4. Elements of a Robust Regulatory Regime

The 'regulatory framework' refers to the combination of policies, laws, regulations and contracts that govern decommissioning. There are several cross-cutting aspects that may be addressed in other sectors' regulatory framework, such as environmental legislation. This section, however, pertains to elements that are typically addressed within petroleum-specific instruments such as petroleum acts, petroleum regulations and petroleum agreements (for example, concessions, production sharing contracts).

Please note: *This section is intended to provide guidance and should not be treated as a substitute for the holistic formulation of laws, regulations and contracts. The following are recommendations for sections of robust regulatory regimes.*

4.1 Principles and policy framework

Given the large budget outlays, significant risks and socio-economic impacts, decommissioning requires clear policy direction to inform the operators' decommissioning plan and strategy. Policy positions should be translated into coherent binding legislation and/or express contractual obligations to ensure compliance. Some important principles that decommissioning legislation should account for are:

- **Polluter-pays principle**: The costs of pollution or damage to the environment should be paid by the responsible party. The responsibility for decommissioning is with the companies who have undertaken petroleum operations and have benefitted from producing hydrocarbons. Companies should thus ensure there are sufficient funds to meet their decommissioning liabilities. The government should establish a financial assurance mechanism that is sufficiently robust to ensure that the owners bear the full cost of decommissioning, and such costs are not borne by third parties, whether the broader industry or the taxpayer. The regulatory agency must also be sufficiently resourced with technical expertise and the financial resources to be able to effectively monitor and ensure compliance.
- **Ecosystems approach**: This refers to strategies that are based on integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It is based on the application of appropriate scientific methodologies focused on levels of biological organisation, which encompass the essential processes, functions and interactions among organisms and their environment. This would inform the operators' key decisions across the asset's lifecycle – in particular, the optimal option for the design and decommissioning.
- **Precautionary principle**: Where there are threats of serious or irreversible harm to society or the environment, the lack of full scientific certainty regarding the extent of that damage should not be used as a reason for not including measures to prevent or minimise such potential adverse effects. This has many implications with respect to decommissioning. For example, the design of oil and gas assets should be done in a manner that minimises residual risk.
- **Good governance, transparency and accountability**: This should provide a strong foundation for sharing of cost information with the government (and among companies) to understand the implications for the economic limits of oil and gas assets. In addition, the industry best practice of full contract disclosure would enable public scrutiny on the decommissioning treatment and could enable fairer negotiated outcomes on the associated issues.
- **Collaborative approach**: This generally recognises the tripartite nature of the petroleum sector among the government, companies and citizens. It also espouses the need for effective engagement with the public and vulnerable groups, such as indigenous peoples and women. This will be important when considering the socio-economic impacts of decommissioning and requirements for consultative processes with stakeholders to determine the most appropriate decommissioning solution.

- **Best international practice, best available techniques (BAT) and best environmental practice (BEP)**: At a minimum, most policies clearly establish the government's expectation that the industry is developed in accordance with best international practice (there is similar reference to 'good oilfield practice' in older legislation) including, where appropriate, clean technology, in their efforts to prevent and eliminate pollution. Some may also refer to best available techniques (BAT) or Best environmental practice (BEP). As defined in the OPSAR Convention BAT 'means the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste'. BEP is defined as 'the application of the most appropriate combination of environmental control measures and strategies'.

Although decommissioning is a multifaceted and complex issue, the above principles could provide a basis for governments to consider and resolve any regulatory deficiencies. This does not preclude the government from specifically looking at the issue in general or against different principles. For example, in determining the most appropriate option for dealing with residual risk, New Zealand evaluated options on effectiveness (the extent to which the option contributes to the desired policy outcomes), proportionality (the extent to which the costs/risks of implementing the option are proportional to the expected benefits), regulatory certainty (the extent to which the option provides clarity of regulatory requirements and predictability of regulatory outcomes) and practicality (the extent to which the option reduces any implementation risks).[27]

