

# Royalties in Alberta

## Background information

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### Royalty review

As the owners of Alberta's energy resources, Albertans are entitled to benefit from development of these resources.

In February 2007, the provincial government announced an independent review of Alberta's royalty and tax regime. The purpose of this review is to ensure that Albertans are receiving a fair share from energy development through royalties, taxes and fees. The review focuses on all aspects of the royalty system, including oil sands, conventional oil, and natural gas including coalbed methane.

An independent panel of experts has been established to review input from all interested Albertans and key stakeholders and make recommendations to the Minister of Finance. Beginning April 23<sup>rd</sup>, the panel will host a series of public meetings in Grande Prairie, Edmonton, Calgary, Fort McMurray, and Medicine Hat.

Individual Albertans, organizations and groups are invited to provide input to the review. All submissions and presentations will be considered public.

You can provide your input by:

- Providing a written submission online at [www.albertaroyaltyreview.ca](http://www.albertaroyaltyreview.ca),
- Mail to Royalty Review Secretariat, 1100, 715 – 5<sup>th</sup> Avenue SW, Calgary, Alberta, T2P 2X6,
- Fax: (403) 297-5238, or
- Appearing at one of the public meetings hosted by the expert panel.
  - If you wish to appear before the panel to make a presentation, we ask that you contact the Secretariat and reserve a space.
  - Please check the website at [www.albertaroyaltyreview.ca](http://www.albertaroyaltyreview.ca) for more details or call (403) 297-8173 for the dates and locations of the public meetings and the presentation and submission process.

Note: This document was prepared by the Government of Alberta and is intended to provide some basic facts and information about Alberta's current royalty regime and tax structure as people consider the review of Alberta's royalty system. It does not necessarily reflect the views of the Royalty Review Panel.

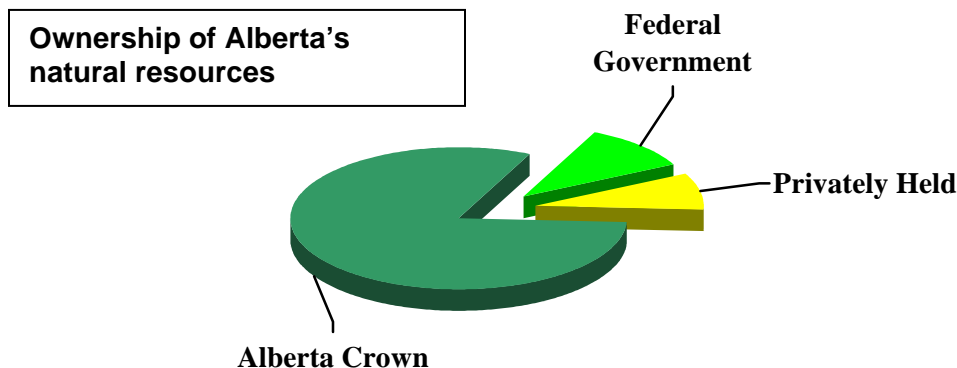
For more information about the terms of reference for the royalty review and the members of the Royal Review Panel, go to [www.albertaroyaltyreview.ca](http://www.albertaroyaltyreview.ca).

## Part 1: The facts about Alberta's royalties

### Who owns Alberta's oil and gas resources?

Although Alberta has a vast supply of natural resources, a large percentage of the supply is comprised of non-renewable, depleting resources.

In Alberta, 81 percent of mineral rights, including oil and natural gas resources, are owned by Albertans through the provincial government. The federal government owns a total of 10.6 percent which is held in trust on behalf of First Nations, and within National Parks. The remaining 8.4 percent are privately owned by corporations and individuals. Rights to oil and gas resources that are owned by individuals and corporations are called "freehold rights."



### What royalties, taxes and fees do companies pay?

The provincial government grants the right to explore for and develop Albertans' natural resources. In exchange, companies pay royalties to the provincial government as compensation for the sale of those resources.

In the case of freehold rights, the provincial government charges an annual tax for oil and natural gas production on those lands.

Royalties are not levied in isolation of taxes. The combination of various types of royalties and taxes is known as the fiscal system, which in Alberta consists of:

- Royalty System
  - The bonus bid system is the public offering of petroleum and natural gas resources owned by Albertans. The mineral rights are issued through a competitive sealed-bid auction system and the rights are leased to the highest bidder.
    - Licences and leases issued carry an annual rental fee of \$3.50 per hectare of Crown land covered by the agreement.
  - Royalties are levied based on the value of production.

