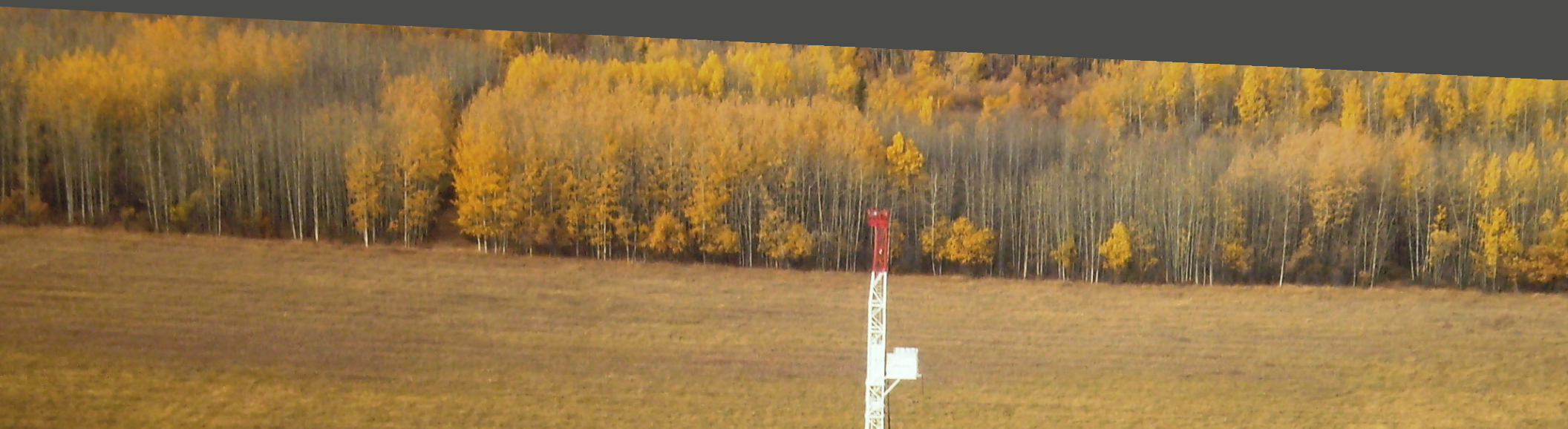


# 2011 Flaring, Venting and Incinerating Summary

BC Oil and Gas Commission



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About the

## BC Oil and Gas Commission

The BC Oil and Gas Commission is the single-window regulatory agency with responsibilities for regulating oil and gas activities in British Columbia, including exploration, development, pipeline transportation and reclamation.

The Commission's core services include reviewing and assessing applications for industry activity, consulting with First Nations, cooperating with partner agencies, and ensuring industry complies with provincial legislation and all regulatory requirements. The public interest is protected by ensuring public safety, respecting those affected by oil and gas activities, conserving the environment, and ensuring equitable participation in production.

For general information about the Commission, please visit [www.bcogc.ca](http://www.bcogc.ca) or phone 250-794-5200.



### Mission

We regulate oil and gas activities for the benefit of British Columbians.

We achieve this by:

- Protecting public safety,
- Respecting those affected by oil and gas activities,
- Conserving the environment, and
- Supporting resource development.

Through the active engagement of our stakeholders and partners, we provide fair and timely decisions within our regulatory framework.

We support opportunities for employee growth, recognize individual and group contributions, demonstrate accountability at all levels, and instill pride and confidence in our organization.

We serve with a passion for excellence.

### Vision

To be the leading oil and gas regulator in Canada.

### Values

Respectful  
Accountable  
Effective  
Efficient  
Responsive  
Transparent

About the

## Flaring, Venting and Incinerating Summary

The Flaring, Venting and Incinerating Summary provides an annual summary of flared volumes of gas and progress toward meeting the objectives of reducing or eliminating flaring, venting and incinerating as outlined in the BC Energy Plan. This summary is for the 2011 calendar year.

In 2007, the provincial government announced the BC Energy Plan, and the following year the BC Oil and Gas Commission (Commission) released the Flaring and Venting Reduction Guideline (Guideline). With natural gas conservation a key objective, the Guideline provides regulatory guidance for flaring, venting and incinerating at all wellsites, facilities and pipelines regulated under the Oil and Gas Activities Act. New wells, facilities and pipelines are designed and operated to conform to the Guideline.