Given that the legislative reform process generally takes a number of years, it would be prudent for government to provide guidance to operators, as soon as possible, on areas such as:

- Full removal or in-situ options for each asset type – pipelines, platforms, processing facilities and other associated infrastructure (for example, storage, loading). For example, adopting a policy position of full removal with exemptions on a case-by-case basis.
- Establishment of multistakeholder bodies, comprising relevant government institutions, industry, universities, NGOs etc., to assess and develop a national approach to areas such as:
    - Scientific research and data collection efforts to inform decommissioning decisions. For example, for offshore projects requirements or conditions that would need to be considered for the acceptability of in-situ options, such as rig-to-reefs and alternative uses.
    - Financial assurance mechanisms.
    - Mitigating social and economic impacts.

4.2 International and regional obligations and commitments

The regulatory framework should ensure that countries' obligations under international and regional conventions and treaties flow through to the operators. This is of particular concern with offshore developments, where there are several such obligations. For example:

- The United Nations Convention on the Law of the Sea 1982 (UNCLOS), which states:

    > *Any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation, taking into account any* ***generally accepted international standards*** *established in this regard by the competent international organization. Such removal shall also have due regard to fishing, the protection of the marine environment and the rights and duties of other States. Appropriate publicity shall be given to the depth, position and dimensions of any installations of structures not entirely removed.*

- The International Maritime Organization (IMO) Guidelines and Standards, which constitute the 'generally accepted international standards' referred to above. They impose a general requirement for removal, except in particular circumstances determined on a case-by-case basis. Standards require complete

27 Government of New Zealand, Ministry of Business, Innovation & Employment (2021), Residual liability for petroleum wells and infrastructure following decommissioning.

removal of all structures weighing less than 4,000 tonnes, when located in 75m or less, and in 100m or less if emplaced on the seabed after January 1998. If a structure is only partially removed, a minimum of 55m of clear water must be present for the safety of navigation.

- Regional agreements such as the Oslo and Paris Convention on the Protection of the Marine Environment in the Northeast Atlantic (the OSPAR Convention), which has more detailed and stringent regulations.
- The Basel Convention, which regulate the international shipment and disposal of hazardous wastes, along with regional agreements, such as the Bamako Convention (Africa) and the Waigani Convention (South Pacific). Naturally occurring radioactive materials (NORM) waste is not specifically dealt with under the Basel Convention and has not always been considered comprehensively in international standards and legislation.

See Appendix B for further details, other conventions and applicability to Commonwealth countries.

4.3 Clear and coherent legal framework

The legal framework consists of the laws, regulations and contracts that govern decommissioning. A robust legal framework should address decommissioning across the entire lifecycle of an oil and gas project. It should include the following:

General

- Is there a clear definition of decommissioning?
    - Does it enable distinction to be made between mothballing and temporary shut-ins versus permanent termination of activities?
    - Is the definition consistent with international best practice?
    - Does it use language that is consistent with understanding environmental impact in the appropriate national / regional policy / regulation?

  Please note: There is no singular international definition for 'decommissioning'. Older legislation often refers to 'abandonment', which is only one aspect of decommissioning. Clarity should be given to treatment of the full range of decommissioning activities, as described in Section 2.2. The definition adopted would have to take into account the definition of the other lifecycle stages (for example, exploration, development, production).
- Is there a requirement that decommissioning must be carried out according to an approved decommissioning plan? And timeframe?
- Is there a duty for all operators to decommission in a safe and prudent manner, in line with international best practice?

  Please note that other terminologies such as 'good oilfield practice' could also be used in this context. It is important that the definition is sufficiently comprehensive, includes principles (for example, prudence, safety) and allows for evolving practice and technology.
- Does failure to fulfil decommissioning obligations attract penalties, depending on the circumstances?

  In some jurisdictions, imposition of criminal penalties is viewed as reflective of the high level of public interest involved, and the potential health and safety and environmental risks that are associated. See recent New Zealand legislation.
- Are the circumstances under which an operator is released from its decommissioning obligations clear? In such event,
    - Is the treatment of funding decommissioning activity and clearly established?
    - Is the responsibility party for the residual liability clear?

