF depuis l'été 2003, qui a permis d'aboutir à des conventions, une méthodologie et des résultats partagés.

Les grands principes qui ont guidé ce travail ont été les suivants :

- o Choix d'une méthode qui respecte le critère d'additivité, c'est à dire que, sur une année, la somme des émissions de CO<sub>2</sub> de l'ensemble des différents usages est égale (ni plus, ni moins) au total des émissions du parc de production.
- o Choix d'une méthode basée sur les données historiques partagées. La période retenue (1998-2003) est volontairement longue afin de gommer les variations dues à des situations particulières, aussi bien en terme de fonctionnement du parc qu'en terme de climatologie.
- o Le périmètre retenu est celui de la France continentale hors production auto-consommée ; il ne s'agit pas ici d'évaluer le kWh d'un acteur particulier dans l'objectif d'une démarche commerciale mais bien de définir le contenu d'un kWh consommé sur notre territoire, afin d'aider à la mise en œuvre de politiques publiques au niveau français.
- o Utilisation de données au pas mensuel : d'une part la « variance » du contenu CO<sub>2</sub> est en grande partie expliquée par la composante saisonnière (par opposition aux variations horaires au sein d'une semaine) et d'autre part, les études à pas de temps plus fin sont moins robustes et difficilement reproductibles.

Plus précisément, la méthode a consisté pour chaque type de production (nucléaire, lac, énergies renouvelables, charbon, fuel et cogénération) à séparer la production entre une fraction en base (environ 400 TWh annuels) et une fraction saisonnalisée (environ 100 TWh), afin de calculer le contenu CO<sub>2</sub> de chacune de ces deux composantes de la production. Les deux valeurs correspondantes sont en moyenne respectivement de 40 et 180 gramme par kWh livré à l'utilisateur final<sup>1</sup>.

Concernant la consommation, l'étude a conduit à identifier un coefficient de saisonnalisation à chaque usage. Ainsi, on considère que le chauffage électrique est saisonnalisé à 100 %, mais l'industrie à 10% seulement. Afin d'affecter à chaque usage un contenu CO<sub>2</sub>, les valeurs des deux composantes de production obtenues précédemment ont été pondérées pour chaque usage par le coefficient de saisonnalisation : pour le chauffage on obtiendra une valeur identique à la composante saisonnalisée tandis que pour l'industrie elle sera calculée en prenant 10% de la valeur saisonnalisée et 90% de la valeur en production de base, etc.

La combinaison de ces deux approches sur des données mesurées permet de tenir compte à la fois des caractéristiques intrinsèques à chaque usage, et de l'adaptation du système de production à ces usages.

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<sup>1</sup> Les émissions de CO<sub>2</sub> sont ramenées à la quantité d'électricité servie par le réseau après déduction des consommations du système électrique. Le contenu en CO<sub>2</sub> du solde import/export (de 58 à 77 TWh) est conventionnellement affecté d'une valeur correspondant à la production en base du parc électrique français.

### 3. Les résultats

Les résultats permettent de distinguer 4 niveaux d'émissions par usages.

Ces 4 indicateurs offrent une vision facilement partageable pour les utilisations les plus courantes. Ils se fondent sur un lot d'indicateurs détaillés (cf. annexe) qui peuvent être utilisés pour des besoins plus précis.

- o L'usage de l'électricité pour le **chauffage** résidentiel et tertiaire (chauffage électrique et pompes de circulation des chaudières fuel et gaz), exclusivement hivernal, se voit attribuer le contenu CO<sub>2</sub> de la production saisonnalisée, à savoir **180 g/kWh**
- o **L'éclairage**, qu'il soit résidentiel, tertiaire, public ou industriel a un contenu CO<sub>2</sub> d'environ **100 g/kWh**
- o Les usages résidentiels (**cuison, lavage et produits bruns**), les usages tertiaires et industriels autres que l'éclairage ont une consommation qui suit la courbe de charge globale et se voient donc attribuer un contenu CO<sub>2</sub> à peu près égal à la moyenne nationale à savoir environ **60 g/kWh**
- o Enfin, les autres usages de base (**froid, ECS, autres usages résidentiels, agriculture, transports, BTP et armées**), dont les variations ne suivent pas le rythme des saisons et la **climatisation dans le secteur tertiaire** (dont la saisonnalité est inversée par rapport au cycle de production électrique) se voient affecter un contenu en CO<sub>2</sub> d'environ **40 g/kWh**.

Ces indicateurs sont des moyennes pondérées sur la période d'analyse. Ils se situent dans des plages de variation parfois importantes, comme pour l'éclairage résidentiel où l'indicateur varie d'une valeur de 93 à 151 gCO<sub>2</sub>/kWh pour la période 1998-2003.

Ceci retrace la variabilité du contenu en CO<sub>2</sub> de l'électricité produite, elle-même en rapport avec trois paramètres majeurs : les aléas climatiques, la disponibilité des modes de production (en particulier de l'hydraulique et du nucléaire) et l'équilibre de gestion dans l'appel des différents modes de production. Malgré une analyse approfondie, aucune corrélation simple n'a pu être mise en évidence entre ces facteurs et le nombre de données disponibles est trop faible pour rechercher des corrélations plus élaborées.

### 4. L'utilisation des résultats et leur domaine de validité

Ces résultats étant désormais partagés et validés, le cadre d'application définit de manière concertée est le suivant :

- o Ils ont vocation à être utilisés par l'ADEME et par EDF pour rendre compte de l'impact en termes d'effet de serre lors de **l'évaluation de projets au niveau local**.

Ils seront notamment utilisés par l'ADEME pour l'instruction et le suivi des projets visant à promouvoir ou à mettre en œuvre des actions de maîtrise de l'énergie, de développement des énergies renouvelables et de politique énergétique locale en collaboration avec les collectivités territoriales et/ou en concertation avec les opérateurs énergétiques locaux.

- o Ces résultats ont été présentés, au niveau national, aux autorités compétentes pour contribuer à l'émergence d'un référentiel national utilisable dans le cadre des **politiques publiques**
- o Ces chiffres n'ont pas d'incidence sur les quotas de CO<sub>2</sub> attribués aux entreprises dans le cadre du PNAQ. Celui-ci ne considère en effet que les émissions directes.

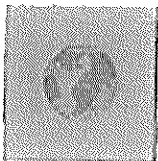
Ces indicateurs, établis sur une référence historique, correspondent à la meilleure estimation existante à ce jour.

En toute rigueur, pour estimer l'impact de projets ou de programmes ayant des durées de vie ou des périodes d'action dépassant 10 ou 15 ans, il faudrait employer une méthode tenant compte des évolutions futures dans la structure de production et des changements de profils de consommation. Dans l'attente de disposer de ces évaluations prospectives, ces indicateurs seront utilisés pour le moyen terme, en veillant à les réactualiser périodiquement (tous les quatre ans).

Par ailleurs, un travail méthodologique sur une évaluation prospective du contenu CO<sub>2</sub> des usages sera entrepris dans le cadre de la convention ADEME/EDF 2004-2007.

Enfin, une évaluation sera parallèlement réalisée pour mettre au point des Indicateurs de CO<sub>2</sub> évité par le développement des productions d'électricité d'origines renouvelables (éolien, hydraulique, photovoltaïque, bois...).

ADEME



Agence de l'Environnement  
et de la Maîtrise de l'Énergie

ANNEXE

A LA NOTE DE CADRAGE DU 14/01/2005 SUR  
LE CONTENU CO<sub>2</sub> DU KWh PAR USAGE EN FRANCE :

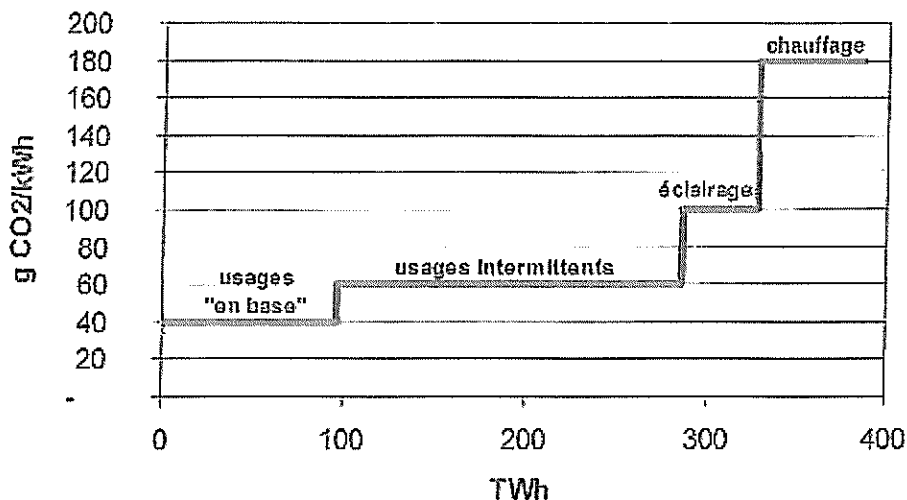
TABLEAU DES RESULTATS DETAILLES PAR USAGE

Indicateurs de contenu en CO<sub>2</sub> de l'électricité consommée en France  
(en g de CO<sub>2</sub>/kWh<sub>e</sub>)

Indicateurs détaillés	Référence (valeur moyenne)	à titre indicatif : plages de variation	Indicateurs simplifiés
chauffage+ pompes de circ.	180	129 à 281	180 Chauffage
éclairage résidentiel	116	93 à 151	100 Eclairage
éclairage tertiaire	80	64 à 88	
éclairage public et industriel	109	85 à 134	
usages résidentiels : cuisson	82	66 à 93	60 Usages intermittents
usages résidentiels : lavage	79	63 à 88	
usages résidentiels : produits bruns	62	50 à 81	
usages tertiaires : autres	52	41 à 77	
usages Industriels (hors éclairage)	55	38 à 86	
Usages résidentiels : ECS	40	20 à 72	40 Usages "en base"
usages résidentiels : froid	40		
usages résidentiels : autres	39		
usages tertiaires : climatisation	37		
agriculture-transport	38		
autres (BTP, recherche, armée, etc.)	35		

source : ADEME et EDF, 2004

Indicateurs CO<sub>2</sub> et volumes de consommation



## DIRECTIVE 2003/54/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 26 June 2003

concerning common rules for the internal market in electricity and repealing Directive 96/92/EC

