DEPARTMENT OF ENERGY AND CLIMATE CHANGE

Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2001 (As Amended) (SI 2001 No. 1091)

Guidance Note

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1. INTRODUCTION

1.1 This revised Guidance Note is issued to accompany the Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2001 (As Amended) (SI 2001 No. 1091) ("the Regulations"), which implement Council Directive 96/61/EC of 24 September 1996 concerning "Integrated Pollution Prevention and Control" (known as the IPPC Directive). The Guidance Note relates solely to combustion installations that are offshore oil and gas facilities. It explains how to apply for a permit and what that permit covers. It gives technical guidance on matters to be taken into consideration when preparing an application for a permit. It also covers the issues of "substantial change" to existing combustion installations, and variations to permits.

1.2 The system of Integrated Pollution Prevention and Control (IPPC) applies a comprehensive approach to the environmental regulation of combustion processes to generate power on offshore facilities. The integrated approach means that emissions to air, the sea and land, plus a range of other environmental effects, must be considered together. It also means that the Department of Energy & Climate Change (the Department) must set permit conditions to achieve a high level of protection for the environment as a whole. The approach and permit conditions are based on the use of Best Available Technique (BAT), which balances the costs to the operator against the benefits to the environment. IPPC aims to prevent emissions and waste production and, where that is not practicable, to reduce them to acceptable levels.

2. OVERVIEW OF THE REGULATORY PROCESS

2.1 The basic purpose of the IPPC regime is to introduce a more integrated approach to controlling pollution from industrial sources. It aims to achieve:

"...a high level of protection of the environment taken as a whole by, in particular, preventing or, where that is not practicable, reducing emissions into the air, water and land."

This is achieved by determining and enforcing permit conditions based on BAT.

2.2 The Directive came into force on 1 November 2000, but the Regulations to implement the Directive for offshore facilities were not made until 18 March 2001. Following implementation of the Regulations, the requirement to obtain a permit applied to all new combustion installations, or existing combustion installations that were the subject of substantial change. For the purpose of the Regulations, a combustion installation is any offshore oil or gas facility where the rated thermal input of the combustion equipment on the facility exceeds a threshold of 50 MegaWatt thermal (MW(th)). This threshold applies to all operational combustion equipment. A permit is not required where the aggregated thermal input is 50 MW(th) or less.

2.3 Combustion equipment, as described in the Regulations, include burning fuel in turbines, internal combustion engines (`ICE`), fired heaters used to heat any medium, inert gas generators, or other similar fired processes.

2.4 Substantial change is defined as "in relation to combustion installations, a change in operation which may have significant negative effects on human beings or the environment." A change in operation could entail either technical alterations or modifications in operational or management practices. In deciding whether or not a change is "substantial" the Department will consider the likely environmental impact resulting from the proposed change. For combustion processes, a change in the environmental impact is most likely to result from increased emissions, resulting from either increased fuel consumption or a change in fuel type (for example, changing from gas to diesel).

2.5 The Regulations do not apply to operational or emergency flaring of gas from a flare stack or low level (`ground') flare, or apply to incinerators.

2.6 The Regulatory process for the offshore oil and gas industry consists of four main elements. These are outlined below and explained in more detail throughout this Guidance Note.

Stage 1 – Permitting

2.7 Operators requiring a permit must submit an application to the Department. Once the Department receives the application, it will consult as necessary. The Department will also advertise receipt of the application in the London, Edinburgh and Belfast Gazettes, and on its website, together with details of where representations can be made.

2.8 Each application under the Regulations is subject to a formal public notice period of four weeks, commencing on the day after the last date on which the application has been publicised in the Gazettes.

2.9 In making an application the operator must address various environmental issues. These include:

- satisfactory environmental management of the combustion installation;
- adequate compliance monitoring;
- assessment of polluting releases and the identification of Best Available Technique (BAT);
- where relevant, compliance with environmental quality standards (EQSs), other EU Directives and domestic regulations;
- energy efficiency, waste minimisation and management; and
- the prevention of accidents.

2.10 Conditions limiting releases will be included in the permits. Potential applicants should therefore be aware of the importance of describing:

- management of the combustion installation;
- emission releases from the combustion installation;
- release routes; and
- methods of monitoring or sampling and analysis.

2.11 As oil and/or gas production from a reservoir declines over field life, emissions will not be constant, but will reflect hydrocarbon production rates and the energy used for gas compression, water re-injection etc. The permit application must therefore provide information on the emissions of the main pollutants over time.

2.12 In determining the application, the Department must be satisfied that the operator has addressed all the above points.

2.13 Whether a permit is granted, and the conditions attached to the permit, will depend on the particular circumstances of each application.

2.14 The permit conditions relating to emission releases will be based on a `mass emissions' approach, i.e. total tonnage, for all of the main pollutants.

2.15 The permit issued will be for the 'life' of the facility, and initially based on the emissions for a period of five years. A review of each permit will be undertaken prior to the end of that five-year period, and any changes will be accommodated in a permit variation.

2.16 Following publication of this guidance, the Department intends to review the permits already issued under these Regulations. Permit holders will therefore be contacted to discuss any necessary amendments.

Stage 2 – Operation

2.17 Once the Department has issued a permit, the permit holder will be required to monitor and report emissions to demonstrate compliance with the permit conditions. The Department may also carry out their own monitoring and inspections.

2.18 If it is likely that the permitted mass emissions will be exceeded, the operator must notify the Department prior to the exceedence.

2.19 Over time, the Department may vary permits, or the permit conditions, to reflect changes in how the facility is operated. The operator may also request a variation to the permit, or the permit conditions.

Stage 3 – Substantial Change

2.20 Operators of permitted and non-permitted offshore facilities undertaking a change in the operation of the combustion equipment on the facility that could have significant negative effects on human beings or the environment must submit an application to the Department for a substantial change assessment. Once the Department receives the application, it will consult as necessary.

2.21 A change in operation could entail either technical alterations or modifications in operational or management practices. In deciding whether or not a change is "substantial" the Department will consider the likely environmental impact resulting from the proposed change.

2.22 An application to the Department for a substantial change assessment could lead to a requirement to obtain a permit, or a requirement to vary an existing permit.

Stage 4 – Surrender and Closure

2.23 If the aggregated thermal input of the facility is reduced below the threshold, the operator must apply to surrender the permit. For example, as combustion equipment is removed from the facility during the decommissioning process. When a permit is surrendered, the operator will be required to satisfy the Department that any pollution risks relating to the qualifying combustion equipment have been removed and, where appropriate, the site restored to a satisfactory state.

Standard Application Forms

2.24 The Department has produced one form to facilitate applications for permits, permit variations and substantial change assessments.

3. SCOPE OF THE REGULATIONS

Application to Offshore Oil and Gas Facilities

3.1 The Regulations apply to the use of combustion equipment on offshore oil and gas facilities. For the purposes of the Regulations, a combustion installation is any facility equipped with turbines, engines or heaters that use fuel, either gaseous or liquid, to generate energy for the operation of the facility, i.e. for the purpose of doing work. The Regulations therefore cover both the major and minor combustion equipment, i.e. turbines, crane engines, fire pumps etc. However, for the purpose of assessing the potential environmental impact of the combustion installation, greater emphasis is likely to be placed on the use of the turbines and, in some cases, the large diesel engines that are relied upon as the main power source for the facility. The application requirements are therefore reduced for the minor combustion equipment, and for equipment that is rarely used. (A 1999 study concluded that 4000 MW (output) of gas turbines had been deployed on UK offshore oil and gas facilities, compared to an estimated 250 MW (output) for diesel engines, and an even smaller output for fired heaters).

3.2 The fuel used on offshore oil and gas facilities is normally raw unprocessed natural gas, which may contain inert gases, ethane, and heavier hydrocarbons, with light distillate ('diesel') fuel often used for start-up or emergencies. Gaseous fuel is generally taken from the oil and gas separation process, after suitable filtration.

3.3 The larger facilities in the UK offshore sector, comprising a steel or concrete jacket supporting the topsides modules which house the oil and gas processing equipment, will typically use gas turbines for power generation and to directly drive large equipment such as compressors or pumps. Reciprocating internal combustion engines ('diesels') will normally be used for start-up, emergency generation, cranes, fire pumps etc. Direct heating requirements are normally relatively small, and met by waste heat recovery, or fired heaters. Smaller facilities in the Southern North Sea will often be fitted with similar equipment, but where there is a lower power generation requirement they may rely more on diesels or, occasionally, spark ignition gas fuelled engines ('gas engines') for primary power generation.

3.4 Floating Production and Storage (FPS) facilities, or Floating Production Storage and Offtake (FPSO) facilities, which are moored or positioned at a fixed location for the life of the oil or gas field, use a variety of equipment for power generation, often related to whether the facility is a conversion of an existing vessel or a "new-build". The main generators or large equipment drivers may therefore be gas or diesel fuelled turbines, or large

marine ‘diesels’, and in some cases the original steam boilers may still be used to provide some energy. Some ‘diesels’ may also have been converted to be predominately fuelled by gas, but with an admixture of ‘torch oil’ liquid distillate fuel to ignite the main gas charge. In some cases, the facility may also be equipped with combustion equipment for inert gas generation, to provide a blanket gas for the crude oil storage tanks, and may be equipped with steam raising plant.

3.5 Mobile Drilling Units (MoDUs) are excluded from the Regulations, but units that have been converted to production facilities and are moored or positioned at a fixed location for that purpose are covered by the Regulations.

3.6 Irrespective of the nature of the facility, the criterion for determining whether or not a facility requires to be the subject of a permit under the Regulations is the aggregated thermal capacity of all the qualifying combustion equipment on the facility. The thermal capacity is a function of the manufacturer’s Maximum Continuous Rating (MCR) of the equipment, the efficiency of the equipment and the calorific value of the fuel, and can be derived from the manufacturer’s output and efficiency specifications for the chosen fuel. If the aggregated total exceeds 50 MW(th), the facility will require a permit to cover all the qualifying combustion equipment on the facility.

New Combustion Installations

3.7 The operators of proposed new facilities that will exceed the 50 MW(th) threshold must apply for a permit prior to commissioning any of the qualifying combustion equipment on the facility. In some circumstances, the Department will allow commissioning prior to permit issue, and operators may wish to discuss this option at the time of permit application. However, it should normally be assumed that a permit will be required in advance of the operation of the new facility.

3.8 Operators of proposed new facilities are strongly recommended to contact the Department at a very early stage in the design process, to discuss the combustion equipment that will be installed on the facility and the permit application process. There is nothing in the Regulations to prevent an operator from designing, ordering or installing the proposed combustion equipment prior to contacting the Department, or prior to submitting the application for a permit, but the Department may not agree with the proposed choice of equipment or the proposed operating strategy. In such cases, the cost of replacing the equipment or changing the operating strategy, to demonstrate BAT, could be extremely high, and such costs would not be taken into consideration as part of the assessment of the available options, nor would they influence the Department’s assessment.

Any decisions or work undertaken prior to contacting the Department will therefore be at the operator's risk, and it will be in the operator's interest to contact the Department at the initial design stage to avoid expensive changes and delays.

3.9 Following the initial discussions, operators are recommended to apply for a permit as soon as they have completed the design process and placed orders to procure the equipment discussed and agreed with the Department. Although there is nothing in the Regulations to prevent an operator from installing the proposed combustion equipment prior to submitting the application, it should be noted that the permit may include monitoring requirements such as metering fuel use or sampling stack gases, and retrofit of the necessary equipment could be expensive and introduce delays. It is therefore undesirable to commence construction work prior to confirmation of these potential requirements (whether on a new facility or in relation to changes to an existing facility).

3.10 Providing the facility or the equipment are not particularly complex or novel, it should be possible to prepare a competent application immediately following the design and procurement phase, as the manufacturers will be able to provide the necessary technical information to under-pin the application. The Department will, nevertheless, wish to discuss potential changes with the applicant and, following a favourable determination of the application, will decide whether to issue the permit immediately, or to withhold permit issue until nearer the commissioning date.

3.11 To accommodate any changes during the course of construction or commissioning, it will be possible to up-date an application if the Department has still to issue the permit, or to request a variation of an issued permit (see Section 7).

Existing Combustion Installations

3.12 The operators of existing combustion installations that exceed the 50 MW(th) threshold are required to obtain a permit before 30 October 2007 (the Directive confirms the deadline of 1 November 2007, but the Regulations have an earlier deadline).

