Oil and Gas Commission Fact Sheet

Unconventional Gas Development Stages

Stage 1 - Resource Identification

Companies pursuing unconventional gas opportunities, generally conduct research in the area where the gas is thought to occur. They may review and analyze historical geological reports, geophysical survey data, well logs and core samples. These records may be obtained from provincial agencies and industry data service companies. The BC Oil and Gas Commission (Commission) maintains a record of well logs, reports and core samples of all wells drilled in the Province. Coal records are available from the Ministry of Natural Resource Operations for companies interested in coalbed gas.

Earlier projects in the area may not have proceeded due to the limitations of the technology of the day or may not have been economically viable based on the prevailing economic climate.

Companies may also conduct regional geological and geophysical surveys to determine the extent of the area prospective for natural gas. If the results of the analysis and initial exploration are encouraging, the company will proceed to the next stage of acquiring tenure.

Stage 2 - Tenure Acquisition

Before the Commission will grant approval to drill a well, a company must hold the petroleum and natural gas (P&NG) rights to the area. The Commission does not issue tenure. The majority of P&NG rights in B.C. are owned by the Province and managed by the Ministry of Energy and Mines. The ministry holds monthly auctions of parcels of P&NG rights.

The proposed tenure parcels are reviewed and referred to First Nations, local governments and other government agencies for comments that may be attached to the parcels as conditions limiting or restricting access. A small amount of P&NG rights in B.C. are owned by the Federal government or are privately owned.

Stage 3 – Initial Drilling and Testing Program

Once a company has acquired petroleum and natural gas tenure, it may proceed to the next step, which is to apply for approval to explore for natural gas. In this phase, a company may:

- Conduct more specific geophysical exploration to determine a drilling location suitable to maximize resource development.
- Design the initial project drawing on scientific and community knowledge to minimize potential impacts to other land users and the environment.
- Conduct public and stakeholder engagement.
- Conduct First Nations community engagement.
- Negotiate access agreements with land owners if private land access is required.
- Complete and evaluate initial well or wells.
- Apply for project approval.

The Commission reviews existing land use plans to guide its decisions.

Based on the results of the drilling the company will decide whether to move on to the pilot project feasibility stage (Stage 4). Should the results of the drilling be unsatisfactory, the company will reclaim and restore any well sites to meet regulatory requirements and government standards.

Stage 4 – Multi-well (Pilot) Drilling and Testing

If the evaluation stage indicates that there is sufficient resource to pursue, companies will consider following up with a small-scale project to test the feasibility of the development. Companies must discuss an expanded program with the public, First Nations and stakeholders and will undertake the following:

- Update project design and develop additional measures to mitigate potential impacts to land users and the environment.
- Continue public and stakeholder engagement.
- Continue First Nations' community engagement.
- Negotiate additional or expanded access agreements with land owners as necessary.
- Update any project scheme approvals and well authorization(s).
- Drill, complete and test wells and construct pipelines.

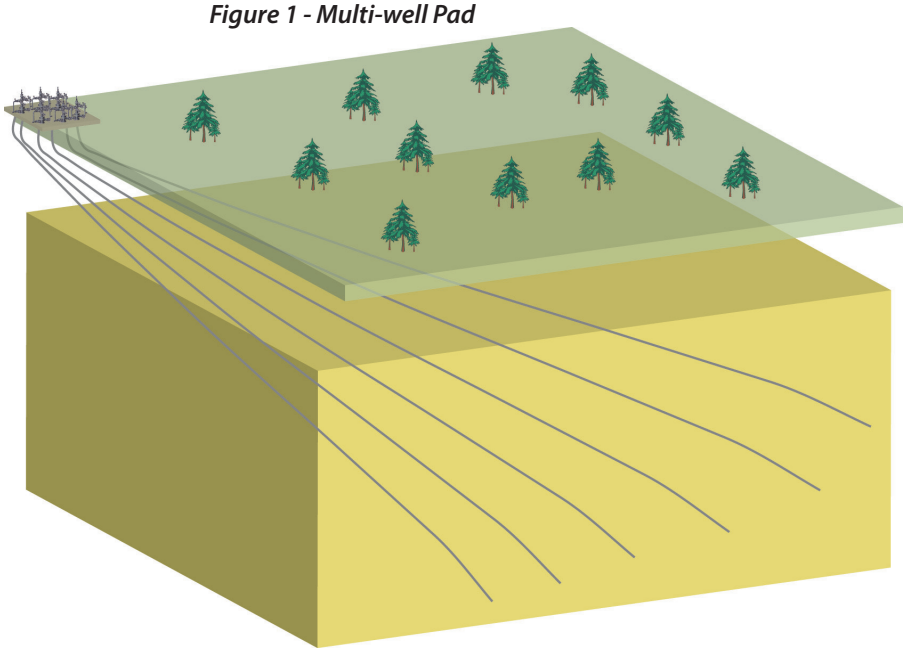
The Commission will review existing land use plans to guide its decisions and may participate in the development of landscape level plans for the development area with First Nations, other agencies and stakeholders, depending on the projected level of activity in the area and known sensitive issues.

Based on the pilot results the company will decide whether to move on to the production stage (Stage 5). Should it be determined that production is not feasible, all wells and related improvements will be restored and the sites reclaimed to meet regulatory requirements and government standards.