- Are the government's obligations under international and regional laws, treaties, conventions etc. passed through to the industry?
- Is there consistency and coherence with other national laws and regional policy? For example:
    - Environmental laws: environmental and social impact assessments, environmental permitting, waste management laws, anti-dumping, etc?
    - Bankruptcy laws: is decommissioning given priority prior to any creditor claims being drawn on the company's assets? *(Please refer to Section 3.8, the Alberta case for context.)*
- Does the legal framework provide the minister/regulator with powers to request information as it relates to the administration of the Act? This will apply to all aspects of decommissioning over a project's lifecycle.

Licencing regime and approval processes

The legal framework should ensure that decommissioning is a key consideration across a project's lifecycle and the broader approach to the development of the sector. It should thus feature as part of the criteria being considered across all key approval and decision points of a project.

- Is a decommissioning plan required for approval of a field development plan/plan of development?
    - Does it include estimated economic limit and year for cessation of production (COP)?
    - Does it include estimated costs?
- Are all oil and gas assets covered by a decommissioning plan and requirements for a financial assurance mechanism?

  Depending on the permitting regime in place, associated infrastructure (for example, pipelines, onshore processing facility) may not be included in a field development plan/plan of development and may be subject to separate licensing requirements. All related assets and infrastructure should have a similar robust legal framework. In addition, depending on the integration of facilities and regulations for third party access, not all assets may require decommissioning at the same time.
- Is the regulator's or ministerial *prior* approval required for any transfers and assignments? This includes direct or indirect change of control (for example, transactions involving share purchases of companies holding petroleum rights).

  This is a feature of all modern legislation and would enable the review and assurance that decommissioning is adequately addressed. This includes due diligence on the transferee, as well as the current standing of decommissioning plan and the status of the financial assurance mechanism.
- Are the duties on termination or transfers of a petroleum licence/agreement clear?
- Is there a requirement for the operator to conduct decommissioning operations as per the approved decommissioning plan?
- Given the multifaceted nature of decommissioning, does approval of a decommissioning plan require consultation with other relevant agencies, such as a Department of Environment?
- Is there an approval process and requirements for temporary suspension or mothballing of assets?
    - Are there accompanying effective regulatory monitoring and enforcement measures in place?
    - Is there a maximum time /period after which assets must be permanently plugged, abandoned and decommissioned?
- Is there clear process around declaration of cessation of production?
- Is there a clear and explicit process and approval for decommissioning of oil and gas assets, including:

  - permanent plugging and abandonment of wells?
  - platforms and other facilities?
  - shared infrastructure and land?

  Establishing requirements according to regulations provides the government with a reasonable approach to develop technical regulations to guide these activities in the future.

- Is there a clear obligation to perform decommissioning activities prior to relinquishment or termination of contract/licence? In the case of termination, what security is in place (bonds and guarantees, for example).

Adequate financial assurance

A financial mechanism should be put in place to ensure that sufficient money is available to fully fund all decommissioning activities and to avoid the taxpayer footing the bill. There are different approaches, each with advantages and disadvantages, which are summarised in Appendix A. Careful consideration should be given to the type of risk profile the assurance mechanism represents. Please note that the financial assurance mechanism should be independent of the economic performance of the asset. Any measure which links funding to the success or failure of the asset would substantially increase the risks of inadequate funding, especially in the event of fall in prices, production or bankruptcy. These mechanisms must also be reviewed and updated regularly, as rising costs may render them obsolete.

- Is there a requirement for financial assurance mechanism to ensure that decommissioning costs are fully funded?
- Is it clear how financial contributions are deductible for production sharing and/or tax purposes? Is it based on a cash or accrual basis?
- Is there a requirement for operators to develop credible, auditable estimates of decommissioning costs?
- Are preliminary decommissioning estimates of costs and timing of cessation of production included as part of the requirements for project approvals – in field development plans or the plan of development?
- Is there a process for reviewing and updating the estimated cost and timing of decommissioning, to ensure that the liability is adequately funded? If so, is it clear what level of detail is required and the timeframe for providing updates?