3.13 It will be an offence to operate an existing qualifying combustion installation without a permit after 30 October 2007. Any existing qualifying combustion installation that does not have a permit after that date will have to cease operations, unless an application has already been submitted to the Department and approval has been given to continue operations pending issue of the relevant permit.

Substantial Change

3.14 A 'substantial change' in operation is defined in Regulation 2 as "in relation to combustion installations, a change in operation which may have significant negative effects on human beings or the environment." A change in operation could entail the installation of additional qualifying combustion equipment; the technical alteration or modification of existing qualifying combustion equipment; an increase in the output of existing qualifying combustion equipment (for example, if additional electrical equipment is installed or there is an additional processing requirement resulting from enhancing the performance of existing wells, bringing on new wells or the tie-back of a new field, and the changes result in an increase in the overall power generation requirement); or the modification of the management of existing qualifying combustion equipment (for example, changing the running regimes of the equipment, increasing the output from some equipment and correspondingly decreasing the output from other equipment). It should be noted that, in the case of the tie-back of a surface facility, there may be separate permitting implications, as the aggregated thermal capacity of the tie-back is assessed separately and is not included in the aggregated thermal capacity of the host installation.

3.15 Where a proposed change in operation involves the installation of additional qualifying combustion equipment, there are three potential outcomes:

- where the aggregated thermal capacity of the combustion equipment, including the additional equipment, is still less than the 50 MW(th) threshold, there are no requirements under the Regulations and it is unnecessary to take any action; or

- where the aggregated thermal capacity of the combustion equipment, excluding the additional equipment, is already greater than the 50 MW(th) threshold, the operator must inform the Department to facilitate a substantial change assessment under the Regulations. Operators are strongly recommended to contact the Department at a very early stage, to discuss the proposed change and the substantial change process; or

- where the aggregated thermal capacity of the combustion equipment, excluding the additional equipment, is less than the 50 MW(th) threshold, but the additional equipment will increase the aggregated thermal capacity to the extent that it will exceed the threshold, the operator must inform the Department to facilitate a substantial change assessment under the Regulations. Operators are strongly recommended to contact the Department at a very

early stage, to discuss the proposed change and the substantial change process.

3.16 For all other changes in operation, there are two potential outcomes:

- where the aggregated thermal capacity of the combustion equipment is less than the 50 MW(th) threshold, there are no requirements under the Regulations and it is unnecessary to take any action; or

- where the aggregated thermal capacity of the combustion equipment is greater than the 50 MW(th) threshold, the operator must inform the Department to facilitate a substantial change assessment under the Regulations. Operators are strongly recommended to contact the Department at a very early stage, to discuss the proposed change and the substantial change process.

3.17 Where there is a requirement to undertake a substantial change assessment, the operator should study the application form to confirm what information is required to facilitate the assessment. Further information in relation to the substantial change assessment and the information requirements are summarised at Annex IV, and operators can also seek advice directly from the Department.

3.18 As indicated above, the substantiality of the change relates to potential negative effects on human beings or the environment, and does not relate to the nature or scope of the changes in operation. Some changes will not have consequences for the environment and will fall outside the definition, but some will have a negative effect. The Department will therefore wish to consider the potential impact of the change in operation on the emissions of substances controlled under the permit (essentially the oxides of nitrogen and sulphur, carbon monoxide, methane and non-methane volatile organic compounds). Although there is no direct relationship between the emissions of these controlled substances and the emissions of carbon dioxide (CO_2), the impact of the change in operation on the emissions of CO_2 can be used as a surrogate to determine the potential negative effects on human beings or the environment, and the information requirements to facilitate the substantial change assessment have been linked to the anticipated increase in the emissions of CO_2. Where this linkage is considered to be inappropriate, operators should seek advice directly from the Department.

3.19 In all cases, following confirmation of the information requirements, operators are strongly recommended to apply for the substantial change assessment well in advance of the implementation of the change in operation. Irrespective of whether the change involves the installation of

additional qualifying combustion equipment, the Department must approve the change prior to implementation; and, if the change does involve the installation of additional equipment, it may additionally be necessary to obtain a permit prior to commissioning the equipment (subject to the exceptional provisions outlined in Section 3.7), and to install monitoring equipment at the time of installation.

3.20 Following receipt of an application for a substantial change assessment, the Department will determine whether the change is substantial in terms of potential negative effects on human beings or the environment.

3.21 Where the Department determines that the change is not substantial, there are three potential outcomes:

- Prior to submission of a permit application for the offshore facility, no further action is required.

- Following submission of a permit application, but prior to issue of a permit, for the offshore facility, the applicant may be requested to provide an up-date of the application to reflect the proposed change.

- Following issue of a permit for the offshore facility, the applicant may be requested to apply for a variation to the permit to reflect the proposed change.

3.22 Where the Department determines that the change is substantial, there are also three potential outcomes:

- Prior to submission of a permit application for the offshore facility, the applicant will be advised that it is necessary to obtain a permit prior to implementing the proposed change. Where the change relates solely to the installation of additional qualifying combustion equipment, the applicant will be offered the choice of obtaining a permit for the additional qualifying equipment or obtaining a permit for the entire offshore facility (the 'combustion installation'). In all other cases, the applicant will be required to obtain a permit for the entire offshore facility. If the applicant has a choice and decides to apply for a permit for the additional qualifying combustion equipment, the application for the substantial change assessment should already contain all the necessary information to process the permit application, and will proceed to advertise the application. (If the information provided is inadequate, the applicant will be requested to provide additional information prior to advertising the application). If the applicant decides, or is required, to apply for a permit for the entire offshore facility, the applicant will be advised

what information is required and will be required to submit a formal permit application.

- Following submission of a permit application, but prior to issue of a permit, for the offshore facility, the applicant will be requested to provide an up-date of the application to reflect the proposed change.

- Following issue of a permit for the offshore facility, the applicant will be requested to apply for a variation to the permit to reflect the proposed change.

3.23 As a substantial change assessment could lead to a request for a permit application or the up-date of a permit application, or lead to a request for a permit variation, it is important to re-emphasise that the application for the substantial change assessment should be submitted to the Department well in advance of implementation of the change in operation, and in advance of placing any orders for equipment associated with the proposed change in operation, to avoid potentially expensive changes and delays.

4. PERMIT AND SUBSTANTIAL CHANGE APPLICATIONS

Pre-application Discussions

4.1 The Department strongly recommends discussion of all proposals relating to new combustion equipment prior to making formal applications. Third parties may be invited to join these discussions, including equipment specialists such as turbine manufacturers. The discussions will be of benefit to both the Department and the operators, for example to agree whether the proposed equipment is acceptable; to confirm whether a permit is required; and to clarify the information requirements.

4.2 In such cases, the primary aim will normally be related to selecting suitable combustion equipment with the best emissions profile for the required power output. The Department will wish to be reassured that schedule or combustion equipment procurement 'alliances' with third parties, such as gas turbine manufacturers, do not distort the selection of appropriate equipment, or affect the application of Best Available Technique (BAT). Where there are cost-benefits relating to an alliance, these may be addressed as part of the cost-benefit evaluation of available options, but the Department will expect to have reached agreement on the selection of suitable equipment prior to the placement of any purchase orders.

4.3 Where an application relates to existing combustion equipment, the selection of appropriate combustion equipment will not be as relevant, as there is no intention to routinely insist upon upgrading equipment to match the performance of currently available new equipment. Discussions prior to making the formal application may therefore be unnecessary.

4.4 In such cases, demonstrating the application of Best Available Technique (BAT) should focus on how the existing equipment is being managed to reduce emissions. If changes are considered to be desirable, they will be discussed with the applicant following submission of the application, and an improvement programme will be agreed for implementation following permit issue.

4.5 In many cases, applications for a permit or a substantial change assessment will be related to applications for separate approvals under the Offshore Petroleum Production and Pipe-lines (Assessment of Environmental Effects) Regulations 1999.

4.6 In such cases, it is strongly recommended that the pre-application discussions should address these overlapping requirements, to decide whether applications should be submitted in parallel or whether there would be advantage in a staged application process. The main advantage

of considering the requirements in tandem is that it should be possible to prepare a single environmental impact assessment for the emissions from the facility, including both the combustion installation and flare emissions. It will also be possible to submit an early draft of the application for the combustion installation permit for consideration by the Department, well in advance of the requirement to obtain the permit. The main advantage of a staged application process is that it would be possible to request approval under the Offshore Petroleum Production and Pipe-lines (Assessment of Environmental Effects) Regulations 1999 prior to final selection of the combustion equipment, where this is more appropriate.

4.7 Additional discussions can be initiated at the request of the applicant or permit holder, if there are any issues requiring clarification.

Preparation of Applications

4.8 The applicant for a permit or substantial change assessment must be the operator of the offshore facility that will be the subject of the permit or the change in operation.

4.9 The applicant and/or permit holder will normally be the licensee with responsibility for exercising any function of organising or supervising all or any of the operations of searching or boring for or getting petroleum in pursuance of a licence, although it can exceptionally be another person or body approved in writing by the Secretary of State.

4.10 Where a licensee is not responsible for exercising those functions (e.g. day-to-day running of the facility is undertaken by a contractor), or there are a number of licensees responsible for exercising those functions in relation to separate fields served by the same offshore facility, the applicant and/or permit holder will be the licensee who, in the opinion of the Secretary of State, has primary responsibility for organising or supervising all or any of the operations of the offshore facility that is the subject of the application.

4.11 The information requirements for permit and substantial change assessment applications are detailed below, and summarised at Annex IV. The information should be included in the application form appended at Annex V, or in documents submitted in support of that application form. (Copies of the application form can also be downloaded from DECC website at: https://www.og.decc.gov.uk/environment/ppcoci_2007.htm).

4.12 The same application form can be used for permit and substantial change assessment applications, although the level of detail required will depend upon the nature of the application.

- Information relating to the applicant and the combustion installation, e.g. company details, the name of the facility, the geographical location of facility (quadrant and block number, and latitude and longitude site co-ordinates), a description of the facility and its activities and the environmental conditions at the site of the facility;

- Information on the qualifying combustion equipment, the operation of the combustion installation and its environmental impact (e.g. the materials, substances and energy used in, or generated by, the combustion equipment, the sources of emissions, the nature and quantities of the foreseeable emissions, the identification of significant effects of the emissions on the environment and the results of appropriate dispersion modelling of emissions);

- Information on how the environmental impact is minimised (e.g. the proposed technology and other techniques for preventing or, where this is not possible, minimising emissions and, where necessary and appropriate, the measures taken to recover wastes generated by the combustion equipment);

- Information on how compliance with the permit will be demonstrated (e.g. measures planned to monitor and report emissions to the environment and proposals for the future management of the combustion installation and, if relevant, the training of operational staff); and

- A non-technical summary of the application.

4.13 The information relating to the applicant and the combustion installation (i.e. the facility) is, for the most part, straightforward and can be entered directly onto the application form.

4.14 The description of the facility and its activities, and the baseline environmental conditions at the site of the facility, should be brief and relevant to the application and the potential environmental impact. Where a directly related Environmental Statement or request for a Direction (a PON15) has been prepared describing the facility etc, they should be referenced, to avoid unnecessary detail.

4.15 The information on the qualifying combustion equipment is also straightforward and can be entered directly onto the application form. For applications relating solely to the installation of additional qualifying combustion equipment, it will only be necessary to provide full details for the additional equipment, although it will be necessary to provide some information in relation to the existing equipment in the accompanying documents to describe the baseline conditions. In all other cases, it will

be necessary to provide full details for all the qualifying combustion equipment.

4.16 The information relating to the management of the qualifying combustion equipment should be more detailed. The information can be entered directly onto the application form, or included in a separate document attached to the application.

4.17 It will be necessary to describe the power requirements, the equipment and fuels used to meet those requirements, and the efficiency of that equipment. The overall objective should be to demonstrate that the operation of the combustion installation is designed to achieve production, processing and export of reservoir hydrocarbons in a manner that is energy efficient, minimises pollution, and applies BAT. Where minimisation of pollution might increase energy use, a suitable balance should be identified. The concept and definition of BAT are explained in Schedule 1 of the Regulations, and summarised at Annex II.

4.18 For applications relating to new combustion installations, or applications relating solely to the installation of additional qualifying combustion equipment, it will be necessary to include details of the equipment and management option selection processes. Applicants will need to carefully consider the oil and gas production and process requirements and the utility provision requirements, ensuring that waste heat recovery is used where appropriate, and the gas turbines, internal combustion engines and fired heaters should be carefully selected taking account of energy efficiency and pollutant emissions.