- Taxes
  - A freehold mineral tax is levied on the value of oil and natural gas production from non-Crown (freehold) mineral rights. The rates vary for natural gas and oil,
  - Companies pay corporate income taxes to both the provincial and the federal governments, and
  - Local municipal taxes are charged where applicable.

### **How do production royalties work?**

Since 1930, when the province first gained ownership of its natural resources, a royalty system has been in place. The royalty system has evolved over time in response to changes in the discovery and processing of natural resources and other factors such as major shifts in costs and prices.

Today's royalty system involves a number of different classifications and categories. Different royalty systems are in place for conventional oil (oil that is pumped from wells located across the province), natural gas, and oil sands. With the exception of the oil sands, royalty rates reflect a combination of the market price of the resource and the productivity of the particular oil or natural gas well.

There also are a number of programs that offset or reduce royalties paid by oil and gas companies and provide incentives for such things as drilling marginal wells or using carbon dioxide to enhance the recovery of oil from existing wells. A full list of all the various credits and offsets as well as comparisons with other provinces is included in the *Oil and Gas Fiscal Regimes of the Western Canadian Provinces and Territories* report available at [www.energy.gov.ab.ca/317.asp](http://www.energy.gov.ab.ca/317.asp).

### **Conventional oil**

Crude oils are generally differentiated by the size of the hydrocarbon molecules they contain. For example, light oil flows easily through wells and pipelines and when refined, produces a large quantity of transportation fuels such as gasoline, diesel and jet fuel. Heavy oil, by comparison, requires additional pumping or dilution to flow through wells and pipelines. When refined, it produces proportionally more heating oil and a smaller amount of transportation fuels.

Royalty rates for conventional oil depend on a number of factors, including when the oil pool was discovered. Royalty rates for newly discovered pools are lower than royalty rates on oil produced from older pools. The cost per barrel of discovering and developing oil from newer pools tends to be higher because the pools are smaller than those discovered in the 1970s and 1980s. Most of the current oil in production in Alberta was discovered between 1974 and 1992.

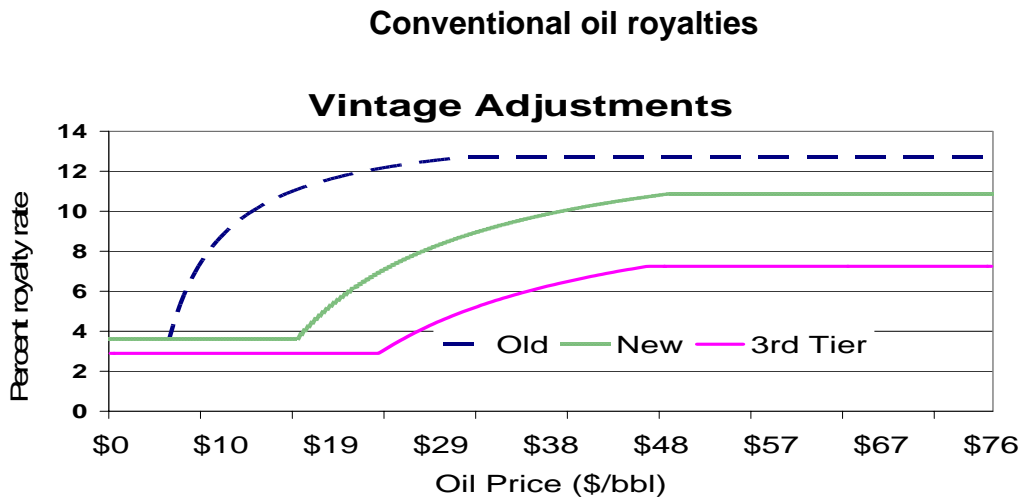
The royalty system includes three classifications (vintages) of conventional oil:

- Old oil – discovered before March 31, 1974
- New oil – discovered after March 31, 1974
- Third tier oil – discovered after September 1, 1992

Each oil well is unique, producing different grades and types of oil as well as different quantities. Consequently, the amount of royalties is calculated on each individual oil well, and based on:

- The volume of oil produced from the well
- The density of oil in the well (whether it is light oil or a heavier oil with a higher density)
- The well classification (based on the vintage of when the oil was discovered)
- A royalty rate factor that reflects the average Alberta market price.