  Ensuring that there is a credible estimate of the decommissioning costs and timing for cessation of production are critical requirements to minimise risks of funding the liability. The regulator should ensure that decommissioning forms part of the annual reporting by the operator. This reporting requirement should recognise that there are likely to be very little changes during the early phase of a project.
- Is there a mechanism to evaluate the sufficiency of the financial assurance (the quality of the cost estimate)? Is there a mechanism to have a third party audit?
- Are qualified/approved institutions in place to secure, hold, manage, report on and administer the financial assurance?
- Is there a clear framework, including criteria, for the release of the financial assurance after completion of activities?
- Is decommissioning funding assessed **prior** to granting any changes in ownership, control or transfer/assignment of rights?
  - Have the funding requirements of the transferor been satisfactorily met?
  - Is the treatment of any tax credits clear between the transferor and transferee?

- Has due diligence been undertaken on the transferee to ensure a) there is not a high risk of bankruptcy, and b) it can meet the financial obligations to satisfactorily execute decommissioning activities at the end of the asset's life?

- Is there clarity on treatment of decommissioning liability in the event of bankruptcy?

  Achieving appropriate protections to the government on the matter of oil and gas companies' insolvency, requires alignment of the legal provisions on decommissioning with the country's bankruptcy and insolvency laws. For example:

  - Are decommissioning obligations treated as a debt owed to the government?
  - Does the legal framework establish this debt as a priority over the claims of other creditors?
  - Is there legal protection to ensure that funds set aside for meeting decommissioning obligations are not available to the general body of creditors of the insolvent company?

- Is there effective monitoring of the decommissioning liabilities and the financial security?

  A company's financial position can change, and it is important for the regulator to ensure there is ongoing effective monitoring to understand the current or emerging risks with a particular company, as well as the industry as a whole, and also to understand what precautionary actions are warranted to safeguard the country's interests.

Decommissioning fund

Where a cash trust fund is established, the legal framework should address the following key issues.

- Are the rules governing the establishment of the decommissioning fund in line with best practice, to minimise corruption and ensure independent, prudent management by competent persons?
  - Is the fund ring-fenced and established for the sole purpose of funding decommissioning activities?
  - Is the management of the fund performed by a committee/board that includes representation by the owner of the petroleum rights (e.g., the operator)?
  - Is there transparency in the selection process and composition of the committee/board?
  - Is there a transparent, robust process, including predetermined selection criteria and due diligence, for the fund's investment manager/ financial institution?
  - Is there a process for ongoing monitoring/an oversight mechanism for the fund manager and replacement in the event of certain circumstances?
  - What level of fees are being charged and how are they treated?
  - Is it clear what investment strategy and allocation across investment classes are permissible?
  - Is there regular reporting, at a minimum on an annual basis, on fund investment strategy, portfolio of assets and performance etc.?
- Is the basis for deposits to the fund by companies clear?
  - Are contributions based on volumes produced? Or a fixed fee?
  - Is the frequency of deposits clear? Are they quarterly or annually?
  - How is the adequacy of contributions relative to the estimated decommissioning costs assessed?
  - How often is this done? Is there a requirement for the operator to indicate if there are material changes that will impact funding contributions?

- Is the tax treatment related to the fund clear?
  - Are contributions to the fund deductible for production sharing and/or tax purposes?
  - Is the tax treatment of income earned held by the fund clear?
  - If there is a surplus, at the end of decommissioning, is it clear how it will be treated for tax purposes?
- Is the process for withdrawals from the fund clear?
- If there is a surplus in the fund after all decommissioning activities are completed, is it clear on how it will be treated? Will it be returned to contributors or held by the state?
- If the fund is in deficit, is the timing and mechanism for dealing with the shortfall clear?

