

## EXPLANATORY MEMORANDUM

### THE GUARANTEES OF ORIGIN OF ELECTRICITY PRODUCED FROM HIGH EFFICIENCY COGENERATION REGULATIONS 2007

2007 No. 292

1. This explanatory memorandum has been prepared by the Department for Environment, Food and Rural Affairs and is laid before Parliament by Command of Her Majesty.
2. **Description**
  - 2.1 These Regulations implement Article 5 of the EC Directive on the promotion of cogeneration based on a useful heat demand in the internal energy market. That Article provides for the issue of guarantees of origin of electricity from high-efficiency cogeneration. The cogeneration of electricity is more commonly referred to in the United Kingdom as electricity produced from combined heat and power, or CHP.
3. **Matters of special interest to the Joint Committee on Statutory Instruments**
  - 3.1 None
4. **Legislative Background**
  - 4.1 The Regulations are made under section 2(2) of the European Communities Act 1972 and section 56 of the Finance Act 1973. They implement Article 5 of Directive 2004/8/EC of the European Parliament and of the Council, on the promotion of cogeneration based on a useful heat demand in the EU internal energy market.
  - 4.2 The effect of the legislation made by these Regulations is to give producers of electricity the right to request a Guarantee of Origin certifying that electricity is produced from high efficiency cogeneration.
  - 4.3 The Directive on the promotion of cogeneration came into force on 21<sup>st</sup> February 2004 and the UK was required to transpose the Directive by 21<sup>st</sup> February 2006. Member States must ensure that Guarantees of Origin are available no later than 6 months after the harmonised efficiency reference values are established. This is likely to be in early 2007, when they are published in the Official Journal of the European Union.
  - 4.4 The transposition note for Article 5 of the Directive is attached to this memorandum at Annex A.

## **5. Territorial Extent and Application**

5.1 This instrument applies to England and Wales and Scotland.

## **6. European Convention on Human Rights**

6.1 As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

## **7. Policy background**

7.1 The overall objective of the Cogeneration Directive is to increase energy efficiency and improve security of supply in the EU by creating a framework for the development of high efficiency cogeneration. High efficiency cogeneration may give primary energy savings compared to the separate generation of heat and electricity. The Directive sets criteria to define high efficiency cogeneration, and makes provision for public support and to ensure fair access to markets for electricity from cogeneration.

7.2 Article 5 of the Directive provides for the issue of guarantees of origin of electricity from high efficiency cogeneration. The purpose of a guarantee of origin is to increase transparency, so that customers for electricity can differentiate between electricity generated by high efficiency combined heat and power and electricity produced using other techniques. The Guarantees do not by themselves imply any right to public support. Indeed, they will not be used in the UK as the basis for providing public support for combined heat and power.

7.3 A consultation was carried out on the mechanism for implementing the requirement of Article 5 of the Cogeneration Directive was undertaken between 20 March 2006 and 14 April 2006. The Government received nine responses to the consultation. These were broadly supportive of the Government's preferred option for the issue of Guarantees of Origin.

## **8. Impact**

8.1 A Regulatory Impact Assessment has been produced for the implementation of Article 5 and is attached at Annex B.

## **9. Contact**

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**Regulatory Impact Assessment on  
'The Guarantees of Origin of Electricity Produced from High-efficiency Cogeneration Regulations 2007'**

These Regulations implement the requirements of Article 5 of the Directive on the Promotion of Cogeneration based on a Useful Heat Demand in the Internal Energy Market (Final Directive text which entered into force on 21 February 2004)

January 2007  
Department for Environment, Food and Rural Affairs

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### **Executive summary**

- i. Directive 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal energy market (“the Cogeneration Directive”) entered into force on 21<sup>st</sup> February 2004. Member States were required to transpose its requirements into national law by 21<sup>st</sup> February 2006. Under Article 5, producers of electricity have the right to request a Guarantee of Origin certifying that electricity is produced from high-efficiency cogeneration, or CHP (combined heat and power) as it is more usually called in the UK. Member States must ensure that right may be exercised no later than 6 months after harmonised efficiency reference values are established. This will be when they are published in the Official Journal of the European Union (OJEU). The date for this is likely to be in early 2007.
- ii. The purpose of the Cogeneration Directive is to increase energy efficiency and improve security of supply by creating a framework for the promotion and development of high-efficiency cogeneration based on useful heat demand and primary energy savings in the internal energy market, taking into account the specific national circumstances especially concerning climatic and economic conditions.
- iii. The UK Government welcomes the Cogeneration Directive. The UK has a target to at least double Good Quality CHP capacity to 10,000 MWe by 2010.
- iv. The requirement of Article 5 to provide producers of high-efficiency CHP with a Guarantee of Origin on request presents an additional administrative burden on the UK. Three options for a procedure to issue Guarantees of Origin and four options for the submission of data were considered and were the subject of a consultation exercise from 20<sup>th</sup> March 2006 until 14<sup>th</sup> April 2006. The recommended options (Option 1a for ‘data submission’ and option A for ‘tracking the Guarantee of Origin’ in the consultation presents the option with least risk and minimal additional costs to both Government and producers.

