THE UK PROGRESS REPORT TO COMPLY WITH ARTICLE 6.3 OF DIRECTIVE 2004/8/EC ON THE PROMOTION OF COGENERATION

The following report was produced in order to comply with Article 6.3 of Directive 2004/8/EC on the promotion of cogeneration using a template supplied by the Commission to that effect.

I. Transposition of the legal text of Directive 2004/8/EC

Question 1: Has your country already sent in Notifications of transposition to the Commission? Please indicate which document you sent on which date, and which Article was transposed in this way, and where it can be found in the document.

The UK Permanent Representative to the European Union, Bill Jones, wrote to Catherine Day, Secretary-General of the European Commission in March 2006 with respect to Article 15 to update the Commission on the UK's progress in transposing this Directive. To be compliant with the Directive the UK needs only to enact secondary legislation in respect of Articles 5 and 16. Taking progress in the enactment of each in turn:

Article 5. New regulations under Section 2(2) of the European Communities Act 1972 have been drafted and were attached in Annex 1 of Bill Jones's March 2006 letter. These regulations apply to GB. Northern Ireland and Gibraltar are following a similar approach.

Article 16 – legislation enacting the provisions of Article 16 entered into force on 21 February 2006 and the regulations were notified to the Commission on that date under reference MNE (2006) 51134.

Q2. What is the timeline for the remaining parts of the transposition of the Directive? Please indicate how this will take place (revision of a general energy law, a specific law, decree, regulation, ….), at what stage in the legislative process your country is for this part, what the expected reasonable timeline until adoption will be, and what the obstacles are, if any.

See answer to Q1 above.

Q3. Will your country use any option that is described in Article 12? If so, which one?

In terms of calculating primary energy savings from Combined Heat and Power (CHP) for the purposes of determining eligibility for public support the UK has an existing programme that does this, called the Combined Heat and Power Quality Assurance Programme (CHPQA). It provides a robust assessment of the environmental benefits of CHP and ensures that any public support is directed to CHP that achieves significant primary energy savings. The UK will comply with Article 12(2) option, using CHPQA as the 'alternative methodology', amended to fulfil the

criteria in Annex III(a) by incorporating the harmonised efficiency reference values for separate production of electricity and heat for new Schemes from January 2007 and for existing Schemes the UK proposes to continue with the current arrangements until the end of 2010. This was communicated with the Commission by a letter to Mr Alfonso Gonzalez Finat on 21 November 2006.

Q 4. Will (parts of) the transposition be done by regions? If so, which parts? And by which regions?

The answer to Q1 above sets out the position in Great Britain (GB), Northern Ireland and Gibraltar. Transposition in Gibraltar may be delayed; however, no CHP plants have been identified in Gibraltar, so the delay is unlikely to have any practical effect.

II. Transposition of Commission Decision 2007/74/EC on harmonised efficiency reference values and related issues

Q1. What is the timeline for the transposition of the Commission Decision of 21.12.06? Please indicate how this will take place (revision of a general energy law, a specific law, decree, regulation, etc).

This will take place by amending the Combined Heat and Power Quality Assurance Programme (CHPQA) Standard. In terms of calculating primary energy savings from CHP for the purposes of determining eligibility for public support the UK uses CHPQA, an existing programme to do this. The CHPQA formulas for Good Quality CHP will have to be amended to incorporate the harmonised efficiency reference values, so that it complies with the calculation of energy savings using the alternative calculation provided for under Article 12(2) of the Directive. This work will be completed shortly and will apply to all new applications for new CHP when determining eligibility for public support.

Q2: Article 5 requires Member States to ensure that accurate and reliable guarantees of origin can be issued according to objective, transparent and non-discriminatory criteria not later than 6 months after the adoption of the harmonised efficiency reference values. Please indicate how your country is making progress towards meeting this deadline. Can you already indicate which will be the "one or more competent bodies" mentioned in Article 5.2?

A consultation was carried out on the mechanism for implementing the requirement of Article 5 of the CHP Directive. This consultation was undertaken between 20 March and 14 April 2006. The Government received only 9 responses to this consultation. On the whole respondents were supportive of the proposals put forward by the UK Government.

We are expecting a low demand for the Guarantee of Origin certificates (CHPGO), so the UK have developed a simple system for issuing CHPGO, which will be administered by the CHPQA Administrator. CHPGO certificates will not be used in the UK as the basis for providing public support to CHP. Public support in the UK will

continue to be based on the CHPQA certificate. This is explained further under Article 12.

The UK is planning to have the CHPGO system in place by end of August 2007. The Final Regulatory Impact Assessment, an Explanatory Memorandum and a Transposition Note have been drafted and approved by the appropriate UK Government Ministers. The Statutory Instrument (SI) has been laid before the UK Parliament and came into force on the 28th February 2007. These regulations apply to GB. Northern Ireland and Gibraltar are following the same approach.

For the purposes of Article 5(2) of the Directive, the Secretary of State for Environment, Food and Rural Affairs is designated as the competent authority.

Q3. Is it already known if your country will adopt the model developed by the Commission and the European Association of Issuing Bodies?
If not:
- Is the national scheme similar enough to allow a transition to this model in the coming years?
- Can you indicate how the national scheme is matching the safeguards of fraud-resistance, accuracy and reliability that are provided by the Commission model?

The Regulatory Impact Assessment (RIA) (see Q2 above) concluded that using a physical certificate, where it is the responsibility of the producer to store and transfer the certificate as necessary, was the most appropriate option for the UK. There is a risk that an appropriate authority cannot adequately track the CHPGO certificate, however while the certificate has little monetary value in the UK, we believe this risk would be small. The scheme, by being linked to the CHPQA assessment programme, will match the safeguards of fraud-resistance, accuracy and reliability that are provided by the Commission model. Thus the UK will not adopt the model developed by the Commission and the European Association of Issuing Bodies at this time. However our scheme will be similar enough to allow a transition to this model (i.e. an electronic registration system) if required and the situation will be kept under review.

