Field Development Plan

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Objectives

- Resource management aims
- Authority's function
- Authority’s tool
- Development plan
  - why?
  - authority focus and roles
  - content
  - approval procedures
Resource Management Aims

- The petroleum resources must be managed such as to provide the best possible economic outcome for the society.

- The petroleum resources must be managed within the context of an environmental sustainable society.

- The oil and gas industry should be developed in a way that makes due consideration to the viable development of other sectors of the society.
Petroleum administration body

**Authorities Functions**

- Manage the resources to the best of the people
- Establish regulations to guide the activity towards the national goal
- Monitor/Supervise that the companies comply with regulations
- Give advice to the politicians (President/Parliament)
- Keep administrative records of obligations and rights
- Manage the information
Society vs company interest

- Increase oil recovery
- Small/marginal fields
- Joint developments
- National budget
- Abandonment
- Life cycle analyses
- Environmental issues
- Field development plan, area studies
- Transport capacity and tariffs (third party access)
Management tools

- Licensing rounds
- Approval of Plan for Development and Operation of a petroleum deposit (PDO)
- Approval of Plan for Installation and Operation of facilities for transport and utilisation of petroleum (PIO)
- Production permits (Export of gas from a field requires a government approval)
- Regulation of the gas transport system
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What is a PDO?

PDO = Plan for Development and Operation (Hydrocarbon deposit)

PIO = Plan for Installation and Operation (Pipeline/infrastructure)
Why PDO?

- Ensure maximized added value for society at large
- Ensure a qualitative good government approval process
- Ensure efficient evaluation of development plan
The information received in a PDO

The authority is able to…

- do strategic planning
- control big international oil companies
- challenge the oil companies (resource management & safety)
- increase the ”government take” by assisting oil companies to operate more efficiently
Petroleum Policy

Good estimates for resources, costs, production and prices give a solid basis for decisions in all phases of the Petroleum Activity:

- Exploration
- Planning for optimal use of infrastructure
- Development
- Production
- Abandonment
What is a PDO?

In Norway:

- Operator creates a PDO
- NPD Analysis Recommend
- MPE Recommend
- Terms
- Parliament Gives permission
- Terms
- Parliament Gives permission
Authorities’ PDO process

- Impact assessment (when required)
  - Received by the Ministry 2-3 months before submission of the PDO
  - Consultation process with all relevant authorities, institutions and groups

- PDO
  - Received by the Ministry of Petroleum and Energy (MPE)
  - Consultation with
    - Norwegian Petroleum Directorate
    - Ministry of Labour and Government Administration
    - Petroleum Safety Authority

- MPE drafts white paper
  - Consultation with relevant ministries

- Proposition submitted for approval
  - Approval by the Parliament or by the King in Council (Government)
Development Planning
NPD interaction prior to PDO

**Objectives:**
- To ensure that the authorities considerations are smoothly included in the field development during the early planning phase
- Obtain an efficient approval process

**Measures:**
- Perform ”Area-study” (study the effect of the new field development in a broader geographic perspective)
- Gather information by participation in licence committee meetings
- Have an early dialogue with operator
- Make in-house evaluations and investigate alternative solutions/interpretations
- More meetings with operator to influence decisions or clarify questions
Requirement to Submit a PDO

A PDO is a description of all important aspects of the development. A PDO shall be submitted to the Ministry for approval when a license decides to develop a petroleum deposit (field). The Ministry may require an account of the impact on the environment or other affected activities (Impact Assessment). Substantial contractual obligations must not be undertaken, nor construction work started, until the PDO has been approved, unless by consent from the Ministry. On application from the licensee the Ministry may waive the requirement to submit a PDO.
PDO - Content

1. Geological evaluation
2. Reservoir evaluation
3. Drilling and completion
4. Field installations
5. Costs and schedule
6. Health, safety and environment
7. Organisation and execution
8. Economic evaluation
9. Removal
10. Area considerations
PDO – Economic analysis

8. Economic evaluation

Assumptions:
- Reservoir/profile
- Capex
- Opex
- Schedule
- Tariffs
- Prices
- Exchange rates
- Financing

Real-term economics analysis:
- Before tax
- Discount factor
- NPV (/IRR)
- Break-even oil prices
- Sensitivities
- After tax
PDO – Economic analysis

- General economic assumptions and evaluation method
  - Price development
  - Currency development
  - Rate of return
  - Tariff/income/expenses

- Results
  - Pre tax
  - Post tax

- Economic uncertainty evaluations
PDO - Economic Policy

- Good estimates for resources, costs, production and prices give a solid foundation for:
  
  * Economic Policy
  * A sustainable long term finance-policy
  * Planning monetary policy issues

- High quality forecasting is needed
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Operator creates a PDO

NPD
Analysis
Recommend

MPE
Recommend

Terms

Parliament
Gives permission

Terms

Time
Approval of PDO
NPD’s role

- Ensure that the plans are consistent and with conclusions that are thoroughly evaluated and documented
- Ensure that all important aspects of the development are included in the plan, according to acts and regulations
- Focus on areas where there is a difference between what is optimal for the society and what is optimal for the licensees
- Make recommendations and provide the best possible basis for decision for Ministry and Parliament/Government
- Present conclusions to the Ministry
NPD interaction after PDO approval

W Follow-up of conditions in the PDO approval
W Follow-up that safety and working environment are in line with regulations
W Report discrepancies to the Ministry
W Information
  W licensee meetings
  W Ad hoc meetings on project status
Field development plan

Sum up

w Differences between a company’s interest and a society’s interest
w A field development plan is used to achieve the society’s interest
w The authority has to do their own evaluation of the area
w Good estimates in a field development plan give a solid foundation for decision in all phases of the petroleum activity