## **Title of the proposal**

1. This document presents the Final Regulatory Impact Assessment (RIA) for the introduction of **'The Guarantees of Origin of Electricity Produced from High-Efficiency Cogeneration Regulations 2007'** which implement the requirements of Article 5 of the Cogeneration Directive.
2. Cogeneration is commonly known as Combined Heat and Power (CHP) in the UK.

## **Purpose and intended effect**

### **Objective**

3. The objective of the Guarantees of Origin for electricity from high-efficiency CHP is to increase transparency and aid consumer choice between CHP electricity and that produced by other techniques. The Guarantees will be issued at the producer's request. They do not by themselves imply a right to benefit from national support mechanisms and it is anticipated that there will not be a large interest in obtaining them in the UK.

## **Devolution**

4. The Cogeneration Directive applies throughout the UK. The Regulations in respect of Article 5 apply to England, Wales and Scotland. Northern Ireland will be legislating separately, but are expected to follow a similar approach to that adopted for the rest of the UK.

## **Background**

5. Directive 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal energy market ("the Cogeneration Directive") entered into force on 21<sup>st</sup> February 2004. Member States had two years, until 21<sup>st</sup> February 2006, to transpose its requirements into national law. Under Article 5, producers of electricity have the right to request a Guarantee of Origin certifying that electricity is produced from high-efficiency cogeneration. Member States must ensure that these Guarantees are available no later than 6 months after the harmonised efficiency reference values are established. This is likely to be in early 2007, when they are published in the OJEU.

## **Rationale for European Commission intervention**

6. The purpose of the Cogeneration Directive is to increase energy efficiency and improve security of supply by creating a framework for the promotion and development of high-efficiency combined heat and power. The purpose of Article 5 of the Directive requiring Member States to put in place arrangements for issuing Guarantees of Origin is to increase transparency, so that customers for electricity can differentiate between electricity generated by high-efficiency CHP and electricity produced using other generation techniques. In particular the Guarantees will contain information about the primary energy savings the CHP generated electricity provides. .

## **Implications for the UK**

7. Together with other Member States, the UK is required to provide a mechanism for issuing a 'Guarantee of Origin' for electricity produced by CHP and this is the focus of this RIA and the associated Regulations that will be introduced to meet

this requirement. The Guarantees do not by themselves imply any right to public support. Indeed, they will not be used in the UK as the basis for providing public support to CHP.

### Consultations Carried out

8. A consultation was carried out on the mechanism for implementing the requirement of Article 5 of the Cogeneration Directive. This consultation was undertaken between 20<sup>th</sup> March and 14<sup>th</sup> April 2006.
9. The Government received 9 responses to this consultation. The responses largely fell into two camps: those broadly supportive of the Government's approach to the CHP Guarantees of Origin and the draft regulations. The second camp covered those with concerns that the Guarantees of Origin might in future be required by electricity suppliers in the UK to prove that the electricity is sourced from CHPs. If this were the case, there would be a value attached to the Guarantees of Origin, and the systems currently proposed would need to be made much more robust, however, this approach would face practical difficulties and is not currently envisaged.

### Options Considered

10. A Guarantees of Origin system comprises of two key processes.

- a mechanism for a producer to submit data
- a mechanism for the issue of a Guarantee

11. Four options were considered for 'Data Submission' in the application process for a Guarantee of Origin. These are summarised in Table 1. The option with the lowest cost and risk was to link the issuing of the Guarantees with the existing CHPQA scheme. This option was presented in the consultation as in the box below:

**Option 1a)** Analysis by CHPQA: The producer would be required to provide the electricity generated for the period he is requesting the Guarantee of Origin. The CHPQA would calculate the information required to issue the Guarantee of Origin using Annex II and III methodology of the Directive.

This process would require an appeal system to be in place in case the producer wishes to challenge the CHPQA calculations and additional administrative time to perform the calculations on top of the current CHPQA validation process.

The benefit of this option would be to provide a system that is demonstrably accurate and reliable as required by the Directive.

