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Centre for Energy Resources

GUIDELINES CONCERNING APPLICATION DOCUMENTS FOR APPROVAL OF A PLAN FOR DEVELOPMENT AND OPERATION (PDO)

Pursuant to section 10 of the Subsoil Act, a plan for the activities, including organisation of production and the layout of production installations, must be approved prior to production start-up and commencement of related measures. An application for approval pursuant to section 10 of the Act must be accompanied by a plan for the decommissioning of all facilities and installations and is subject to approval by the DEA, cf. section 32a (2) of the Act. In connection with approval of the PDO, the date of production start-up must be fixed, cf. section 14 of the Act, and the Danish Energy Agency stipulates the quantities that may be produced, cf. section 15. Establishment and operation of pipelines included in the PDO must be approved pursuant to section 17 of the Subsoil Act.

The plan for the activities must include all data, studies, interpretations, map models, etc. necessary to evaluate the development project. This material must include:

1. A description of the deposits of hydrocarbons planned to be produced, including detailed analyses and assessments of conditions relating to geology, technical reservoirs, technical production and economical aspects. Oil and gas volumes in place (STOIIP and GIIP) and reserves/resources must be calculated in accordance with the SPE/WPC/AAPG/SPEE Petroleum Resources Management System 2007 (SPE-PRMS 2007).

2. A plan for the production with information about the date of production start-up as well as the expected annual production for each year of the anticipated lifetime of the project. The production profiles must be included for P50 in addition to the mean value. The production profiles must be stated for oil and gas as well as for butane and propane if these are expected to be sold as independent products. Profiles for the expected fuel consumption and flaring of gas must be specified on an annual basis for the lifetime of the project. The expected composition of hydrocarbons in gas and oil exported from the processing plant must be described. If the plan comprises several deposits, such information must be stated for each deposit in the plan, as well as for the total production expected according to plan. If the development is planned to be carried out in separate phases, the reason for this and prerequisites for implementing the individual phases must be accounted for.

3. A general description of the planned facilities and installations, including number of slots, number and type of planned wells, facilities for production and injection, fiscal measurement, energy supply, storage and treatment as well as pipelines between the individual parts of the facilities. In addition hereto a statement of the planned transport systems for produced hydrocarbons. Relevant capacities of the planned facilities, e.g. for production, injection, gas lift and export. Capacity and design principles of the energy production and a description of the equipment (is it directly mechanically driven by e.g. gas turbines or is it driven by electricity). A description of the relevant assumptions for the capacities. A statement of how maintenance of installations and wells has been included in design of the PDO.

4. A statement of how energy consumption and flaring in connection with establishment and operation of installations in the PDO has been minimised. Refer to the Action Plan for Energy Efficiency in Oil and Gas Production in the North Sea 2012-2014.

5. The licensee's plan for how the development project should be implemented, including a detailed timetable with specification for each phase in the PDO.

6. Information about investments (CAPEX, ABEX) and operating costs (OPEX), broken down by main items and year for the entire project life time, as well as key economic figures (internal rate of return, net present value and relevant break-even values) and the assumptions applied (oil and gas prices, exchange rates, discount factors, etc.).

7. A plan of the organisation with which the licensee will implement the development. The plan must describe requirements for the technical skills of the employees in the individual elements of the organisation. Similar information must be stated for the operating organisation. If the licensee does not have employees with the required technical skills at one's disposal, external experts may be part of the organization if agreements about this have been entered.

   The licensee's technical capacity shall be adequate for carrying out the activities with a view to responsible resource management and to handling unforeseen events in a safe and appropriate manner. Accordingly, the licensee shall have the necessary technical capacity, etc. to ensure the appropriate preparation, immediate launch and uninterrupted continuation of all measures necessary for effective emergency response and subsequent remediation.

8. A comprehensive statement of any elements of uncertainty in the development project with regards to reserves (P10 and P90), timetable and economical aspects, etc., including a description of the initiatives (core sampling, ongoing measurements, etc.) planned to be carried out as a part of the development project in order to reduce any uncertainties relating to the reservoirs.

9. A Statement of the use of existing infrastructure. Status for agreements in this respect and information about the anticipated or actual main terms, including tariffs.

10. A statement of the flexibility of the planned facilities and installations for potential future production from other deposits in the actual or other licences. The statement must

also cover information about potentials for establishment of additional processing capacity and risers on the planned facilities together with information of unused capacity of volume and weight which can be used in future tie-ins.