Stage 5 - Commercial Drilling and Production

If the potential for commercial production is proven through the pilot project stage, a company can make an application to the Commission for Good Engineering Practice (GEP) under as a special project order under Section 75 of the Oil and Gas

Figure 1 - Multi-well Pad



Activities Act and an Other Than Normal Spacing order under Section 65.1 (2) of the Petroleum and Natural Gas Act. In this phase a company will:

- Continue to update project design and measures to mitigate potential impacts to land users and the environment.
- Continue to ensure public and stakeholder involvement when required.
- Continue to ensure First Nations' involvement when required.
- Apply for additional wellsite and pipeline permits.
- Develop compression facilities and pipelines.
- Market the natural gas.
- Work with Commission's Resource Conservation branch staff to insure the gas is produce efficiently and effectively, optimizing the full utility and return of the resource. Full return ensures the Crown receives maximum value through royalties.

Stage 6 - Program End

At the end of the lifecycle of the project after maximum natural gas has been recovered, which may be more than 10 – 40 years depending on the nature and magnitude of the development, the site and all improvements will be reclaimed and restored to meet regulatory requirements and government standards.

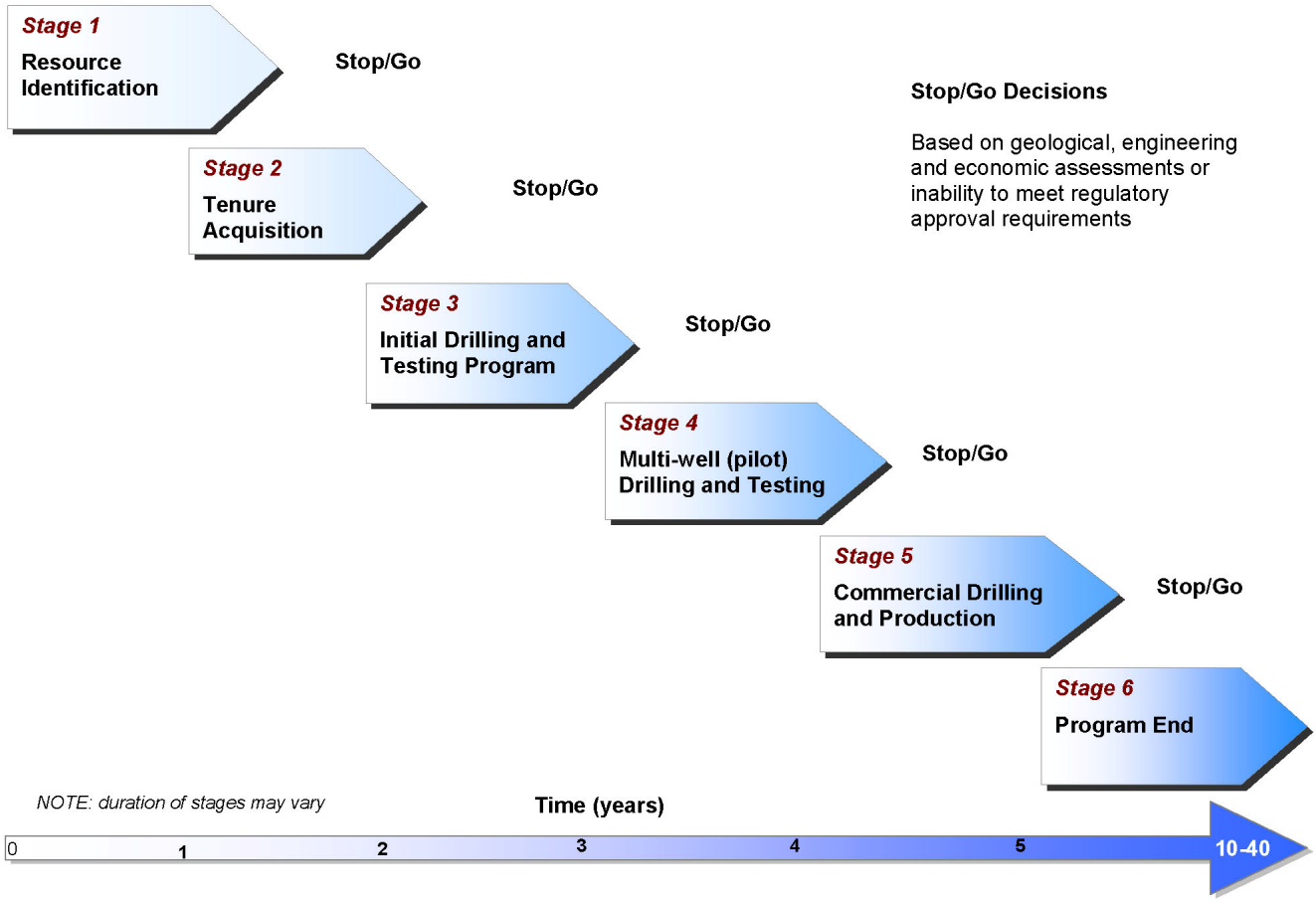


Figure 2 - Overview of Unconventional Gas Development Stages

Report a Concern/Learn More:

24 Hour Main Switchboard:

To report concerns regarding noise, smell or spill, or for general information

Tel: 1-250-794-5200 (24 hours a day)

Fax: 1-250-794-5390

Web: www.bcogc.ca

Mail: PO Box 9331 Stn. Prov. Gov't, Victoria, BC V8W 9N3

24 Hour Emergency Response for Industry Clients:

Toll free: 1-800-663-3456 (24 hours a day)

BC Oil & Gas COMMISSION