The main risk associated with this option is that Defra, or the CHPQA administrators, could become liable if there is an error in the information on the Guarantee of Origin that leads to a financial loss for a project. This risk is perceived to be low because the Guarantee of Origin does not imply a right to any support in the UK and therefore carries no financial value in the UK. Additional costs would also be incurred for producers that have not previously registered with CHPQA and for the CHPQA administrators to carry out the calculation. This latter cost could be passed on to the producer, if Defra were to charge for the issue of Guarantees of Origin. A right to appeal system can



be put in place to remove the liability, if used this would impose an additional cost burden on the Government but experience from the CHPQA programme suggests that if the right procedure is in place the appeals system will not need to be used. In 4 years of operation, the CHPQA appeal system has never been used<sup>1</sup>.

12. This is the least cost option that maintains the integrity of the Guarantee of Origin and is the recommended option that has been taken forward in the development of these Regulations. It is the option favoured by the majority of consultees and also by Government. An operator who requires a Guarantee of Origin will apply to the CHPQA Administrator as the nominated body and the application will be assessed in a similar manner to the current procedures for the CHPQA scheme. A Guarantee of Origin is issued following a request from an applicant. It follows therefore that the costs of processing the application will be borne by the applicant.

#### Options for Issuing a Guarantee of Origin

Three options were considered for issuing and tracking a Guarantee of Origin. The possible options included developing an electronic register, modifying Ofgem's existing register for tracking LECs (Levy Exemption Certificates), or the preferred option of issuing a physical certificate, which was presented in the consultation as Option A below.

**Option A:** Using a physical certificate, it will be the responsibility of the producer to store and transfer the certificate as necessary. The Guarantee of Origin would only be transferred if the production site were sold to a new producer. There is a risk that an appropriate authority cannot adequately track the Guarantee of Origin. While the Guarantee of Origin has little monetary value in the UK, this risk would be small.

13. The other approaches that were discounted included Option B: Using a register will require an online system with sufficient storage space to accommodate all Guarantees of Origin and a unique identifier that ensures that it can be tracked and transferred within the system. This is comparable to the Renewable Energy Guarantee of Origin (REGO) tracking system administered by Ofgem (see <http://ofgem.gov.uk/work/index.jsp?section=/areasofwork/guarantee>). This will require producers to register and receive a secure log on. There is a significant cost associated with setting this system up. Option C was based on the system Ofgem currently have for tracking and issuing Levy Exemption Certificates (LECs) for CHPQA qualified producers. This would involve modifying the Ofgem and Ofreg (the Northern Ireland energy regulator) systems to enable them to track and issue Guarantees of Origin. The risk is that the modification would adversely affect the LEC register and the cost of modification could result in higher costs than building a new register from scratch.

14. Option A is the most appropriate and least cost way of achieving the requirements of the Directive. Although we have no way of tracking the movement or transfer of certificates, the likely small uptake of these certificates in the UK does not

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<sup>1</sup> Since the consultation, the appeal system has now been used once against a background of 3,500 CHPQA certificates being issued.

appear to warrant a more sophisticated system. This situation will be kept under review, so that we can develop an electronic registration system, should that be necessary.

## **Costs**

### Article 5 Compliance Costs

15. The cost to the producer and the Government for the mechanism for the producer submitting the data are summarised below in Table 1. All options will have costs associated with setting up the administrative procedures and providing guidance.
16. The costs for the mechanism issuing the Guarantee of Origin certificates are summarised in Table 2 and are on the basis of the assumption that the cost to the Government of creating, logging and issuing a certificate is around £300 per certificate. For 12 certificates a year this gives a total of around £4,500 per year (options B and C were calculated to cost £60,000-£70,000 and £30,000-£45,000 respectively).
17. The Defra Handbook on Charging states it is best practice to recover costs where the benefit is to a defined party and is not mandatory. As this is the case for the issue of a Guarantee of Origin, which is at the request of producer and does not imply public support, the Government intends to charge producers. The charge would aim to recover costs and would depend on the complexity of the scheme, where small CHP producers will be charged significantly less than the large complex CHP producers.