Decommissioning plan

The incorporation of a 'decommissioning plan', which can be updated during the asset's lifecycle, provides an ongoing mechanism for engagement for the regulator and a basis for reflection of the latest view of critical factors and risks. Given the long duration of the production phase, it is to be expected that the preliminary view of decommissioning at the development phase may not necessarily be the same as during the decommissioning phase. Changes may arise from detailed planning or incorporation of new information, research, best practice and technology, as more experience is garnered in different operating environments.

- Is a decommissioning plan required for approval of a field development plan/plan of development?
- Is there a robust process in place for ongoing review of the decommissioning plan over the project's lifecycle? There should be early discussions between the operator and the regulator to ensure that the decommissioning process is well understood by both parties, as that would allow the operator to develop a realistic decommissioning plan, including a delivery timescale.
- Are the contents of a decommissioning plan clearly outlined? For example, does it include:
  - A decommissioning strategy?
  - An economic limit/year of cessation of production?
  - Decommissioning costs?
  - An environmental management planning framework?
  - A project plan and risks?
  - Arrangements for ongoing monitoring, required after decommissioning activities have been completed?
- Is it clear what the government's policy is for the treatment of each type of asset to inform the operators' decommissioning plan and strategy? That is, for wells, pipelines, platforms, processing facilities, other associated infrastructure (e.g. storage, loading)?
  - Are there any distinctions for onshore versus offshore?
  - Pipelines?
- Are there measures that the government can take if the decommissioning plan is deemed to be unsatisfactory?
- Is there a requirement to update the decommissioning plan for any material change that will impact decommissioning?
- Is there a clear, transparent and efficient process for the approval of the decommissioning plan?

Social issues

- Is there a mechanism to ensure that closure planning will be aligned with local and national development goals?
- Is there a mechanism for the regulator to ensure that stakeholders are identified and involved? Does it include a meaningful consultation process?
- Is there a mechanism for timely sharing of information with stakeholders?
- Is an assessment of the social impacts of decommissioning required?
    - Is there a requirement for a stakeholder engagement plan?
    - Does it specifically address vulnerable groups, such as women and indigenous peoples?
    - Is there a requirement for a transition strategy to be put in place for local economies and workers, to support the period from operations to decommissioning?
- Are opportunities for the use of local employment and firms considered in the decommissioning plan?

  The government should consider whether local capacity exists and, if not, how to begin to build such capacity.

Environmental issues

- Is an assessment of the environmental impacts of decommissioning required?
    - Is there a requirement for an environmental baseline?
    - Is the requirement and timing for scoping exercises clear?
    - Is there a consultation process with stakeholders?
    - Does it include a non-technical summary, including a brief explanation of the main findings and clear, concise conclusions?
- Is there an environmental management planning framework for decommissioning? (Included as part of the decommissioning plan).
- Is there a requirement to evaluate the impact of climate change and commitments towards decarbonisation on the decommissioning strategy and residual risks? E.g. type and frequency of monitoring for in-situ infrastructure, potential for movement in hurricanes etc.
    - Does this consider that history may not reflect the variability and intensity of future events?
- Is it clear what environmental permits/approvals are required for decommissioning activities?
- Are there provisions for ongoing monitoring after decommissioning activities are completed? Is there a mechanism to communicate results from such monitoring to relevant government agencies?

  Structures left in place will require ongoing review, to ensure that there is no leakage and/or potential threat to other users of the area – for example, those engaged in fishing.

Technical issues

- Is there a clear classification for wells? For example, shut-in, suspended or inactive, abandoned?
- Are there clear technical requirements for each well classification? Are there guidelines for temporary suspension and permanent abandonment of wells?
- Is it clear the maximum time period that a well can be suspended or inactive before it must be permanently plugged and abandoned? (This is to avoid 'orphan' wells.)