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF  
THE EUROPEAN UNION,Having regard to the Treaty establishing the European  
Community, and in particular Article 47(2), Article 55 and  
Article 95 thereof,Having regard to the proposals from the Commission <sup>(1)</sup>,Having regard to the Opinion of the European Economic and  
Social Committee <sup>(2)</sup>,

Having consulted the Committee of the Regions,

Acting in accordance with the procedure laid down in Article  
251 of the Treaty <sup>(3)</sup>,

Whereas:

(1) Directive 96/92/EC of the European Parliament and of  
the Council of 19 December 1996 concerning common  
rules for the internal market in electricity <sup>(4)</sup> has made  
significant contributions towards the creation of an  
internal market for electricity.(2) Experience in implementing this Directive shows the  
benefits that may result from the internal market in  
electricity, in terms of efficiency gains, price reductions,  
higher standards of service and increased  
competitiveness. However, important shortcomings and  
possibilities for improving the functioning of the market  
remain, notably concrete provisions are needed to  
ensure a level playing field in generation and to reduce  
the risks of market dominance and predatory behaviour,  
ensuring non-discriminatory transmission and  
distribution tariffs, through access to the network on  
the basis of tariffs published prior to their entry into  
force, and ensuring that the rights of small and  
vulnerable customers are protected and that information  
on energy sources for electricity generation is disclosed,  
as well as reference to sources, where available, giving  
information on their environmental impact.(3) At its meeting in Lisbon on 23 and 24 March 2000, the  
European Council called for rapid work to be  
undertaken to complete the internal market in both  
electricity and gas sectors and to speed up liberalisation  
in these sectors with a view to achieving a fully  
operational internal market. The European Parliament,  
in its Resolution of 6 July 2000 on the Commission's  
second report on the state of liberalisation of energy  
markets, requested the Commission to adopt a detailed  
timetable for the achievement of accurately defined  
objectives with a view to gradually but completely  
liberalising the energy market.(4) The freedoms which the Treaty guarantees European  
citizens — free movement of goods, freedom to provide  
services and freedom of establishment — are only  
possible in a fully open market, which enables all  
consumers freely to choose their suppliers and all  
suppliers freely to deliver to their customers.(5) The main obstacles in arriving at a fully operational and  
competitive internal market relate amongst other things  
to issues of access to the network, tariffication issues and  
different degrees of market opening between Member  
States.(6) For competition to function, network access must be  
non-discriminatory, transparent and fairly priced.(7) In order to complete the internal electricity market,  
non-discriminatory access to the network of the  
transmission or the distribution system operator is of  
paramount importance. A transmission or distribution  
system operator may comprise one or more  
undertakings.(8) In order to ensure efficient and non-discriminatory  
network access it is appropriate that the distribution  
and transmission systems are operated through legally  
separate entities where vertically integrated undertakings  
exist. The Commission should assess measures of  
equivalent effect, developed by Member States to achieve  
the aim of this requirement, and, where appropriate,  
submit proposals to amend this Directive. It is also  
appropriate that the transmission and distribution  
system operators have effective decision-making rights  
with respect to assets necessary to maintain, operate and  
develop networks when the assets in question are  
owned and operated by vertically integrated  
undertakings. It is necessary that the independence of  
the distribution system operators and the transmission  
system operators be guaranteed especially with regard to  
generation and supply interests. Independent  
management structures must therefore be put in place<sup>(1)</sup> OJ C 240 E, 28.8.2001, p. 60, and OJ C 227 E, 24.9.2002, p. 393.<sup>(2)</sup> OJ C 36, 8.2.2002, p. 10.<sup>(3)</sup> Opinion of the European Parliament of 13 March 2002 (OJ C 47 E,  
27.2.2003, p. 350), Council Common Position of 3 February 2003  
(OJ C 50 E, 4.3.2003, p. 15) and Decision of the European  
Parliament of 4 June 2003 (not yet published in the Official  
Journal).<sup>(4)</sup> OJ L 27, 30.1.1997, p. 20.

between the distribution system operators and the transmission system operators and any generation/supply companies.

It is important however to distinguish between such legal separation and ownership unbundling. Legal separation does not imply a change of ownership of assets and nothing prevents similar or identical employment conditions applying throughout the whole of the vertically integrated undertakings. However, a non-discriminatory decision-making process should be ensured through organisational measures regarding the independence of the decision-makers responsible.

- (9) In the case of small systems the provision of ancillary services may have to be ensured by transmission system operators (TSOs) interconnected with small systems.
- (10) While this Directive is not addressing ownership issues it is recalled that in case of an undertaking performing transmission or distribution and which is separated in its legal form from those undertakings performing generation and/or supply activities, the designated system operators may be the same undertaking owning the infrastructure.
- (11) To avoid imposing a disproportionate financial and administrative burden on small distribution companies, Member States should be able, where necessary, to exempt such companies from the legal distribution unbundling requirements.
- (12) Authorisation procedures should not lead to an administrative burden disproportionate to the size and potential impact of electricity producers.
- (13) Further measures should be taken in order to ensure transparent and non discriminatory tariffs for access to networks. Those tariffs should be applicable to all system users on a non discriminatory basis.
- (14) In order to facilitate the conclusion of contracts by an electricity undertaking established in a Member State for the supply of electricity to eligible customers in another Member State, Member States and, where appropriate, national regulatory authorities should work towards more homogenous conditions and the same degree of eligibility for the whole of the internal market.
- (15) The existence of effective regulation, carried out by one or more national regulatory authorities, is an important factor in guaranteeing non-discriminatory access to the network. Member States specify the functions, competences and administrative powers of the regulatory authorities. It is important that the regulatory authorities in all Member States share the same minimum set of competences. Those authorities should have the competence to fix or approve the tariffs, or at least, the methodologies underlying the calculation of transmission and distribution tariffs. In order to avoid uncertainty and costly and time consuming disputes, these tariffs should be published prior to their entry into force.
- (16) The Commission has indicated its intention to set up a European Regulators Group for Electricity and Gas which would constitute a suitable advisory mechanism for encouraging cooperation and coordination of national regulatory authorities, in order to promote the development of the internal market for electricity and gas, and to contribute to the consistent application, in all Member States, of the provisions set out in this Directive and Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas <sup>(1)</sup> and in Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity <sup>(2)</sup>.
- (17) In order to ensure effective market access for all market players, including new entrants, non discriminatory and cost-reflective balancing mechanisms are necessary. As soon as the electricity market is sufficiently liquid, this should be achieved through the setting up of transparent market-based mechanisms for the supply and purchase of electricity needed in the framework of balancing requirements. In the absence of such a liquid market, national regulatory authorities should play an active role to ensure that balancing tariffs are non discriminatory and cost-reflective. At the same time, appropriate incentives should be provided to balance in-pull and off-take of electricity and not to endanger the system.
- (18) National regulatory authorities should be able to fix or approve tariffs, or the methodologies underlying the calculation of the tariffs, on the basis of a proposal by the transmission system operator or distribution system operator(s), or on the basis of a proposal agreed between these operator(s) and the users of the network. In carrying out these tasks, national regulatory authorities should ensure that transmission and distribution tariffs are non-discriminatory and cost-reflective, and should take account of the

<sup>(1)</sup> See p. 57 of this Official Journal.

<sup>(2)</sup> See p. 1 of this Official Journal.



long-term, marginal, avoided network costs from distributed generation and demand-side management measures.

Infrastructure, including interconnection capacity and decentralised electricity generation, are important elements in ensuring a stable electricity supply.

- (19) All Community industry and commerce, including small and medium-sized enterprises, and all Community citizens that enjoy the economic benefits of the internal market should also be able to enjoy high levels of consumer protection, and in particular households and, where Member States deem it appropriate, small enterprises should also be able to enjoy public service guarantees, in particular with regard to security of supply and reasonable tariffs, for reasons of fairness, competitiveness and indirectly to create employment.
- (20) Electricity customers should be able to choose their supplier freely. Nonetheless a phased approach should be taken to completing the internal market for electricity to enable industry to adjust and ensure that adequate measures and systems are in place to protect the interests of customers and ensure they have a real and effective right to choose their supplier.
- (21) Progressive market opening towards full competition should as soon as possible remove differences between Member States. Transparency and certainty in the implementation of this Directive should be ensured.
- (22) Nearly all Member States have chosen to ensure competition in the electricity generation market through a transparent authorisation procedure. However, Member States should ensure the possibility to contribute to security of supply through the launching of a tendering procedure or an equivalent procedure in the event that sufficient electricity generation capacity is not built on the basis of the authorisation procedure. Member States should have the possibility, in the interests of environmental protection and the promotion of infant new technologies, of tendering for new capacity on the basis of published criteria. New capacity includes *inter alia* renewables and combined heat and power (CHP).
- (23) In the interest of security of supply, the supply/demand balance in individual Member States should be monitored, and monitoring should be followed by a report on the situation at Community level, taking account of interconnection capacity between areas. Such monitoring should be carried out sufficiently early to enable appropriate measures to be taken if security of supply is compromised. The construction and maintenance of the necessary network infrastructure, including interconnection capacity, should contribute to ensuring a stable electricity supply. The maintenance and construction of the necessary network infrastructure, including interconnection capacity and decentralised electricity generation, are important elements in ensuring a stable electricity supply.
- (24) Member States should ensure that household customers and, where Member States deem it appropriate, small enterprises, enjoy the right to be supplied with electricity of a specified quality at clearly comparable, transparent and reasonable prices. In order to ensure the maintenance of the high standards of public service in the Community, all measures taken by Member States to achieve the objectives of this Directive should be regularly notified to the Commission. The Commission should regularly publish a report analysing measures taken at national level to achieve public service objectives and comparing their effectiveness, with a view to making recommendations as regards measures to be taken at national level to achieve high public service standards. Member States should take the necessary measures to protect vulnerable customers in the context of the internal electricity market. Such measures can differ according to the particular circumstances in the Member States in question and may include specific measures relating to the payment of electricity bills, or more general measures taken in the social security system. When universal service is also provided to small enterprises, measures to ensure that this universal service is provided may differ according to households and small enterprises.
- (25) The Commission has indicated its intention to take initiatives especially as regards the scope of the labelling provision and notably on the manner in which the information on the environmental impact in terms of at least emissions of CO<sub>2</sub> and the radioactive waste resulting from electricity production from different energy sources, could be made available in a transparent, easily accessible and comparable manner throughout the European Union and on the manner in which the measures taken in the Member States to control the accuracy of the information provided by suppliers could be streamlined.
- (26) The respect of the public service requirements is a fundamental requirement of this Directive, and it is important that common minimum standards, respected by all Member States, are specified in this Directive, which take into account the objectives of common protection, security of supply, environmental protection and equivalent levels of competition in all Member States. It is important that the public service requirements can be interpreted on a national basis, taking into account national circumstances and subject to the respect of Community law.

