



**RELEVANT PERMIT/LICENSE/AUTHORISATION/LEGAL BASIS FOR CONDUCTING CCS ACTIVITIES**

| Exploration Permit  | Development Permit  | Emissions Performance Standards/Pollution Control Requirements   | CO <sub>2</sub> Transport/ Pipeline Licence  | Injection Licence   | Application for Site Closure  | Closure Authorisation                     |
|---|---|--|--|---|---|---|
| An authority which grants the holder the necessary rights to explore an area (onshore or offshore) to identify a potential storage site | An authority which grants the holder the necessary regulatory approvals (including development, land and environmental approvals) to construct and operate CCS project infrastructure | Companies may be legally required to conduct CO <sub>2</sub> capture activities through emissions performance standards and pollution control requirements | The transport of CO <sub>2</sub> via ship or pipeline may require a separate license | An authority which grants the holder the rights to inject and permanently store captured CO <sub>2</sub> in the identified geological formation | A formal process to close a storage site, marking the cessation of CO <sub>2</sub> injection activities at the storage site | Ultimate approval to close a storage site |

**REGULATORY ISSUES AND PROJECT OPERATOR REGULATORY OBLIGATIONS**

| PRE-INJECTION  | OPERATION   | CLOSURE   | POST-CLOSURE   |
|--|---|---|--|
| <ul style="list-style-type: none"> <li>• Classification of CO<sub>2</sub> as a substance approved for disposal</li> <li>• CO<sub>2</sub> stream characterisation</li> <li>• Obtain authorisation to undertake exploration of a specified area for potential CO<sub>2</sub> storage sites, in accordance with the terms of an exploration authority</li> <li>• Assess storage site adequacy and evaluate any potential leakage pathways</li> <li>• Activities may include seismicity testing or drilling programme</li> <li>• Potential to inject limited CO<sub>2</sub> volumes for testing purposes</li> <li>• Evaluate well construction and completion to ensure safety and CO<sub>2</sub> containment</li> <li>• Obtain all regulatory approvals (including Environmental Impact Assessment for storage facility, construction and development authorities if applicable)</li> <li>• Conduct public notification and engagement</li> <li>• Clarify transboundary CO<sub>2</sub> transport obligations</li> </ul> | <ul style="list-style-type: none"> <li>• Capture CO<sub>2</sub> pursuant to relevant regulatory requirements relating to capture plant, operational liabilities, pollution prevention and control, health and safety, and planning</li> <li>• Conduct an Environmental Impact Assessment on the CCS value chain</li> <li>• Conduct the safe transportation of CO<sub>2</sub> consistent with agreed national protocols and guidelines, risk management and environmental protection requirements applicable to CCS specific or similar infrastructure/energy projects</li> <li>• Safely inject CO<sub>2</sub> for the purpose of storage and in accordance with the terms of the injection authority</li> <li>• Monitor any injected substances and site performance</li> <li>• Undertake all necessary testing, monitoring and reporting activities</li> <li>• Implement an emergency and remedial response plan</li> <li>• Remediate any damage caused to the environment, human health, or property</li> <li>• Take corrective action to address any problems that arise</li> <li>• Maintain financial security and insurance</li> </ul> | <ul style="list-style-type: none"> <li>• Follow any approved procedures specified within the injection authority, accompanying plan, or a site closure authorisation</li> <li>• Activities may include removal of injection facilities and/or site rehabilitation</li> <li>• Continue to monitor any injected substances and overall site performance</li> <li>• Closure period may be for a dedicated time frame specified within regulatory regime</li> </ul> | <ul style="list-style-type: none"> <li>• Long-term monitoring and site care activities</li> <li>• Conduct corrective measures as needed</li> <li>• Closure authorisation to mark the completion of an operator's responsibilities under the storage authority</li> <li>• Transfer of liability (where applicable)</li> </ul> |

One of the most significant roadblocks to the global deployment of carbon management technologies is the difficulty developing countries face in building institutional capacity. This includes creating effective policy and regulatory frameworks, evaluating capture and storage. To develop these frameworks, countries need to understand the key legal and regulatory considerations and project milestones associated with carbon management projects.

The graphic provides a visual representation of a typical CCS project permitting model, including key considerations for policymakers and regulators when developing regulatory frameworks for CCS. It is a consolidation of key regulatory aspects and activities included in various legal jurisdictions with established regulations, and assessment models and guidance documents. It was created to support and promote the development of CCS-specific legislation, or to evaluate the capability of national frameworks to regulate the CCS process.

The graphic covers key approvals and associated activities over four phases of the carbon management project lifecycle:

1. Pre-injection (assessment, development, construction)
2. Operation (capture, transport and injection of CO<sub>2</sub> into geological formations)
3. Closure (cessation of injection and closure)
4. Post-closure (long-term stewardship).

The regulatory issues and obligations listed under each phase are typical of a carbon management value chain and include high-level activities to obtain the necessary approvals and meet all regulatory obligations in each phase. Certain activities indicated in the graphic may only be applicable in select jurisdictions, or under certain circumstances. For example, post-closure transfer of stewardship may not be applicable under certain jurisdictional regulations, and where applicable, transfer may depend on a post-closure monitoring period, or fulfilment of certain conditions, which vary between jurisdictions. In addition, in some jurisdictions, the indicated permits/licenses may include additional approvals or titles. In some jurisdictions, there may be interim authorisations required between the granting of the permits/licenses indicated in the graphic.

The model provides general guidance and does not include an exhaustive list of responsibilities of carbon management project developers or activities necessary to obtain the required licences and permits. Names of permits and licenses indicated in the graphic are general, and the specifics will vary between jurisdictions.



Northern Lights CCS Project



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