The UK guarantee of origin system will operate as follows:

- the issue of a Combined Heat and Power Guarantee of Origin (CHPGO) will be linked to our existing Combined Heat and Power Quality Assurance (CHPQA) assessment system;
- the details of the operation of the CHP plant will come from a Producer's submission to CHPQA, with some additional information requested by the CHPQA programme, if necessary;
- producers requesting a CHPGO will be required to submit information to the CHPQA programme if they do not already do so;
- The Producer would be required to provide a figure for the electricity generated for the period he is requesting the CHPGO. The Producer can choose the period the CHPGO covers, from three months to one year;

- the CHPQA administrator would calculate the information required to issue the CHPGO using the Annex II and III methodology as required by the Directive;
- the competent authority will issue the CHPGO according to that information;
- The reliability of the CHPGO system is ensured because data submitted to CHPQA is used to determine eligibility for fiscal benefits in the UK and is therefore subject to rigorous checking and audits by the CHPQA administrative team.
- The CHPQA programme defines the accuracy requirements for meters and applies a correction if these requirements are not met.
- The CHPQA administrator is responsible for producing the annual statistics under Article 10(3) and already carries out most of the analysis needed for larger schemes. The administrator is therefore very familiar with the Directive methodology.
- A review system will be put in place to allow review of the calculations if requested by the Producer.
- CHPGOs will be revoked if any material inaccuracies are demonstrated.

Q4. Will (parts of) the transposition be done by regions? If so, which parts? And by which regions?

As stated above these regulations apply to GB. Northern Ireland and Gibraltar are following the same approach.

III. Reporting obligations

Article 10 of Directive 2004/8/EC requires Member States to submit various reports. Article 10.1 suggests that there could be one big overall report. Due to the developments in the cogeneration Committee it could be argued that there might be a reason to have a delay in the report mentioned in Article 5.3 but this can not be a justification for a delay in the analysis and evaluations carried out in accordance with Article 9 and hardly for the one in accordance with Article 6.1

Q1. Article 9.1 requires an evaluation on the existing legislative and regulatory framework with regard to authorisation and other procedures, applicable to high efficiency CHP units. Article 9.2 requires Member States to provide indications on the stage reached in coordination between administrative bodies, on guidelines for reduced and/or simplified authorisation procedures and the reduction of barriers, as well as the designation of authorities able to mediate in disputes between applicants for CHP authorisation with issuing authorities.

This report was due on 21.02.2006 and has no relation with the CHP Committee procedure. How far is your country with this report? When can the Commission expect it?

In the correspondence mentioned earlier from Bill Jones to Catherine Day of the European Commission in March 2006 a report on the analysis carried out in accordance with Articles 9(1) and 9(2) as required by Article 10, was enclosed.

Article 9 (1) and (2) requires an evaluation of the existing legislative and regulatory framework with regard to the authorisation procedures in the UK applicable to high-efficiency CHP units. The Article specifies a number of aims behind such an evaluation and requires reporting on three specific matters.

There is no single authorisation regime for the whole of the UK; it is instead a mix of general planning regimes with a specialised planning regime for larger projects, Northern Ireland being the exception. Given the responsibilities of the devolved administrations in their territories an overall review of the whole of the UK has not been attempted. Instead, the report in response by the Department for Business, Enterprise and Regulatory Reform (BERR, formally DTI) on the influence central Government exerts on the authorisation of CHP proposals is at Annex B (originally supplied to the Commission by Mr Bill Jones with his letter dated 22nd March 2006).

Article 6.1and 6.2 requires Member States to establish an analysis of the national potential for the application of high-efficiency cogeneration, including high-efficiency micro- cogeneration. This has to be based on well-documented scientific data. It has to identify all potential for useful heating and cooling demands as well as fuels and other energy resources, including waste heat. It also has to include a separate analysis of barriers, in particular relating to prices and costs of and access to fuels, grid system issues, administrative procedures, internalisation of external costs.

Q2. Has your country already submitted this report? If so, when? If not, when can it be expected? Will the final report have taken into account the harmonised efficiency reference values as endorsed by the Cogeneration Committee in August 2006 and officially adopted by the Commission on 21.12.2006? Will the report include an analysis of the heat demand suitable for CHP and the waste heat potential?

As part of the development of the Government's CHP Strategy to 2010, the UK has undertaken a full assessment of the economic potential for CHP in the UK. To comply with the Article 6 requirement, the UK Government commissioned, in 2005, a study to update this bottom-up study report. This update focuses on the period to 2010 and on the main areas where there is potential within this timescale, namely gas-fired CHP serving heating demands.

Analysis in three areas is drawn together: industrial heat demands, individual buildings and community heating. All three areas have been assessed using a bottom-up methodology, based on defined heat and power demands and the costs and performance for CHP units. The study also examined the potential for micro-CHP within the domestic sector. The study concluded, based on the market discount rates and predicted future energy prices; the economical potential for new (additional) CHP capacity could be in the order of 7 GWe by 2010.

The study also concluded the potential is projected to increase with time, mainly due to growth in industrial sectors, showing an additional economical potential of about 1.3GWe by 2015. The draft report (excluding Northern Ireland) was sent to the European Commission (by Mr Bill Jones) on 24 March 2006. A summary of this study is shown in Annex A. The Department of Enterprise, Trade & Investment in Northern Ireland conducted a separate study in accordance with Article 6 requirement and

have produced a full report on the potential for CHP in Northern Ireland. The Northern Ireland figures are included in the UK potential report.

The final report will take into account the harmonised efficiency reference values and will include an analysis of the heat demand suitable for CHP and the waste heat potential.