Production characteristics vary considerably by well. Although the average royalty rate for conventional oil was about 15 percent in 2005, many wells in the province produce at levels at which lower royalty rates apply. The following example of a well producing 20 barrels per day is reflective of a typical well in Alberta.



Production is 20bopd

This chart shows how the royalty rates change for different vintages of oil and at different prices. It is based on an oil well that produces 20 barrels of oil per day. Wells that produce more, pay more in royalties. Wells that produce less, pay less. Above certain prices, the royalty rates remain the same, regardless of increases in price. For example, the royalty rates for a well producing 20 barrels a day of old oil are the same whether the price is \$29 a barrel or \$76 a barrel.

## Natural gas

Natural gas is a mixture of hydrocarbons, mainly methane, in a gaseous state. Water, oil, sulphur, carbon dioxide, nitrogen and other impurities may be mixed with the gas when it comes out of the ground. These impurities are removed before the natural gas is delivered to the end user.

Coalbed methane occurs as a result of the decomposition of organic materials during the coal formation process. Generally produced at lower pressures than conventional natural gas, it requires minimal processing before it is suitable for moving via pipeline.

Coalbed methane and conventional natural gas are subject to the same royalty system. The royalty rate for these products is determined by:

- When the gas pool was discovered
- Adjustments for both the price of natural gas and the cost of processing the Crown's royalty share of the gas
- Whether the well is a low producing well.

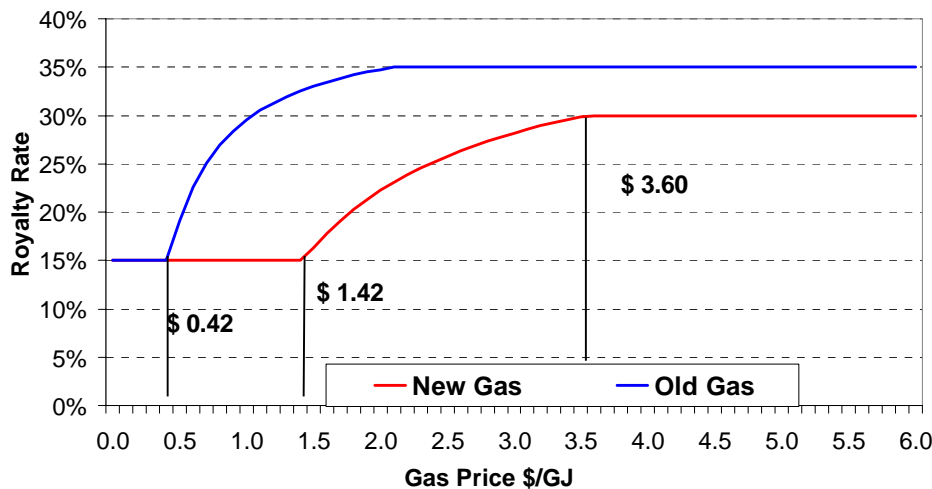
There are two classifications of natural gas: one for old gas discovered before December 31, 1973 and one for new gas discovered after December 31, 1973. About 90 percent of Alberta's current natural gas production was discovered in 1974 or later.

Generally, natural gas royalty rates start at 15 percent of production and increase to a maximum of 30 percent for new gas and 35 percent for old gas after the price reaches \$3.60 per gigajoule. An adjustment is made for lower-producing wells. This graduated adjustment can lower royalty rates to 5 percent. About 90 percent of Alberta's wells are considered low productivity wells.

In 2005, the average royalty rate on Alberta's natural gas production was 20 percent.

For natural gas byproducts (e.g. ethane, propane, butane, and pentanes plus), the royalties are related to the price of the products and can range from 15 to 50 percent.

**Current royalty rates for natural gas**



This chart shows how the royalty rates change for different vintages of natural gas at different prices. It is based on a gas well that produces more than 16.9 thousand cubic metres of gas per day. Wells that produce less, pay less. At certain prices, the royalty rates remain the same, regardless of increases in price. For example, the royalty rates for a well producing new gas are the same whether the price is \$3.60 per gigajoule or \$6 per gigajoule.

