

Timing of decommissioning an offshore field

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vår energi

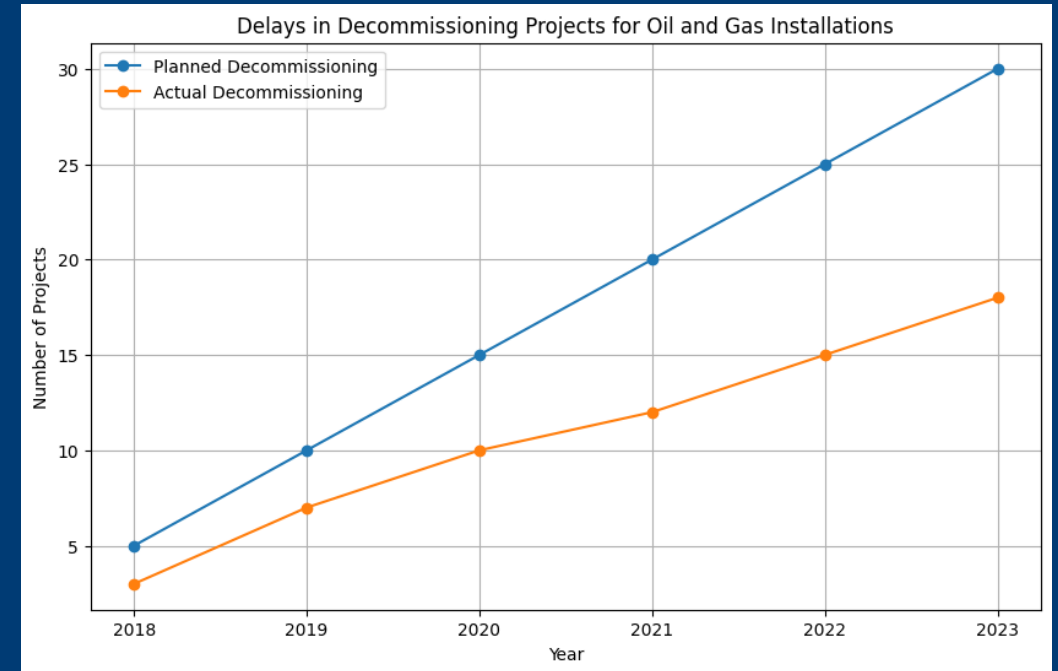
Timing of decommissioning an offshore field

Decommissioning usually begins when the field is no longer economically viable. This means the cost of extracting oil or gas exceeds the revenue generated

General impression:

“The pace and scale of decommissioning activities are consistently slower and more limited than initially anticipated.”

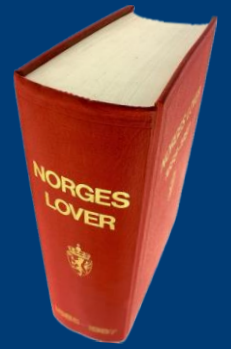
- How could this be explained?



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Some Key factors:

- **Field/License considerations:**
 - Regulatory Requirements - Norwegian Petroleum Law, Section 4-1 Prudent production:
 - Emphasizes the importance of maximizing petroleum recovery
 - Increased production from existing and tie-in fields
 - Enhanced recovery methods allows for extended production
 - Near field tie-backs may extend the economic life of the host
 - Lifetime extension
 - Better insights and innovations allow us to extend the technical life of the facilities without costly upgrades
 - Closing down a field is irreversible and permanent
- **Economic Factors:**
 - Production vs operating cost - when will it become economic unprofitable?
 - High oil price gives financial incentive to continue operations
 - Low oil price can lead to fields reaching the end of their economic life faster - but can also limit available resources for decommissioning
 - Other factors: OPEX, CO2 emissions, Lifetime extension cost
 - P&A is often a major part of the decommissioning cost - solutions and timing has an economic impact
 - In general: delaying decommissioning cost gives a financial benefit