Q3. When can the report referred to in Article 5.3 and 10.1 and related to Chapter II of this template be expected?

The final report on the potential study will be published in September 2007.

Q4. Will (parts of) the reporting obligations be fulfilled by regions? If so, which parts? And by which regions?

With the exception of Gibraltar who will report separately, the reporting obligations will be fulfilled in the UK Government final report. As stated earlier, no CHP plants have been identified in Gibraltar.

IV. Support schemes

Article 7 of Directive 2004/8/EC deals with support schemes for high efficiency cogeneration.

Q1. Does your country already have support schemes for cogeneration (operational and/or investment aid)? Have these schemes been notified to and approved by the Commission (DG COMP)? If so, please give references. Until when are these schemes running? What kind of support is provided (feed-in tariffs, certificates and quota, priority access to the grid, …)? How much money on a yearly basis has been provided in this way in the past years to the promotion of cogeneration in general and to the promotion of high efficiency cogeneration in particular?

The UK Government recognised that CHP makes a significant contribution to the UK's sustainable energy goals, bringing environmental, economic, social and energy security benefits. In recognition of these benefits, the Government announced in 2000 a target of achieving at least 10,000 MWe of Good Quality CHP capacity by 2010 and the development of a Strategy to achieve it. It introduced a range of support measures in order to encourage the growth of CHP.

However, in recent years the CHP industry has faced serious economic difficulties mainly due to the high price of gas and low market price for electricity. The Government recognised that, in the light of the adverse economic circumstances, further interventions in the market would be needed to help support this sustainable energy technology.

The support measures the UK Government have put into place include:

- Exemption from the Climate Change Levy, introduced in 2001, of all Fuel inputs and electricity outputs from Good Quality CHP, worth 0.43p/kWh of electricity and 0.15pkWh of Gas.
- Eligibility for Enhanced Capital Allowances for Good Quality CHP, introduced in 2001.
- Grants to support a Community Energy Programme, whereby the use of CHP in public sector lead district heating schemes is encouraged (this programme is now closed).
- Business Rates exemption for CHP power generation plant and machinery
- Reduction in VAT on certain grant-funded domestic micro-CHP installations (from 17.5 down to 5%).
- Extending the eligibility for Renewable Obligation Certificates to include mixed waste plants which use Good Quality CHP. This adds CHP to the list of eligible advanced conversion technologies
- Separate sector for Good Quality CHP in Phase II of the EU Emissions Trading Scheme (EU ETS).

In addition:

- In support of the Government target for Good Quality CHP, the Government has set a target to source at least 15% of electricity for use on the Government Estate from Good Quality CHP by 2010.
- In December 2006 new power station consents guidelines to encourage the development of CHP were published. In the UK, proposals for new power stations are subject to a system of statutory consent. In England and Wales, those over 50MWe are subject to the consent under section 36 of the Electricity Act 1989 and those below from local planning authorities under the normal planning regime. Developers have to show that they have explored fully any opportunities for existing and likely local business or community uses of heat. To facilitate this, the Guidance contains new heat maps were developed by Defra, indicating potential local heat customers

Since 2001, CHPQA has provided the UK's methodology for assessing the quality of CHP schemes, and their qualification as Good Quality CHP for all or part of their inputs, outputs and capacity. Certification issued under the CHPQA programme is used for determining the eligibility of Schemes for fiscal or other benefits and for determining compliance of Schemes with regulatory requirements where quality is relevant to entitlement.

Thus the UK already has support schemes for CHP and these schemes been notified, where appropriate to and approved by the Commission (Ref. Commission decisions C18/2001 and N539/2002). These currently run to the end of 2011 and 2013.

The value of the Climate Change Levy exemption for Good Quality CHP in the UK is in the order of £60-80 million per year (total value to CHP operators of about £300-

400 million since 2001) and the total Enhanced Capital Allowance tax reduction benefit for investment in Good Quality CHP, since 2001, is estimated to be in the order of £59 million for a total investment in the order of £1.2 billion.

Q2. Is your country in the process of developing or introducing new support schemes to promote cogeneration? Will these be reserved for high efficiency cogeneration units based on Directive 2004/8/EC and Commission Decision 2007/74/EC? What kind of support is planned? Which sectors will be targeted (agricultural and/or industrial and/or heating cogeneration)? Will these measures be general or based on certain principles or criteria? If so, which? Have they been based on an assessment, including cost-effectiveness, of earlier support schemes in your country or elsewhere, and if so, which ones? Are they designed to provide stable long-term investment conditions? At which stage in the legislative process are these new schemes? When are these new schemes expected to be notified to the Commission?
How much money is expected to be made available on a yearly basis to the promotion of high efficiency cogeneration in the coming years?

Our position on incentivising Combined Heat and Power is set out in the UK Government's Energy White Paper 2007. This includes the proposals for the review of policies such as the Renewables Obligation; current proposals include doubling the amount of Renewable Obligation Certificates that renewable CHP schemes are eligible for from 2009. The Renewables Obligation places an obligation on electricity suppliers in the UK to source an increasing percentage of their supply from renewable energy – the generation market then adjusts to meet suppliers' demands. How generators choose to do this is down to them in a liberalised market so we cannot say with confidence the capacity of renewable CHP this will drive. We are assuming though that the increase in capacity by 2010 will not be significant.

The Energy White Paper also sets out proposals to change the planning system and building regulations which will encourage the uptake of renewable and low carbon energy over the long-term.

Q3. Will there be regional support schemes? If so, please answer these questions for each of them.

On the whole the key incentives for CHP uptake come through UK fiscal instruments. However, to the degree that issues of planning policy and renewable and low-carbon energy promotion are the responsibility of administrations in Scotland, Wales and Northern Ireland, the relevant Devolved Administrations have said that they are examining the possibilities of incentivising district heating, etc, but discussions about such schemes are very much in the preliminary phase.