11. Technical and economical evaluation of possible alternative development solutions and reasons for the selected development solution.

12. A plan for the decommissioning of all facilities and installations, etc. comprised by this application and any facilities and installations, etc. previously approved under the licence.

13. The decommissioning plan shall include a calculation of the estimated expenses for implementing the decommissioning plan and a description of how security will be provided for availability of the funds necessary for implementing the decommissioning plan.

14. Documentation that each party holding this licence has adequate financial capacity to execute this PDO including to have a reserve for unforeseen expenses and security to cover potential liability in damages resulting from the activities.

    This documentation of financial capacity shall contain the latest yearly financial reports of each party if these have not been shared with the DEA already. In addition each party shall inform of other relevant circumstances which could affect the assessment of the party's financial capacity. This include the party's other commitments which could have financial consequences, such as exploration and/or development projects abroad or other non-hydrocarbon activities which potentially would affect the assessment of the party's financial capacity.

Environmental impact assessment and other environmental issues
Pursuant to section 28a of the Subsoil Act, prior to notification of approval under section 10(2) or (3) and section 17, an assessment must be made on whether the project could have significant impacts on the environment or could significantly impact designated international nature conservation areas or certain protected species. More detailed regulations are laid down in Statutory Order no. 632 of 11 June 2012 on environmental impact assessments regarding international nature conservation areas and protection of certain species in connection with offshore exploration and production of hydrocarbons, subsoil storage, pipelines etc.

Development projects on production of more than 500 tonnes of crude oil per day or more than 500,000 m^3 of natural gas per day for commercial purposes must submit an EIA, i.e. an environmental impact assessment must be prepared with the information required pursuant to the Statutory Order on environmental impact assessments. Pipelines covered by a development project must be included in the EIA. The EIA must be prepared in a form suitable for submission for consultation to the relevant public parties and affected organisations and authorities. The process for handling an EIA is likely to take 6-8 months. It has been usual procedure that a draft for EIA is forwarded to the DEA and other relevant authorities for comments before the final version is published for hearing. However, a longer period of time may be expected if the project is assessed potentially to have significant adverse environmental cross boundary impacts and the report must be made subject to notification and possible hear-

ing in the potentially affected countries according to the Espoo Convention, or if a comprehensive numbers of responses are received.

In relation to development projects below the above referenced threshold values, and in relation to deep drilling concerning exploration and production of hydrocarbons, necessary information on the project must be submitted pertaining to the conditions mentioned in Annex 1 of the Statutory Order on EIAs for use by the Danish Energy Agency in their decision on whether the development project is obliged to perform and submit an EIA.

Furthermore, information necessary for determining any impacts on international nature conservation areas within and outside Denmark must be submitted for use by the Danish Energy Agency in their decision on whether an impact assessment must be prepared in connection with the application.

Furthermore, in connection with the application, the necessary information and evaluations must be submitted as to whether the development project might disturb protected animal species included in Annex IV of the EC Habitats Directive; for instance all species of whales and dolphins, in their area of natural distribution, or whether the project might endanger or destroy the breeding or resting areas of such species.

Technical and financial capacity
Pursuant to section 24b of the Subsoil Act the licensee shall be able to document that it has the necessary technical and financial capacity to perform the obligations comprised by the licence before approval of the PDO, cf. section 10 and 17 of the Subsoil Act.

The technical capacity will be assessed based on the information given according to bullet 7 in this document. Thus it is essential that the information documents that the organisation of the operator has the necessary technical and professional skills to operate in the interest of both exploitation and safety.

The financial capacity will be assessed based on the information given according to bullet 14 in this document.

If the documentation of the technical and/or financial capacity is not fulfilled or is deficient the PDO and the activities according to this plan will not be approved, cf. section 24b. (2).

Approvals and permits from other Authorities
The licensee is responsible for obtaining all required approvals and permits before implementing the PDO. Note that safety and health-related questions are covered by the Offshore Safety Act (Act on Safety) etc. for offshore installations for exploration, production, and transport of hydrocarbons. With regard to an application for permits and approvals pursuant to the Offshore Safety Act, please refer to the Danish Working Environment Authority – Offshore (DWEA) www.arbejdstilsynet.dk.