4.19 For applications relating to existing combustion installations, it will be necessary to describe how the equipment management regime is designed to provide the power to meet current oil and gas production and process requirements, and utility requirements, whilst maximising efficiency and minimising environmental impact.

4.20 In all cases, care should be taken to review ‘part load’ conditions, which will usually result in increased emissions for most gas turbines. Operability and complexity should also be considered, to obviate future plant ‘trips’ (unwanted shut-downs caused by changes outwith the operating envelope) as far as practicable, as these will inevitably result in increased emissions during the re-start cycle and may result in the emergency flaring of gas.

4.21 Applications for permits should normally be accompanied by an energy efficiency study or audit, to demonstrate that the management regime maximises efficiency and minimises the atmospheric emissions. The UKOOA Atmospherics work-group has undertaken preparatory work in

relation to guidance on the scope of an acceptable energy efficiency study or audit, and would hope to publish that guidance following discussions with the Department.

4.22 The information relating to the assessment of the environmental impact will need to consider all materials and substances used during the course of operation of the combustion equipment, and all emissions, or releases, of materials and substances to the environment.

4.23 Atmospheric emissions are, self evidently, the major pollutant release route for combustion activities, and the following pollutants are of primary interest to the Department:

- the oxides of nitrogen, and other compounds containing nitrogen;
- the oxides of sulphur, and other compounds containing sulphur;
- carbon monoxide; and
- methane and non-methane Volatile Organic Compounds (nmVOCs).

Further information in relation to these, and other potentially relevant, pollutants are contained in Schedule 2 of the Regulations, and summarised at Annex III.

4.24 Direct discharges to the marine environment are unlikely to be significant, although “drop-out” of atmospheric emissions may be relevant to consideration of the overall environmental impact. There is a general presumption that no solid or liquid wastes associated with the combustion activities should be directly discharged to the marine environment, with the exception of chemicals discharged in accordance with the terms and conditions of a permit issued under The Offshore Chemicals Regulations 2002 (e.g. turbine washes and general purpose “rig” washes), and machinery space discharges undertaken in accordance with MARPOL requirements.

4.25 Onshore recycling or disposal of wastes will normally be restricted to materials such as used filters and lubricating oils. Offshore storage of potentially hazardous wastes should be avoided, unless the materials are contained or otherwise rendered harmless. The aim should be to prevent the creation of wastes containing substances prescribed for disposal on land, or which could cause harm. Where this is not possible, waste quantities should be minimised, by careful selection of raw materials and management processes, and by re-use and/or recycling. Evidence should be provided to demonstrate that these issues have been addressed.

4.26 As the major pollutant release route for combustion activities will be the atmospheric emissions, the emissions profiles of the qualifying combustion equipment will be critical to the impact assessment, and the demonstration of BAT. It will therefore be necessary to provide information in relation to the performance of the major combustion equipment, in terms of the mass emissions per unit volume of exhaust gas from each item of qualifying combustion equipment.

4.27 For applications relating to new combustion installations, or applications relating solely to the installation of additional qualifying combustion equipment, consideration of the emission profiles will form part of the early discussions relating to the project, and will be relevant to equipment selection. For applications relating to existing combustion installations, it may be necessary to consult the original suppliers or manufacturers of the equipment to obtain the necessary information.

4.28 Article 9 of the parent IPPC Directive states that the permit shall include emission limit values for pollutants, in particular, those listed in Annex IV to the Directive that are likely to be emitted in significant quantities from the facility, having regard to their nature and their potential to transfer pollution from one medium to another (water, air and land). However, where appropriate, Article 9 allows limit values to be supplemented or replaced by equivalent parameters or technical measures.

4.29 Given the difficulties inherent in achieving effective control of emission limit values for offshore combustion equipment, particularly for the older equipment present on most facilities on the United Kingdom Continental Shelf (UKCS), and the difficulties associated with monitoring the emissions, the Department has decided that it is more appropriate to control the total mass emissions of the pollutants from the entire facility, on a calendar year basis, rather than the mass emissions per unit volume of exhaust gas from each item of qualifying combustion equipment. This, in conjunction with controls on overall efficiency, is considered to an equivalent parameter that will deliver the objectives of the Directive.

4.30 In addition to providing the emissions profiles of the qualifying combustion equipment, it will therefore be necessary to provide information in relation to both the current and projected future total mass emissions, and the overall efficiency of the combustion equipment. For permitting purposes, the information provided should cover the calendar year of the permit application, and a period of at least five complete calendar years following the year of permit application.

4.31 Notwithstanding the Department's decision to control total mass emissions from the entire facility, it may be appropriate to assess the emissions

profiles of the main combustion equipment against relevant Environmental Quality Standards and Objectives (EQS and EQO), which specify maximum concentrations of the relevant pollutants in ambient air, for example if facilities are immediately adjacent to one another or to the coastline. Consideration should also be given to any relevant qualitative Community EQSs, which may be particularly relevant when selecting new combustion equipment and comparing emission limit values.

4.32 Applications for permits must also include the results of appropriate atmospheric dispersion modelling studies, to demonstrate whether any relevant EQSs will be breached on adjacent facilities or, in the case of facilities that are located close to the coastline, on the adjacent landmass. This is a requirement of the IPPC Directive, which requires the regulator to consider whether relevant EQSs will, or could be, breached, as part of the assessment of the proposals.

4.33 It is recognised that dispersion models have significant limitations. However, ADMS and AERMOD are generally accepted and well validated for modelling concentrations some distance from the sources, where dispersion characteristics are dominated by the wind, atmospheric turbulence, plume buoyancy, etc. It is therefore expected that these models will be used. It is accepted that representative meteorological data may not be available for offshore locations to run these models, but onshore data for locations such as Lerwick are considered to be acceptable. Normal procedure would be to run the models based on hourly meteorological data for one calendar year, although it may be more representative to run the models for three calendar years for facilities that are immediately adjacent to the coastline.

4.34 The use of theoretical data sets such as the R91 lines, which originate from the 1979 NRPB study, may be acceptable. However, whilst providing a useful indication of theoretical short-term maximum concentrations, the data is not considered to be generally suitable for the assessment of long-term averages. The use of the R91 lines would therefore be unacceptable for facilities that are adjacent to other combustion installations, or adjacent to the coastline. In all cases, ADMS and AERMOD are the preferred models.

4.35 Although flaring is not included within the definition of qualifying combustion installations, the environmental impact of the flaring of gas as a direct consequence of the shut-down of the combustion units, for instance during commissioning, needs to be addressed. It is therefore recommended that both combustion and flaring emissions are addressed when undertaking the atmospheric dispersion modelling studies. This work, and the results, can either be included in the permit application, or

included in the Environmental Statement for the development and referenced in the permit application.

4.36 Following permit issue, periodic monitoring will be required to validate the emissions profiles, the mass emissions estimates and the atmospheric dispersion modelling (see Section 10 and Annex IV).

Submission of Applications

4.37 It is essential to provide all the requested information, to enable the Department to determine the application. If the application is deficient, the Department will request an application up-date, and this could delay the determination.

4.38 All applications, including any supporting documents, should be submitted electronically to emt@decc.gsi.gov.uk.

4.39 If there any problems relating to the submission of an application, applicants should contact:

The Environmental Management Team
Department of Energy and Climate Change
Energy Development Unit (EDU)
Offshore Environment and Decommissioning (OED)
4th Floor, Atholl House
86-88 Guild Street
Aberdeen AB11 6AR

Telephone: 01224 254050/254045
Fax: 01224 254019

5. CONSULTATION ON PERMIT APPLICATIONS

5.1 The Secretary of State is required under the Regulations to advertise receipt of applications for a permit in the Gazettes, and to state where a copy of the application can be obtained. He must also allow a notice period of at least 28 days to allow members of the public to make representations on the application. The Department may also decide that it is appropriate to advertise an application for a variation to a permit.

5.2 Although there are no statutory consultees under the Regulations, in some cases the Department may consider it appropriate to consult other bodies. The Department may also decide that it is appropriate to consult other bodies in relation to an application for a variation to a permit.

5.3 For those facilities near the shore (less than 12 nautical miles from the shoreline), or where atmospheric dispersion modelling indicates there may be a detrimental effect on local onshore air quality, further consultation may be required.

5.4 If, as a result of information contained within a permit application, the Department considers that transboundary impacts are likely, it may consult other bodies within the transboundary state as appropriate.

5.5 Where the Department decides that it is appropriate to consult other bodies in relation to an application, the Department will advise the applicant accordingly.

6. DETERMINATION OF PERMIT APPLICATIONS

6.1 It is the aim of Department to apply the Regulations proportionately, and the permit conditions will therefore reflect the magnitude and complexity of the facility, and any environmental effects.

Requests for More Information

6.2 Additional information may be required in order to determine an application. In such cases, any additional information that is supplied may be subject to further public notice (depending on the nature of the information), which could delay the determination of the application. If there is a delay in providing additional information, it could also delay the determination of the application, and could impact the commissioning programme or result in existing operations being suspended.

Determination by the Department

6.3 The Department will aim to approve applications within twelve weeks (which includes the statutory public notice period). However, the Department may decide that a longer period is required to process the application.

6.4 Before determining an application the Department will take account of any relevant Environmental Statement, any representations on that statement, and any representations received from consultees including other EEA States (if appropriate).

Grant of a Permit with Conditions

6.5 Where a permit is granted, it will include the following:

- conditions relating to the emissions of pollutants that are likely to be present in significant quantities. These will normally be based on BAT, taking account of the nature of the facility and the local environment;
- conditions that require the operator to take appropriate steps before, during and after operation, which may include emissions monitoring, site monitoring and remediation;
- conditions that require the operator to inform the Department without delay of any incident or accident relating to the permitted combustion equipment, that may significantly affect the environment;
- any conditions the Department deems necessary to ensure a high level of protection for the environment; and
- conditions related to an improvement plan to enhance energy efficiency.

6.6 A copy of the draft permit and related conditions can be found at Annex VI.

Refusal of a Permit

6.7 The Department may refuse a permit under certain circumstances. A permit may be refused if:

- the applicant has failed to demonstrate BAT within the application;
- the information provided by the operator does not provide a reasonable basis to determine the permit conditions, taking account of the applicant's responses to any requests for additional information;
- the environmental impact would be unacceptable. For example, an applicant might propose locating a new facility close to an extremely sensitive environment, without giving adequate consideration to emission reductions; and
- the Department takes the view that the applicant will not comply with the proposed permit conditions. This may occur if the Department has reason to believe that the applicant lacks the management systems or competence to operate the combustion installation in accordance with proposals outlined in the application or in accordance with any of the permit conditions.

6.8 If the Department refuses to issue a permit, it will provide notice of the refusal and the reasons for the refusal.

6.9 The applicant has the right to appeal to the Secretary of State if the Department refuses a permit.

7. UPDATES AND VARIATIONS TO PERMIT APPLICATIONS

7.1 An *update* to an application is an amendment submitted before the Department has determined the application and issued the permit. An applicant should provide an update if any of the information in the application has to be amended.

7.2 A *variation* to an application is an amendment submitted after the Department has issued the permit. An operator should apply for a permit variation when there are expected changes in the operation of the facility, etc.

Requests by the Applicant / Operator

7.3 The applicant for a permit update or variation must be the current permit holder, except in the case of variations relating to a change of operatorship when the applicant must be the proposed new permit holder (see Section 8).

7.4 The applicant should apply for an update or a variation if their Company name changes (e.g. if Joe Smith Ltd changes it's name to Joe Smith (UK) Ltd). Before re-issuing the permit in the new Company name, the Department will require written confirmation of the name change under the new Company's letterhead.

7.5 The applicant should normally apply for an update or a variation if there are any changes to the administrative details. However, applicants are advised to contact the Department prior to submitting an update or a variation for trivial changes. In some cases, the Department may advise that an update or variation is unnecessary to cover the amendments.

7.6 The information requirements for updates and variations will depend upon the nature of the changes. Where an update or variation relates solely to the removal of an item of combustion equipment, it may be sufficient to identify the equipment and any impact on the mass emissions. Where the update or variation relates to changes in equipment or the equipment management regime, it may be necessary to amend the entire application to provide sufficient detail to enable the Department to determine the request.