(27) Member States may appoint a supplier of last resort. This supplier may be the sales division of a vertically integrated undertaking, that also performs the functions of distribution, provided that it meets the unbundling requirements of this Directive.

(28) Measures implemented by Member States to achieve the objectives of social and economic cohesion may include, in particular, the provision of adequate economic incentives, using, where appropriate, all existing national and Community tools. These tools may include liability mechanisms to guarantee the necessary investment.

(29) To the extent to which measures taken by Member States to fulfil public service obligations constitute State aid under Article 87(1) of the Treaty, there is an obligation according to Article 88(3) of the Treaty to notify them to the Commission.

(30) The requirement to notify the Commission of any refusal to grant authorisation to construct new generation capacity has proven to be an unnecessary administrative burden and should therefore be dispensed with.

(31) Since the objective of the proposed action, namely the creation of a fully operational internal electricity market, in which fair competition prevails, cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale and effects of the action, be better achieved at Community level, the Community may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve that objective.

(32) In the light of the experience gained with the operation of Council Directive 90/547/EEC of 29 October 1990 on the transit of electricity through transmission grids<sup>(1)</sup>, measures should be taken to ensure homogeneous and non-discriminatory access regimes for transmission, including cross-border flows of electricity between Member States. To ensure homogeneity in the treatment of access to the electricity networks, also in the case of transit, that Directive should be repealed.

(33) Given the scope of the amendments that are being made to Directive 96/92/EC, it is desirable, for reasons of clarity and rationalisation, that the provisions in question should be recast.

(34) This Directive respects the fundamental rights, and observes the principles, recognised in particular by the Charter of Fundamental Rights of the European Union,

HAVE ADOPTED THIS DIRECTIVE:

## CHAPTER I

### SCOPE AND DEFINITIONS

#### Article 1

##### Scope

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

#### Article 2

##### Definitions

For the purposes of this Directive:

1. 'generation' means the production of electricity;
2. 'producer' means a natural or legal person generating electricity;
3. 'transmission' means the transport of electricity on the extra high-voltage and high-voltage interconnected system with a view to its delivery to final customers or to distributors, but not including supply;
4. 'transmission system operator' means a natural or legal person responsible for operating, ensuring the maintenance of and, if necessary, developing the transmission system in a given area and, where applicable, its interconnections with other systems, and for ensuring the long term ability of the system to meet reasonable demands for the transmission of electricity;
5. 'distribution' means the transport of electricity on high-voltage, medium voltage and low voltage distribution systems with a view to its delivery to customers, but not including supply;
6. 'distribution system operator' means a natural or legal person responsible for operating, ensuring the maintenance of and, if necessary, developing the distribution system in a given area and, where applicable, its interconnections with other systems and for ensuring the long term ability of the system to meet reasonable demands for the distribution of electricity;
7. 'customers' means wholesale and final customers of electricity;
8. 'wholesale customers' means any natural or legal persons who purchase electricity for the purpose of resale inside or outside the system where they are established;

<sup>(1)</sup> OJ L 313, 13.11.1990, p. 30. Directive as last amended by Commission Directive 98/75/EC (OJ L 276, 13.10.1998, p. 9).

9. 'final customers' means customers purchasing electricity for their own use;
10. 'household customers' means customers purchasing electricity for their own household consumption, excluding commercial or professional activities;
11. 'non-household customers' means any natural or legal persons purchasing electricity which is not for their own household use and shall include producers and wholesale customers;
12. 'eligible customers' means customers who are free to purchase electricity from the supplier of their choice within the meaning of Article 21 of this Directive;
13. 'interconnectors' means equipment used to link electricity systems;
14. 'interconnected system' means a number of transmission and distribution systems linked together by means of one or more interconnectors;
15. 'direct line' means either an electricity line linking an isolated production site with an isolated customer or an electricity line linking an electricity producer and an electricity supply undertaking to supply directly their own premises, subsidiaries and eligible customers;
16. 'economic precedence' means the ranking of sources of electricity supply in accordance with economic criteria;
17. 'ancillary services' means all services necessary for the operation of a transmission or distribution system;
18. 'system users' means any natural or legal persons supplying to, or being supplied by, a transmission or distribution system;
19. 'supply' means the sale, including resale, of electricity to customers;
20. 'integrated electricity undertaking' means a vertically or horizontally integrated undertaking;
21. 'vertically integrated undertaking' means an undertaking or a group of undertakings whose mutual relationships are defined in Article 3(3) of Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings<sup>(1)</sup> and where the undertaking/group concerned is performing at least one of the functions of transmission or distribution and at least one of the functions of generation or supply of electricity;
22. 'related undertaking' means affiliated undertakings, within the meaning of Article 41 of the Seventh Council Directive 83/349/EEC of 13 June 1983 based on Article 44(2)(g) (\*) of the Treaty on consolidated accounts<sup>(2)</sup>, and/or associated undertakings, within the meaning of Article 33(1) thereof, and/or undertakings which belong to the same shareholders;
23. 'horizontally integrated undertaking' means an undertaking performing at least one of the functions of generation for sale, or transmission, or distribution, or supply of electricity, and another non electricity activity;
24. 'tendering procedure' means the procedure through which planned additional requirements and replacement capacity are covered by supplies from new or existing generating capacity;
25. 'long-term planning' means the planning of the need for investment in generation and transmission and distribution capacity on a long term basis, with a view to meeting the demand of the system for electricity and securing supplies to customers;
26. 'small isolated system' means any system with consumption of less than 3 000 GWh in the year 1996, where less than 5 % of annual consumption is obtained through interconnection with other systems;
27. 'micro isolated system' means any system with consumption less than 500 GWh in the year 1996, where there is no connection with other systems;
28. 'security' means both security of supply and provision of electricity, and technical safety;
29. 'energy efficiency/demand-side management' means a global or integrated approach aimed at influencing the amount and timing of electricity consumption in order to reduce primary energy consumption and peak loads by giving precedence to investments in energy efficiency measures, or other measures, such as interruptible supply contracts, over investments to increase generation capacity, if the former are the most effective and economical option, taking into account the positive environmental impact of reduced energy consumption and the security of supply and distribution cost aspects related to it;

(\*) The title of Directive 83/349/EEC has been adjusted to take account of the renumbering of the Articles of the Treaty establishing the European Community in accordance with Article 12 of the Treaty of Amsterdam; the original reference was to Article 54(3)(g).

(2) OJ L 193, 18.7.1983, p. 1. Directive as last amended by Directive 2001/65/EC of the European Parliament and of the Council (OJ L 283, 27.10.2001, p. 28).

(1) OJ L 395, 30.12.1989, p. 1. Regulation as last amended by Regulation (EC) No 1310/97 (OJ L 180, 9.7.1997, p. 1).

30. 'renewable energy sources' means renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases);

31. 'distributed generation' means generation plants connected to the distribution system.

small and medium-sized consumers by promoting the possibilities of voluntary aggregation of representation for this class of consumers.

The first subparagraph shall be implemented in a transparent and non-discriminatory way and shall not impede the opening of the market provided for in Article 21.

## CHAPTER II

### GENERAL RULES FOR THE ORGANISATION OF THE SECTOR

#### Article 3

##### Public service obligations and customer protection

1. Member States shall ensure, on the basis of their institutional organisation and with due regard to the principle of subsidiarity, that, without prejudice to paragraph 2, electricity undertakings are operated in accordance with the principles of this Directive with a view to achieving a competitive, secure and environmentally sustainable market in electricity, and shall not discriminate between these undertakings as regards either rights or obligations.

2. Having full regard to the relevant provisions of the Treaty, in particular Article 86 thereof, Member States may impose on undertakings operating in the electricity sector, in the general economic interest, public service obligations which may relate to security, including security of supply, regularity, quality and price of supplies and environmental protection, including energy efficiency and climate protection. Such obligations shall be clearly defined, transparent, non-discriminatory, verifiable and shall guarantee equality of access for EU electricity companies to national consumers. In relation to security of supply, energy efficiency/demand-side management and for the fulfilment of environmental goals, as referred to in this paragraph, Member States may introduce the implementation of long term planning, taking into account the possibility of third parties seeking access to the system.

3. Member States shall ensure that all household customers, and, where Member States deem it appropriate, small enterprises, (namely enterprises with fewer than 50 occupied persons and an annual turnover or balance sheet not exceeding EUR 10 million), enjoy universal service, that is the right to be supplied with electricity of a specified quality within their territory at reasonable, easily and clearly comparable and transparent prices. To ensure the provision of universal service, Member States may appoint a supplier of last resort. Member States shall impose on distribution companies an obligation to connect customers to their grid under terms, conditions and tariffs set in accordance with the procedure laid down in Article 23(2). Nothing in this Directive shall prevent Member States from strengthening the market position of the domestic,

4. When financial compensation, other forms of compensation and exclusive rights which a Member State grants for the fulfilment of the obligations set out in paragraphs 2 and 3 are provided, this shall be done in a non-discriminatory and transparent way.