V. Statistics

Under Article 10.3 of Directive 2004/8/EC Member States shall submit statistics on national electricity and heat production from CHP, in accordance with Annex II, as well as annual

statistics on cogeneration capacity and fuels used for cogeneration. Most Member States seem to be able to comply with this obligation, even without detailed guidelines being in place.

Q1 Do you have any comments regarding this requirement? Does your country also submit statistics on primary energy savings achieved by cogeneration in accordance with Annex III, or does it plan to do so in the future? If so, when?

The UK has no issue with providing data on national electricity and heat production from CHP based on Annex II methodology or the lack of detailed guidelines being in place. Reports to date have covered 2003, 2004 and 2005. The next report, covering 2006, is due in December 2007 will include statistics on primary energy savings achieved by CHP in accordance with Annex III.

VI. Concrete progress

Q1: Can your country already show progress in high efficiency cogeneration since the publication of the Directive on 21.02.2004 which can be ascribed to either EU or national legislation and support schemes? If so, please inform the Commission of the details (success factors, problems, risks, etc….). If regions are responsible for (part of the) legislation and support schemes please specify your answer at the level of these regions as well.

The growth in CHP electricity since 2004 has been slow despite supportive national schemes. This is accepted as being due to a number of barriers - the most significant being the relative prices of gas (the fuel used most abundantly in CHP in the U.K.) and electricity (see Annex A). Across all commercial and industrial sectors (including fuel industries, but not including electricity generation), approximately 11.5% of electricity consumed in 2004 was supplied by CHP. By 2010, if the economic potential is all realised, the capacity would increase by 7GWe and the percentage of electricity supplied by CHP will increase to about 17%.

The use of renewable-fired CHP and the inclusion of cooling demands should increase the potential further, but it is not expected to be significant in the UK by 2010. This is also true of micro-CHP (see Annex A).

Annex A

Potential evaluation and fiscal measures

Progress Towards Increasing the Share of High Efficiency CHP

Table 1 below shows the evolution of installed CHP capacity, input fuel and cogenerated electricity and heat production in the UK since 2003.

Year	Total No. Schemes[1]	Gross Capacity[2] (MWe)	CHP Capacity[3] (MWe)	Fuel Input[4] (GWh)	CHP Electricity Production[5] (GWh)	CHP Heat Production[6] (GWh)
2003	1,443	10,797	4,848	98,499	22,950	52,718
2004	1,518	9,105	5,653	99,352	26,337	55,329
2005	1,502	9,088	5,440	95,376	27,237	51,454

Table 1 UK CHP statistics 2003-2005 (see notes)

1) figure quoted here excludes mothballed schemes, at the time of reporting.

2) Total Power Capacity of schemes

3) Qualifying Power Capacity

4) Fuel input to generate CHP Power (gross power generated-condensing power) and CHP heat.

5) Power generated with an overall annual efficiency (NCV) • 75% (gas turbines, internal combustion engines and backpressure steam turbines) or • 80% (combined cycle gas turbines with heat recovery and steam condensing extraction turbine).

6) Total useful heat from CHP. This excludes any heat generated in boilers or heat extracted from a steam generator before entering the steam turbine.

Electricity production from CHP increased by about 18% over the 2003-2005 period.

Demand/supply structure - projections of electricity supply

Figure 1 shows the historic and projected electricity generated for the UK in terms of electricity generated by fuel type, with the electricity generated by CHP in the UK over the same time period superimposed. The projected 2010 value for CHP is the electricity generated if the cost-effective CHP capacity of about 13.7 GWe (additional potential of about 8.2 GWe by 2010), identified is installed.

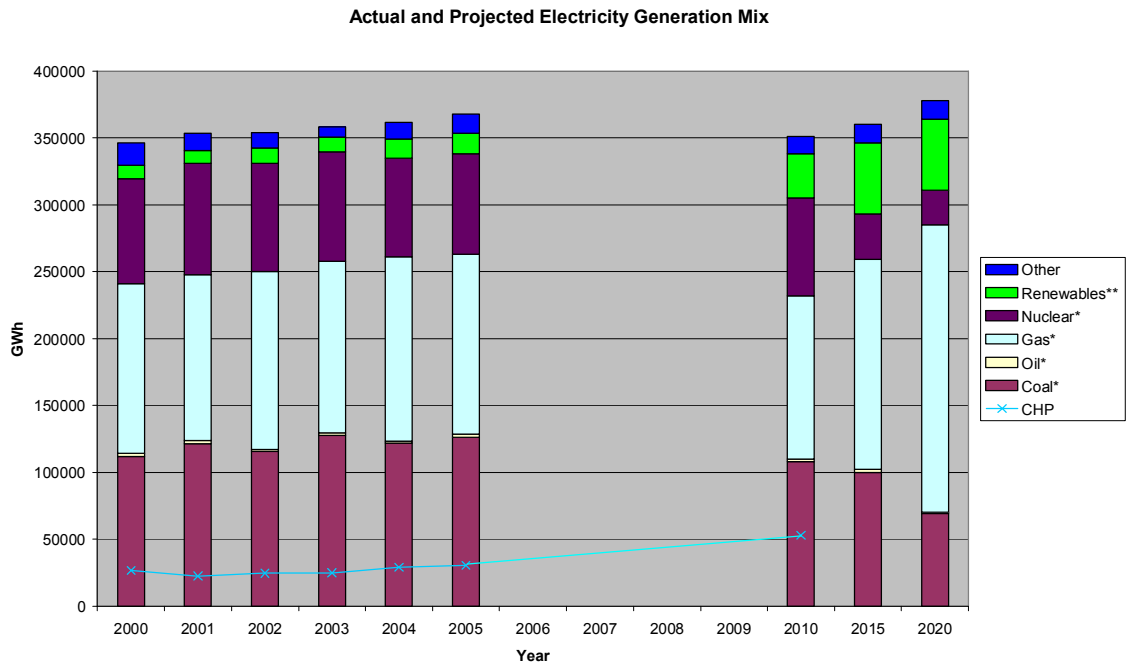

Figure 1 Historic and projected electricity generated mix for the U.K

The salient features of this plot are falling proportions of electricity generation coming from coal and nuclear. Some of this lost generation is made up by a growth in renewable generation, but most is made up by a growth in natural gas-fuelled generation.