7.7 Irrespective of the nature of the update or variation, applications can be made by amending the most recent version of the permit application. (If necessary, a copy can be obtained from the Department). The amendments should be clearly highlighted, and the revised application, including any supporting documents, should be submitted electronically to emt@decc.gsi.gov.uk.

7.8 The Department will endeavour to determine updated applications within the originally agreed timescale, and will endeavour to determine applications for variations within 28 days of receipt. However, if an update or variation identifies significant changes in the operation of the facility, then the update or variation may be subject to an additional public notice, which could delay the determination. Applicants should therefore allow for this possibility.

Variation by the Department

7.9 The Department may vary permits at any time. The Department may do this in response to a permit review (see Section 9), a recent inspection or investigation, or because additional permit conditions are considered to be necessary.

7.10 If the Department decides to vary a permit, it will provide notice of the variation and the reasons for the variation.

7.11 The permit holder has the right to appeal to the Secretary of State if the Department varies a permit and the permit holder objects to the variation.

8. PERMIT TRANSFERS

8.1 If there is a proposed assignment of an offshore facility to another company, the original permit holder must initiate a request for a permit assignment. The original permit holder must apply to the Department in writing, confirming the name of the 'new' operator; the effective date of transfer of the offshore facility to the 'new' operator; and that copies of the most recent permit application has been made available to the 'new' operator.

8.2 Following receipt of the original permit holder's request for a permit assignment, the 'new' operator will be required to submit an application for a permit variation containing any necessary amendments, e.g. contact information.

8.3 Following receipt of the 'new' operator's application for a permit variation, the Department will issue a revocation notice, under Regulation 10, to the original permit holder. The Department will also review the application for a variation and, if appropriate, issue the amended permit.

8.4 The 'new' operators should be aware that, if the application for a variation contains significant changes, the Department may decide that there should be a public notice period for the application. Under such circumstances, the Department will advise the 'new' operator accordingly.

8.5 The Department may require the 'new' operator, or the original permit holder, to supply such additional information as it requires to process the request for a permit assignment.

9. PERMIT REVIEWS

9.1 Regular permit reviews are required to check whether the permit conditions are still relevant, and to reflect any appropriate new standards. The Department will review permits in the light of updated information on available technologies, environmental effects or other relevant issues. Following a review, the Department may either request an application for a permit variation, or proceed to issue a revised permit.

9.2 The Department intends to undertake a formal review of all permits at least once every five years. The Department may additionally review the conditions attached to permits on a more frequent basis, at such intervals as it deems appropriate.

9.3 Permit holders will be contacted by the Department at least three months prior to a formal permit review, and advised what information is required to facilitate the review.

9.4 Matters to be taken into consideration during the review will include:

- whether the facility emissions are causing such significant pollution that the Department takes the view that it must change or supplement the existing permit conditions;

- whether substantial changes in technology have made it possible to reduce emissions significantly without excessive costs; or

- whether operators should consider changes in technology for any other reasons.

10. CHECKING AND ENFORCING COMPLIANCE

Monitoring and Reporting

10.1 Currently, the main pollutant species that will require to be monitored and reported are:

- Sulphur dioxide and other sulphur compounds;
- Oxides of nitrogen and other nitrogen compounds;
- Carbon monoxide; and
- Unburnt HydroCarbons (UHC), expressed separately as methane and non-methane volatile organic compounds (nmVOC).

Reporting Requirements

10.2 Permit holders must submit quarterly and annual emissions reports using the EEMS database system. The Department may impose more frequent reporting in the event of unsatisfactory performance or unforeseen situations.

10.3 The annual emissions report should confirm the calculated mass of pollutants emitted from the qualifying combustion equipment, i.e. the permitted combustion equipment.

Monitoring Requirements

10.4 Applications must include details of measures planned to monitor emissions into the environment. Applicants must provide information on the pathways of release, the proposed methods of monitoring, sampling and analysis and relevant QA/QC procedures.

10.5 The expectation is that emissions monitoring will be undertaken for all qualifying combustion equipment, unless it can be demonstrated that the emissions from a particular item of combustion equipment are not material, e.g. if the equipment has a thermal capacity of <2MW(th); if the equipment is run for less than 1000 hours per annum; or if the equipment is run on diesel and the total emissions from all diesel use represent less than 4% of the total emissions.

10.6 Emissions monitoring must be undertaken at a range of machine loads that are considered to be representative of the normal operational regime. Further discussion of monitoring methods, including topics such as the design and location of sample ports, sample conditioning, etc, can be

found in the report `Background Paper on Offshore Emissions Monitoring', available at:

https://www.og.decc.gov.uk/regulation/guidance/environment/ippc/index.htm

10.7 Emissions monitoring analyses may be carried out offshore or onshore, using either fixed or portable instruments. Accuracy and repeatability of any instrument must be within acceptable limits, and clearly defined in the monitoring proposals.

10.8 Emissions monitoring and reporting frequencies, and the formats of the reports, will be agreed between the applicant and the Department.

European Pollutant Emissions Register Reporting Requirement

10.8 Article 15(3) of the IPPC Directive requires the publication of an EC inventory of principal emissions and their sources, known as the `European Pollutant Emissions Register' (EPER). The register requires the reporting, every three years, of 50 pollutants released to air and water, and includes some of the emissions from offshore facilities. Existing facilities above the 50 MW(th) threshold are required to report emissions in advance of the permitting deadline of 1 November 2007.

10.9 Although reporting under EPER is only required every three years, operators will continue to report annually via the EEMS database, and this requirement will be incorporated into legally binding conditions as facilities are permitted.

11. ENFORCEMENT NOTICE

11.1 Regulation 14 gives powers to the Department (acting on behalf of the Secretary of State) to serve notice on an operator of a facility where it is of the opinion that the operator of the facility has contravened or is contravening any condition of the permit, or is likely to contravene any such condition of the permit. The Department may serve on the operator a notice (referred to in these Regulations as an "enforcement notice") which:

- states that the Department is of such an opinion;
- specifies the matters which constitute, constituted or, as the case may be, are likely to constitute the contravention;
- specifies the steps that must be taken to remedy or, as the case may be, prevent the contravention; and
- specifies the period within which those steps must be taken.

Prohibition Notices

11.2 If the Department is of the opinion that the operation of an offshore combustion installation involves an imminent serious risk of pollution, the Department may serve a 'prohibition notice' on the operator of the facility.

11.3 A prohibition notice shall:

- state the Department's opinion;
- specify the risk involved in the operation of the combustion installation;
- specify the steps that must be taken to remove it and the period within which they must be taken; and
- direct that the permit shall, until the notice is withdrawn, wholly or to the extent specified in the notice, cease to have effect to permit the operation of the combustion installation.

Power of Department to Take Action

11.4 Where a person to whom an enforcement notice or a prohibition notice is addressed has failed to take the action required by it within such time as

may be specified in the notice, or in default of any time being specified within a reasonable time of service of the notice, and where such a notice has not been withdrawn, the Department may undertake any action required and the cost of so doing shall be recoverable from the person on whom the notice was served.

12. PUBLIC REGISTERS AND INFORMATION

12.1 The Department will maintain a register on its website (https://www.og.decc.gov.uk/environment/arp.htm#ppcoci), listing the applications received and determined under these Regulations.

12.2 The Department will also provide facilities at its Aberdeen Office where interested parties may inspect permit applications, permit application correspondence and a copy of the permit (subject to any confidentiality issues identified by the applicant).

12.3 Where an applicant has indicated that parts of the permit application are commercially confidential, the applicant / permit holder will be contacted prior to releasing the relevant information (which must be clearly identified in the application).

12.4 Requests for access to information should be made to:

Environmental Management Team
Department of Energy and Climate Change
86-88 Guild Street
Aberdeen AB11 6AR

Telephone: 01224 254050 / 254045
Fax: 01224 254019
e-mail: emt@decc.gsi.gov.uk

13. CHARGING

13.1 For information on charging, please refer to the current charging scheme which can be found at:–

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/446291/IED_2015_-_2016_Charging_Scheme_16_July.pdf

14. APPEALS

14.1 Any applicant or permit holder, aggrieved by any decision of the Secretary of State, in relation to their application or permit, may appeal:

- in respect of a decision relating to the operation of an offshore combustion installation in the English area, to the High Court;
- in respect of a decision relating to the operation of an offshore combustion installation in the Scottish area (excluding Scottish Controlled Waters), to the Court of Session; or
- in respect of a decision relating to the operation of an offshore combustion installation in the Northern Irish area, to the High Court in Northern Ireland

14.2 Appeals must be made within 28 days of the date of the written notification of the decision from the Secretary of State.

ANNEX I

MATTERS COVERED BY THE REGULATIONS

Operators are advised to read the Regulations, which can be found at https://www.og.decc.gov.uk/environment/ppcoci_2007.htm The following summary is not comprehensive.

Regulation 1 – Citation and commencement

This regulation provides for the title and commencement of the Regulations.

Regulation 2 – Interpretation

This regulation defines terms used in the Regulations.

Regulation 3 – Requirement for permit to operate combustion equipment

This regulation confirms that no offshore combustion installation can be operated except in accordance with a permit issued under the Regulations, from 30 October 2007 permits are required for existing facilities.

Regulation 4 – Grant of permit, contents of permit, publication of grant of permit

This regulation confirms that the Secretary of State (SoS) has the power to grant an application for a permit and to attach certain conditions. Any permit that is granted will be publicised in the Gazettes.

Regulation 5 – Contents of application for permit

This regulation confirms that the application for the grant of a permit should contain:

- a description of the facility and its activities;
- the materials, substances and energy used in or generated by the facility;
- the sources of emissions from the facility;
- the conditions of the site of the facility;

- the nature and quantities of foreseeable emissions from the facility into each medium, as well as identification of significant effects of the emissions on the environment;

- the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the facility;

- where necessary, measures for the prevention and recovery of waste generated by the facility;

- measures planned to monitor emissions into the environment; and

- a non-technical summary.

Regulation 6 – Fees

The Regulations have recently been amended, under the Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005, to allow the Department to implement a charging scheme for the Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2001 (As Amended). A copy of the current charging scheme is available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/446291/IED_2015_-_2016_Charging_Scheme_16_July.pdf

Regulation 7 – Publicity regarding application for permit

This regulation requires notices to be published in the Gazettes confirming receipt of applications; confirming where a copy of an application for a permit may be obtained; and inviting comments on the application from interested parties, including members of the public.

Regulation 8 – Variation of conditions of permit on application of operator

This regulation allows an operator to apply to the Secretary of State for the conditions attached to an existing permit to be varied where, for example, a change to the combustion installation is proposed that would result in the existing conditions being no longer applicable. The request should detail the reasons for the change and the nature of the change. If the Secretary of State deems that the change is not substantial then he can issue a revised permit. If, however, the Secretary of State deems it to be substantial, then the permit holder would have to apply for a new permit (but this will also be managed using the permit variation procedure).

Regulation 9 – Reconsideration and updating of permit conditions

This regulation places a requirement on the Secretary of State to review the conditions attached to existing permits at such times as he considers it necessary. In addition to reviewing the standard permit format, to take account of new technologies etc, it is proposed that individual permits will be reviewed on a regular basis. The Department currently intends to conduct this formal review of permits every three years, with a view to up-dating the emission limits and determining whether the other permit conditions are still relevant. The reviews will be initiated by the Department, following discussions with the permit holder. When undertaking any review, the Department will, if appropriate, incorporate improvement conditions.

Regulation 10 - Revocation, surrender and assignment of permits

This regulation allows the Secretary of State to revoke a permit, and allows the permit holder to surrender or (re-)assign a permit. The Secretary of State may revoke a permit if it is considered that the conditions are no longer appropriate (usually following discussions with the permit holder). If a permit is revoked, the operator will be required to apply for a new permit if the intention is to continue to operate the combustion installation.

Regulation 11 - Register to be kept by the Secretary of State

This regulation requires the Secretary of State to keep a register of all permits issued, and the results of any monitoring required under the conditions of any permit. Such information will be made available to interested parties. If an interested party wishes to view specific information relating to a permit, they should telephone 01224 254050 or e-mail emt@decc.gsi.gov.uk to make an appointment.

Regulation 12 - Provision of information to the Secretary of State

This regulation requires all permit holders to provide the Secretary of State with the results of any monitoring of the releases, as required under the conditions of any permit. It also requires the Secretary of State to be informed immediately about any incident or accident relating to the combustion equipment where there is a release of pollutants that could significantly affect the environment.