5. Member States shall take appropriate measures to protect final customers, and shall in particular ensure that there are adequate safeguards to protect vulnerable customers, including measures to help them avoid disconnection. In this context, Member States may take measures to protect final customers in remote areas. They shall ensure high levels of consumer protection, particularly with respect to transparency regarding contractual terms and conditions, general information and dispute settlement mechanisms. Member States shall ensure that the eligible customer is in fact able to switch to a new supplier. As regards at least household customers, these measures shall include those set out in Annex A.

6. Member States shall ensure that electricity suppliers specify in or with the bills and in promotional materials made available to final customers:

- (a) the contribution of each energy source to the overall fuel mix of the supplier over the preceding year;
- (b) at least the reference to existing reference sources, such as web-pages, where information on the environmental impact, in terms of at least emissions of CO<sub>2</sub> and the radioactive waste resulting from the electricity produced by the overall fuel mix of the supplier over the preceding year is publicly available.

With respect to electricity obtained via an electricity exchange or imported from an undertaking situated outside the Community, aggregate figures provided by the exchange or the undertaking in question over the preceding year may be used.

Member States shall take the necessary steps to ensure that the information provided by suppliers to their customers pursuant to this Article is reliable.

7. Member States shall implement appropriate measures to achieve the objectives of social and economic cohesion, environmental protection, which may include energy efficiency/demand-side management measures and means to combat climate change, and security of supply. Such measures may include, in particular, the provision of adequate economic

incentives, using, where appropriate, all existing national and Community tools, for the maintenance and construction of the necessary network infrastructure, including interconnection capacity.

8. Member States may decide not to apply the provisions of Articles 6, 7, 20 and 22 insofar as their application would obstruct the performance, in law or in fact, of the obligations imposed on electricity undertakings in the general economic interest and insofar as the development of trade would not be affected to such an extent as would be contrary to the interests of the Community. The interests of the Community include, amongst others, competition with regard to eligible customers in accordance with this Directive and Article 86 of the Treaty.

9. Member States shall, upon implementation of this Directive, inform the Commission of all measures adopted to fulfil universal service and public service obligations, including consumer protection and environmental protection, and their possible effect on national and international competition, whether or not such measures require a derogation from this Directive. They shall inform the Commission subsequently every two years of any changes to such measures, whether or not they require a derogation from this Directive.

#### Article 4

##### Monitoring of security of supply

Member States shall ensure the monitoring of security of supply issues. Where Member States consider it appropriate they may delegate this task to the regulatory authorities referred to in Article 23(1). This monitoring shall, in particular, cover the supply/demand balance on the national market, the level of expected future demand and envisaged additional capacity being planned or under construction, and the quality and level of maintenance of the networks, as well as measures to cover peak demand and to deal with shortfalls of one or more suppliers. The competent authorities shall publish every two years, by 31 July at the latest, a report outlining the findings resulting from the monitoring of these issues, as well as any measures taken or envisaged to address them and shall forward this report to the Commission forthwith.

#### Article 5

##### Technical rules

Member States shall ensure that technical safety criteria are defined and that technical rules establishing the minimum technical design and operational requirements for the connection to the system of generating installations, distribution systems, directly connected consumers' equipment, interconnector circuits and direct lines are developed and made public. These technical rules shall ensure the interoperability of systems and shall be objective and non discriminatory. They shall be notified to the Commission in accordance with

Article 8 of Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society Services <sup>(1)</sup>.

#### CHAPTER III

#### GENERATION

#### Article 6

##### Authorisation procedure for new capacity

1. For the construction of new generating capacity, Member States shall adopt an authorisation procedure, which shall be conducted in accordance with objective, transparent and non discriminatory criteria.

2. Member States shall lay down the criteria for the grant of authorisations for the construction of generating capacity in their territory. These criteria may relate to:

- (a) the safety and security of the electricity system, installations and associated equipment;
- (b) protection of public health and safety;
- (c) protection of the environment;
- (d) land use and siting;
- (e) use of public ground;
- (f) energy efficiency;
- (g) the nature of the primary sources;
- (h) characteristics particular to the applicant, such as technical, economic and financial capabilities;
- (i) compliance with measures adopted pursuant to Article 3.

3. Member States shall ensure that authorisation procedures for small and/or distributed generation take into account their limited size and potential impact.

4. The authorisation procedures and criteria shall be made public. Applicants shall be informed of the reasons for any refusal to grant an authorisation. The reasons must be objective, non discriminatory, well founded and duly substantiated. Appeal procedures shall be made available to the applicant.

<sup>(1)</sup> OJ L 204, 21.7.1998, p. 37. Directive as amended by Directive 98/48/EC (OJ L 217, 5.8.1998, p. 18).

## Article 7

## Tendering for new capacity

1. Member States shall ensure the possibility, in the interests of security of supply, of providing for new capacity or energy efficiency/demand-side management measures through a tendering procedure or any procedure equivalent in terms of transparency and non-discrimination, on the basis of published criteria. These procedures can, however, only be launched if on the basis of the authorisation procedure the generating capacity being built or the energy efficiency/demand-side management measures being taken are not sufficient to ensure security of supply.

2. Member States may ensure the possibility, in the interests of environmental protection and the promotion of infant new technologies, of tendering for new capacity on the basis of published criteria. This tender may relate to new capacity or energy efficiency/demand-side management measures. A tendering procedure can, however, only be launched if on the basis of the authorisation procedure the generating capacity being built or the measures being taken are not sufficient to achieve these objectives.

3. Details of the tendering procedure for means of generating capacity and energy efficiency/demand-side management measures shall be published in the *Official Journal of the European Union* at least six months prior to the closing date for tenders.

The tender specifications shall be made available to any interested undertaking established in the territory of a Member State so that it has sufficient time in which to submit a tender.

With a view to ensuring transparency and non-discrimination the tender specifications shall contain a detailed description of the contract specifications and of the procedure to be followed by all tenderers and an exhaustive list of criteria governing the selection of tenderers and the award of the contract, including incentives, such as subsidies, which are covered by the tender. These specifications may also relate to the fields referred to in Article 6(2).

4. In invitations to tender for the requisite generating capacity, consideration must also be given to electricity supply offers with long term guarantees from existing generating units, provided that additional requirements can be met in this way.

5. Member States shall designate an authority or a public body or a private body independent from electricity generation, transmission, distribution and supply activities, which may be a regulatory authority referred to in Article 23(1), to be responsible for the organisation, monitoring and control of the tendering procedure referred to in paragraphs 1 to 4. Where a transmission system operator is fully

independent from other activities not relating to the transmission system in ownership terms, the transmission system operator may be designated as the body responsible for organising, monitoring and controlling the tendering procedure. This authority or body shall take all necessary steps to ensure confidentiality of the information contained in the tenders.

## CHAPTER IV

## TRANSMISSION SYSTEM OPERATION

## Article 8

## Designation of Transmission System Operators

Member States shall designate, or shall require undertakings which own transmission systems to designate, for a period of time to be determined by Member States having regard to considerations of efficiency and economic balance, one or more transmission system operators. Member States shall ensure that transmission system operators act in accordance with Articles 9 to 12.

## Article 9

## Tasks of Transmission System Operators

Each transmission system operator shall be responsible for:

- (a) ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity;
- (b) contributing to security of supply through adequate transmission capacity and system reliability;
- (c) managing energy flows on the system, taking into account exchanges with other interconnected systems. To that end, the transmission system operator shall be responsible for ensuring a secure, reliable and efficient electricity system and, in that context, for ensuring the availability of all necessary ancillary services insofar as this availability is independent from any other transmission system with which its system is interconnected;
- (d) providing to the operator of any other system with which its system is interconnected sufficient information to ensure the secure and efficient operation, coordinated development and interoperability of the interconnected system;
- (e) ensuring non-discrimination as between system users or classes of system users, particularly in favour of its related undertakings;

- (f) providing system users with the information they need for efficient access to the system.

setting out the measures taken, shall be submitted by the person or body responsible for monitoring the compliance programme to the regulatory authority referred to in Article 23(1) and shall be published.

#### Article 10

##### Unbundling of Transmission System Operators

#### Article 11

##### Dispatching and balancing

1. Where the transmission system operator is part of a vertically integrated undertaking, it shall be independent at least in terms of its legal form, organisation and decision making from other activities not relating to transmission. These rules shall not create an obligation to separate the ownership of assets of the transmission system from the vertically integrated undertaking.

1. Without prejudice to the supply of electricity on the basis of contractual obligations, including those which derive from the tendering specifications, the transmission system operator shall, where it has this function, be responsible for dispatching the generating installations in its area and for determining the use of interconnectors with other systems.

2. In order to ensure the independence of the transmission system operator referred to in paragraph 1, the following minimum criteria shall apply:

2. The dispatching of generating installations and the use of interconnectors shall be determined on the basis of criteria which may be approved by the Member State and which must be objective, published and applied in a non-discriminatory manner which ensures the proper functioning of the internal market in electricity. They shall take into account the economic precedence of electricity from available generating installations or interconnector transfers and the technical constraints on the system.

(a) those persons responsible for the management of the transmission system operator may not participate in company structures of the integrated electricity undertaking responsible, directly or indirectly, for the day-to-day operation of the generation, distribution and supply of electricity;

3. A Member State may require the system operator, when dispatching generating installations, to give priority to generating installations using renewable energy sources or waste or producing combined heat and power.

(b) appropriate measures must be taken to ensure that the professional interests of the persons responsible for the management of the transmission system operator are taken into account in a manner that ensures that they are capable of acting independently;

4. A Member State may, for reasons of security of supply, direct that priority be given to the dispatch of generating installations using indigenous primary energy fuel sources, to an extent not exceeding in any calendar year 15 % of the overall primary energy necessary to produce the electricity consumed in the Member State concerned.