## Oil sands

Alberta's oil sands deposits are recognized as the second largest commercial oil deposits in the world, next only to Saudi Arabia. These deposits consist of bitumen, a molasses-like, viscous oil that will not flow unless heated or diluted with lighter hydrocarbons. Technological advances have allowed the economical development of Alberta's oil sands.

The current (generic) royalty system for Alberta's oil sands was established in 1997 and was specifically designed to encourage investment and development. At that time, the technology for extracting oil from the oil sands was new, the costs were high, the number of companies interested in the oil sands was limited, and there was no certainty that the process was economically viable. Also, in 1997, prices were in the \$27 per barrel range and the cost of producing a barrel of oil from oil sands was about \$15.

Prior to 1997, individual Crown Agreements establishing royalty terms had been separately negotiated with each oil sands project developer. This produced an ad hoc approach that was manageable given the small number of commercial oil sands projects in Alberta at the time. However, it did not provide certainty about the royalty treatment for future projects or a level playing field across all projects.

A generic royalty regime was put in place in 1997 specifically to encourage the establishment of the oil sands as a viable resource and industry, taking into account some of the barriers faced by oil sands developers. Unlike conventional oil and gas projects, with the oil sands, substantial investments of as much as billions of dollars are required to implement a project and it can take several years before oil is produced.

Under the generic oil sands royalty system, two royalty rates are set:

- A royalty rate of 1 percent of the project's gross revenue applies before "payout" – before the developer has made profit equal to the capital invested in the project, plus an allowance equal to the long term government bond interest rate, to recognize financing costs during the construction period.
- The royalty rate after payout is the greater of:
  - 25 percent of the project's net revenue (gross revenue minus allowable costs) or
  - 1 percent of the project's gross revenue.

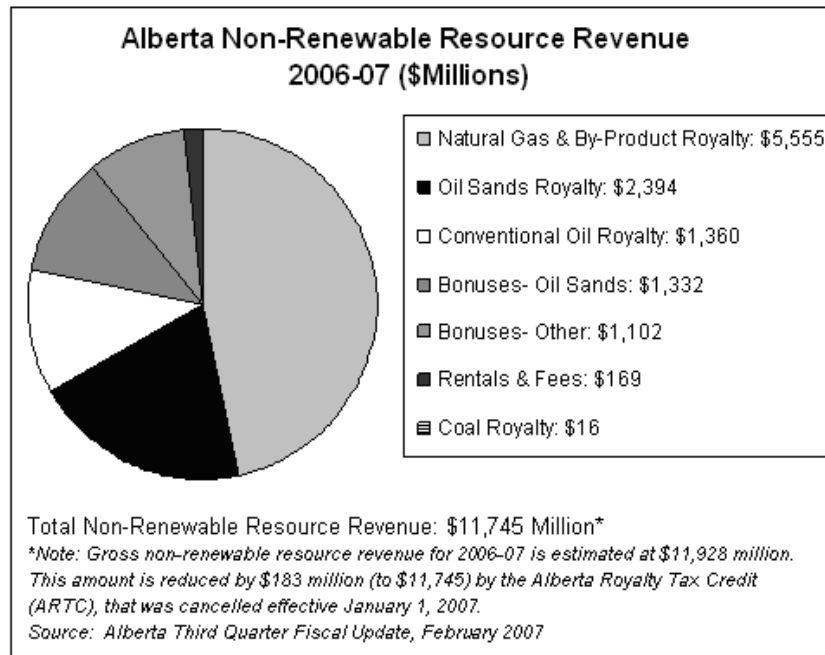
As of December 2006, there were 66 projects paying royalties under the generic royalty regime. Thirty-two were in the pre-payout stage and 34 were in the post-payout stage.

While at 25 percent the actual royalty rate is flat, the post-payout royalty regime provides an element of price sensitivity as profits are correlated with oil prices.

## How much does the province receive in royalties from natural resource development?

The provincial government receives resource revenue through a combination of royalties, bonus bids, and rental fees. Over the past five years, annual resource revenue has averaged \$9 billion, or 33 percent of Alberta's total revenues. In 2005-06, a record \$14.3 billion in non-renewable resource revenues was collected – nearly 40 percent of the total provincial revenues. The forecast for 2006-07 is \$11.7 billion. In addition to royalties, bonuses and fees, the provincial government also received freehold mineral taxes in the amount of \$334 million in 2005-06 and is anticipating \$315 million for 2006-07.

