Supplementary Guidelines for Environment Act Proposals for Carbon Capture and Storage Facilites

These guidelines apply to Environment Act Proposals for Carbon Capture and Storage or Utilization facilities, which are Class 2 developments under The Environment Act, as identified in the Classes of Development Regulation.

In addition to the standard information requirements of the Environment Act Proposal Guidelines, the following information must be provided to identify the potential environmental impacts of Carbon Capture and Storage (CCS) or utilization projects including transport.

Definitions:

"Carbon Capture and Storage Facility" means a facility for permanent storage of captured carbon as defined under The Captured Carbon Storage Act including any infrastructure used to capture and transport carbon dioxide.

"Carbon Capture and Utilization Facility" means a facility for the utilization of carbon dioxide that is defined as captured carbon under The Captured Carbon Storage Act into a reusable format or product, including any infrastructure used to convert the carbon dioxide.

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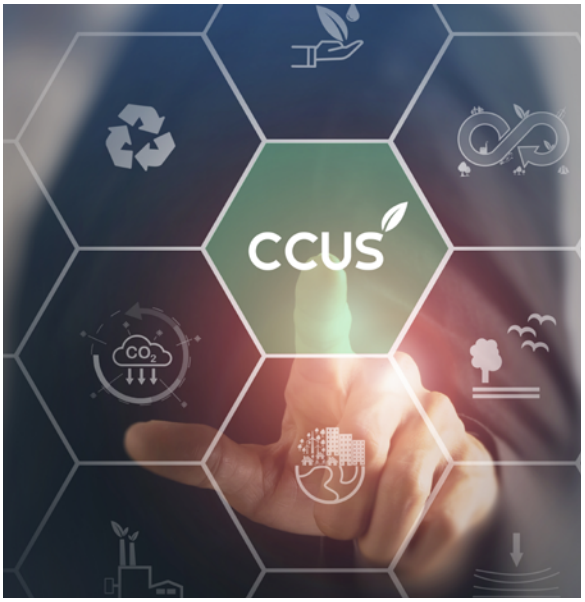
Description of Proposed Development

- For infrastructure such as pressure booster stations, pipelines, etc., include a current land title certificate copy (Certificate of Title or Status of Title) and either a copy of a land purchase or lease agreement or a description of land purchase arrangements if additional land is being purchased or leased. A proposal should not be filed until the exact location of the facility is known and the landowner is aware of the project.
- Include the appropriate municipal approval for the type of facility (e.g., conditional use, or zoning and approved uses in that zone).
- Include the following background information in the proposal:
  - Source of carbon dioxide for the project; for example, the facility generating the carbon dioxide or direct air capture
  - Description of the facility generating carbon dioxide
  - Details supporting that a positive greenhouse gas reduction will take place:
    - Provide a mass balance indicating the amount of greenhouse gases that will be generated by the operation of the facility and offset by the removal, transport and storage of carbon dioxide.
  - Details of any alterations required at the source facility to capture the proposed carbon dioxide
    - Note: if a facility has an existing Environment Act licence, a Notice of Alteration must be submitted by the licensee of that facility to install and operate a carbon capture system at the facility.
  - Amount of carbon dioxide released to the environment by the source facility
  - Expected amount of carbon dioxide to be captured
  - Methods and processes proposed for carbon capture and treatment to remove impurities
  - Potential pollutants generated in the process of carbon dioxide purification and proposed mitigation to prevent environmental impacts
  - Any methods and locations of temporary storage of carbon dioxide, if required
- Include the following information regarding the carbon storage facility:
  - Indicate if the proposed well site for the carbon storage facility is located on the same site with the facility generating the carbon dioxide
  - Summarized information about the geological formation of the proposed carbon storage site or well including geological storage capacity
  - Construction requirements including site access details
  - Construction requirements of monitoring wells including site access details
  - Any waste generated during construction and how it will be handled and/or disposed of
  - Distance of the wells from the property line to the nearest residence, community, railroad, road and other critical infrastructure or sites
  - Provide a site plan showing all wells including decommissioned and abandoned wells within three kilometres of the proposed storage or monitoring well
  - Provide detailed information on the local aquifer and any potential impacts, e.g. impact on drinking water, irrigation sources.

- Include the following background information if the proposal includes the construction of a carbon utilization facility:
  - A site plan of the proposed carbon utilization facility
  - A site plan showing the closest residence, community and road right-of-way with associated setback distances
  - A description of the process to convert the carbon dioxide into another product
  - Details of proposed temporary storage of carbon dioxide
  - A description of the product to be manufactured from the captured carbon
  - A list of other chemicals utilized in the process and their characteristics, volume, and storage on site
  - A description of potential environmental impacts of the conversion system
  - A description of emission control systems proposed at the facility and detailed information regarding the control system
  - A description of the proposed disposal of residual carbon dioxide and other chemicals used in the process.
- Operation – a complete and concise description of the proposed operation, including the following:
  - A detailed description of the proposed injection methods of the carbon captured at the source
  - Frequency of injection and volume of each injection
  - Proposed method for the transportation of carbon from the source to the storage site. If pipeline construction is required, the pipeline length, diameter, and detailed construction methods and routes must also be indicated on the site plan. Pipeline integrity testing methodology must be included.
  - Indicate the length the compressed carbon dioxide will travel from its point of capture to final underground storage



  - Carbon dioxide compression required for transportation and any booster stations needed. If booster stations are needed, provide details of the construction and their location on the pipeline.
  - Monitoring well operations and detailed information of how the monitoring will take place.

Mitigation Measures:

- Proposed mitigation measures to prevent and monitor any impacts to soil, surface water, and groundwater for the lifetime of the project.
- Proposed ambient air monitoring plan and other mitigation measures in the event of unexpected pollutant release.
- Mechanisms proposed to handle any leaks during the capture, temporary storage, transportation, or injection into the storage well.
- Mechanisms in place if the monitoring shows any carbon dioxide or other pollutant release with potential environmental impact.
- Detailed Trigger Action Response Plan including defined action triggers and specific response methods.

Closure and Post-Closure Monitoring

- Proposed carbon storage well closure plan and post-closure monitoring plan.
- Proposed decommissioning plan for the following carbon dioxide capture and temporary storage facility components:
  - Capture facility
  - Booster stations
  - Temporary storage and
  - Transport systems.

Emergency Response Plan Considerations

All sites are required to prepare Emergency Response Plans prior to operation of the development. Emergency response plans (e.g., fire safety plans) should be filed in accordance with local fire department and Manitoba Fire Code (MFC) requirements.

It is recommended that if the site is located close to communities, highways, or residential buildings, special considerations should be included in the Emergency Response Plans. In these circumstances, the facility must canvass neighbouring properties to identify potential risks and propose appropriate responses to include in the plan.