(c) the transmission system operator shall have effective decision-making rights, independent from the integrated electricity undertaking, with respect to assets necessary to operate, maintain or develop the network. This should not prevent the existence of appropriate coordination mechanisms to ensure that the economic and management supervision rights of the parent company in respect of return on assets, regulated indirectly in accordance with Article 23(2), in a subsidiary are protected. In particular, this shall enable the parent company to approve the annual financial plan, or any equivalent instrument, of the transmission system operator and to set global limits on the levels of indebtedness of its subsidiary. It shall not permit the parent company to give instructions regarding day-to-day operations, nor with respect to individual decisions concerning the construction or upgrading of transmission lines, that do not exceed the terms of the approved financial plan, or any equivalent instrument;

5. Member States may require transmission system operators to comply with minimum standards for the maintenance and development of the transmission system, including interconnection capacity.

(d) the transmission system operator shall establish a compliance programme, which sets out measures taken to ensure that discriminatory conduct is excluded, and ensure that observance of it is adequately monitored. The programme shall set out the specific obligations of employees to meet this objective. An annual report,

6. Transmission system operators shall procure the energy they use to cover energy losses and reserve capacity in their system according to transparent, non-discriminatory and market-based procedures, whenever they have this function.

7. Rules adopted by transmission system operators for balancing the electricity system shall be objective, transparent and non-discriminatory, including rules for the charging of system users of their networks for energy imbalance. Terms and conditions, including rules and tariffs, for the provision of such services by transmission system operators shall be

established pursuant to a methodology compatible with Article 23(2) in a non-discriminatory and cost-reflective way and shall be published.

#### Article 12

### Confidentiality for Transmission System Operators

Without prejudice to Article 18 or any other legal duty to disclose information, the transmission system operator shall preserve the confidentiality of commercially sensitive information obtained in the course of carrying out its business. Information disclosed regarding its own activities, which may be commercially advantageous, shall be made available in a non-discriminatory manner.

## CHAPTER V

### DISTRIBUTION SYSTEM OPERATION

#### Article 13

### Designation of Distribution System Operators

Member States shall designate or shall require undertakings that own or are responsible for distribution systems to designate, for a period of time to be determined by Member States having regard to considerations of efficiency and economic balance, one or more distribution system operators. Member States shall ensure that distribution system operators act in accordance with Articles 14 to 16.

#### Article 14

### Tasks of Distribution System Operators

1. The distribution system operator shall maintain a secure, reliable and efficient electricity distribution system in its area with due regard for the environment.
2. In any event, it must not discriminate between system users or classes of system users, particularly in favour of its related undertakings.
3. The distribution system operator shall provide system users with the information they need for efficient access to the system.
4. A Member State may require the distribution system operator, when dispatching generating installations, to give priority to generating installations using renewable energy sources or waste or producing combined heat and power.
5. Distribution system operators shall procure the energy they use to cover energy losses and reserve capacity in their system according to transparent, non-discriminatory and market based procedures, whenever they have this function.

This requirement shall be without prejudice to using electricity acquired under contracts concluded before 1 January 2002.

6. Where distribution system operators are responsible for balancing the electricity distribution system, rules adapted by them for that purpose shall be objective, transparent and non-discriminatory, including rules for the charging of system users of their networks for energy imbalance. Terms and conditions, including rules and tariffs, for the provision of such services by distribution system operators shall be established in accordance with Article 23(2) in a non-discriminatory and cost-reflective way and shall be published.

7. When planning the development of the distribution network, energy efficiency/demand-side management measures and/or distributed generation that might supplant the need to upgrade or replace electricity capacity shall be considered by the distribution system operator.

#### Article 15

### Unbundling of Distribution System Operators

1. Where the distribution system operator is part of a vertically integrated undertaking, it shall be independent at least in terms of its legal form, organisation and decision making from other activities not relating to distribution. These rules shall not create an obligation to separate the ownership of assets of the distribution system operator from the vertically integrated undertaking.

2. In addition to the requirements of paragraph 1, where the distribution system operator is part of a vertically integrated undertaking, it shall be independent in terms of its organisation and decision making from the other activities not related to distribution. In order to achieve this, the following minimum criteria shall apply:

- (a) those persons responsible for the management of the distribution system operator may not participate in company structures of the integrated electricity undertaking responsible, directly or indirectly, for the day-to-day operation of the generation, transmission or supply of electricity;
- (b) appropriate measures must be taken to ensure that the professional interests of the persons responsible for the management of the distribution system operator are taken into account in a manner that ensures that they are capable of acting independently;
- (c) the distribution system operator shall have effective decision-making rights, independent from the integrated electricity undertaking, with respect to assets necessary to operate, maintain or develop the network. This should not prevent the existence of appropriate coordination mechanisms to ensure that the economic and management supervision rights of the parent company in respect of



return on assets, regulated indirectly in accordance with Article 23(2), in a subsidiary are protected. In particular, this shall enable the parent company to approve the annual financial plan, or any equivalent instrument, of the distribution system operator and to set global limits on the levels of indebtedness of its subsidiary. It shall not permit the parent company to give instructions regarding day-to-day operations, nor with respect to individual decisions concerning the construction or upgrading of distribution lines, that do not exceed the terms of the approved financial plan, or any equivalent instrument.

- (d) the distribution system operator shall establish a compliance programme, which sets out measures taken to ensure that discriminatory conduct is excluded, and ensure that observance of it is adequately monitored. The programme shall set out the specific obligations of employees to meet this objective. An annual report, setting out the measures taken, shall be submitted by the person or body responsible for monitoring the compliance programme to the regulatory authority referred to in Article 23(1) and published.

Member States may decide not to apply paragraphs 1 and 2 to integrated electricity undertakings serving less than 100 000 connected customers, or serving small isolated systems.

#### Article 16

##### Confidentiality for Distribution System Operators

Without prejudice to Article 18 or any other legal duty to disclose information, the distribution system operator must preserve the confidentiality of commercially sensitive information obtained in the course of carrying out its business, and shall prevent information about its own activities which may be commercially advantageous being disclosed in a discriminatory manner.

#### Article 17

##### Combined operator

The rules in Articles 10(1) and 15(1) do not prevent the operation of a combined transmission and distribution system operator, which is independent in terms of its legal form, organisation and decision making from other activities not relating to transmission or distribution system operation and which meets the requirements set out in points (a) to (d). These rules shall not create an obligation to separate the ownership of assets of the combined system from the vertically integrated undertaking:

- (a) those persons responsible for the management of the combined system operator may not participate in company structures of the integrated electricity

undertaking responsible, directly or indirectly, for the day-to-day operation of the generation, or supply of electricity;

- (b) appropriate measures must be taken to ensure that the professional interests of the persons responsible for the management of the combined system operator are taken into account in a manner that ensures that they are capable of acting independently;

- (c) the combined system operator shall have effective decision-making rights, independent from the integrated electricity undertaking, with respect to assets necessary to operate, maintain and develop the network. This should not prevent the existence of appropriate coordination mechanisms to ensure that the economic and management supervision rights of the parent company in respect of return on assets, regulated indirectly in accordance with Article 23(2), in a subsidiary are protected. In particular, this shall enable the parent company to approve the annual financial plan, or any equivalent instrument, of the combined system operator and to set global limits on the levels of indebtedness of its subsidiary. It shall not permit the parent company to give instructions regarding day-to-day operations, nor with respect to individual decisions concerning the construction or upgrading of transmission and distribution lines, that do not exceed the terms of the approved financial plan, or any equivalent instrument;

- (d) the combined system operator shall establish a compliance programme which sets out measures taken to ensure that discriminatory conduct is excluded, and ensure that observance of it is adequately monitored. The programme shall set out the specific obligations of employees to meet this objective. An annual report, setting out the measures taken, shall be submitted by the person or body responsible for monitoring the compliance programme to the regulatory authority referred to in Article 23(1) and published.

#### CHAPTER VI

##### UNBUNDLING AND TRANSPARENCY OF ACCOUNTS

#### Article 18

##### Right of access to accounts

1. Member States or any competent authority they designate, including the regulatory authorities referred to in Article 23, shall, insofar as necessary to carry out their functions, have right of access to the accounts of electricity undertakings as set out in Article 19.

2. Member States and any designated competent authority, including the regulatory authorities referred to in Article 23, shall preserve the confidentiality of commercially sensitive information. Member States may provide for the disclosure of such information where this is necessary in order for the competent authorities to carry out their functions.

#### Article 19

##### Unbundling of accounts

1. Member States shall take the necessary steps to ensure that the accounts of electricity undertakings are kept in accordance with paragraphs 2 to 3.

2. Electricity undertakings, whatever their system of ownership or legal form, shall draw up, submit to audit and publish their annual accounts in accordance with the rules of national law concerning the annual accounts of limited liability companies adopted pursuant to the Fourth Council Directive 78/660/EC of 25 July 1978 based on Article 44(2)(g) (\*) of the Treaty on the annual accounts of certain types of companies (1).

Undertakings which are not legally obliged to publish their annual accounts shall keep a copy of these at the disposal of the public in their head office.

3. Electricity undertakings shall, in their internal accounting, keep separate accounts for each of their transmission and distribution activities as they would be required to do if the activities in question were carried out by separate undertakings, with a view to avoiding discrimination, cross subsidisation and distortion of competition. They shall also keep accounts, which may be consolidated, for other electricity activities not relating to transmission or distribution. Until 1 July 2007, they shall keep separate accounts for supply activities for eligible customers and supply activities for non-eligible customers. Revenue from ownership of the transmission/distribution system shall be specified in the accounts. Where appropriate, they shall keep consolidated accounts for other, non-electricity activities. The internal accounts shall include a balance sheet and a profit and loss account for each activity.

4. The audit referred to in paragraph 2 shall, in particular, verify that the obligation to avoid discrimination and cross-subsidies referred to in paragraph 3, is respected.

(\*) The title of Directive 78/660/EEC has been adjusted to take account of the renumbering of the Articles of the Treaty establishing the European Community in accordance with Article 12 of the Treaty of Amsterdam; the original reference was to Article 54(3)(g).

(1) OJ L 222, 14.8.1978, p. 11. Directive as last amended by Directive 2001/65/EC of the European Parliament and of the Council (OJ L 283, 27.10.2001, p. 28).