Table 1: Guarantee of Origin Data Submission Option Costs

	<b>Option 1a</b> (the preferred option)	<b>Option 1b</b>	<b>Option 2</b>	<b>Option 3</b>
<b>Option Summary</b>	CHPQA administrator to calculate all information for Guarantee of Origin.	Producer submits Guarantee of Origin data to CHPQA for validating.	Producer submits data to Competent Body for validating	Producer submits Guarantee of Origin data to competent body.
<b>Benefits</b>	Least cost, accurate and reliable generation of Guarantee of Origin data. Makes use of existing systems	Accurate and reliable generation of Guarantee of Origin data. Makes use of existing systems	Accurate and reliable generation of Guarantee of Origin data. Independent of CHPQA.	Full responsibility lies with producer.
<b>Risks</b>	Liability for incorrect data lies with Government	Significant assistance and corrections required leading to increased costs	Duplication of activities with CHPQA leading to increased cost	Guarantee of Origin data not considered reliable and accurate by other member states
<b>Costs</b>	£	£	£	£
Setting up administration procedures and processes <sup>2</sup>	9,250 (1,100 annualised <sup>3</sup> )	11,750 (1,400 annualised)	41,000 (4,900 annualised)	26,000 (3,100 annualised)
Producing guidance and documentation	2,500 (300 annualised)	7,500 (900 annualised)	10,000 (1,200 annualised)	12,500 (1,500 annualised)
<b>Annualised Cost to Government</b>	<b>1,400</b>	<b>2,300</b>	<b>6,100</b>	<b>4,600</b>
Calculating and validating information for Guarantee of Origin <sup>4</sup>	31,750	13,750	24,500	6,500
Helpline (annual costs)	1,000	2,000	5,000	7,500
Direct Cost to producer <sup>5</sup>	3,000	24,000	24,000	30,000
<b>Annual cost to Industry (employing cost recovery<sup>6</sup>)</b>	<b>35,750</b>	<b>39,750</b>	<b>53,500</b>	<b>44,000</b>
<b>Total annual cost per producer<sup>7</sup></b>	<b>3,000</b>	<b>3,300</b>	<b>4,400</b>	<b>3,600</b>

<sup>2</sup> This includes set-up costs for procedures, forms, databases, helpline, government contract, and cost recovery process.

<sup>3</sup> Annualised assuming 10 year regulatory cycle.

<sup>4</sup> This includes all calculation and validation activities carried out by a competent body, including audits. Costs are based on 12 large schemes per year and three audits.

<sup>5</sup> Cost to producer to generate data and calculations, based on 12 large schemes per year.

<sup>6</sup> Cost recovery can be applied to the calculation, validation and helpline costs of processing a Guarantee Of Origin for a producer.

<sup>7</sup> Based on 1 large scheme per producer per year and employing cost recovery.

Table 2 Cost of options for issuing a CHPGO

<p><b>Option A:</b> The cost to the Government of creating, logging and issuing a certificate is estimated to be £300 per certificate. For 12 certificates a year this gives around £4400 per year.</p>
<p><b>Option B:</b> The cost to the Government of creating an online register capable of tracking electronic CHPGOs is estimated to be £60,000-£70,000. As discussed earlier, the benefits from CHPGOs are likely to be limited to a small number of larger schemes that are able to trade electricity with other Member States. The benefits of setting up a tracking system are therefore unlikely to justify the costs.</p>
<p><b>Option C:</b> The cost of modifying the Ofgem SIMS system to track and register CHPGOs is estimated to be about half the cost of setting up a database from scratch. However the feasibility of this option is low because the SIMS is required to constantly remain active and secure to allow monthly LEC data to be registered. Maintaining this security during the modification could result in high additional costs and burdens.</p>

Other Costs:

18. Other than the costs associated with the Guarantee of Origin, there will be no significant costs imposed for business, charities or voluntary organisations.
19. Where a Guarantee of Origin for CHP electricity has been requested, there may be additional costs to the producer associated with the installation of additional metering (fuel, electricity and heat). The definition in the Directive of CHP electricity to be applied in the Guarantee of Origin, unlike the UK's CHPQA standard, does not allow heat produced by supplementary firing or in auxiliary boilers or electricity produced by a condensing turbine to be counted. It is for this reason that additional metering may be required. However, the issue of a Guarantee of Origin is at the request of the producer and any additional costs will form part of the commercial decision to request a Guarantee of Origin.

### Competition assessment and effect on small business

Organisations affected Issues of equity and fairness

20. Article 5 provides that the issue of a Guarantee of Origin for electricity from CHP is at the request of the producer. This does not therefore impose any burdens on individual producers.

Competition Assessment

21. A competition filter<sup>8</sup> has been carried out for organisations that will be affected by the Directive. This examines market structure in order to establish whether any particular operator might be substantially more vulnerable than any other.
22. The market for CHP is diverse and covers the majority of market sectors including domestic, health, leisure, light industry, heavy industry, power generation, and food and drink. The market includes the end users of CHP, the developers, third party operators and equipment suppliers.
23. The majority of larger more complex CHP producers are within the heavy industry and power generation sectors. This sector is not dominated by any companies in terms of number of installed units, but is dominated by the three main UK power companies in terms of installed capacity.
24. There are a variety of small CHP producers, but the market is dominated by two main CHP unit equipment suppliers.
25. The additional cost implications of the Directive are relative to the size and complexity of the CHP installed; they will apply to all existing and new CHP in the same manner and are consistent across all market segments. Therefore, it can be

<sup>8</sup> See "Guidelines for Competition Assessment", p. 15, Office of Fair Trading, February 2002.

concluded that there is unlikely to be a significant detrimental impact on competition as a result of the Directive.