### Alberta Non-Renewable Resource Revenue



Further, energy companies pay federal and provincial corporate income tax, as well as local municipal taxes.

Alberta's fiscal situation relies on a number of factors, including the significant benefits from the province's energy sector. The fiscal contribution from this sector, whether it is \$3 billion or \$14 billion, is only one piece of the fiscal story and only one indicator of whether or not the royalty system is meeting the objective of providing a fair return to Albertans.

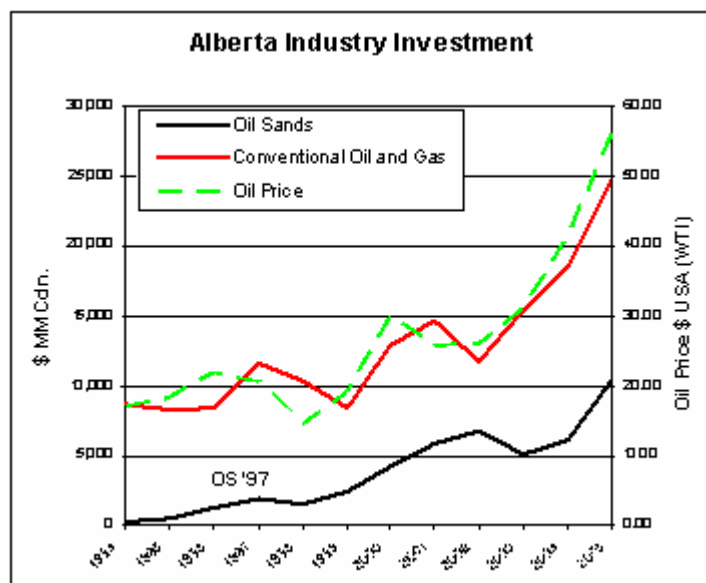
### The energy sector and Alberta's economy

Alberta is a province rich in natural resources and the energy industry has a significant impact on Alberta's economy. In 2005, energy resource exports accounted for

\$65 billion or 46 percent of Alberta's total exports of goods and services. The primary energy sector accounts for about one sixth of the province's real Gross Domestic Product. In addition to direct mining and exploration for oil and gas, there also are many spin-off companies and services that are driven by the energy industry.

Energy company profits have increased significantly due to a number of factors including increased world demand for oil and gas, high prices and technological advances.

From 1998 to 2005, there was an 80 percent increase in total conventional oil and natural gas wells and a 74 percent increase in overall expenditures on oil and natural gas. In the same time period, there was a 300 percent increase in investment in the oil sands. Production of oil from the oil sands has also exceeded expectations.



## Part 2: What objectives should Alberta's royalty system achieve?

The overall objective of Alberta's royalty system is to provide a fair return to Albertans as owners of the province's energy resources. A number of factors are taken into account to achieve that objective.

Since all of Alberta's energy resources are developed by the private sector, the royalty system has to strike a balance between providing a sufficient incentive for companies to explore for and produce Alberta's resources while, at the same time, providing a fair return to the people of Alberta.

The royalty system also considers the risks involved to companies given the significant investments that are required to explore for and produce oil and natural gas. There is a risk that exploration may not result in productive wells. Historically, prices for oil and gas

are highly volatile. All of these factors are considered in developing an effective royalty system for Alberta.

Within the context of providing a fair return, Alberta's current royalty system is designed with three other objectives in mind:

- To extend the life of mature oil and natural gas pools to maximize recovery
- To promote the development of new and more efficient technologies
- To promote the exploration and development of new reserves.

In the case of the oil sands, the royalty system was specifically designed to take into account the large capital investments required and the length of time it takes before individual projects result in actual production of oil. When the current system was introduced in 1997, it was intended to encourage investment in the oil sands.

### **Economic rent**

When economists address the issue of fair share, they typically refer to a concept called "economic rent", which describes the level of profit above a normal rate of return. As developers and producers, oil and gas companies expect to generate a reasonable rate of return and profit from their investment and the risk they take in developing Alberta's resources. The Province, as owner of the resource, wants to recover as much of the economic rent as possible, while at the same time facilitating development of the resource.

The purpose of the royalty system is to capture economic rent. However, capturing the appropriate amount of economic rent can be difficult to achieve in practice. If too much "rent" in the form of royalties is taken, it can discourage development of the resource and reduce economic growth. On the other hand, if not enough rent is collected, resource owners will not be compensated adequately for the sale of their non-renewable asset.