#### CHAPTER VII

##### ORGANISATION OF ACCESS TO THE SYSTEM

#### Article 20

##### Third party access

1. Member States shall ensure the implementation of a system of third party access to the transmission and distribution systems based on published tariffs, applicable to all eligible customers and applied objectively and without discrimination between system users. Member States shall ensure that these tariffs, or the methodologies underlying their calculation, are approved prior to their entry into force in accordance with Article 23 and that these tariffs, and the methodologies — where only methodologies are approved — are published prior to their entry into force.

2. The operator of a transmission or distribution system may refuse access where it lacks the necessary capacity. Duly substantiated reasons must be given for such refusal, in particular having regard to Article 3. Member States shall ensure, where appropriate and when refusal of access takes place, that the transmission or distribution system operator provides relevant information on measures that would be necessary to reinforce the network. The party requesting such information may be charged a reasonable fee reflecting the cost of providing such information.

#### Article 21

##### Market opening and reciprocity

1. Member States shall ensure that the eligible customers are:

- (a) until 1 July 2004, the eligible customers as specified in Article 19(1) to (3) of Directive 96/92/EC. Member States shall publish by 31 January each year the criteria for the definition of these eligible customers;
- (b) from 1 July 2004, at the latest, all non-household customers;
- (c) from 1 July 2007, all customers.

2. To avoid imbalance in the opening of electricity markets:

- (a) contracts for the supply of electricity with an eligible customer in the system of another Member State shall not be prohibited if the customer is considered as eligible in both systems involved;

(b) in cases where transactions as described in point (a) are refused because of the customer being eligible only in one of the two systems, the Commission may oblige, taking into account the situation in the market and the common interest, the refusing party to execute the requested supply at the request of the Member State where the eligible customer is located.

#### Article 22

##### Direct lines

1. Member States shall take the measures necessary to enable:

- (a) all electricity producers and electricity supply undertakings established within their territory to supply their own premises, subsidiaries and eligible customers through a direct line;
- (b) any eligible customer within their territory to be supplied through a direct line by a producer and supply undertakings.

2. Member States shall lay down the criteria for the grant of authorisations for the construction of direct lines in their territory. These criteria must be objective and non-discriminatory.

3. The possibility of supplying electricity through a direct line as referred to in paragraph 1 shall not affect the possibility of contracting electricity in accordance with Article 20.

4. Member States may make authorisation to construct a direct line subject either to the refusal of system access on the basis, as appropriate, of Article 20 or to the opening of a dispute settlement procedure under Article 23.

5. Member States may refuse to authorise a direct line if the granting of such an authorisation would obstruct the provisions of Article 3. Duly substantiated reasons must be given for such refusal.

#### Article 23

##### Regulatory authorities

1. Member States shall designate one or more competent bodies with the function of regulatory authorities. These authorities shall be wholly independent from the interests of the electricity industry. They shall, through the application of this Article, at least be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market, monitoring in particular:

- (a) the rules on the management and allocation of interconnection capacity, in conjunction with the regulatory authority or authorities of those Member States with which interconnection exists;
- (b) any mechanisms to deal with congested capacity within the national electricity system;
- (c) the time taken by transmission and distribution undertakings to make connections and repairs;
- (d) the publication of appropriate information by transmission and distribution system operators concerning interconnectors, grid usage and capacity allocation to interested parties, taking into account the need to treat non-aggregated information as commercially confidential;
- (e) the effective unbundling of accounts, as referred to in Article 19, to ensure that there are no cross subsidies between generation, transmission, distribution and supply activities;
- (f) the terms, conditions and tariffs for connecting new producers of electricity to guarantee that these are objective, transparent and non-discriminatory, in particular taking full account of the costs and benefits of the various renewable energy sources technologies, distributed generation and combined heat and power;
- (g) the extent to which transmission and distribution system operators fulfil their tasks in accordance with Articles 9 and 14;
- (h) the level of transparency and competition.

The authorities established pursuant to this Article shall publish an annual report on the outcome of their monitoring activities referred to in points (a) to (h).

2. The regulatory authorities shall be responsible for fixing or approving, prior to their entry into force, at least the methodologies used to calculate or establish the terms and conditions for:

- (a) connection and access to national networks, including transmission and distribution tariffs. These tariffs, or methodologies, shall allow the necessary investments in the networks to be carried out in a manner allowing these investments to ensure the viability of the networks;
- (b) the provision of balancing services.

3. Notwithstanding paragraph 2, Member States may provide that the regulatory authorities shall submit, for formal decision, to the relevant body in the Member State the tariffs or at least the methodologies referred to in that paragraph as

well as the modifications in paragraph 4. The relevant body shall, in such a case, have the power to either approve or reject a draft decision submitted by the regulatory authority. These tariffs or the methodologies or modifications thereto shall be published together with the decision on formal adoption. Any formal rejection of a draft decision shall also be published, including its justification.

4. Regulatory authorities shall have the authority to require transmission and distribution system operators, if necessary, to modify the terms and conditions, tariffs, rules, mechanisms and methodologies referred to in paragraphs 1, 2 and 3, to ensure that they are proportionate and applied in a non-discriminatory manner.

5. Any party having a complaint against a transmission or distribution system operator with respect to the issues mentioned in paragraphs 1, 2 and 4 may refer the complaint to the regulatory authority which, acting as dispute settlement authority, shall issue a decision within two months after receipt of the complaint. This period may be extended by two months where additional information is sought by the regulatory authority. This period may be further extended with the agreement of the complainant. Such a decision shall have binding effect unless and until overruled on appeal.

Where a complaint concerns connection tariffs for major new generation facilities, the two-month period may be extended by the regulatory authority.

6. Any party who is affected and has a right to complain concerning a decision on methodologies taken pursuant to paragraphs 2, 3 or 4 or, where the regulatory authority has a duty to consult, concerning the proposed methodologies, may, at the latest within two months, or a shorter time period as provided by Member States, following publication of the decision or proposal for a decision, submit a complaint for review. Such a complaint shall not have suspensive effect.

7. Member States shall take measures to ensure that regulatory authorities are able to carry out their duties referred to in paragraphs 1 to 5 in an efficient and expeditious manner.

8. Member States shall create appropriate and efficient mechanisms for regulation, control and transparency so as to avoid any abuse of a dominant position, in particular to the detriment of consumers, and any predatory behaviour. These mechanisms shall take account of the provisions of the Treaty, and in particular Article 82 thereof.

Until 2010, the relevant authorities of the Member States shall provide, by 31 July of each year, in conformity with competition law, the Commission with a report on market dominance, predatory and anti competitive behaviour. This

report shall, in addition, review the changing ownership patterns and any practical measures taken at national level to ensure a sufficient variety of market actors or practical measures taken to enhance interconnection and competition. From 2010 onwards, the relevant authorities shall provide such a report every two years.

9. Member States shall ensure that the appropriate measures are taken, including administrative action or criminal proceedings in conformity with their national law, against the natural or legal persons responsible where confidentiality rules imposed by this Directive have not been respected.

10. In the event of cross border disputes, the deciding regulatory authority shall be the regulatory authority which has jurisdiction in respect of the system operator which refuses use of, or access to, the system.

11. Complaints referred to in paragraphs 5 and 6 shall be without prejudice to the exercise of rights of appeal under Community and national law.

12. National regulatory authorities shall contribute to the development of the internal market and of a level playing field by cooperating with each other and with the Commission in a transparent manner.

## CHAPTER VIII

### FINAL PROVISIONS

#### Article 24

#### Safeguard measures

In the event of a sudden crisis in the energy market and where the physical safety or security of persons, apparatus or installations or system integrity is threatened, a Member State may temporarily take the necessary safeguard measures.

Such measures must cause the least possible disturbance in the functioning of the internal market and must not be wider in scope than is strictly necessary to remedy the sudden difficulties which have arisen.

The Member State concerned shall without delay notify these measures to the other Member States, and to the Commission, which may decide that the Member State concerned must amend or abolish such measures, insofar as they distort competition and adversely affect trade in a manner which is at variance with the common interest.

## Article 25

**Monitoring of imports of electricity**

Member States shall inform the Commission every three months of imports of electricity, in terms of physical flows, that have taken place during the previous three months from third countries.

## Article 26

**Derogations**

1. Member States which can demonstrate, after the Directive has been brought into force, that there are substantial problems for the operation of their small isolated systems, may apply for derogations from the relevant provisions of Chapters IV, V, VI, VII, as well as Chapter III, in the case of micro isolated systems, as far as refurbishing, upgrading and expansion of existing capacity are concerned, which may be granted to them by the Commission. The latter shall inform the Member States of those applications prior to taking a decision, taking into account respect for confidentiality. This decision shall be published in the *Official Journal of the European Union*. This Article shall also be applicable to Luxembourg.

2. A Member State which, after the Directive has been brought into force, for reasons of a technical nature has substantial problems in opening its market for certain limited groups of the non-household customers referred to in Article 21(1)(b) may apply for derogation from this provision, which may be granted to it by the Commission for a period not exceeding 18 months after the date referred to in Article 30(1). In any case, such derogation shall end on the date referred to in Article 21(1)(c).

## Article 27

**Review Procedure**

In the event that the report referred to in Article 28(3) reaches the conclusion whereby, given the effective manner in which network access has been carried out in a Member State — which gives rise to fully effective, non-discriminatory and unhindered network access — the Commission concludes that certain obligations imposed by this Directive on undertakings (including those with respect to legal unbundling for distribution system operators) are not proportionate to the objective pursued, the Member State in question may submit a request to the Commission for exemption from the requirement in question.

The request shall be notified, without delay, by the Member State to the Commission, together with all the relevant information necessary to demonstrate that the conclusion reached in the report on effective network access being ensured will be maintained.

Within three months of its receipt of a notification, the Commission shall adopt an opinion with respect to the request by the Member State concerned, and where appropriate, submit proposals to the European Parliament and to the Council to amend the relevant provisions of the Directive. The

Commission may propose, in the proposals to amend the Directive, to exempt the Member State concerned from specific requirements, subject to that Member State implementing equally effective measures as appropriate.