26. Although improvements in both technology and application will continue for many years to come, these will be steady and incremental in nature. The market, therefore, is not characterised by rapid technological development.

#### Effect on Small Businesses

27. The potential impact on small businesses formed part of the consultation on the Commission's proposal for the Directive. The final draft of the Directive is believed to have no specific impact on SMEs. We have not, therefore, carried out a Small Firms Impact Test. The responses to the consultation identified that there might be a disproportionate affect on small CHP if additional metering is required but this is not an issue while the CHPGO is not mandatory and the Guarantee of Origin has no monetary value.

### **Enforcement and sanctions**

28. Following the publication of the Harmonised Efficiency Reference Values in the OJEU, expected in early 2007, we will publicise any changes required to the current UK system for defining, assessing and monitoring Good Quality CHP. We will also publicise the arrangements for combined heat and power producers to obtain Guarantees of Origin for high-efficiency CHP generated electricity.
29. Enforcement is required to ensure that the Guarantees of Origin are reliable and accurate and accepted by other Member States. As the option selected for 'data submission' involves the CHPQA Administrator in calculating the information required to issue the Guarantee the system should be demonstrably accurate and reliable, as required by the Directive. The Guarantee of Origin does not currently carry any monetary value and so it is not envisioned that any system to fine producers that attempt to abuse the system will be required. However, the Regulations allow for revocation of Guarantees of Origin which were obtained on the basis of incorrect information.

### **Monitoring and review**

30. Article 10 of the Directive lays out the requirements for Member States' reporting and this is where the majority of the cost to Government lies. Article 10(1) states that Member States shall publish a report which, outlines the measures taken to ensure the reliability of the Guarantee of Origin system, establishes an analysis framework for assessing the national potential for the application of high-efficiency CHP, evaluates the existing legislative and regulatory frameworks with regard to authoritative procedures that are applicable to high-efficiency CHP and provides an indication of the stage reached in managing and implementing the procedures. This report is required every four years and will be produced by a competent body as part of the transposition process.

### **Summary and recommendation**

31. The requirement of Article 5 to provide, on request, producers of high-efficiency CHP with a Guarantee of Origin presents an additional administrative burden on the UK. Several options were considered for the implementation of this Article. The option chosen represents what we think is the lowest cost and least risk route. Four options were considered for 'Data Submission' in the application process for a Guarantee of Origin. The chosen option (Option 1a) involves the CHPQA Administrator in calculating the information required to issue the

Guarantee. Three options were considered for issuing and tracking Guarantees of Origin. The chosen one (Option A) is to use a physical certificate, with the producer being responsible for storing and transferring the certificate as necessary.

## **Glossary**

32. The following definitions are defined in Article 3 of the Directive and shall apply to this Transposition and RIA:

- Cogeneration or CHP shall mean the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy.
- Useful heat shall mean heat produced in a cogeneration process to satisfy an economically justifiable demand for heating or cooling.
- High-efficiency cogeneration shall mean cogeneration meeting the criteria of Annex III of the Directive.
- Harmonised Efficiency Reference Value shall mean the efficiency of the alternative separate productions of heat and electricity that the cogeneration process is intended to substitute.

## **DECLARATION**

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed Ian Pearson

Date 15th January 2007

Minister's name, Mr Ian Pearson

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## TRANSPOSITION TABLE

### ARTICLE 5 OF DIRECTIVE 2004/8/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON THE PROMOTION OF COGENERATION BASED ON USEFUL HEAT DEMAND IN THE INTERNAL ENERGY MARKET AND AMENDING DIRECTIVE 92/42/EEC.

Article	Purpose	Implementation	Responsibility
5	<b>Guarantee of origin of electricity from high efficiency cogeneration</b> – requires Member States to ensure that the origin of electricity produced from high efficiency combined heat and power can be guaranteed in response to a request from the producer	<b>Legislation required</b>  The Guarantees of Origin of Electricity Produced from High-efficiency Cogeneration Regulations 2007.  Regulations made under section 2(2) of the European Communities Act 1972 and section 56 of the Finance Act 1973	Department for Environment, Food and Rural Affairs