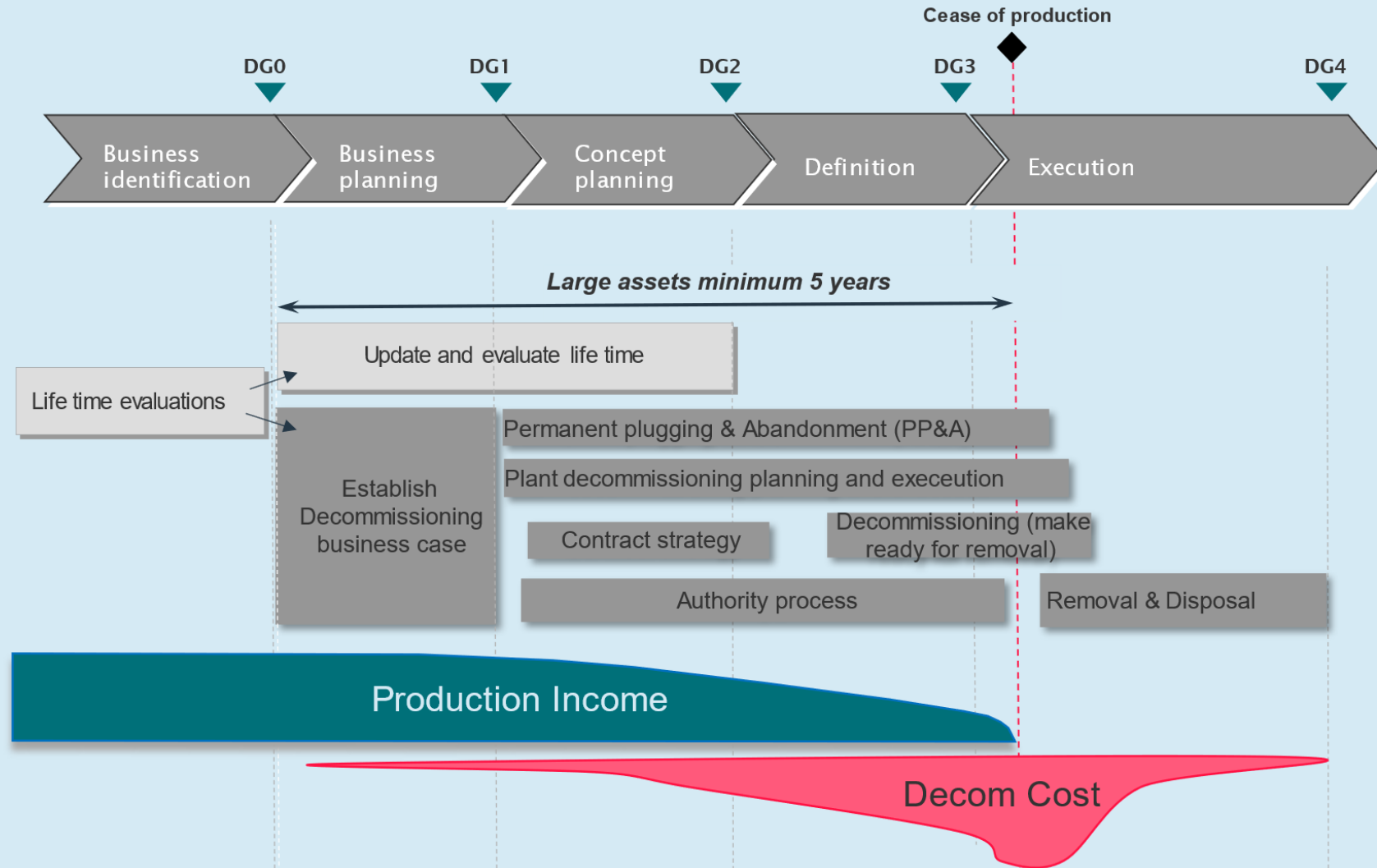


Norwegian Petroleum Law, Section 4-1
Prudent production:

"Production of petroleum shall take place in such a manner that as much as possible of the petroleum in place in each individual petroleum deposit, or in several petroleum deposits considered as a whole, is produced."

Production shall take place in accordance with prudent technical and sound economic principles and in such a manner that waste of petroleum or reservoir energy is avoided. *The licensee shall carry out continuous evaluation of production strategy and technical solutions and shall take the necessary measures in order to achieve this."*

Field decommissioning project key elements



Some Key factors - continued:

- **Complexity and Scope - Planning phase:**
 - Decommissioning is an extensive process that includes a.o. wells P&A, marine operations, dismantling structures, and handling waste. Requires careful planning and coordination.
 - Defining suitable contract strategies is essential - ideally giving contractors flexibility in performing their work
 - Impact Assessment and Disposal Plan preparations including authority approval may take 3-9 years.
 - Re-use/redeploy alternatives is challenging, due to
 - early phase development project candidates often unable commit or take part in decom cost
 - difference in timelines
- **Technical Challenges:**
 - Technological and engineering challenges can arise during the planning process, which can delay the decommissioning.
- **Environmental Considerations:**
 - Environmental requirements/considerations can also extend the pre-timeline for decommissioning



Conclusion

Operators and License partners endeavors to delay the decommissioning of the fields as long as possible:

- Maximize recovery - Expectations from the authorities
- Benefit from improved technologies and favorable economic conditions
- Facilitate Host/HUB developments if possible
- Thorough planning of business cases and projects
- Delay ABEX
- Maximize profit



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