## Article 28

**Reporting**

1. The Commission shall monitor and review the application of this Directive and submit an overall progress report to the European Parliament and the Council before the end of the first year following the entry into force of this Directive, and thereafter on an annual basis. The report shall cover at least:

- (a) the experience gained and progress made in creating a complete and fully operational internal market in electricity and the obstacles that remain in this respect, including aspects of market dominance, concentration in the market, predatory or anti-competitive behaviour and the effect of this in terms of market distortion;
- (b) the extent to which the unbundling and tariffication requirements contained in this Directive have been successful in ensuring fair and non-discriminatory access to the Community's electricity system and equivalent levels of competition, as well as the economic, environmental and social consequences of the opening of the electricity market for customers;
- (c) an examination of issues relating to system capacity levels and security of supply of electricity in the Community, and in particular the existing and projected balance between demand and supply, taking into account the physical capacity for exchanges between areas;
- (d) special attention will be given to measures taken in Member States to cover peak demand and to deal with shortfalls of one or more suppliers;
- (e) the implementation of the derogation provided under Article 15(2) with a view to a possible revision of the threshold;
- (f) a general assessment of the progress achieved with regard to bilateral relations with third countries which produce and export or transport electricity, including progress in market integration, the social and environmental consequences of the trade in electricity and access to the networks of such third countries;
- (g) the need for possible harmonisation requirements that are not linked to the provisions of this Directive;

(h) the manner in which Member States have implemented in practice the requirements regarding energy labelling contained in Article 3(6), and the manner in which any Commission Recommendations on this issue have been taken into account.

Where appropriate, this report may include recommendations especially as regards the scope and modalities of labelling provisions including e.g. the way in which reference is made to existing reference sources and the content of these sources, and notably on the manner in which the information on the environmental impact in terms of at least emissions of CO<sub>2</sub> and the radioactive waste resulting from the electricity production from different energy sources could be made available in a transparent, easily accessible and comparable manner throughout the European Union and on the manner in which the measures taken by the Member States to control the accuracy of the information provided by suppliers could be streamlined, and measures to counteract negative effects of market dominance and market concentration.

2. Every two years, the report referred to in paragraph 1 shall also cover an analysis of the different measures taken in the Member States to meet public service obligations, together with an examination of the effectiveness of those measures and, in particular, their effects on competition in the electricity market. Where appropriate, this report may include recommendations as to the measures to be taken at national level to achieve high public service standards, or measures intended to prevent market foreclosure.

3. The Commission shall, no later than 1 January 2005, forward to the European Parliament and Council, a detailed report outlining progress in creating the internal electricity market. The report shall, in particular, consider:

- the existence of non-discriminatory network access;
- effective regulation;
- the development of interconnection infrastructure and the security of supply situation in the Community;
- the extent to which the full benefits of the opening of markets are accruing to small enterprises and households, notably with respect to public service and universal service standards;
- the extent to which markets are in practice open to effective competition, including aspects of market dominance, market concentration and predatory or anti-competitive behaviour;
- the extent to which customers are actually switching suppliers and renegotiating tariffs;

— price developments, including supply prices, in relation to the degree of the opening of markets;

— the experience gained in the application of the Directive as far as the effective independence of system operators in vertically integrated undertakings is concerned and whether other measures in addition to functional independence and separation of accounts have been developed which have effects equivalent to legal unbundling.

Where appropriate, the Commission shall submit proposals to the European Parliament and the Council, in particular to guarantee high public service standards.

Where appropriate, the Commission shall submit proposals to the European Parliament and the Council, in particular to ensure full and effective independence of distribution system operators before 1 July 2007. When necessary, these proposals shall, in conformity with competition law, also concern measures to address issues of market dominance, market concentration and predatory or anti-competitive behaviour.

#### Article 29

#### Repeals

Directive 90/547/EEC shall be repealed with effect from 1 July 2004.

Directive 96/92/EC shall be repealed from 1 July 2004 without prejudice to the obligations of Member States concerning the deadlines for transposition and application of the said Directive. References made to the repealed Directive shall be construed as being made to this Directive and should be read in accordance with the correlation table in Annex B.

#### Article 30

#### Implementation

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 1 July 2004. They shall forthwith inform the Commission thereof.

2. Member States may postpone the implementation of Article 15(1) until 1 July 2007. This shall be without prejudice to the requirements contained in Article 15(2).

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

*Article 31*

**Entry into force**

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

*Article 32*

**Addressees**

This Directive is addressed to the Member States.

Done at Brussels, 26 June 2003.

*For the European Parliament*

*The President*

P. COX

*For the Council*

*The President*

A. TSOCHATZOPOULOS

## ANNEX A

## Measures on consumer protection

Without prejudice to Community rules on consumer protection, in particular Directives 97/7/EC of the European Parliament and of the Council <sup>(1)</sup> and Council Directive 93/13/EC <sup>(2)</sup>, the measures referred to in Article 3 are to ensure that customers:

- (a) have a right to a contract with their electricity service provider that specifies:
- the identity and address of the supplier;
  - the services provided, the service quality levels offered, as well as the time for the initial connection;
  - if offered, the types of maintenance service offered;
  - the means by which up-to-date information on all applicable tariffs and maintenance charges may be obtained;
  - the duration of the contract, the conditions for renewal and termination of services and of the contract, the existence of any right of withdrawal;
  - any compensation and the refund arrangements which apply if contracted service quality levels are not met; and
  - the method of initiating procedures for settlement of disputes in accordance with point (i).

Conditions shall be fair and well known in advance. In any case, this information should be provided prior to the conclusion or confirmation of the contract. Where contracts are concluded through intermediaries, the above information shall also be provided prior to the conclusion of the contract;

- (b) are given adequate notice of any intention to modify contractual conditions and are informed about their right of withdrawal when the notice is given. Service providers shall notify their subscribers directly of any increase in charges, at an appropriate time no later than one normal billing period after the increase comes into effect. Member States shall ensure that customers are free to withdraw from contracts if they do not accept the new conditions notified to them by their electricity service provider;
- (c) receive transparent information on applicable prices and tariffs and on standard terms and conditions, in respect of access to and use of electricity services;
- (d) are offered a wide choice of payment methods. Any difference in terms and conditions shall reflect the costs to the supplier of the different payment systems. General terms and conditions shall be fair and transparent. They shall be given in clear and comprehensible language. Customers shall be protected against unfair or misleading selling methods;
- (e) shall not be charged for changing supplier;
- (f) benefit from transparent, simple and inexpensive procedures for dealing with their complaints. Such procedures shall enable disputes to be settled fairly and promptly with provision, where warranted, for a system of reimbursement and/or compensation. They should follow, wherever possible, the principles set out in Commission Recommendation 98/257/EC <sup>(3)</sup>;
- (g) when having access to universal service under the provisions adopted by Member States pursuant to Article 3(3), are informed about their rights regarding universal service.

<sup>(1)</sup> OJ L 144, 4.6.1997, p. 19.

<sup>(2)</sup> OJ L 95, 21.4.1993, p. 29.

<sup>(3)</sup> OJ L 115, 17.6.1998, p. 31.



## ANNEX B

## Correlation table

Directive 96/92/EC	This Directive
Article 1	Article 1 Scope
Article 2	Article 2 Definitions
Article 3 and 10(1)	Article 3 TSOs and Customer protection
—	Article 4 Monitoring of security of supply
Article 7(2)	Article 5 Technical rules
Article 4 and 5	Article 6 Authorisation procedure for new capacity
Article 4 and 6	Article 7 Tendering for new capacity
Article 7(1)	Article 8 Designation of TSOs
Article 7(3)-(5)	Article 9 Tasks of TSOs
Article 7(6)	Article 10 Unbundling of TSOs
Article 8	Article 11 Dispatching and balancing
Article 9	Article 12 Confidentiality for TSOs
Article 10(2) and (3)	Article 13 Designation of DSOs
Article 11	Article 14 Tasks of DSOs
—	Article 15 Unbundling of DSOs
Article 12	Article 16 Confidentiality for DSOs
—	Article 17 Combined operator
Article 13	Article 18 Right of access to accounts
Article 14	Article 19 Unbundling of accounts
Article 15-18	Article 20 Third Party Access
Article 19	Article 21 Market opening and reciprocity
Article 21	Article 22 Direct lines
Article 20(3)-(4) and 22	Article 23 Regulatory authorities
Article 23	Article 24 Safeguard measures
—	Article 25 Monitoring of imports of electricity
Article 24	Article 26 Derogations
—	Article 27 Review procedure
Article 25 and 26	Article 28 Reporting
—	Article 29 Repeals
Article 27	Article 30 Implementation
Article 28	Article 31 Entry into force
Article 29	Article 32 Addressees
—	Annex A Measures on consumer protection

## ASA Adjudication on Guernsey Gas Ltd

### Guernsey Gas Ltd

The Energy Centre  
Admiral Park  
St Peter Port  
Guernsey  
Channel Islands  
GY1 2BB

**Date:**

7 July 2010

**Media:**

Regional press

**Sector:**

Utilities

**Number of complaints:**

1

**Complaint Ref:**

96458

**Ad**

a. A regional press ad for Guernsey Gas was headed "A step forward to greener living". Body copy stated "When you install a high efficiency gas condensing boiler you reduce your carbon footprint compared to using oil or electricity".

b. A second regional press ad was also headed "A step forward to greener living". A sub-heading stated "The facts show which fuel is greener" followed by data that compared the amount of carbon dioxide that Guernsey Gas claimed was needed to produce a kWh of energy from different fuels:

Electricity generated on the island = 0.60 kg (linked to footnote text that stated "Guernsey Electricity have refused to declare the carbon intensity of electricity when generated on-island but it can be assessed knowing they use fuel oil and that the thermal efficiency of the power station is circa 42% (information taken from GEL's Report and Accounts)");

Electricity imported from Europe = 0.38 kg (linked to footnote text: "This figure is the average carbon intensity for electricity when generated in the EU25 countries taken from an International Energy Agency report");

Coal = 0.33 kg;

Heating Oil = 0.25 kg and

LPG (Gas on Guernsey) = 0.21 kg (the data for coal, heating oil and LPG were linked to footnote text:

"Figures taken from the UK Carbon Trust Factsheet CTL018 ..."). Text underneath the data stated "Of the above, gas is the lowest carbon fuel".