Regulation 13 - Appointment of inspectors

This regulation allows the Secretary of State to appoint inspectors to advise on whether any requirements, restrictions or prohibitions imposed by the Regulations have been complied with; and also to advise on the condition or operation of, or emissions from, any qualifying offshore combustion equipment. The regulation also sets out the powers of the inspectors.

Regulation 14 - Enforcement notices

This regulation empowers the Secretary of State to issue a notice - known as an `enforcement notice' - where a permit holder has contravened, or is contravening, any condition of a permit. The Secretary of State will do this by issuing a notice which will state what the contravention is; what measures must be taken to remedy or prevent the contravention; and the time scale in which these measures must be taken. Such measures can include the steps to be taken to remedy any resulting pollution.

Regulation 15 - Prohibition notices

This regulation empowers the Secretary of State to issue a notice - known as a `prohibition notice' - where the operation of the combustion equipment involves the imminent serious risk of pollution. Such a notice can cover any aspect of the operation of the combustion installation - not just the conditions in an existing permit. A prohibition notice will state the Secretary of State's opinion; specify the risk involved; specify the steps to be taken to remove the risk and the time scale in which they must be undertaken; and direct that an existing permit shall be withdrawn wholly, or to the extent specified in the notice, until the notice is withdrawn. The Secretary of State may withdraw a prohibition notice if satisfied that the steps specified in the notice have been taken.

Regulation 16 - Power of Secretary of State to take action

This regulation empowers the Secretary of State to take action as a result of an enforcement notice or a prohibition notice (which has not been withdrawn) where the permit holder has not taken the measures specified within the time specified. The Secretary of State can recover the costs of this action from the person to whom the notice was issued, and can require that person to provide such assistance as is reasonably required.

Regulation 17 - Appeal to High Court, High Court in Northern Ireland or Court of Session

This allows anyone aggrieved by a decision of the Secretary of State to appeal to the appropriate Court. It is not permissible to appeal solely on the grounds of incorrect administration, and appeals should be based on questions of fact. Appeals have to be made within 28 days of the date of the written decision by the Secretary of State.

Regulation 18 – Offences

This regulation defines what would be classed as an offence and the penalties that can be imposed. It can be used as a defence if the contravention of the Regulations arose as a result of something which could not have been reasonably prevented, or was done as a matter of urgency to secure the safety of a person.

Regulation 19 - Service of notices

This regulation is the standard regulation setting out how notices may be served.

Schedule 1

This schedule defines the matters to be taken into account to determine what constitutes Best Available Technique.

Schedule 2

This schedule details the main polluting substances to be taken into account when considering the potential environmental impact of the combustion installation.

ANNEX II

MATTERS COVERED BY SCHEDULE 1 OF THE REGULATIONS

BAT (Best Available Techniques) is a concept well established in EU environmental legislation. Its definition for the purpose of these Regulations is reproduced below.

`Best available techniques' means, having regard to the matters set out in Schedule 1 to these Regulations, the most advanced stage in the development of combustion installations and their methods of operation which can be practically applied on platforms to reduce or, where possible, eliminate emissions into, and effects on, the environment from the operation of such installations and for the purposes of this definition-

(a) `available techniques' means those techniques which can be implemented on platforms, balancing the costs of their implementation against benefits to the environment;

(b) `best' means, in relation to techniques, the most effective in achieving a high general level of protection of the environment as a whole; and

(c) `techniques' includes both the technology used and the way in which the (combustion) installation is designed, built, maintained, operated and decommissioned.

Combustion installations must therefore be designed, equipped and operated with the objective of complying with BAT, so that pollution may be eliminated or reduced and energy used efficiently. Where minimisation of pollution might increase energy use, a suitable balance should be identified.

This Guidance represents the current position, and will be reviewed at regular intervals. The applicant should be aware of the best available techniques relevant to offshore combustion activities at the time of their application, and should investigate any relevant future developments.

Gas Turbines

The gas turbines installed offshore vary from about 1 MW output power (approximately 3 MW(thermal) input), through to large units of about 44 MW output power (130 MW(thermal) input). The oldest machines are in excess of 25 years old, although these will have been the subject of scheduled maintenance, and possible modifications and upgrades over the years.

Flue gas clean up, which can be used to remove/reduce both SO_x and NO_x emissions onshore, is not currently considered to be an appropriate technology for deployment offshore. Similar considerations apply to water or steam injection to reduce NO_x, due to the difficulties in providing suitable quality `fresh' water supply. However, Dry Low NO_x technology has been successfully used offshore, and the emergence of new technologies in the future cannot be ruled out.

Dry Low NO_x (DLN) or Dry Low Emissions (DLE)

All gas turbines produce oxides of nitrogen, and it is not possible to prevent their formation completely. Since gas turbine operations cover a wide range of duties, from occasional emergency use to full time continuous operation, account must be taken of the equipment's technical characteristics, its periods of utilisation and the load factors, when assessing the suitability of DLN or any other technique.

DLN techniques aim to lower the maximum combustion temperatures, using multi-stage combustion techniques with very precise fuel metering, to reduce the formation of the oxides of atmospheric nitrogen. However, a balance has to be struck in terms of the firing temperature, to achieve an appropriate balance with other pollutants such as unburnt hydrocarbons (UHCs).

DLN techniques may marginally decrease the thermal efficiency at high loads, and thus give rise to a small increase in the amount of carbon dioxide (CO_2) produced per unit of fuel used. However, this 'CO_2 penalty' will be machine / technology specific, and vary from 0 to 3% at 100% load. The combustion efficiency at part-load, both in terms of power output and emissions, may also be less favourable for some machines. This also has an impact on emissions because combustion stability has to be maintained to achieve the NO_x reductions, and this may not be practical at low rates such as during start-up and when under part-load. All of these factors reinforce the need to consider the overall machinery configuration and operating schedules when selecting offshore turbines.

DLN is available for many turbine applications, but is more often associated with applications using only gaseous fuels. DLN for 'dual - fuel' turbines, which can run on both liquid and gaseous fuels, is less common, but it is now available and manufacturers claim good DLN performance over a range of loads and fuels, although the reliability has not been totally proven offshore. For the purpose of these Regulations, the Department therefore considers that DLN systems would normally represent BAT when selecting equipment for new facilities. However, for some new facilities, and the vast majority of existing facilities, DLN may not necessarily be appropriate. It is therefore the responsibility of the applicant to justify the chosen solution.

Best Practice

For new combustion installations, Best Practice may include:

- Selecting turbines which achieve both high thermal efficiency and a low emissions spectrum;
- Using dual-fuel turbines only where operationally necessary;
- Minimising `spinning reserve' (leaving a machine idling, so that it can be brought up rapidly to operational load);
- Providing a fuel gas supply from a point in the process which offers a minimum variation of fuel gas combustion parameters, e.g. calorific value, Wobbe index (the Wobbe number is derived from a gas properties equation, and is an indicator of combustion characteristics) etc;
- Providing a fuel supply with minimal sulphur compound concentration - to minimise SO_x formation;
- Providing fuel gas conditioning if this benefits turbine emission characteristics;
- Optimising maintenance and refurbishment programmes, and
- Ensuring that platform personnel are adequately trained to understand and implement the combustion equipment management systems.

Reciprocating Engines

It is now possible to obtain diesel engines designed for low emissions (both gaseous and particulate) and high fuel efficiency. Some large engines can also be designed to run on a gas main charge, with a liquid fuel used only for start-up and when gas is not available. In circumstances where a high quality fuel gas is readily available, spark ignition engines may also be used to reduce emissions.

Best Practice (diesels)

Factors which may be relevant are:

- Selecting diesels which achieve both high thermal efficiency and low emissions;

- Where process gas is used as fuel, providing supply from a point in the topsides process that will offer minimum emissions, e.g. low SO_x;

- For liquid fuels, using only low sulphur specifications;

- For larger diesels, considering gas fuelling;

- Optimising injection timing;

- Operating multiple generator or compressor sets at load points which minimise pollution;

- Optimising maintenance and refurbishment; and

- Ensuring that platform personnel are adequately trained to understand and implement the combustion equipment management systems.

Heaters and Boilers (Including Inert Gas Generators)

Low NO_x burners are available for many gas fired heaters, boilers and furnaces. This may represent BAT for minimising NO_x, but the trade-off with fuel consumption must be evaluated.

Best Practice is similar to that for diesels.

Waste Heat Recovery

All combustion units should be assessed for their potential to provide energy for other parts of the process (if this is required). In most cases, this will take the form of using heat from the exhaust gases and may, for example, remove the requirement to install separate heaters or boilers.

Monitoring and Reporting

<u>Reference conditions</u>

The reference conditions for concentrations of substances in releases to air from point sources are:

- For combustion gases: dry, temperature 273K (0 deg C), pressure 101.3kPa (1 atmosphere) and adjusted to an oxygen content of 15 % v/v (dry) for gas turbines and reciprocating engines and to 3 % v/v (dry) for fired heaters;

However, these units and reference conditions may not be suitable for monitoring methods and may, by agreement with the Department, be converted into values more suitable for the available instrumentation.

Where reference is made to megajoules (MJ), these are related to net thermal input.

ANNEX III

MATTERS COVERED BY SCHEDULE 2 OF THE REGULATIONS

Schedule 2 to the Regulations reproduces the full list of substances detailed in the IPPC Directive. For the purposes of these Regulations only the following substances are currently controlled.

Oxides of Sulphur (SO_x)

Emissions of sulphur dioxide from all combustion installations are dependent on the sulphur content of the fuel. Offshore facilities are normally fuelled by liquid (diesel) or gas (produced by the facility or imported from a nearby facility), or are dual-fuel (gas or liquid depending on service and availability).

The sulphur content of the diesel most commonly used on offshore facilities is 0.2% sulphur by weight, but some operators use diesel with a lower sulphur content, and the Department intends to phase in the use of Ultra-Low Sulphur (ULS) diesel as part of the permitting process. The phase-in process will take account of representations received from operators relating to the impact of changing the fuel on the operation of the combustion equipment. This aspect should therefore be addressed as part of the BAT assessment included in the permit application.

Most gas produced on the UKCS is 'sweet' (low H_2S content) and combustion installations can use the gas without the need for desulphurisation. However there are a number of fields where this is not the case, and gas needs to be treated to achieve export (pipeline) specification. In such cases, the combustion equipment should be fuelled using treated gas, although there may be some exceptions. Any proposed use of 'sour' (high H_2S content) gas must be discussed with the Department, or addressed as part of the BAT assessment included in the permit application. (It should also be noted that if gas is treated specifically for the purpose of providing a 'sweet' fuel, i.e. it is not being treated to achieve export specification, the disposal of the waste products from the 'sweetening' process would be covered by these Regulations, and would have to be addressed in the permit application).

Oxides of Nitrogen (NO_x)

All oxides of nitrogen are covered by the Regulations, but for the purpose of describing and setting emission limits the levels are expressed as nitrogen dioxide equivalents.

Carbon Monoxide (CO)

For equipment in steady operation, the concentration of carbon monoxide in the final emissions to air should be low. Nevertheless, levels must be monitored and reported, and emissions minimised wherever possible.

Unburnt Hydrocarbons (UHCs)

The emissions to air of unburnt hydrocarbons should be minimised. For the purpose of monitoring and reporting UHCs have to be 'broken down' into methane and non-methane Volatile Organic Compounds (VOCs).

It is recognised that the CO and UHC concentrations in the emissions from well-maintained units are dependent on overall combustion efficiency, and that this is likely to have been optimised to maximise power output or possibly to minimise NO_x emissions.

Smoke and Particulate Matter

Although there are no emission limits in the permits, operating procedures must be developed to minimise the emissions of dense smoke during start-up and shut-down and, for reciprocating engines in particular, to minimise particulate emissions during normal running.

Other Issues

Aqueous discharges may arise from any steam raising combustion equipment installed on the facility, or from turbine compressor washing, resulting in discharges to the drainage systems. Quantities are likely to be small, and the turbine wash chemicals are controlled under the Offshore Chemicals Regulations 2002. Nevertheless, aqueous discharges should be briefly mentioned in the application.

Similarly, the fate of any liquid or solid wastes, e.g. oils and filters, should be briefly mentioned in the application.

ANNEX IV

DATA REQUIREMENTS FOR APPLICATIONS

Summary of Data Requirements

The data requirements for permit applications and substantial change assessments are essentially similar, and are summarised below. The data requirements for permit variation applications will depend upon the nature of the variation, and will comprise amendments to the standard data requirements.