Between 2003 and 2005 the electricity generated by CHP grew by about 18% and over this period the rate of growth was an average of 2140 GWh/year. Expressed as a percentage of total electricity generated, the share of CHP power has increased from 7.7% to 8.6% over this period.

If all the cost-effective CHP capacity were installed, CHP power would account for 17% of the projected total for electricity generation in 2010. However, in order for this to be realized, an average growth rate of over 12,000 GWh/year (~1.37 GWe/year of new capacity) would be required, nearly six times the rate achieved over the period 2003-2005.

The growth in CHP electricity to date has been slow. This is accepted as being due to a number of barriers - the most significant being the relative prices of gas (the fuel used most abundantly in CHP in the U.K.) and electricity. These barriers are considered in more detail in Section 4.

Fuels used in CHP in the UK

Figure 2 shows how the use of fuels in CHP installations has evolved since 2000. Natural gas is by far the predominant fuel used in CHP in the UK.

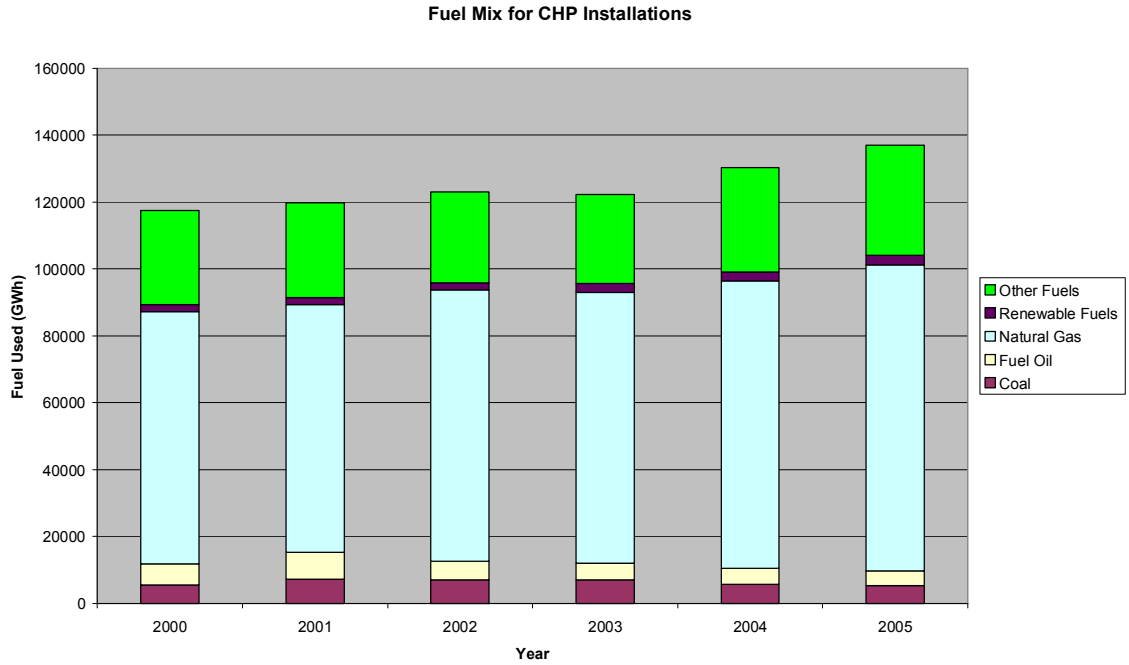

Figure 2. The fuel mix for CHP installations

The share of fuel inputs accounted for by natural gas has increased since 2000, as has 'Other Fuels' (which includes diesel).

The heavy reliance on natural gas for fuelling reciprocating engines tends to suppress the potential for CHP in sites that require electrical and heat generating capacities at the lower end of the spectrum, usually satisfied by reciprocating engines, but which are off the national gas grid.

In 2005, approximately 27% of fuel used in CHP was classed as non-conventional fuel. Non-conventional fuels include solid, liquid or gaseous by-products or waste products from industrial processes and also include renewable fuels. The majority of these fuels are burned in external combustion engines, for example boilers used to raise steam for steam turbines. It is a characteristic of these fuels that the electrical generating efficiency will be lower than that achievable with conventional fuels. However, despite this lower efficiency there is a net environmental benefit, since these fuels displace conventional fossil fuels and must in any case be disposed of.

Barriers

In recent years the CHP industry has faced adverse economic conditions, due largely to the spark spread – the difference between the price received for the electricity and the cost of generation – which has not been large enough to provide an adequate return on investment. The disparity between gas and electricity prices in recent years has thus acted against CHP.

While there are obstacles to the installation of CHP that either cannot be removed or for which it would be inappropriate to make interventions to remove (such as gas and electricity prices), there are a number of barriers currently operating where corrective action is possible through the regulatory framework. These are discussed below, together with the measures that either can be or are being adopted to overcome these barriers.