- Is it clear the maximum time period that a facility/installation can be suspended, "mothballed" or inactive before it must be decommissioned? (This is to avoid 'orphan' facilities, pipelines, sites.)
- Are there specifications for dealing with drilling cuttings? And on disposal of other materials?
- When decommissioning is deferred, are there specifications for suitably maintaining facilities? For example:
    - What maintenance is required?
    - Is there ongoing monitoring and inspection by the regulator?
    - In the event that there are integrity issues, what are the recourse measures?

Liabilities

- Is there joint and several liability for all petroleum operations, including financial obligations, penalties, incidents, decommissioning etc?
- Does the legal framework establish strict liability towards the government for any loss or damage caused, in connection with the decommissioning of the facility or other implementation of the decommissioning plan?
- Is it clear who bears responsibility for residual liabilities?

  The government may want to consider provisions for retention of security (potentially for a limited period) after decommissioning activities are completed.

Reporting requirements

- Is there a requirement to provide the regulator and other stakeholders with updates on any significant modifications to the decommissioning plan? For example, changes to estimated costs, reserves, cessation of production.
- Does the legal framework provide for regular receipt of information in a timely manner (to enable agencies sufficient time to consider and act)?
- Is there a standard reporting template for collection of the information?

  This would provide clarity to operating companies on what is needed and when. The government, in recognition of limited resourcing, should seek to leverage technology and standardisation to increase efficiency and reduce the administrative burden, so that more time can be spent on analysing the information (versus collecting data).
- Is there requirement for accurate records to be kept on operational issues, which would be required for decommissioning planning and selection of optimal solution. For example, details on drilling materials, location, ongoing environmental monitoring?

  These should be safeguarded and considered in transfers and assignments, especially in instances of changes in operatorship. Such records are vital for adequate understanding of what is to be decommissioned and the potential threats to the public and environment during decommissioning operations.
- Is there a requirement for a decommissioning report (also referred to as a 'close out report') to be submitted to the minister/regulator after decommissioning activities are completed?
- Are the contents of the decommissioning (close out) report specified?
- Is there a certificate of completion provided to operators if the minister/regulator is satisfied with the decommissioning (close out) report?
- Is there a provision for penalties for failure to report or keep accurate records?

4.4 Well-resourced institutions with access to technical expertise

Having a robust policy and legal framework is a prerequisite for the effective management of decommissioning risks. However, without strong government institutions to monitor and enforce compliance, the risks are likely to remain. This requires sufficient funding to execute tasks and build capacity across several areas, for example, operational, environmental and financial areas.

For example, the policy and regulatory framework is likely to change in the future, and the policy and regulators should remain abreast of how the issues are changing, how new gaps are identified and innovative solutions to ensure that the national framework remains robust to the changing context.

To avoid the inherent pressures from industry bodies and politicians, it is important that regulatory agencies are independent. The regulator should also be able to effectively perform its monitoring and enforcement duties. One area of particular concern should be the expertise to ensure there is adequate money to fund decommissioning activities. This requires specialists to assess companies' financial viability, and sufficient experience to understand the existing or emerging risks with each asset. This includes understanding how decommissioning costs are formulated, benchmarking (and hence the adequacy of a company's proposed plan), the vulnerabilities of a particular company to changing market outlook (for example, if prices or production falls), the ability to conduct due diligence on transferees etc.

Another area that requires particular attention is the environmental expertise required to first assess the adequacy and completeness of the environmental and social impact assessments (ESIAs) performed for FDP approval and then subsequent monitoring of petroleum operations. Given the complex nature of decommissioning on the ecosystem, this will be of even more importance at the time of approving the operator's preferred decommissioning options.

The government may want to consider outsourcing the review of decommissioning plans to specialist environmental consulting or assurance companies, bearing in mind funding constraints. Options should be explored if such arrangements can be included in the legal framework, such that independent reviews can be funded by the asset but managed by the government (for example, in terms of the selection of the third party).

The government, in recognition of limited resourcing, should seek to leverage technology and standardisation to increase efficiency and reduce the administrative burden, so that more time can be spent on analysing the information (compared to collecting data).