1. All permit applications and substantial change assessments relating to proposals resulting in additional CO_2 emissions of less than 40 kilotonnes per annum

Applicants must provide:

A brief project description, including facility and field names, and details of the proposed development and/or change.

Details of the qualifying combustion equipment, including type and tag numbers (the tag number should be recorded in the facility asset register, e.g. gas turbine KTA-1000, diesel engine DG-1000, etc; and any changes to the equipment).

Details of the Maximum Continuous Rating (MCR) of the qualifying combustion equipment; and/or any changes to the MCR of the qualifying combustion equipment.

Details of fuel sources and properties; and/or any significant changes in fuel sources or fuel properties that could have a detrimental effect on the atmospheric emissions. (Where there is a significant change in the calorific value of the fuel(s), the changes in the thermal input of the fuel stream(s) and the power/heat output to process and utilities should also be confirmed).

Details of fuel consumption; and/or any changes in fuel consumption, i.e. a comparison of current annual fuel consumption with the maximum annual fuel consumption in the foreseeable future, following the proposed changes, for each fuel type.

Details of CO_2 emissions; and/or any changes in CO_2 emissions, i.e. a comparison of current annual CO_2 emissions with the maximum annual CO_2 emissions in the foreseeable future, following the proposed changes.

2. All permit applications and substantial change assessments relating to proposals resulting in additional CO_2 emissions of between 40 and 100 kilotonnes per annum

Applicants must provide all the information detailed above (Item 1), **plus**:

Details of NOx, SOx, CO, CH_4 and nmVOC emission profiles and mass emissions; and/or any changes in the mass emissions, i.e. a comparison of current emissions with the emissions in the foreseeable future, following the proposed changes.

Details of thermal energy input and energy output, and/or any changes in energy input and output estimates, i.e. a comparison of the current thermal input(s) and power/heat output(s) to process and utilities, versus the maximum input and output in the foreseeable future, following the proposed changes.

3. **All permit applications and substantial change assessments relating to proposals resulting in additional CO_2 emissions of greater than 100 kilotonnes per annum**

Applicants must provide all the information detailed above (Items 1 and 2), **plus**:

A BAT Assessment of the combustion equipment and combustion equipment operating regime, including the impact of any changes on that equipment or regime.

Details of any relevant energy audit studies undertaken.

Details of any cost benefit studies undertaken in relation to current or proposed energy efficiency and/or emissions reduction measures (or in support of the energy audit).

Details of studies undertaken to model the dispersion of atmospheric emissions from the qualifying combustion equipment. (Where an application relates to a new facility, applicants will be required to model the dispersion of all significant atmospheric emissions from the facility, as part of the Environmental Statement for the proposed development, and the results of that modelling can be used to support the PPC permit application).

An Environmental Impact Assessment, that considers gaseous, liquid and solid waste streams relating to the combustion equipment, but concentrates on the environmental impact of the atmospheric emissions from the qualifying combustion equipment, including reference to:

- all other significant atmospheric emissions from the facility, e.g. flaring;
- local atmospheric emissions from any immediately adjacent operations or facilities; and

- regional atmospheric emissions.

Details of proposed monitoring to validate the emissions estimates and the Environmental Impact Assessment.

Further Guidance in Relation to the Data Requirements

The offshore oil and/or gas facilities

The Regulations apply to all offshore oil and/or gas facilities operated at a fixed geographical location for the purpose of developing and producing any hydrocarbons, or for the purpose of providing reservoir pressure support or similar services.

The oil and/or gas facility will include all apparatus, structures, and linked facilities, including any bridge-linked utility or quarters platforms that supply power or energy to the main producing facility, e.g. a multi-platform bridge-linked development.

Typical offshore oil and/or gas facilities that would be covered by the Regulations include:

- fixed platforms - gravity, piled, jack-up or other;
- tension leg platforms or other tethered design; and
- floating production units, both of vessel and semi-submersible design, or alternative designs.

Typical support facilities that would not be covered by the Regulations included:

- shuttle tankers for hydrocarbon export;
- seismic or similar survey vessels;
- jack up MoDUs, semi-submersible MoDUs, drill ship or any other drilling facility used for the exploration and/or appraisal of hydrocarbon prospects;
- general vessels covered by maritime legislation, e.g. supply boats, safety vessels, crane barges, pipe laying vessels, rock dumping vessels, `floatels' etc; and
- well test vessels used to produce a limited quantity of hydrocarbons for reservoir evaluation.

The combustion installation

Combustion installation(s), as described in the Regulations, means the technical apparatus in which fuels are oxidised to generate energy or heat, and includes gas turbines, internal combustion engines, fired heaters, inert gas generators, or other similar fired processes. It also refers to any equipment connected to such apparatus, which could have an effect on emissions from that apparatus or could otherwise give rise to pollution. It does not include any apparatus that is used for the disposal of materials by flaring or incineration.

The term `installation' is widely used in the offshore industry, to describe an offshore oil and/or gas facility. However for the purposes of the Regulations, 'combustion installation' has a different meaning, although it can be considered as an offshore oil and/or gas facility where the aggregated rated thermal input of the qualifying combustion equipment exceeds a threshold of 50 MW(th).

Combustion equipment on offshore oil and/or gas facilities is often relatively `stand-alone', and capable of being started up individually, to meet offshore oil and/or gas operational requirements. The exhaust gases will normally be vented via a dedicated stack. The `boundary limits' of the combustion equipment are therefore considered to be:

- the equipment packaged on the manufacturer-supplied 'skid', including both the combustion unit and the ancillary equipment packaged on the skid, e.g. local instrumentation, integrated fire detection and prevention equipment, and integrated cooling or combustion equipment. (The plant driven by the combustion equipment, e.g. a generator or compressor, would not be deemed to be part of the combustion installation);

- the fuel supply boundary limit is considered to be the fuel supply inlet flange on the combustion equipment; and

- the exhaust boundary limit is considered to comprise the complete exhaust stack, including any waste heat recovery exchanger.

The combustion equipment

The application should provide a brief overview of the activities undertaken on the facility, describing the utilities and major energy users such as compressors and pumps; and provide details of all the qualifying combustion equipment on the facility, including fixed heaters, crane engines and firewater pumps (where these burn either gas or liquid fuel).

The rated thermal input

For the purpose of these Regulations and this Guidance Note, the `thermal input' is the rate at which fuel can be burned at the maximum continuous rating (MCR), multiplied by the net calorific value of the fuel and expressed as megawatts thermal (MW(th)). The reference point for thermal input calculations will be at the normal design ambient temperature and barometric pressure specified for the facility, taking account of inlet ducting and exhaust stack pressure losses, etc.

Fuel consumption and fuel properties

The application should provide details of the type, nature and quantity of fuel used. Where fuel gas can be taken from a number of off-takes in the process, or the quality varies depending on which wells are on stream, this should be reflected in the application.

Emissions profiles and emissions mass

The emissions profile describes the pollutant 'signature' of the equipment, and the overall mass emissions form part of the basis of the permit issued by the Department. It is therefore important that this information is included in the application. (EEMS Tier 5 or Tier 4 factors should be used to calculate emissions from the larger combustion units, particularly turbines, as the use of other factors could delay determination of the application).

Demonstration of BAT

Where the application includes proposals to install new equipment, the application should clearly set out the option selection process that led to the choice of a particular solution, for example, the use of DLN equipment or waste heat recovery. For existing equipment, the assessment should concentrate on demonstrating that the equipment and energy generated are used efficiently.

Information on the baseline environment

In most cases, it is likely that the only potentially significant impact on the environment will result from atmospheric emissions. The application should therefore concentrate on air quality. In the absence of baseline, offshore atmospheric levels of the relevant pollutants, it is appropriate to use onshore data for remote areas of the UK, e.g. the Scottish Highlands.

Information on the environmental impact

The application should address potential impacts from discharges to the sea and from waste taken ashore, but should concentrate on impacts on air quality. The standard method of assessing the impact from atmospheric emissions is to

undertake dispersion modelling, and this should be undertaken (at the least) for emissions of NO_2 (with reference to any relevant onshore standards and, where relevant, potential trans-boundary effects). For facilities close to shore, the potential impact on onshore air quality should also be assessed. For emissions that may contribute to global impacts, the emissions should be compared with total offshore emissions and total UK emissions, to put the facility emissions into some sort of context.

The assessment of the environmental impact of the atmospheric emissions from the qualifying combustion equipment should also include reference to:

- all other significant atmospheric emissions from the facility, e.g. flaring;

- local atmospheric emissions from any immediately adjacent operations or facilities (it will only be necessary to consider this aspect if the results of the dispersion modelling indicate that local cumulative effects are likely); and

- regional atmospheric emissions (applicants are not expected to initiate new studies, but should draw upon emission estimates for the UKCS, or sectors of the UKCS, and the results of any relevant regional dispersion studies commissioned by third parties, e.g. the UKOOA / NILU / AEAT studies for the Northern North Sea and the DECC studies for the Southern North Sea.

Information on the proposals to demonstrate compliance

Permit holders will be required to undertake monitoring of emissions from combustion installations, both to check that the emission factors used in the application are appropriate and to ensure that the equipment is within its expected emissions envelope. Monitoring programmes can be tailored for each facility but, as a minimum, all permit holders will be required to monitor emissions from all the main qualifying equipment on the facility, under different load regimes, within a specified period of permit issue.

Following the initial monitoring programme, the Department will require additional monitoring. The frequency and content of subsequent monitoring programmes will depend upon the results obtained during the initial programme, for example if the data is similar to the manufacturer's specification, if all the main equipment is similar, or if other methodologies are employed to record the performance of the equipment. Additional information on monitoring is provided can be found on the DECC website (www.og.decc.gov.uk).

Use of Predictive Environmental Monitoring Systems (PEMS) and Continuous Environmental Monitoring Systems (CEMS)

There has recently been an increase in the use of PEMS offshore, to correlate emissions with the operating state of the combustion equipment (gas turbines). These systems generally use a derived correlation of the emissions profiles versus load, to calculate emissions in real time. They should not be seen as a substitute for emissions monitoring, since the correlations used in PEMS must be verified using field measurements, but they will be taken into consideration when determining the frequency and content of monitoring programmes. The advantages of PEMS include:

- parameter inputs to model can be provided from existing instrumentation;
- real-time emissions calculated from operating parameters;
- minimal operation and maintenance requirements;
- no calibration gases;
- reduced use of emissions analysers;
- reduced exhaust gas sampling and conditioning;
- diagnostic and trending capabilities; and
- may provide a more robust solution than CEMS.

The accuracy of PEMS can be greatly increased if used in conjunction with equipment-specific fuel gas metering. However, few offshore combustion installations currently have this facility.

CEMS are used fairly extensive onshore, but their reliability for offshore use has still to be satisfactorily demonstrated. If suitable units become available, the advantages will be similar to those outlined for PEMS.

Further Guidance in Relation to Substantial Change

What is substantial change?

The IPPC Directive and the offshore Regulations define substantial change as “in relation to combustion installations, a change in operation which may have significant negative effects on human beings or the environment.” The change in operation could entail either technical alterations or modification of the operational or management practices.

In deciding whether or not a change is "substantial" the Department must take account of the likely environmental impact resulting from the proposed change. For combustion processes this is most likely to occur from increased emissions from either increased fuel consumption or a change in fuel type (for example, changing from gas to diesel).

The requirement to determine whether there is substantial change is applicable to all offshore facilities covered by the Regulations, irrespective of whether the facility is the subject of a permit.

The approach to determining whether there may be substantial change is based on a surrogate assessment related to the burning of methane in a 50 MW(th) or 20 MW(th) turbine. The former represents the threshold for applicability of these Regulations and the latter is the threshold for applicability of the EU Emissions Trading Scheme (20MW(th) is also the threshold for the control of combustion processes by the Local Authorities under onshore legislation, and can therefore be assumed to provide a useful guide to the level below which any impact is assumed to be insignificant).

To determine whether or not a proposed change is substantial, the operator must provide the Department with details of the proposed change. The data required to facilitate the assessment are directly related the 50 MW(th) and 20 MW(th) thresholds, which are assumed to equate to theoretical CO_2 emissions of 100 and 40 kilotonnes per annum respectively. These thresholds are applied to the maximum increase that will be achieved after the change.