Upgrading the distribution network

A barrier to the installation of distributed generation including CHP is the cost associated with upgrading the distribution network. This upgrade is required to move from a situation where electricity is taken from centralised power plants and delivered to consumers to one where small-scale generators, such as CHP installations, can sell surplus power all the time whilst maintaining the integrity and reliability of the network. At present UK developers of CHP wishing to export power to the distribution network would be charged for the necessary network reinforcement. However, in response to this barrier, Ofgem is developing an incentive framework aimed at encouraging distribution network operators to connect and utilise distributed generation.

Simplified supply licenses

The need to obtain a license for the generation and supply of electricity can be a burdensome procedure for small-scale distribution, tending to suppress CHP installation. However, in recognition of this the Government in 2001 relaxed the license requirements by raising the license exemption criteria. This means that a greater number of schemes can supply electricity directly without the need for the additional administrative burden associated with becoming a licensed supplier. This position is being kept under review.

EU Emissions Trading Scheme

The EU ETS is intended to encourage lower carbon technologies such as CHP. However, with the approach used in the Phase I allocation, CHP units do not seem to be able to realise the full value for their environmental benefits. These shortcomings were acknowledged by Defra. Following consideration of the treatment of CHP in the UK's National Allocation Plan for the second phase of the EU emissions trading scheme, a separate sector for incumbent (existing) Good Quality CHP plant has been created and a New Entrant Reserve ring-fenced for new plant generating Good Quality CHP electricity. Incumbent CHP will receive an equitable allocation based on historic emissions within the Good Quality CHP sector and New Entrant CHP will receive favourable allocation arrangements relative to non-CHP through the New Entrant Reserve.

Access to mains gas

In most cases, the installation of CHP requires good, reliable access to the gas and electricity networks. Some parts of the UK have little or no access to mains gas. In these situations potential CHP schemes would tend to rely on diesel as the fuel. However, the incentive to run CHP on diesel was not as strong as for running on natural gas, since there is no climate change levy on diesel and therefore no CCL rebate to enjoy when running CHP on this fuel. In short, using diesel in CHP would still incur the excise duty cost. In recognition of this from 1st January 2006 diesel used in CHP was treated as exempt from Hydrocarbon Oil Duty Rates. This provides a

financial motivation for sites considering the use of CHP, which do not have access to the gas grid, to implement CHP at their sites, as there is now a financial incentive to do so.

Cost-effective potential

In 2004, as part of the development of the UK Government's draft CHP Strategy to 2010, the UK undertook an assessment of the economic potential for CHP in the UK.

The study drew together analysis in three areas: industrial heat demands, individual buildings and community heating. All three areas were assessed using a bottom-up methodology, based on defined heat and power demands and costs and performance for CHP units.

In assessing the cost-effective potential for CHP in 2010, it is appropriate to consider different discount rates for different sectors. For example, in the case of industry and individual buildings, investment would tend to be private in origin and standard market rates of return would be expected. To reflect this, a Discount Rate (DR) of 15% is assumed. In the case of community heating schemes, in recognition of the fact that local authorities would be investors in such schemes and would have lower expectations on the rate of return of the investment, a DR of 9% is assumed. It is worth noting that no cost-effective potential is found for DR values above 12%.

Table 4 below shows the B heat and electricity generation that would be expected if all of the cost-effective CHP was installed by 2010, together with the corresponding cost-effective heat and electrical capacities.

Scenario	**Delivered Energy (TWh)**		**Additional Potential Capacities (MW)**		**Energy Savings (TWh)**
	Heat	**Electricity**	**Heat**	**Electricity**	
Medium to low temperature industry	56	43	6,898	5,389	29
High temperature industry	0.48	0.53	120	130	0.5
Other industries (Refineries & LNG)	6.25	10.70	650	1,300	5.9
Buildings (GB only)	12	6	2,536	1,268	8
CH (9% DR)	0.6	0.5	67	56	0.4
Buildings NI	*0.4*	*0.2*	*90*	*45*	*0.3*
Total*	**75.73**	**60.93**	**10,361**	**8,188**	**44.1**

Table 4 Additional delivered energy and capacities if all cost effective CHP installed by 2010

The share of total generated electricity accounted for by cogenerated electricity is shown in the figure below.

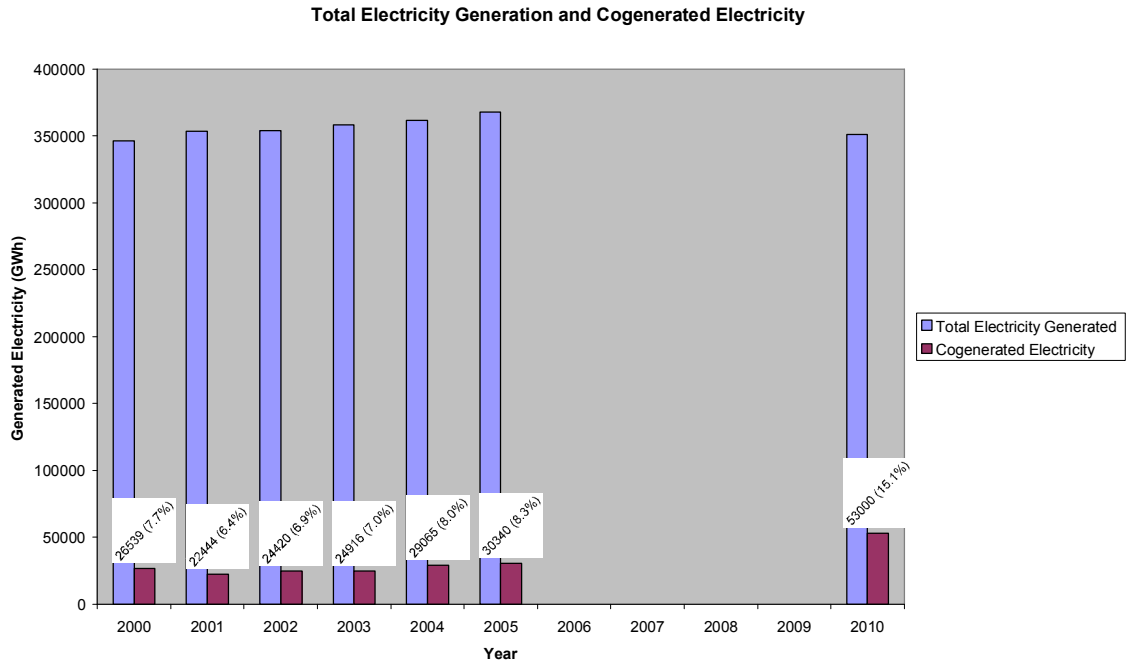

Figure 3. The share of total generated electricity accounted for by cogenerated electricity