## Issue

Guernsey Electricity Ltd challenged whether:

1. the claim "When you install a high efficiency gas condensing boiler you reduce your carbon footprint compared to using oil or electricity" in ad (a); and
2. the figures in ad (b) relating to the carbon intensity of the electricity used in Guernsey were misleading and could be substantiated.

## CAP Code (Edition 11)

3.17.118.149.1

## Response

1. & 2. Guernsey Gas said high efficiency condensing gas boilers had a SEDBUK band A rating. They supplied an extract of the technical specification of the boiler that had been used when calculating the figures that were used in the background to the claim in ad (a). Guernsey Gas said the comparison between gas and electricity in ads (a) and (b) was based on the figure published by the Carbon Trust for LPG (the gas supplied on Guernsey) and carbon intensity figures for the electricity supplied on Guernsey, which was a combination of electricity generated on the island and electricity imported from EDF in France. They said they had previously agreed with Guernsey Electricity that 0.667 kg CO<sub>2</sub>/kWh was an accurate carbon intensity figure for electricity generated on Guernsey but that they had not agreed on a carbon intensity figure for electricity imported from Europe. They said Guernsey Electricity believed the figure should be based on the average carbon intensity of electricity generated by EDF but that Guernsey Gas believed it was more appropriate to use a European average carbon intensity for imported electricity or the marginal carbon intensity for European electricity, which they believed was in line with the convention adopted in the UK regarding imported electricity. Guernsey Gas supplied a fact sheet published by the Carbon Trust, which said companies should use a grid average figure for the carbon intensity of electricity. Guernsey Gas supplied two reports into energy policy and the calculation of carbon intensity of imported electricity on to Guernsey/Jersey which had used the marginal carbon intensity for electricity as the most appropriate method for calculating the carbon intensity of electricity imported on to Guernsey. They also supplied letters from two energy consultants, who considered it was more appropriate for the carbon intensity figure for electricity imported from Europe to Guernsey to be based on a European average figure, and press releases which they believed showed Guernsey Electricity was going against convention that had previously been adopted regarding how the figures should be calculated.

## Assessment

### 1. Upheld

The ASA noted that the claim related in part to the efficiency of a gas condensing boiler and that Guernsey Gas described the boiler as "high efficiency gas condensing". Guernsey Gas had supplied information that showed the particular model of gas condensing boiler used ran at 90% efficiency and was rated as being in band A, the highest efficiency rating, in the SEDBUK (Seasonal Efficiency of Domestic Boilers in the UK) boiler banding system created in conjunction with Defra (the Department for Environment, Food and Rural Affairs). We noted that the carbon intensity comparison figures between LPG (Gas on Guernsey) and electricity supplied on Guernsey, on which the claim was based, and which took into account the emissions factors of different sources of energy in kg of CO<sub>2</sub> per kWh of energy expended if work was done at a constant rate of 1,000 watts for an hour, relied in part on the

use of an average figure across all EU countries for electricity imported on to Guernsey. We noted, however, that Guernsey imported electricity from one supplier only, EDF in France. We spoke to the Carbon Trust. We understood that a reasonable carbon intensity figure for electricity generated by EDF in France was 0.092 kg CO<sub>2</sub>/kWh. Although electricity from other suppliers, including electricity imported into France, would be included in the electricity imported on to Guernsey, we understood that the proportions were small and would not have a significant effect on the 0.092 kgCO<sub>2</sub>/kWh figure. We also noted that, in practice, electricity customers on Guernsey would be supplied with a combination of electricity generated on the island and electricity imported from EDF in France. We noted that Guernsey Gas believed the proportion of electricity generated on the island would have the effect of raising the overall carbon intensity figure for electricity used on Guernsey. We noted that the carbon intensity figure for electricity generated on Guernsey was higher, at 0.667 kgCO<sub>2</sub>/kWh, but that Guernsey Gas had not provided conclusive evidence that showed the proportion of electricity generated on the island in comparison with the proportion imported. We noted that the carbon intensity figure of 0.092 kgCO<sub>2</sub>/kWh for electricity generated by EDF in France was considerably lower than the EU average figure of 0.38 kgCO<sub>2</sub>/kWh that Guernsey Gas had used in the comparison and on which the claim was based. We noted the reasons Guernsey Gas had given for believing it was reasonable for them to use the EU average figure for comparison. We also noted that, in practice, electricity customers on Guernsey were supplied with a combination of imported electricity and electricity generated on the island (the higher carbon intensity figure for which was not in dispute). We considered, nevertheless, that, although different figures were available, the figures that related to electricity generated by EDF in France were more relevant than the EU average figure and Guernsey Gas should have taken them into account and used them in their comparison. We welcomed Guernsey Gas's assurance that the ad had been superseded by ad (b) but concluded that, because the claim was not based on the most relevant comparison data, the ad was misleading.

On this point, ad (a) breached CAP Code clauses 3.1 (Substantiation), 7.1 (Truthfulness), 18.1 (Comparisons) and 49.1 (Environmental claims).

## 2. Upheld

As in point 1., above, we noted the reasons Guernsey Gas had given for believing it was reasonable for them to use the EU average figure for comparison. We noted that ad (b) listed separate figures for electricity generated on the island and electricity imported from Europe but that, in practice, electricity customers on Guernsey would be supplied with a combination of the two. For the reasons noted above, however, we considered that the figures that related to electricity generated by EDF in France (the electricity imported from Europe) were more relevant than an EU average figure and Guernsey Gas should have taken them into account and used them in their comparison. Because they had not, we considered ad (b) gave an incorrect impression of the carbon intensity of LPG (Gas on Guernsey) in relation to electricity imported on to Guernsey from Europe and, consequently, claimed that the carbon intensity of Gas on Guernsey was lower than electricity imported on to Guernsey from Europe. Because Guernsey Gas had not used more relevant comparison data for electricity in making their claim, we concluded that the ad was misleading.

On this point, ad (b) breached CAP Code clauses 3.1 (Substantiation), 7.1 (Truthfulness), 18.1 (Comparisons) and 49.1 (Environmental claims).

## Action

Ads (a) and (b) must not appear again in their current form. We welcomed Guernsey Gas's assurance that ad (a) would not be used again. We told them to ensure they used the most relevant figures for carbon intensity comparison claims in future.

Adjudication of the ASA Council (Non-broadcast)

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Good Morning Steve,

After making inquiries, the difference between the carbon intensity communicated by EDF and the carbon intensity communicated by the UK Carbon trust is explained by the use of a different methodology.

EDF calculates the actual emissions of EDF production plus the actual emissions of power bought from third parties (on EDF's French balancing area), which result is divided by EDF's sales. The actual emission of each plant are validated by a third party.

The UK Carbon Trust uses the "Analyse cycle de vie" (lifetime analysis ?), which evaluates the carbon intensity for all activity of a plant : commissioning / production / maintenance / decommissioning. There is a different carbon intensity figure for each type of generation : nuclear / coal / gas / hydro...

EDF R&D has simulated the carbon intensity using the "Analyse cycle de vie" method using their own database for the carbon intensity of each type of generation, and comes to a figure of 86 g CO<sub>2</sub>/kWh. By adding an estimate 7% for the losses, we can agree with the 92 g CO<sub>2</sub>/kWh of the UK Carbon Trust.

As far as your complaint is concerned, I guess that you have a good point in saying that you are an EDF customer, and as all other EDF customer, you are entitled to communicate on the same figures published by EDF.

You will find below the analysis from "EDF R&D" on that issue :

"

La méthodologie en question est couramment appelée PAS 2050 (Publicly Available Specification). Il s'agit d'une méthodologie de calcul de l'empreinte carbone du couple emballage/produit à l'initiative conjointe du ministère britannique en charge de l'environnement (DEFRA) et de Carbon Trust (qui joue un rôle équivalent à l'ADEME au Royaume-Uni dans le domaine de la lutte contre le changement climatique).

Cette méthodologie, élaborée en consultation avec un grand nombre de parties prenantes au Royaume-Uni, a vocation à servir de base à une norme nationale (prescriptions et règles de comptabilisation des émissions de gaz à effet de serre sur le cycle de vie du produit). Elle pourra notamment servir de référence à un affichage carbone des produits. Les Britanniques sont moteurs dans ce domaine en Europe.

Le PAS 2050 est donc une démarche nationale, initiée par les pouvoirs publics britanniques. Nous n'avons pas de partenariat dans ce cadre. Toutefois, nous suivons ces travaux via notre représentation aux instances de normalisation (AFNOR/ISO) : une démarche similaire est en cours au niveau international (ISO) à travers deux projets de normes (empreinte carbone des produits et l'empreinte carbone des organisations (e.g. les entreprises)). Le PAS 2050 et le Bilan carbone de l'ADEME sont les deux principaux "inspirateurs" de ces textes, le premier pour les produits, le second pour les organisations.

Enfin, il faut noter que la France a engagé une démarche similaire dans le cadre de la plateforme ADEME/AFNOR sur l'affichage environnemental des produits de grande consommation (engagement du Grenelle). Cette plateforme, qui traite de différents impacts environnementaux du couple emballage/produit, fait bien évidemment une place importante à l'empreinte carbone des produits.

Le PAS 2050 ne fournit pas de base de données de référence. A ma connaissance, le seul document mis à disposition par le Carbon Trust est un guide fournissant les facteurs d'émissions pour l'énergie adapté au contexte britannique. Il ne fournit donc pas de contenu de l'électricité pour les autres pays européens.

Je ne peux pas te dire quelle est l'origine de la valeur de 92 gCO<sub>2</sub> que tu mentionnes. En revanche, elle est tout à fait cohérente avec la base de données ACV que nous utilisons. Ce chiffre en effet à 86 gCO<sub>2</sub>/kWh le contenu du kWh produit en France (production décentralisée et imports/exports compris). En prenant en compte des pertes réseau à hauteur de 7%, on

retombe bien sur cette valeur.  
"

**Kind Regards,  
Christian Wipff**