In most cases, the Department will only determine that there has been substantial change if the increase in CO_2 emissions is greater than 100 kilotonnes per annum. However, the Department may determine that smaller increases are substantial, if there are significant (as a guide, greater than 20%) increases in the emissions of other combustion products, such as the oxides of sulphur or nitrogen. Similarly, the Department may determine that increases of greater than 100 kilotonnes are not substantial, if the threshold will only be exceeded for a short period and the increase in CO_2 emissions will then reduce to less than 100 kilotonnes per annum.

If the Department determines that a change is substantial, applicants can currently decide whether to seek a permit for the combustion equipment that is the subject of the assessment, or the entire facility. After 30 October 2007, this option will be withdrawn, and applicants will automatically be required to seek an initial or new permit for the entire facility.

When to seek a substantial change assessment?

All development proposals, and modifications to existing operations, should be assessed to determine whether there is a requirement for a substantial change assessment. Operators can use the following guide:

1. Does the proposal relate to the installation of new combustion equipment?

No		Go to question 2
Yes		Go to question 4

2. Does the proposal relate to increasing the load on existing combustion equipment?

No		Go to question 3
Yes		Go to question 4

3. Does the proposal relate to a change in fuel source, or a change in fuel consumption?

No		Substantial change assessment not required (but there may still be a requirement for a permit variation)
Yes		Go to question 4

4. Will the proposal lead directly to an increase in the atmospheric emissions of carbon dioxide, or an increase in the atmospheric emissions of the oxides of nitrogen or sulphur, carbon monoxide, methane or non-methane Volatile Organic Compounds (additional to any increases already included in a permit)?

No		Substantial change assessment not required (but there may still be a requirement for a permit variation)
Yes		Go to question 5

5. Does the proposal only involve or affect small items of equipment (<2MW(th))?

No		Go to question 6
Yes		Substantial change assessment not required (but there may still be a requirement for a permit variation)

6. Does the proposal only involve or affect infrequently used equipment (<1000 running hours per annum), and will the running hours remain less than 1000 hours per annum after the change?

No		Substantial change assessment required (and there will be a subsequent requirement for a new permit or a permit variation)
Yes		Substantial change assessment not required (but there may still be a requirement for a permit variation)

ANNEX V

DRAFT APPLICATION FORM

OFFSHORE COMBUSTION INSTALLATION (PREVENTION AND CONTROL OF POLLUTION) REGULATIONS 2001 (As Amended)

APPLICATION FORM

IMPORTANT: before you start to complete this form, please read the associated Guidance Notes.

- This form can be used to apply for a permit under the Regulations, **or** to apply for a variation of an existing permit under the Regulations, **or** to request a substantial change assessment under the Regulations.
- Please complete all relevant sections of the form. If any information is not available at the time of submission, please indicate at the appropriate section and submit the details separately as soon as possible. Any delay in forwarding information is likely to result in a delay in determining your application.
- Applications and enquiries should be forwarded to the Department via email (mailto:emt@decc.gsi.gov.uk).

For DECC Use Only	Reference No:
(If the application relates to a permit variation, a suffix will be added to the original reference number upon issue of the permit).	

1. TYPE OF APPLICATION

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

		Yes	No
a)	Is this an application for a new permit?		
b)	Is this an application to vary an existing permit?		
c)	Is this a request for a substantial change assessment?		
d)	Does the application relate to a facility that is already the subject of a permit under the PPC Regulations?		

If the answer to Question 1d) is "Yes", please confirm the permit reference number.	

2. APPLICANT DETAILS

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

Name of Company	
Address	
Name of Contact	
Position within Company	
Telephone Number	
Fax Number	
Email	
Company VAT Registration Number	

NOTE: The applicant will normally be the licensed operator.

3. LICENSED OPERATOR DETAILS

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

If the **Licensed Operator** is the **Applicant** in Section 2, please tick this box and move to Section 4.	

Name of Company	
Address	
Name of Contact	
Position within company	
Telephone Number	
Fax Number	
Email	
Company VAT Registration Number	

4. INVOICEE DETAILS

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

If the **Invoicee** is the **Applicant** in Section 2, please tick this box and move to Section 5. ☐

Name of Company	
Address	
Name of Contact	
Position within Company	
Telephone Number	
Fax Number	
Email	
Company VAT Registration Number	
Purchase Order Number (where applicable)	

5. FACILITY DETAILS

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

5.1 Name or Identifier of Facility:

5.2 Type of Facility: *(Platform / NUI / FPSO / FPU / FSU / Other (please specify)*

5.3 Location of Facility

Quad No	Block No	Field / Prospect Name	Latitude	Longitude	Datum

5.4 Tied Back Facilities:

Name or Identifier of Tied Back Facility	Type of Facility e.g. Platform, Sub-sea Satellite etc	Operator of Facility

5.5 Operator of Facility:

If the **Operator of the Facility** is also the **Licensed Operator**, please tick this box and move to Section 5.6. ☐

Name of Operator	
Address	
Name of Contact	
Position within company	
Telephone Number	
Fax Number	
Email	
Company VAT Registration Number	

6. ACTIVITY / PROJECT DETAILS

6.1 Description of Activities to be covered by the Permit

To be completed for <u>all</u> applications, amending existing entries as necessary. All amendments should be clearly highlighted.

Please enter a non-technical summary of the activities to be covered by the permit and the application. In the case of applications for permit variations, please add a non-technical summary of the changes in the activities (e.g. installation of additional gas turbine). In the case of applications for permit variations relating to a substantial change assessment, please also complete Section 6.2.

6.2 Description of Project to be covered by the Substantial Change Assessment

If you are applying for a permit or a permit variation that does not require a substantial change assessment, Sections 6.2.1 and 6.2.2 should be left blank

6.2.1 Brief details of project

Please enter a non-technical summary of the project necessitating the requirement for a substantial change assessment.

6.2.2 Predicted increase in carbon dioxide emissions

Please indicate the current annual fuel consumption, and the predicted maximum annual fuel consumption following the proposed change, for all fuel sources; the current and predicted maximum annual carbon dioxide emissions; and the emission factor(s) used to convert fuel consumption to carbon dioxide emissions.

Before & After	Fuel Type (please specify)	Consumption (tonnes per annum)	Emission Factor	Total Carbon Dioxide Emissions (tonnes)
Before				
After				

Where the predicted increase in carbon dioxide emissions is <40,000 tonnes per annum (tpa), please complete Sections 7.1 and 7.2

Where the predicted increase in carbon dioxide emissions is >40,000 and <100,000 tpa, please complete Sections 7.1, 7.2, 7.3 and 7.4.

Where the predicted increase in carbon dioxide emissions is >100,000 tpa, please complete Sections 7, 8, 9 and 10.

Sections 11 and 12 must be completed for all applications.

7. COMBUSTION EQUIPMENT DETAILS

7.1 Description of Equipment

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

Please enter details of all the qualifying combustion equipment on the facility. For applications relating to the permitting of specific items of equipment, or the addition of specific items of equipment, please enter details for all the qualifying combustion equipment on the facility, and highlight the equipment that is the subject of the permit application, the permit variation application and/or the substantial change assessment.

Item No.	Name and Model	TAG / Facility No.	Fuel (e.g. gas, diesel or dual fuel)[1]	Type of Item and Primary Purpose[2]	Maximum Rated Output[3] (MW)	Maximum Thermal Input (MW(th))	Rated Thermal Efficiency[4]
Example	Solar– Mars 100	CTG04601A	Dual Fuel	Turbine driving compressor	10.5	30.9	34%
1							
2							
3							
4							
5							
6							

Notes:
1. Significant changes in fuel sources or fuel properties, e.g. substituting diesel for natural gas, should be recorded as an amendment, and highlighted.
2. Changes in use, i.e. primary purpose, should be recorded as an amendment, and highlighted.
3. Changes in the maximum rated output should be recorded as an amendment, and highlighted.
4. Changes in the rated thermal efficiency should be recorded as an amendment, and highlighted.

7.2 Emission Profiles

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

Please enter the emission profiles (milligrammes of determinand per litre of exhaust) for all the qualifying combustion equipment on the facility. If this information is not readily available for all the qualifying combustion equipment, it is unnecessary to provide the profiles for equipment that is not material, e.g. if the equipment has a thermal capacity of <2MW(th); if the equipment is run for less than 1000 hours per annum; or if the equipment is run on diesel and the total emissions from all diesel use represent less than 4% of the total emissions. Where information cannot be provided, please enter N/A. The information provided can be based on manufacturers' specifications or the results of emissions monitoring, or estimated based on the performance of similar equipment. The level of sulphur oxides should be based on the sulphur content of the fuel used on the facility that is the subject of the application. Wherever possible, the source of the data should be confirmed. For applications relating to the permitting of specific items of equipment, please enter details for all the qualifying combustion equipment if this information is readily available, and highlight the equipment that is the subject of the permit application, the permit variation application and/or the substantial change assessment. If full details are not readily available, details must be provided for the relevant equipment that is the subject of the permit application, the permit variation application and/or the substantial change assessment.

Item No.	Nitrogen Oxides[1] (NO_x)	Sulphur Oxides (SO_x)	Carbon Monoxide (CO)	Methane[2] (CH_4)	Non-methane VOCs	Source of Data
1						
2						
3						
4						
5						
6						

Notes:

1. Reported as NO_2 equivalent.
2. PPC reporting usually requests the levels of Unburnt HydroCarbons (UHC), and manufacturers' specifications often use this term. When the base data is quoted as levels of UHC, operators should estimate and report the relative proportions of methane and non-methane Volatile Organic Compounds, based on the fuel composition. For oil facilities it is normally assumed that the ratio of methane to non-methane VOCs is 50:50, and for gas facilities it is normally assumed that the ratio is 90:10.

7.3 Energy Efficiency

To be completed and/or amended for all permit applications and permit variation applications, and for all applications for substantial change assessments involving a predicted increase in carbon dioxide emissions of >40,000 tonnes per annum. All amendments should be clearly highlighted.

Please enter the total thermal energy inputs, total energy outputs (e.g. power/heat outputs to process and utilities) and the overall thermal efficiency of the facility, for the calendar year prior to the application (Year -1), the calendar year of the application (Year 0) and the next five calendar years (Years +1, +2 etc). For applications relating to the permitting of specific items of equipment, please enter details for all the qualifying combustion equipment if this information is readily available. If full details are not readily available, please enter details for the equipment that is the subject of the permit application, the permit variation application and/or the substantial change assessment, and identify the relevant equipment in the "Comment" column.

Year No.	Thermal Energy Input (MWh)	Energy Output (MWh)	Overall Thermal Efficiency[1]	Comments
-1				
0				
+1				
+2				
+3				
+4				
+5				

Notes:
1. Calculated power output (output from primary generators + output to process from fired heaters + waste heat recovery) / thermal energy input consumption.

7.4 Emission Loads

To be completed and/or amended for all permit applications and permit variation applications, and for all applications for substantial change assessments involving a predicted increase in carbon dioxide emissions of >40,000 tonnes per annum. All amendments should be clearly highlighted.

Please enter the maximum emission loads (tonnes per annum) and the overall thermal efficiency of the facility, for the calendar year prior to the application (Year -1), the calendar year of the application (Year 0) and the next five calendar years (Years +1, +2 etc). For applications relating to the permitting of specific items of equipment, please enter details for all the qualifying combustion equipment if this information is readily available. If full details are not readily available, please enter details for the equipment that is the subject of the permit application, the permit variation application and/or the substantial change assessment, and identify the relevant equipment in the "Comment" column.

Year No.	Nitrogen Oxides[1] (NO_x)	Sulphur Oxides (SO_x)	Carbon Monoxide (CO)	Methane[2] (CH_4)	Non-methane VOCs	Carbon Dioxide (CO_2)	Comments
-1							
0							
+1							
+2							
+3							
+4							
+5							

Notes:
1. Reported as NO_2 equivalent.
2. PPC reporting usually requests the levels of Unburnt HydroCarbons (UHC), and manufacturers' specifications often use this term. When the base data is quoted as levels of UHC, operators should estimate and report the relative proportions of methane and non-methane Volatile Organic Compounds, based on the fuel composition.

8. BAT ASSESSMENT

To be completed and/or amended for all permit applications and permit variation applications, and for all applications for substantial change assessments involving a predicted increase in carbon dioxide emissions of >100,000 tonnes per annum. All amendments should be clearly highlighted.