In conclusion, across all commercial and industrial sectors (including fuel industries, but not including electricity generation), approximately 11.5% of electricity consumed in 2004 was supplied by CHP. By 2010, if the economic potential is all realised, the capacity would increase by 8.2GWe and the % of electricity supplied by CHP will increase to 17%.

The use of renewable fired CHP and the inclusion of cooling demands should increase the potential further, but it is not expected to be significant in the UK by 2010. This is also true of micro-CHP.

Energy savings

The energy savings for each sector that would be expected if all the cost-effective CHP was installed by 2010 are given in the table below.

Scenario	**Energy Saving TWh(TJ)**
Medium to low temperature industry	29 (104.4)
High temperature industry	0.5 (1.8)
Other industries (Refineries & LNG)	5.9 (21.2)
Buildings (GB only)	8 (28.8)
CH (9% DR)	0.4 (1.4)
Buildings NI	0.3 (1.1)
Total	**44.1 (158.8)**

Table 5 Sector energy savings expected if all cost effective CHP installed by 2010

The energy savings that are realised (with respect to conventional generation of electricity and heat) depend on the level of export of generated electricity and the

degree of heat utilisation. These vary across the different sectors, so the energy savings per unit of generated electricity would vary also.

National policy goals

The UK Government announced, in 2000, a target of achieving at least 10,000 MWe of Good Quality CHP capacity by 2010 and the development of a Strategy to achieve it. In support of this target, the Government has set a target to source at least 15% of electricity for use on the Government Estate from Good Quality CHP by 2010. CHP makes a significant contribution to the UK's sustainable energy goals, bringing environmental, economic, social and energy security benefits. However, in recent years the CHP industry has faced serious economic difficulties. CHP has the potential to make further significant contributions to the security and diversity of energy supply and to help support a competitive manufacturing industry for sustainable energy technologies in the UK. The Government recognised that, in the light of the adverse economic circumstances faced by much of the UK CHP industry, a range of interventions in the market was needed to help support this sustainable energy technology.

The UK Government have put into place several support measures including:

- Exemption from the Climate Change Levy, introduced in 2001, of all Fuel inputs to and electricity outputs from Good Quality CHP, this is worth 0.43p/kWh of electricity and 0.15pkWh of Gas.
- Eligibility for Enhanced Capital Allowances of Good Quality CHP, introduced in 2001.
- Grants to support a Community Energy Programme, whereby the use of CHP in public sector lead district heating schemes is encouraged.
- Business Rates exception for CHP power generation plant and machinery
- Reduction in VAT on certain grant-funded domestic micro-CHP installations (from 17.5 down to 5%).
- Extending the eligibility for Renewable Obligation Certificates to include mixed waste plants which use Good Quality CHP. This adds CHP to the list of eligible advanced conversion technologies.

In addition:

- The eligibility for Renewable Obligation Certificates has been extended to include mixed waste plants which use Good Quality CHP. This adds CHP to the list of eligible advanced conversion technologies.
- Reviewed the power station consents guidelines to encourage the development of CHP. In the UK, proposals for new power stations are subject to a system of statutory consent. In England and Wales, those over 50MWe are subject to the consent under section 36 of the Electricity Act 1989 and those below from local planning authorities under the normal planning regime. In December 2006, new Guidance on power station notifications under this legislation was published. Specifically it sets out the information that developers must submit to show that they have fully considered the opportunities to use CHP when developing their proposals. Developers have to show that they have explored fully any opportunities for existing and likely

local business or community uses of heat. To facilitate this, the Guidance contains new heat maps indicating potential local customers for heat from power stations.

Since 2001, CHPQA has provided the UK's methodology for assessing the quality of CHP schemes, and their qualification as Good Quality CHP for all or part of their inputs, outputs and capacity. Certification issued under the CHPQA programme is used for determining the eligibility of Schemes for fiscal or other benefits and for determining compliance of Schemes with regulatory requirements where quality is relevant to entitlement.

Annex B

Report on implementation of Article 9 Of EC Directive (CHP): Evaluation Of Administrative Procedures

Article 9 requires an evaluation of the existing legislative and regulatory framework with regard to the authorisation procedures in the UK applicable to high efficiency CHP units. The Article specifies a number of aims behind such an evaluation and requires reporting on three specific matters.

There is no single authorisation regime for the whole of the UK, as it is a mix of general planning regimes with a specialised planning regime for the larger projects, Northern Ireland being the exception. Annex A briefly identifies the regimes. Given the responsibilities of the devolved administrations in their territories an overall review of the whole of the UK has not been attempted. Instead this report is a response by BERR on the influence central Government exerts on the authorisation of CHP proposals.