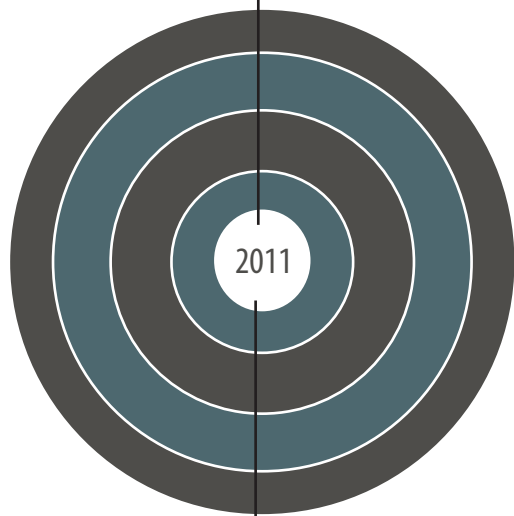
Previous annual flaring reports and background information on flaring can be viewed here:

- [The BC Energy Plan](#)
- [2008 Flaring, Incinerating and Venting Reduction Report](#)
- [2009 Flaring, Incinerating and Venting Reduction Report](#)
- [2010 Flaring, Incinerating and Venting Report](#)
- [Flaring Fact Sheet](#)
- [Flaring and Venting Reduction Guideline](#)



#### BC Energy Plan targets

"The province has set a goal of reducing routine flaring at producing wells and production facilities by 50 per cent in five years and eliminating all routine associated gas flaring in 10 years."



#### Target Achieved

In 2010 the BC Energy Plan target of eliminating all routine associated gas flaring was achieved. Routine associated gas flaring is defined as the continuous flaring of solution gas that is economical to conserve. Associated (solution) gas is gas produced from a well during oil production. In accordance with the BC Energy Plan, the Commission continues to work to reduce other sources of flaring including temporary flares, flaring required for safe operations and the flaring of gas that is not economical to conserve. Long-term objectives are to minimize non-routine flaring which may never be completely eliminated. The Commission continually works to maintain other goals in the BC Energy Plan, including reducing venting and reducing fugitive emissions. This is achieved by increased scrutiny of flare applications, economic assessments of flared gas, improvements to existing facilities and regulatory and policy changes.

#### Achievements related to the reduction of flared volumes in 2011 include:

**36 %**

decrease in flaring levels since 1996

**22.3 %**

decrease in flaring levels since 2006

**97 %**

conservation of solution gas in 2011

#### Other Achievements:

- A five per cent decrease in solution gas flaring since 2010, and a 93.1 per cent decrease since 1997.
- A 3.2 per cent decrease in well cleanup and well test flaring since 2010.
- A 9.3 per cent decrease in flaring from underbalanced drilling from 2010 to 2011.
- From 1996 to 2011, natural gas production increased by 76 per cent and the amount of gas flared per unit of natural gas production decreased by 63 per cent.
- The total gas flared per unit of production in 2011 was 4.9 m<sup>3</sup>/1,000 m<sup>3</sup>, which is below the forecasted amount of 5.4 m<sup>3</sup>/1,000 m<sup>3</sup> in the Commission's 2011/12 Service Plan.



## Summary of Flared Volumes

Overall, industry achieved a 36 per cent decrease in flaring levels between 1996 and 2011. Flaring volumes rose five per cent over 2010 levels, the increase attributable to an increase in the number of plants and facilities in B.C. and an 18 per cent increase in gas production. The five sources of flaring are broken down in Figure 1, Table 1 and defined further on the following page.