Economists distinguish between royalties and taxes. Taxes are intended to cover costs of services such as police and fire protection, education and health care. Royalties, however, are not a tax and are levied simply as a right of ownership.

### **Comparisons with other jurisdictions**

When considering where to invest, energy companies take into account a variety of factors, including royalty systems and tax structures. Other considerations for companies include the market conditions, prices, costs, available resources, and political risk factors. As a result, most inter-jurisdictional comparisons of fair share take into account the combined royalty and tax revenues in addition to these other investment factors.

Each jurisdiction designs its royalty and tax systems to meet its own unique objectives and circumstances. Comparisons are extremely difficult, so choosing the proper jurisdictions for comparison is important. For example, many comparisons are made between Alberta, Alaska and Norway. However, the resource conditions are quite different across these jurisdictions. For example, Alaska has about 2,500 oil and natural gas wells, while Norway has about 1,000 wells. In contrast, Alberta has about 120,000 oil and natural gas wells.

The type of oil being produced is also important. The bitumen that is produced in Alberta is a lower value heavy oil compared to the much lighter and higher valued oil being produced in Alaska and Norway.

### **What are the trends for the future?**

It is difficult to predict future trends for Alberta's revenues and its energy sector because prices for oil and natural gas are notoriously volatile and production can change as a result of a number of factors including changes in prices or costs.

That being said, there are some trends that are evident in the oil and gas sector:

- Alberta's conventional crude oil and natural gas resources are maturing and production is decreasing.
- The average productivity of conventional oil and natural gas wells has been declining. That means existing wells are producing less oil and gas while costs for producing each unit of oil and gas are increasing.
- Non-conventional oil, or bitumen, from the oil sands, will account for an increasing proportion of overall production in the province. In 1996, conventional oil accounted for about 70 percent of total production in Alberta and non-conventional production accounted for only 30 percent. By 2011, conventional crude will make up only 20 percent of production and non-conventional oil will make up 80 percent.
- The Alberta Energy and Utilities Board forecasts conventional natural gas production will decline from now until 2015. Non-conventional sources of natural gas such as coalbed methane are expected to only partially offset the decline.
- National and international demand for Alberta's oil and natural gas is expected to increase.

The relationship between the level and structure of royalties and how much development occurs in the oil and gas industry is difficult to predict. Royalties are just one of the factors companies consider in deciding how much exploration they do, how many wells they drill, and whether they invest further in the oil sands. Changes in the prices of oil and gas, in costs to industry, and in the exchange rate between Canadian and US dollars also affect choices. So can the availability of opportunities for investment in other provinces, states or countries.

### **Part 3: Other issues and ideas**

This document is intended to provide background information on Alberta's royalty systems.

Please visit the Royalty Review Panel website at [www.albertaroyaltyreview.ca](http://www.albertaroyaltyreview.ca) to provide your suggestions in writing or through a presentation to the Royalty Review Panel. Instructions on how and where to make submissions are provided on the first page of this document.

#### **If you have questions about Alberta's royalty review, please contact:**

*Telephone: (403) 297-8173 (9 a.m. – 4 p.m.)*

*Email: [royaltyreview@gov.ab.ca](mailto:royaltyreview@gov.ab.ca)*

*To call toll-free within Alberta, dial 310-0000.*

#### **If you have questions about Alberta's royalty review, please contact:**

For more information about the terms of reference for the royalty review and the members of the Royal Review Panel, go to [www.albertaroyaltyreview.ca](http://www.albertaroyaltyreview.ca)

In keeping with the principle of transparency, all submissions provided to the panel or its Secretariat – whether from individual Albertans or from other interested parties – will be made publicly available on the panel website in accordance with the panel's "Royalty Review Panel Privacy and Submissions Policy" at [www.albertaroyaltyreview.ca](http://www.albertaroyaltyreview.ca).

This means that your name will be published along with your complete submission; but your personal contact information (home address, phone number and email) will be removed. **Please do not submit any personal or confidential business information to the Panel that you do not wish to be made public.**

Submission of your personal information to the panel will be an indication that you have read the panel's Privacy and Submissions Policy and accept its terms. You understand the panel's intent to publish your information on their website and authorize the panel to do so. If you have any questions concerning the collection, use or disclosure of your information, please contact (403) 297-8173.