Co-ordination between the different administrative bodies as regards deadlines, reception and treatment of applications for authorisations

As indicated CHP projects receive planning authorisation under two different regimes depending on size. Given that a project is handled in one or other of the planning regimes, but not both, there is no necessity for co-ordination of planning authorisation. Each regime has its own procedures but with certain common themes – they are quasi-judicial procedures with the prospect of legal challenge to the decision, local Government is involved, the public have an opportunity to express their view on the proposal, environmental information is produced that that can be demanded on proposals and there is the possibility of a public inquiry. In both regimes Government energy policy is a relevant factor in the determination that is made. That energy policy has most recently been espoused in the February 2003 Energy White Paper *"Our energy future – creating a low carbon economy"* (Cm 5761). The White Paper noted that CHP has significant potential to play a part in creating a low carbon economy and so endorsed the existing emphasis on the benefits of CHP.

At the same time CHP projects are often to be fuelled by natural gas or oil, and as such, in addition to planning permission, are subject to energy policy control by central Government. Under Section 14 of the Energy Act 1976 any proposal of 10 MW or more in Great Britain requires the clearance of BERR. In exercising that control BERR has issued guidance for proposals that come to it for approval and consults the Department of the Environment, Food and Rural Affairs (Defra) on each proposal. This guidance is aimed at ensuring that developers in bringing forward power station proposals show they have seriously explored opportunities to use combined heat and power technology. The guidance identified where market opportunities may be found and provided follow-up contacts. Following a consultation exercise, BERR and Defra are looking to finalise a revision to that guidance.

For the larger projects developers will apply for Section 14 clearance at the same time as they apply for Section 36 consent. With the smaller projects developers may seek certainty on energy policy clearance before putting their planning application through the system and therefore Section 14 clearance may precede planning permission.

Drawing up possible guidelines for the activities referred to in paragraph 1 [authorisation procedures] and the feasibility of a fast track planning procedure for CHP producers

It has not been thought necessary to draw up specific guidance on the authorisation of CHP proposals. Such proposals come forward in regimes which handle development proposals more generally, the Town and Country Planning Act regime which covers domestic, commercial and industrial development or the specialised Section 36 regime just for power stations. Information is available within those regimes on their procedures.

As for a fast track planning procedure both the Town and Country Planning Act regime and the Section 36 regime provide for EU wide requirements on environmental impact assessment (97/11/EC amending 85/337/EEC) and for a public inquiry to be called into a particular proposal. Both factors will inevitably add to the delivery time for CHP projects but it is not realistic to contemplate removing such requirements. To remove the requirement in regard to environmental information would contravene EU law, whilst removing the potential for a public inquiry would contravene perceptions of natural justice and possibly Human Rights legislation as well as taking away a fundamental and long standing pillar of the planning process in the UK. In some senses the Section 36 process has features of a fast track procedure in that it wraps up local Government and central Government consideration in one decision rather than a proposal first being considered by local Government and then if rejected it being considered by central Government.

The only streamlining in prospect is very limited and is in the area of tightening up on public inquiry procedures. Some steps have already been taken on this in the Town and Country Planning Act regime covering smaller CHP proposals with new rules being introduced for England for public inquiries in that regime in August 2000. With the medium to large CHP proposals handled under the Section 36 regime the February 2003 Energy White Paper*, "Our energy future – creating a low carbon economy"* (Cm 5761), committed the Government to introduce proposals to enable public inquiries under that regime in England and Wales to handle issues concurrently rather than sequentially as at present through the use of additional inspectors. It was not anticipated that such an approach would be used for all inquiries since some inquiries could be adequately handled by a single inspector. The Energy Bill implements this commitment and received Royal Assent on 22 July 2004.

Provision does exist within the Town and Country Planning Act regime for the Deputy Prime Minister to call-in a planning application for his own determination rather than leave it go through the process of seeking local planning authority consent. Such call-ins are rare and unlikely to happen with CHP proposals as developments which might fit the criteria for call-in – of more than local importance or gives rise to

substantial regional or national controversy - are more likely to be found in the Section 36 regime.

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

For the smaller CHP projects handled in the general planning regime of the Town and Country Planning Act mediators as such are not a feature. If the proposal is refused planning permission the appropriate avenue is for the developer to appeal to The Department for Communities and Local Government (CLG) in England, or the devolved administrations in their territories. CLG will appoint a planning inspector to look into the case and report. Based on that report CLG will then decide whether to agree with the local planning authority's refusal or to overrule that and grant planning permission.

For the larger CHP projects handled in the specialised Section 36 regime there is no formal mediation. The proposal will, however, have gone through a comprehensive evaluation in which there is scope for further information, planning conditions to mitigate impacts, and modifications, to be probed and aired so that concerns can be addressed and only when that has been completed will a decision be made on the proposal.

Projects at or below 50 MW in Great Britain (England, Wales and Scotland) are granted development permission under the normal planning regime for development, the Town and Country Planning Act 1990. Under this regime local planning authorities are the competent authority and make the decision. If the decision is refusal the developer can appeal against the decision. In England that appeal would be handled by central Government, through CLG. If the development is in Wales or Scotland the appeal would be handled by the devolved administrations.

Projects over 50 MW are granted development permission under the specialised regime of Section 36 of the Electricity Act 1989 operated by central Government (BERR) if the proposal is in England and Wales, and by the devolved administration if the proposal is in Scotland. The Section 36 authorisation procedure is an integrated process in that it brings in the views of local Government, the local planning authority in the locality, into the process. With their knowledge of the local terrain, local planning policies and representing the local community it is obviously important that their views are seriously taken into account. Thus if a local planning authority objects a public inquiry has to be held into the proposal. Otherwise calling a public inquiry into a proposal is at the discretion of Ministers in BERR, or in Scotland Ministers in the devolved administration. Proposals are simultaneously presented to the competent authority, BERR or Scottish Executive, and put to the local planning authority for a view. At the same time the public will be consulted on the proposal and statutory bodies such as English Nature asked for their views.

In Northern Ireland the administration of planning is handled differently with all planning decisions being handled by the Planning Service, an executive agency of the Department of the Environment (Northern Ireland).