Figure 1 – Flared volume broken down by source 1996-2011

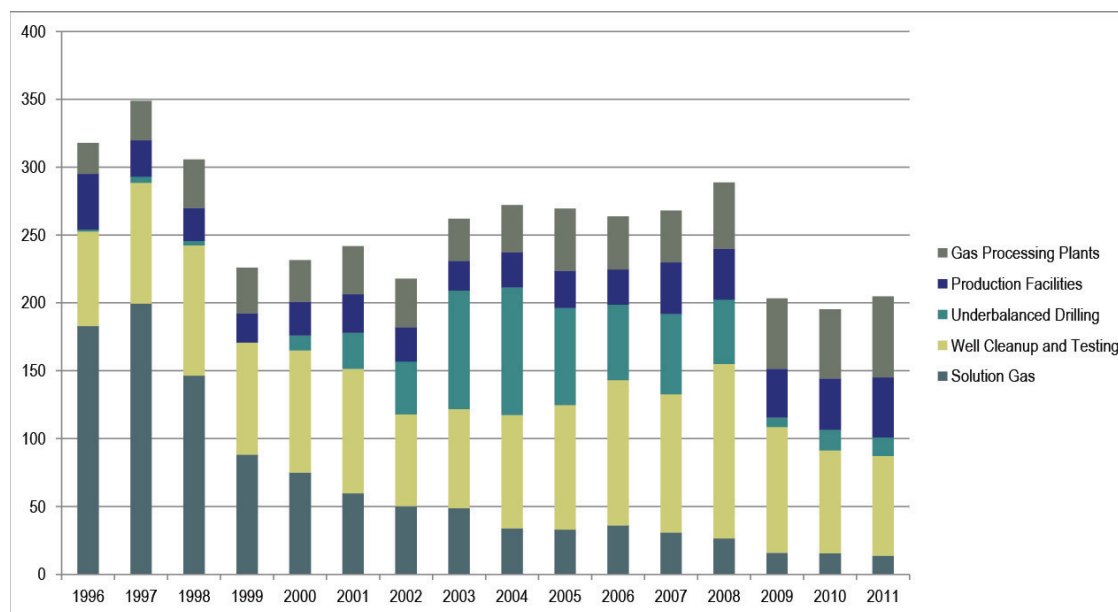


Table 1 – Flared volume broken down by source 1996-2011

Flared volumes (10 <sup>6</sup> m <sup>3</sup> )																
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Gas Processing Plants	22.7	29	35.7	33.7	30.6	35.4	35.7	31	35	45.7	39	38	48.8	51.7	51	59.6
Production Facilities	40.9	26.9	24.3	21.3	24.8	28.4	25.3	21.8	25.7	27.4	25.9	37.9	37.5	35.9	37.9	44.3
Underbalanced Drilling	1.4	4.5	3.1	0.1	11	26.4	38.9	87.3	94.1	71.5	55.6	59.2	47.4	7	15	13.6
Well Cleanup and Testing	69.8	89	96	82.7	90	91.7	67.6	72.9	83.4	91.7	107	101.9	128.5	92.7	75.9	73.5
Solution Gas	182.9	199.5	146.4	88.1	75	59.8	50.3	48.9	33.9	33	36.1	30.9	26.5	15.9	15.5	13.8
Total	317.7	348.9	305.5	225.9	231.4	241.7	217.8	261.9	272.1	269.3	263.6	267.9	288.7	203.2	194.3	204.8
Solution gas production	1424	1681	1700	1629	1655	1659	1368	1137	976	861	830	747	669	490	472	426
Solution Gas Flared	182.9	199.5	146.4	88.1	75	59.8	50.3	48.9	33.9	33	36.1	30.9	26.5	15.9	15.5	13.8
% Conserved	87%	88%	91%	95%	95%	96%	96%	96%	97%	96%	96%	96%	96%	97%	97%	97%



## Summary of Flared Volumes

**F**laring volumes from year to year are dependent on a number of factors that can include activity levels, types of recovery techniques used and locations of oil and gas activities. Due to flaring reduction efforts, flaring levels have experienced a significant decline since 1996, and smaller fluctuations in flaring levels in recent years are largely attributed to the above factors. Following is a breakdown of 2011 flaring sources:

- **Gas processing plants:** Flaring occurs at gas processing plants primarily for safety and cleanup reasons. Commission efforts for reduction focus partly on conservation as a priority during the application review stage. Flaring from gas processing plants increased 14.4 per cent between 2010 and 2011, and increased 61.9 per cent since 1996. Increases resulted from increased production.
- **Production Facilities:** Flaring occurs at production facilities primarily for safety and during process upsets. The Commission works with operators on production facility designs, ensuring all reasonable options are considered in an effort to eliminate or reduce flaring. Flaring from production facilities increased 14.5 per cent between 2010 and 2011, and since 1996 increased 7.7 per cent. Increases resulted from increased production.
- **Underbalanced Drilling:** This is a procedure used to drill oil and gas wells where wellbore pressure is kept lower than fluid pressure in the formation being drilled. There was a 9.3 per cent decrease in flaring from underbalanced drilling between 2010 and 2011. Flaring from underbalanced drilling peaked in 2004, and since that time decreased 85.6 per cent. The decrease in 2011 resulted from decreased underbalanced drilling and increased gas conservation during drilling.
- **Well Cleanup and Testing:** These are conducted once a well is completed and prior to placing it into production. Well cleanup flaring ensures sufficient contaminants have been removed from the gas stream to allow the well to produce safely, and well testing involves flowing a well so pressure and flow data can be collected. Flaring from these sources decreased 3.2 per cent between 2010 and 2011, and increased five per cent since 1996. The decrease in 2011 resulted from increased gas conservation due to inline testing.
- **Solution Gas:** This is flaring that occurs predominantly at oil producing wells and batteries. Operators are required to conserve solution gas that meets an economic threshold as defined in the Guideline. There was a five per cent decrease in solution gas flaring between 2010 and 2011, and a 92.5 per cent decrease since 1996. The decrease in 2011 results from declining oil production.



## Moving Forward

The Commission continues to work with operators to ensure all flaring, venting and incinerating reduction options are considered, including:

- Elimination.
- Reduction where elimination is not possible (for instance, if there is a lack of available infrastructure such as pipelines and facilities in the vicinity due to remoteness of the activity).
- Improvement of the efficiency of flare, vent and incinerator systems.

Updates and improvements to the Guideline contribute to overall improvements in gas utilization through:

- Solution gas economic analysis.
- Requirement to assess all flares for elimination or reduction.
- Gas plant flaring volume limits.
- Temporary facilities for inline tests.
- Flare gas minimum heating value.
- Alternatives to flaring.

The Commission is committed to the goals outlined in the BC Energy Plan in both maintaining the goals that have been met and working toward further flaring reductions.



More Information

Contact [www.bcogc.ca](http://www.bcogc.ca)

This summary is updated as required. For specific questions or enquiries regarding this document please contact:

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