Please provide a BAT Assessment of the combustion equipment and the combustion equipment management regime. For new combustion installations, or new items of equipment, this should include details of the option selection process, to demonstrate that the combustion equipment represents BAT. For existing combustion installations, the assessment need only briefly address the nature of the combustion equipment. In all cases, the assessment should include details of relevant energy audit and cost benefit studies undertaken in relation to current or proposed overall energy efficiency and emissions reduction strategies, both at the facility level and for individual items of equipment. Where independent energy assessments have been undertaken, copies of the reports should be appended to the application (see Section 11).

9. ENVIRONMENTAL IMPACT ASSESSMENT

To be completed and/or amended for all permit applications and permit variation applications, and for all applications for substantial change assessments involving a predicted increase in carbon dioxide emissions of >100,000 tonnes per annum. All amendments should be clearly highlighted.

Please provide an Environmental Impact Assessment for the commissioning (where appropriate), operation and maintenance of the combustion equipment that is the subject of the application. This should include brief details of any liquid or solid waste streams, including details of measures to prevent or recover such wastes, and details of any wastes that are discharged to the marine environment. However, the assessment should concentrate on the potential impact of the atmospheric emissions. The latter should include details of studies undertaken to model the dispersion of all significant atmospheric emissions from the facility, and an assessment of potential local and regional impacts on the environment. Where independent modelling studies have been undertaken, copies of the reports should be appended to the application (see Section 11). It should be noted that, as the assessment should concentrate on the potential impact of the atmospheric emissions, it is unnecessary to provide a detailed description of the marine environment.

10. MONITORING

To be completed and/or amended for all permit applications and permit variation applications, and for all applications for substantial change assessments involving a predicted increase in carbon dioxide emissions of >100,000 tonnes per annum. All amendments should be clearly highlighted.

Please provide an outline of any proposed measures to monitor emissions from the facility or from individual items of equipment. Where there are no proposed measures, any permit issued in response to this application will include a requirement to undertake a monitoring programme.

11. SUPPLEMENTARY INFORMATION

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

If you are providing any documents to support the application, please provide the following information:

Title of Document	File Name or Reference No.	Related Section of Application

	Yes	No
a) Has all supporting information been included with this application?		
	Email	**Hard Copy**
b) If 'NO' will the additional information be submitted by email or hard copy?		

12. DISCLOSURE OF INFORMATION

To be completed for all applications, amending existing entries as necessary. All amendments should be clearly highlighted.

Please indicate whether there is any information contained within, or provided in support of, this application that you consider should not be released to the public on the grounds that its disclosure:

	Yes	No
a) would be contrary to the interests of National Security; or		
b) would prejudice to an unreasonable degree your or some other person's commercial interests or those of a third party.		

Please tick appropriate box

If the answer to either a) or b) is YES, please indicate which information should be withheld, and provide a full justification, in the box below.

13. DECLARATION

It is an offence under the Offshore Combustion Installation (Prevention and Control of Pollution) Regulations 2001(As Amended) to fail to disclose information, or to provide false or misleading information. Applicants should therefore carefully check the information provided prior to submission of the application, to ensure that the details provided are correct. Applicants should also ensure that they have attached or appended any relevant documents referred to in the application.

ANNEX VI

PERMIT SCHEDULE AND CONDITIONS

THE OFFSHORE COMBUSTION INSTALLATIONS (PREVENTION AND CONTROL OF POLLUTION) REGULATIONS 2001 (AS AMENDED)

COMBUSTION INSTALLATION PERMIT

«Field_Name»

«DECC_Number»

Pursuant to the application made by «Company» on «Date», under regulation 5 of the above Regulations, the Secretary of State, in exercise of the powers conferred on him/her by regulation 4, hereby permits «Company» to operate the above named combustion installation in accordance with the following conditions:

The combustion installation authorised under this permit shall be operated at the location specified in Table A of Schedule I attached hereto.

The combustion equipment authorised under this permit shall be as specified in Table B of Schedule I attached hereto.

The annual emissions of polluting substances from the combustion equipment authorised under this permit shall not, for the year in question, exceed the quantities specified in Table C of Schedule I attached hereto.

This permit is issued subject to the additional conditions set out in Schedule II attached hereto.

An official authorised to act on behalf of the Secretary of State

- **……**
-

Environmental Manager

DATE

THE OFFSHORE COMBUSTION INSTALLATIONS (PREVENTION AND CONTROL OF POLLUTION) REGULATIONS 2001 (AS AMENDED)

SCHEDULE I OF PERMIT CONDITIONS

The grant of the permit is conditional upon the permit holder complying with the following conditions.

Table A
Location of Combustion Installation

«Field_Name» ("the combustion installation"), located at:
Quadrant/Block Number ……;
Latitude … degrees, … minutes, … seconds North;
Longitude … degrees, … minutes, … seconds East/West.

Table B
Combustion Equipment Authorised Under the Permit

Item No.	Name and Model	TAG / Facility No.	Maximum Rated Output (MW)	Maximum Thermal Input (MW(th))
1				
2				
3				
4				
5				
6				

Table C
Total Annual Emissions of Polluting Substances from Combustion Equipment Authorised Under the Permit (Metric tonnes)

Year	Nitrogen Oxides (NO_x)	Sulphur Oxides (SO_x)	Carbon Monoxide (CO)	Methane (CH_4)	Non-methane VOCs[1]
2007					
Etc					
Etc					
Etc					
Etc					

THE OFFSHORE COMBUSTION INSTALLATIONS (PREVENTION AND CONTROL OF POLLUTION) REGULATIONS 2001 (AS AMENDED)

SCHEDULE II OF PERMIT CONDITIONS

The grant of the permit is conditional upon the permit holder complying with the following conditions.

1. The permit shall be valid from **<date>.**

2. The permit holder shall ensure that the combustion installation shall be so operated, so far as is practicable, to minimise pollution and to maximise the efficiency with which energy is generated.

3. The permit holder shall ensure that any liquid or solid wastes arising from the operation of the combustion equipment authorised under the permit shall, so far as is practicable, be recovered for onshore recycling or disposal, or disposed of offshore in accordance with the conditions of any relevant authorisations, consents or permits that may be required under other legislation.

4. The permit holder shall undertake a monitoring programme to determine the levels of the polluting substances in the emissions from the combustion equipment authorised under the permit; to determine the suitability of the emission factors used to calculate the total annual emissions of the polluting substances; to determine the suitability of the emission projections that form the basis of the total permitted annual emissions; and to determine the efficiency of the monitored combustion equipment.

> For new combustion installations: The monitoring programme must be agreed with the Department for Energy & Climate Change (hereinafter called the Department) prior to undertaking the programme; and the initial survey must be completed within twelve months of the first production of oil and/or gas.
>
> For new combustion equipment installed on a combustion installation: The monitoring programme must be agreed with the Department prior to undertaking the programme; and the initial survey must be completed within twelve months of start-up of the new combustion equipment.
>
> For all other combustion installations and equipment: The monitoring programme must be agreed with the Department prior to undertaking the programme; and the initial survey must be completed prior to the formal review of this permit (see Condition 10).
>
> For all combustion installations: Monitoring reports must be submitted directly to the Department, at emt@decc.gsi.gov.uk, within three months

of completion of each survey or by the deadlines specified above, whichever are the sooner, quoting the Department Permit Reference Number.

The frequency and scope of the monitoring surveys will be reviewed following an assessment of the results of each survey.

5. Should the Department consider it necessary or expedient to undertake an independent monitoring programme to assess the impact of the emissions of the polluting substances, the permit holder shall afford the Department with such facilities and assistance as the Department considers necessary to undertake the work.

6. Where directed by the Department, the permit holder shall commission an independent energy audit or assessment to quantify the total energy use on the combustion installation and the energy consumption by specific equipment or processes, to identify opportunities for energy efficiencies and/or the reduction of emissions of pollutant substances. Where directed by the Department, the audit should include a cost benefit analysis for the replacement of existing combustion equipment with more efficient combustion equipment and/or equipment that would contribute to the reduction of emissions of pollutant substances. A report of the findings of the audit must be submitted directly to the Department, at emt@decc.gsi.gov.uk, within three months of completion of the audit or by the deadline specified by the Department, whichever is the sooner, quoting the Department Permit Reference Number. The frequency and scope of any further studies, or the requirement for subsequent progress reports, will be determined by the Department following a review of the report of the findings of the audit.

7. The permit holder shall maintain records of fuel use, fuel composition, running hours and running loads for the combustion equipment authorised under the permit, to facilitate calculation of the emissions of the polluting substances from the combustion equipment. Copies of these records must be made available to the Department upon request, and retained for a period of ten calendar years following submission of the relevant annual report of the emissions from the combustion equipment (see Condition 8).

8. The permit holder shall submit an annual report of the emissions from the combustion equipment authorised under the permit. The report must be submitted via the EEMS database within two calendar months of the end of each calendar year, using the relevant EEMS atmospheric emissions return form.

9. Should the Department consider it necessary or expedient for an Inspector appointed by the Secretary of State to investigate whether the conditions of the permit are being complied with, the permit holder shall afford the Inspector with such facilities and assistance as the Inspector considers necessary to exercise the powers conferred by the regulations. The permit holder shall additionally

ensure that copies (electronic or paper) of the permit and any other relevant documents are available for inspection by the Inspector at:

The premises of the permit holder;

The premises of any agent or supplier acting on behalf of the permit holder; and

The combustion installation that is the subject of this permit.

10. The permit shall be subject to regular formal review. The frequency of review will be approximately every three years, and the Department will contact the permit holder at least three months prior to a proposed review to confirm the arrangements. The permit holder shall provide the Department with any information that it considers necessary to undertake a review.

11. In the event that the permit holder becomes aware that any of the information on which the issue of the permit was based may change, or has changed, the permit holder shall notify the Department immediately, and may be required to submit an application for a permit variation. In the event that the permit holder wishes any of the particulars detailed in the permit to be altered, the permit holder shall notify the Department immediately and must request a permit variation.

COMMENTS ON THE COMBUSTION INSTALLATION PERMIT APPLICATION

Section 1

The attention of permit holders is drawn to the following provisions regarding the Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2001.

1. Permit holders must satisfy themselves that there are no barriers, legal or otherwise, to the carrying out of the permitted operations. The issue of the permit does not absolve the permit holder from obtaining such authorisations, consents etc. that may be required under any other legislation.

2. The Secretary of State has the power under regulations 9 and 10 of the above Regulations:

to review the grant of the permit, together with any of the conditions described above; and

to revoke the grant of permit.

Section 2

The Department requires you to take the following action:

1. With regard to Condition 4 of Schedule II to the permit, the Department requires you:

to undertake the monitoring programme detailed in the permit application, and to report the findings of the initial survey to the Department within three months of completion of the survey or *by* ***[Insert Date - twelve months after permit issue for new installations or equipment]*** ***or*** *28 days prior to the formal review of the permit*, whichever is the sooner;

to prepare a detailed monitoring programme based on the proposals outlined in the permit application, and to submit the programme to the Department by ***[Insert Date]***.

2. With regard to Condition 6 of Schedule II to the permit, the Department requires you:

to undertake an independent energy audit as detailed in that permit condition, *including a cost benefit analysis for the replacement of existing combustion equipment with more efficient combustion equipment and/or equipment that would contribute to the reduction of emissions of pollutant*

substances, and to report the findings to the Department within three months of completion of the audit or *by **[Insert Date]** **or** 28 days prior to the formal review of the permit*, whichever is the sooner;

to forward a copy of the independent energy audit report referred to in the permit application to the Department by ***[Insert Date]***, to substantiate the information contained in the application.

to undertake a cost-benefit analysis for the replacement of existing combustion equipment with more efficient combustion equipment and/or equipment that would contribute to the reduction of emissions of pollutant substances, *in particular to demonstrate whether the existing turbines could be replaced with, or converted to, DLE turbines,* and to report the findings to the Department within three months of completion of the cost benefit analysis or *by **[Insert Date]** **or** 28 days prior to the formal review of the permit*, whichever is the sooner;

to provide a progress report on the assessment and potential implementation of the recommendations detailed in the independent energy audit, and to forward the report to the Department *by **[Insert Date]** **or** 28 days prior to the formal review of the permit*.

to prepare an improvement programme designed to reduce pollution and increase the efficiency with which the energy is generated, based on the findings of the independent energy audit, and to forward the programme to the Department *by **[Insert Date]** **or** 28 days prior to the formal review of the permit*.

[Amend or delete Parts 1 and 2 of Section 2 as appropriate.]

Section 3

The Department requires you to take note of the following additional comments on the application: