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Alaska Gas Marketing Study

A Review of RIK Sales Processes

September 15, 2004

I. INTRODUCTION

A. Scope of Work

1. Lukens Energy Group ("LEG") was engaged to assist the Alaska Department of Natural Resources ("DNR") by performing a Review of RIK Sales Processes. The scope of LEG's engagement was defined as:

    a) Review and summarize existing State and federal requirements for selling gas royalty production.

    b) Define market value relative to lease requirements, regulations, and industry.

    c) Review processes used by other states, MMS, and Alberta to market royalty production.

    d) Determine/ recommend sales processes the state should consider.

B. Major Issues to Consider

1. In reviewing the sales processes, there are several issues to consider. The main issues are discussed in the following paragraphs.

2. One of the key issues is whether there are there any restrictions on the method of RIK sales. For example, there may be restrictions on participation or involvement in negotiated contracts as opposed to a competitive bid out process.

3. A second key issue is what the requirements are to meet selected benchmarks. Some potential benchmark requirements to measure RIK performance against could be:

    a) Best Interest of the State

    b) Royalty in Value

    c) Market Value Test

4. The third key issue is whether there are any restrictions in paying for marketing related expenses such as transportation, processing and other expenses accrued.

II. REVIEW STATE AND FEDERAL STATUTORY/ REGULATORY GUIDELINES

A. Alaskan RIK Guidelines

1. Alaska's RIK program provides that royalties should be taken in kind unless the commissioner has deemed taking the gas in value would be in the best interest of the state:

> 'Any royalty provided for in Alaska Land Act may be taken in kind rather than in money if the commissioner determines that the taking in kind would be in the best interest of the state. However, **royalties on oil and gas shall be taken in kind** unless **the commissioner determines** that the taking in money would be **in the best interest of the state**.' (A.S 38.05.182)

2. The commissioner dictates the need for a competitive bid in Alaska for its RIK gas after submitting notice to the Advisory Board:

> 'The sale, exchange, or other disposal…shall be by **competitive bid** and the sale, exchange, or other disposal made to the highest responsible bidder, **except** that competitive bidding is not required when the commissioner…determines that **the best interest of the state** does not require it or that **no competition exists**.'
>
> 'When competitive bids are required, the commissioner…may reject all bids on a determination that ….acceptance of the bids would not be in **the best interest of the state**.'
>
> 'If the commissioner determines that a sale…shall be made otherwise than by competitive bid…the commissioner shall make public in writing the specific findings and conclusions upon which that determination is based.' (A.S 38.05.183)

3. Under conditions of non-competitive negotiations, bids are awarded in Alaska on the basis of the 'maximum benefits to the citizens of the state':

> 'When a sale is made **other than by competitive bid**, the sale, exchange, or other disposal shall be awarded by the commissioner to the prospective buyer whose proposal offers the **maximum benefits to citizens of the state**.' (A.S. 38.05.183)

4. Alaskan Gas and Oil royalties by statute must be sold within the State unless given notice:

'..royalty share may not be sold or otherwise disposed of for export from the state until the commissioner determines that the royalty-in-kind oil or gas is surplus to the present and projected intrastate domestic and industrial needs...' (A.S. 38.05.183)

B. MMS RIK Guidelines

1. The Minerals Leasing Act ("MLA"), passed in 1920, included a provision that enabled MMS to take royalties in-kind:

   'Sec. 192… All royalty accruing to the United States under any oil or gas lease or permit under this chapter on demand of the Secretary of the Interior shall be paid in oil or gas…the Secretary of the Interior may sell the current product (oil or gas) at private sale, at **not less than the market price**…'

2. The 1953 Outer Continental Shelf Lands Act ("OCSLA"), which also enabled RIK, included the requirement for MMS to receive fair market value for all RIK sales:

   Sec. 27(b)(1) for oil and (c)(1) for gas have the language that the Secretary '…may offer to the public and sell by **competitive bidding** for not more than its regulated price, or if no regulated price applies, not less than its **fair market value**, any part of the [oil/gas] obtained by the United States pursuant to any lease as royalty or net profit share....'

3. In addition, Congress has passed budget appropriations language that explicitly authorized RIK for the following fiscal year. Example of the language included in the current annual appropriations:

   '… MMS may… use a portion of the revenues from royalty-in-kind sales, **without regard to fiscal year limitation, to pay for transportation to wholesale market centers** …, and to **process or otherwise dispose of** royalty production taken in-kind.'

4. The proposed Energy legislation includes several additional RIK guidelines:

   'Sec. 30201 (b)(3)(A)… The Secretary of the Interior may sell or otherwise dispose of any royalty production taken in-kind… for not less than the **market price**…'

   'Sec. 30201 (b)(4)… The Secretary of the Interior may… retain and use a portion of the revenues from the sale of oil and gas royalties taken in-kind… **without regard to fiscal year limitation**…'

> 'Sec. 30201 (d)… The Secretary of the Interior may receive oil or gas royalties in-kind only if the Secretary determines that receiving such royalties provides benefits to the United States **greater than or equal to those likely to have been received had royalties been taken in value**.'
>
> 'Sec. 30201 (e)… the Secretary of the Interior shall provide a **report to the Congress** that describes actions taken to develop an organization, business processes, and automated systems to support a full royalty in-kind capability to be used in tandem with the royalty in value approach to managing Federal oil and gas revenues.'

C. Alberta RIK Guidelines

1. The Province of Alberta first passed legislation in 1974, which mandated that crude oil produced in the province of Alberta would be taken and sold through an RIK process.

   > 'the royalty reserved to the Crown in right of Alberta shall be deliverable in kind'

2. During a period of deregulation from 1985-1995, Alberta not only marketed its RIK oil, but also aggregated and sold crude oil for a number of producers.

3. The Alberta Government set up a commission to execute the RIK oil program.

4. Currently only oil is handled under the Alberta RIK system. Natural Gas royalties are collected in-value.

5. There does not appear to be any statute or regulation that discusses fair market value as a benchmark. As an administrative matter, the Crown has established that the publicly available posted prices for Canadian crude oil represent a market price.

D. Louisiana RIK Guidelines

1. Louisiana outlines RIK contracts to be made under public bids in most instances followed by a Board review:

   > 'The board may contract under terms which it deems to be **most advantageous to the state** with (parties) for the sale and/or use of such royalties' (R.S. 30:142)

2. Louisiana gives preferred status to human needs and depressed industry interests with non-public negotiations:

'The board is authorized to negotiate contracts with applicants desiring the acquisition and use of the in-kind natural gas royalties to **satisfy and meet human needs**, and **public bidding shall not be required**. Human needs for purposes of this Section are defined as those needs involving the **public health, welfare, safety, and economic well-being**…' (R.S. 30:142)

'Sales ..to a certified depressed energy-intensive industry **shall be at a price which will enable that industry to restart and/or continue the operation** of its Louisiana facility and that price, established by the board, may be less than the average price of purchases reported to the Public Service Commission by intrastate pipeline companies.….' (R.S 30: 142)

3. Contracts allowed under arms-length negotiations shall not be less than a price index benchmark:

'… the price at which any natural gas is to be sold **shall be not less than** the first of the month published price for the subject month for Henry Hub natural gas as reported in Platts Inside FERC…' (R.S 30: 142)

'…for those leases for which an **existing pricing mechanism** provides a higher price than the above published price, the price the state receives for those specific leases **shall not be less than the existing pricing mechanism**…' (R.S 30: 142)

E. New Mexico RIK Guidelines

1. New Mexico allows for its Board of Land Commissioners to exercise the option of taking royalty fees in kind:

'..at the **option of the lessor** … the lessee shall pay ..as royalty one-eighth part of the gas produced and saved from the leased premises, including casing-head gas' (NMSA 19-10-41)

2. State Statutes prevent the Board from selling Royalty Gas at less than the net consideration of royalties being received in value in negotiations following a public bid:

'Upon granting any oil or **gas** lease upon public lands in the state.., the commissioner of public lands may offer for sale … by competitive bidding a portion or all of the **royalty'** (NMSA 19-10-67)

'The commissioner shall have the authority to negotiate and enter into agreements for the sale or exchange of royalty gas taken in kind under leases issued by the state.. he **shall not** dispose of said gas for **a net consideration of less than that being received at the time of exercising the option**.' (NMSA 19-10-61)

3. The commissioner is entitled to make private sales if it is determined by the commissioner the highest bid is not in the public interest:

> '.. If **no satisfactory bid** is received or where the accepted bidder fails to complete the purchase or where the **commissioner of public lands shall determine that it is unwise in the public interest** to accept the offer of the highest bidder.. (he) may re-advertise such royalty oil for sale, sell it at a **private sale** at **not less than the market price** for such period or accept the cash value thereof from the lessee.' (NMSA 19-10-67)

4. New Mexico gives preferred treatment to interstate refineries in times of low supply by waiving public bid requirements as well:

> 'When a determination has been made that sufficient supplies of refinery charge stocks are not available .. (New Mexico) shall grant preferences to such petroleum refineries… for processing … but not for resale in kind…**at private sale and at not less than the market price'** (NMSA 19-10-67)

5. Market Value guideline for like kind and quality

> 'Market price is equal to the **maximum** price being paid for gas of like kind and quality and under like conditions in the same field or area' (NMSA 19-10-4)

F. Texas RIK Guidelines

1. Commissioner of the General Land Office has contract authority following the collection of Texas royalty gas:

> 'The **Commissioner (GLO) may negotiate and execute contracts** or any other instruments or agreements necessary to dispose of or enhance their portion of royalty in kind to secure or guarantee payment' (T.S. §52.133)

2. Texas focuses on providing state gas to state agencies, for which the RIK program historically has represented a valuable cost-savings.

> 'The (GLO) shall review and must approve any contract entered into by a state agency for gas ….
>
> Before approving a contract, the land office shall ensure that the agency, to meet its energy requirements, is using, to the **greatest extent practical**, **natural gas produced from leased land**.' (T.S 31.401)

3. The GLO goal is to provide RIK gas at a savings to state run operations:

'GLO will not approve a contract using non-state gas if it determines that it can provide gas at the same, or a lower price.' (Texas Administrative Code Title 31 Part 1 Chapter 8.4)

G. Wyoming RIK Guidelines

1. Wyoming regulations dictate Land Board Commissioners must dispose of its royalty in kind gas to the greatest benefit to the state:

   'The Board shall dispose of royalty oil and gas.. in the judgment of the Board..to the **greatest benefit of the state** land trust beneficiaries. The Board may dispose of royalty oil and gas…at **no less than the market price**.' (Chapter 7 Board of Land Commissioners Wyoming)

2. Public Bidding is established through notifications. Refineries are notified if they have previously registered with the state and are given a longer royalty contract that is available for gas bidders and others:

   'Any eligible refiner who is interested in purchasing royalty oil may **file with the Office** a **request to be notified** of any royalty sales. After the Board has decided to sell its royalty oil, the Office shall notify all eligible refiners who have made this request of the proposed sale.'

   'Contracts for the sale of royalty oil to eligible refiners within the state shall be for a maximum term of **two (2) years**.'

   (Chapter 7 Board of Land Commissioners Wyoming)

3. For royalty oil and gas sales to responsible bidders, the Office will solicit bids under the terms and conditions set out by the Board, with a considerably shorter guaranteed contract length.

   'The Director shall examine all bids filed by responsible bidders to a royalty volume sale, and shall award upon Board approval, royalty oil or gas to the bidder(s) offering the highest price for the oil or gas available for the period available, relying on market indices and comparable value experiences for like production in quality and general location.'

   'The purchase term for oil and gas sales to responsible bidders shall be for no greater than **six months** from the contract effective date, and monthly thereafter by agreement of both parties.'

   (Chapter 7 Board of Land Commissioners Wyoming)

4. Qualified marketers must have annual third-party sales in excess of $20,000,000 and fall under similar public bid requirements:

'The Office is authorized to negotiate…with any qualified oil or gas marketer. Marketers shall take possession …at the wellhead and negotiate all the terms for lease transfer, volume transportation, delivery scheduling, and sale value.' (Chapter 7 Board of Land Commissioners Wyoming)

5. Wyoming specifically outlines the comparison of RIK to RIV in its regulations as a requirement of the Board:

'The Office is authorized to exchange crude oil and natural gas on an equal value basis with any of its lessees or operators, responsible bidders, or eligible refiners in order to obtain a **ultimate sales price that is greater than that which would have been received for the same collective volume of oil or gas on a cash royalty basis**.' (Chapter 7 Board of Land Commissioners Wyoming)

6. Market price is driven by the bid process in Wyoming:

'… means the **highest price offered** in an open bid/negotiation process by an eligible refiner, qualified marketer, or responsible bidder and **accepted by the Board**….' (Chapter 7 Board of Land Commissioners Wyoming)

III. COMPARISON BETWEEN STATE, FEDERAL AND ALBERTA RIK PROGRAMS

A. MMS RIK Program

1. Overview of Activity

a) *Wyoming RIK oil* –The oil RIK pilot project began in October 1998 and is now operational. Current bid out, Oct 2004-Mar 2005 has about 2500 bbls/d; down from around 4,000 bbls/d.

b) *Texas 8(g) RIK gas* – This pilot began in June 1999 and rolled into MMS GOM gas program. Total of 28,565,503 MMBtu of gas was sold under this pilot from June 1999 through December 2000, and the total value of all RIK gas sold was $99,620,227. MMS' draft report on this pilot concluded that RIK pilot revenues were increased by about 1 %. Currently about 75 mmcfd.

c) *GOM RIK gas* – The Gulf of Mexico ("GOM") gas pilot program began in 1999 and has since been combined with the Texas 8(g) program and Louisiana 8(g) program. Currently marketing over 550 mmcfd over 8 pipeline systems.

d) *GOM RIK oil* – The GOM oil pilot program began in 2000. Majority of volumes have been rolled into the SPR program. Current bid package has about 15,000 barrels/d.

e) *RIK Small Refiner Program* – Although the Small Refiner Program has been in operation for some time, it began utilizing the RIK bid-out process in January of 2000. Currently about 50,000 bbls/d ; between GOM and California leases

f) *RIK oil SPR program* – The SPR program was initiated in 1975. RIK oil has been used for volume additions to the SPR on two occasions. Starting in 2001, MMS and DOE initiated a 120 million barrel fill program to reach the SPR's full capacity of 700 million barrels. Expected completion-mid 2005.

2. Current Business Model

a) RIK gas sales are conducted through a bid-out process. The gas is sold at the royalty meter or production area pooling point and delivered at either the royalty meter or first pooling point. The sale is tied to an index (first-of-month and daily) and has base and swing components.

b) RIK crude oil disposition includes three components: i) MMS bids out SPR volumes for transportation and quality differentials, ii) MMS bids out Small Refiner volumes with pricing based on NYMEX or Koch Postings and iii) Wyoming bid outs at lease with pricing based on average of 4 postings, NYMEX, or Canadian postings.

c) The length of contract terms is less than or equal to one year. Gas sales have terms of five months (winter deals), seven months (summer deals) or one year. Oil sales are typically six month or one year terms.

d) A choice of multiple methods is accepted in the price methodology. Index-based and NYMEX based prices are used in bidding process.

e) MMS subscribes to certain transportation/processing capacity. This allows for more efficient aggregation of gas and enables decreased cost and increased netback. Interruptible Transportation ("IT") contracts are used by purchasers to schedule oil/gas and the dispatching of RIK sales are performed by the purchasers.

f) MMS is engaged in very limited risk management activity including credit monitoring. There are no price hedging positions.

3. Five Year Business Model Extensions

   a) Diversify sales portfolio

   b) Aggregate volumes to pipeline pools or market centers

   c) Optimize processing contracts

   d) Optimize productions area transportation and market opportunities

   e) Explore production exchanges

4. Specific Commercial Goals & Objectives

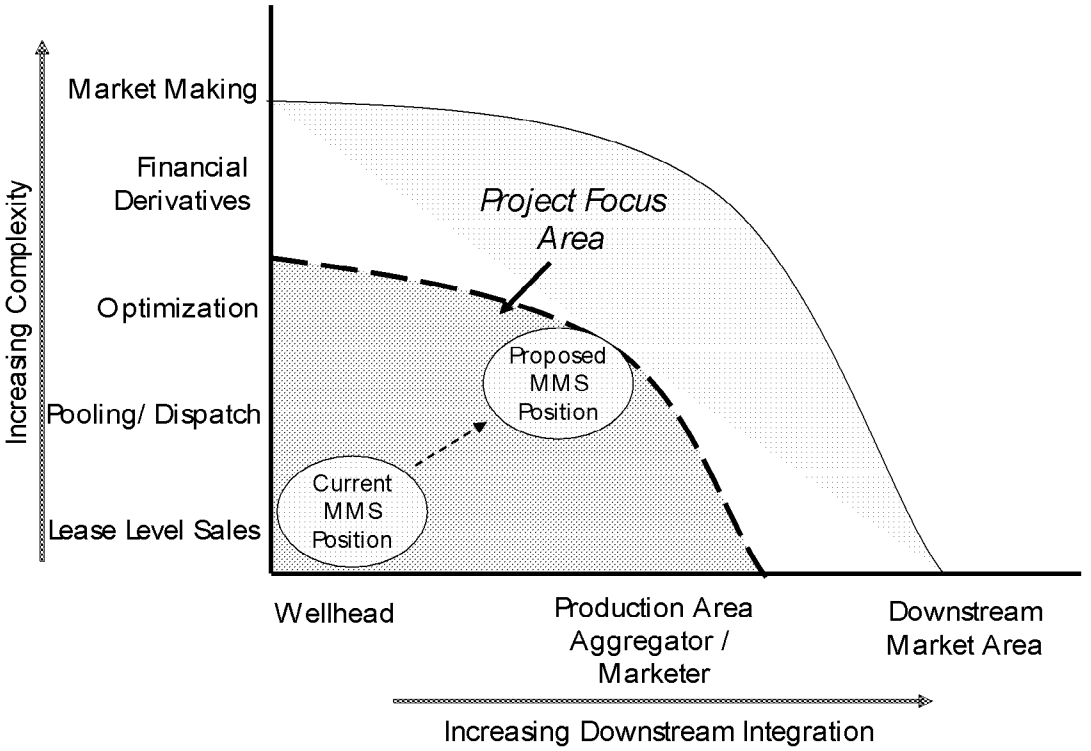
a) Realize maximum benefits by optimizing RIK volumes – The goal for RIK Gas volumes is growth up to 1.3 bcf/d by fiscal year 2009. The goal for RIK Oil volumes is to maintain level volumes less than 190,000 bbls/d through fiscal year 2009.

b) Enhance net revenue benefits by $50 million over the five-year plan.

c) Develop a high quality marketing portfolio through diversification. Diversification of customers involves increasing sales to utilities/industrials to up to 20% of all gas sales. Diversification of the contract portfolio involves increasing non-seasonal sales to up to 35% of all gas sales.

5. Proposed MMS Marketing Position

a) Marketing organizations position themselves depending on the level of complexity and the level of downstream integration that desire to participate at. Conservative companies sell their production at the wellhead with minimum complexity. In contrast, more sophisticated marketing organizations choose to market further downstream using more complex marketing tools, undertaking higher risk for higher returns.



b) MMS' marketing position as it emerges from the pilot program is currently is at the conservative end of the spectrum. As the RIK program gains more experience, it is anticipated that MMS will engage in more sophisticated marketing practices such as pipeline pooling and optimization and sell its production as a production area aggregator/marketer as indicated in Figure No. 1.

6. Future Contracting Considerations

a) Length of contract terms – Currently gas sales typically have terms of five months (winter deals), seven months (summer deals) or one year while oil sales typically have six month or one year terms. Additional diversification of sales portfolio through varying contract terms and staggered sales will be considered in the future.

b) Price methodology – Currently a choice of multiple methods is accepted and index-based and NYMEX based prices are used in the bidding process.

c) MMS subscribes to certain transportation/processing capacity which allows for more efficient aggregation of gas and enables decreased cost and increased netback. Interruptible Transportation ("IT") contracts are used by purchaser to schedule oil/gas.

d) MMS engaged in limited risk management activity including daily credit monitoring. There are no price hedging positions.

e) Contracting Options - RIK gas sales contracts are sold through bid-out process or negotiated contracts. The gas is sold at facility measurement point or production area pooling point and delivered at either the facility measurement point or production area pooling point. The sales are tied to an index and have base and swing components.

- Contracting Options - RIK crude oil disposition is completed through a variety of options including negotiated contracts and completing production swaps. MMS bids out SPR volumes for transportation and quality differentials. MMS bids out Small Refiner volumes with pricing based on NYMEX or Koch Postings. Wyoming bid outs at lease with pricing based on average of 4 postings, NYMEX, or Canadian postings.

B. Alberta RIK program

1. Background

a) Mandatory crude oil RIK required in 1974 legislation. Originally, Alberta Department of Resource Development (ADRD) performed the commercial marketing functions. ADRD began to market its crude oil utilizing private sector agents June 1, 1996 and entered into 5 year contract in summer of 2002 with Encana, Tidal Energy.

b) No natural gas is currently taken in kind, but being considered

2. Description of RIK program

a) Mandatory RIK for oil and marketing agents are used to sell oil.

b) Integrated companies are not considered for agent role in Alberta. Private agents take on certain risks such as volume risk and exchange rate risks.

c) ADRD takes possession of oil at one of 5,000 batteries in Alberta. Currently taking about 100,000 bbls/d.

d) Posted prices (Platts) are used as the benchmark for oil sales – Bow River, Hardisty, Edmonton. Deemed to be fair market value.

e) No financial hedges taken by ADRD.

f) 34 people in Calgary and Edmonton that verify agents' marketing activities.

g) The vast majority of sales prices meet or exceed price benchmarks for royalty sales.

h) Compared to the MMS, Alberta has a mature RIK program as shown in Figure No. 3.

Alberta
No RIV Option – Alberta has a mandated RIK program
Less oversight of the Alberta RIK program partly due to the stability and longevity of the program
Only conventional oil is handled in the Alberta RIK program
The oil infrastructure in Alberta is well developed and less complex
Alberta has straightforward benchmarks (i.e. Canadian posted prices)
Alberta out sources the marketing function to agents
Alberta cites reduction in administrative expenses
Royalty volumes are variable – depend on price levels

MMS
Although the MMS RIK/RIV option can add value, it also introduces a certain level of complexity
Considerable oversight of MMS' RIK pilot program
MMS' RIK model includes both oil & gas
More complex oil & gas infrastructure in the US
Multiple indices – benchmarks are generally not well defined
MMS does not use marketing agents
MMS cites reduction in administrative expenses
Royalty volumes are more certain

C. Louisiana RIK Activities

1. Currently partnering with MMS on OCSLA 8(g).

   a) For crude oil, the RIK activity started in October 2003. Currently 1,100 barrels per day of Heavy Louisiana Sweet crude are being sold in the RIK program with commingled MMS volumes. MMS handles marketing of the crude oil.

   b) For natural gas, the RIK volumes are approximately 25 mmcfd and these volumes are included with MMS in GOM sales packages.

2. Louisiana is currently evaluating feasibility of an onshore RIK program for oil and gas. This effort involves identifying market opportunities and looking for synergies with the MMS RIK program.

D. Texas RIK Activities

1. Annual revenue for in-kind oil, gas, and electricity sales for the 2003 fiscal year exceeded $135 million, resulting in a savings to GLO customers of over $62 million.

2. As of September 1, 2003, the Public Customer Gas Program has served 92 customers.

3. Fiscal year 2003 quantities are over 26.7 bcf of RIK gas and over 631,749 barrels of RIK oil.

4. Fiscal year 2003 breakdown:

   a) 49%($83,226,026.49) of gas taken vs. 51% ($83,600,201.73) of monetary royalty payment

   b) 39.57%($16,111,200.00) of oil taken vs. 60.43% ($24,601,865.20) of monetary royalty payment

E. Wyoming RIK Activities

1. The Wyoming RIK program started in October of 1998 and the latest IFO was for October 2004 through March 2005.

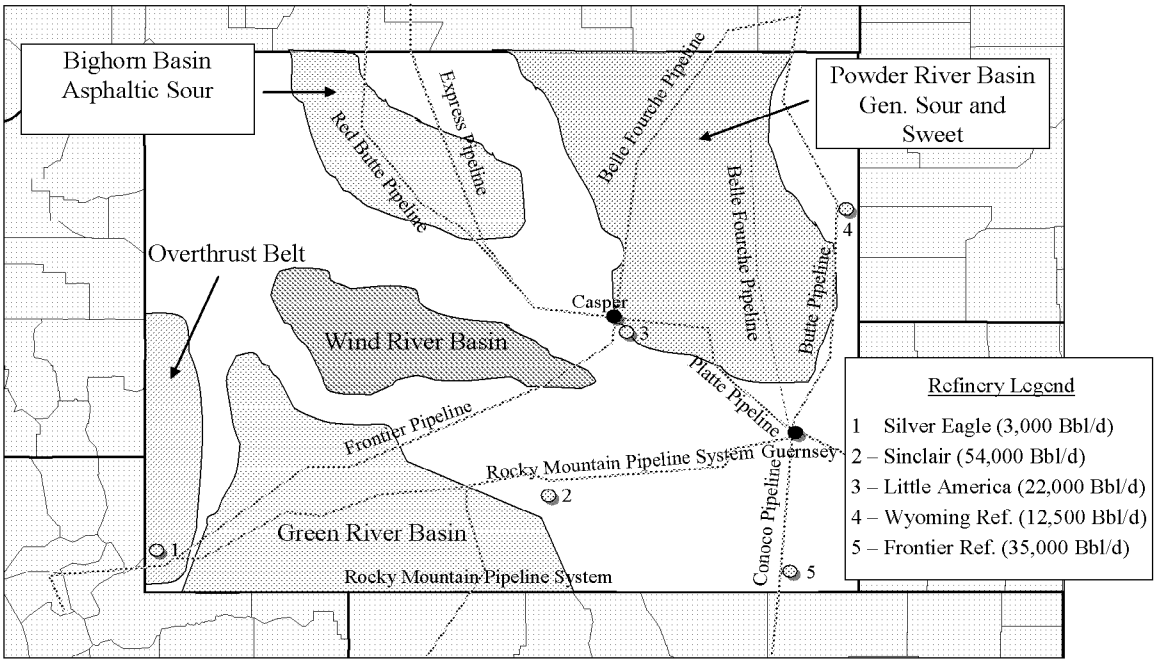
2. The prevalent crude oil grades produced in Wyoming are Asphaltic sour, general sour and Wyoming sweet.

3. Typically, net bids at lease level have been higher than those at the corresponding market centers. This is an indication that purchasers have lower transportation costs.

4. The number of bid participants has varied for certain grades of crude oil.

5. The 2001 Wyoming Oil Royalty In Kind Pilot report looked at first 18 months. The assessment concluded that the pilot had reduced the cycle time for royalty compliance and increased net revenues by approximately $810,000.

6. MMS RIK oil comes primarily from Big Horn and Powder River Basins as shown in Figure No. 3.



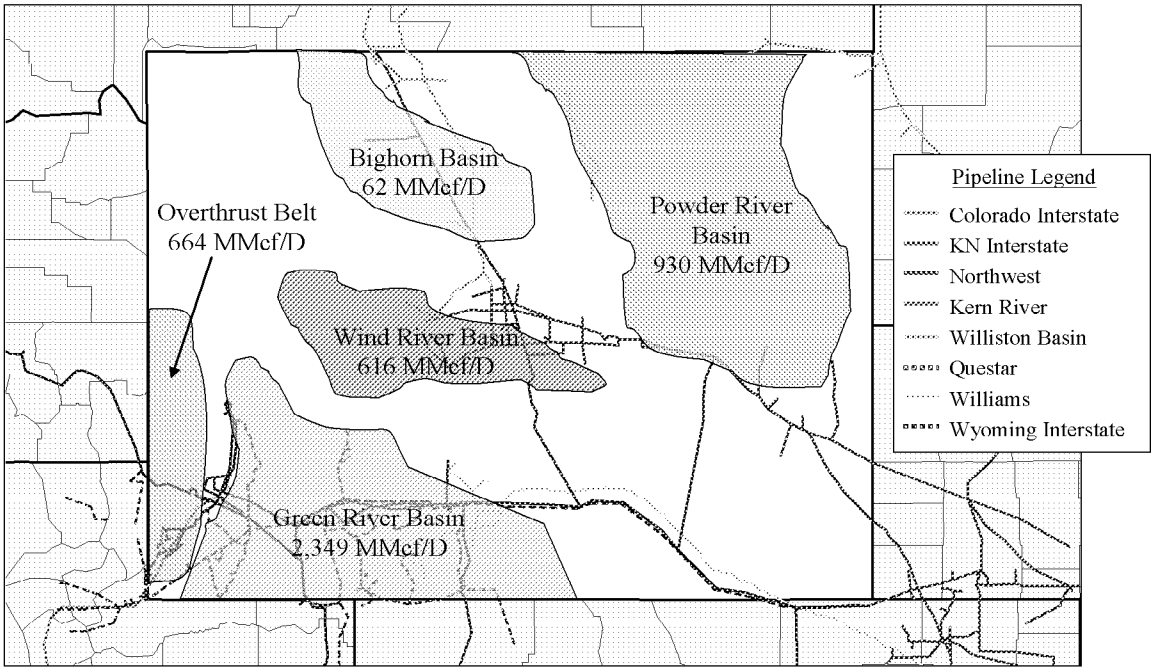
7. Wyoming/MMS are considering an RIK gas program

   a) Basis differential between Wyoming and Gulf Coast gas has narrowed since the expansion of the Kern River pipeline.

   b) The majority of Wyoming royalty gas comes out of the Green River Basin as shown in Figure No. 4. Green River, Powder River and Wind River Basins have all increased production levels over the past five years.

   c) Pipeline capacity in the Rocky Mountain region is highly utilized during peak seasons.

d) Several capacity expansion projects are under construction or on the on the drawing boards. Cheyenne Plains allows additional capacity going to eastern markets. Additional Kern River expansion to California is also being planned.



IV. BENCHMARKING RIK

A. There are several key issues that are critical in defining a benchmark to measure RIK performance:

1. Determine the metric for RIK performance measurement

    a) Commercial

    b) Regulatory

2. Location along Value Chain for performance measurement

    a) Wellhead, Tailgate transfer meter, Downstream pooling point

3. Availability of data

    a) Royalty in value

    b) Transparent market indicators

4. Methodology used in determining the benchmark for comparison

    a) Consistent and repeatable over different time frames

B. Principles for Establishing RIK Performance Benchmark

1. The benchmarks implemented should adhere to statutory/regulatory requirements

2. Be adaptable as the State's RIK business model evolves.

3. Support the development of marketing strategies. This includes providing decision-making support for assessing alternative marketing strategies.

4. The benchmark methodology should be as transparent as possible.

C. Metric for RIK Performance Measurement

1. There are several metrics that can be considered in measuring RIK performance such as:

    a) Revenue metrics including gross revenue and net revenue

b) Credit metrics

c) Efficiency metrics

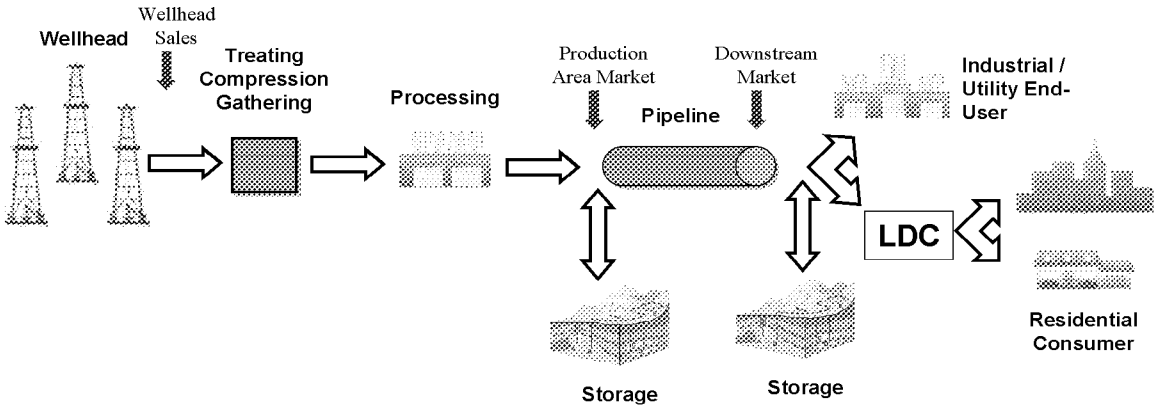
2. Net revenue is the realized market price for gas sales plus/minus adjustments to achieve the realized market price of the gas. Adjustments can include the cost of transportation and processing.

3. The net revenue metric is a key metric to measure since it represents the State's share of royalty net of costs and provides the best measure of the benefit to the State.

D. Location for Measurement of RIK Performance

1. It is critical to define the span of RIK marketing to measure the performance consistently

2. As shown in Figure No. 5, there are several locations along the value chain that the RIK production can be sold at. It is essential to define where the measurement of RIK performance will be made.



3. The main alternatives for measurement location are the wellhead, the production area market and the downstream market. The measurement location should ideally be chosen to reflect the marketing practices of the organization.

E. Availability of Data

1. Typically, actual RIV data would be required to create a suitable benchmark. It is possible to create a process to use recent historic RIV data and project it forward for the RIK performance period. The State should consider obtaining information on the lessees' Alaska gas sales using data submitted by for tax purposes. The availability of RIV data places the biggest constraint on establishing a benchmark to evaluate RIK performance. In the absence of RIV data, an RIV proxy can be created to measure RIK performance.

2. In the MMS model, an RIV Proxy is created using market information:

   a) If RIV data is not available, then market information will be needed to create an approximation of lessees' sales practices to estimate RIV performance.

   b) This process will include gathering detailed market information on market prices, transportation costs and processing costs for the markets where Alaska gas is sold.

   c) A database of this information should be created and maintained systematically in order to create a replicable method for estimating RIV performance to compare RIK .

   d) A statistical methodology can be developed to create a proxy benchmark range. Need to determine benchmark contract terms (FOM / GD mix)

3. In the Alberta model, transparent market prices are used as the RIV Proxy:

   a) In the absence of RIV data to measure RIK performance, other transparent market indicators can be used to establish an appropriate benchmark

   b) Alberta uses published indexes as a market proxy as the best indicator of value for its royalty gas. Adjustments are made to RIK actual to compare to the market proxy.

   c) State could consider the option of defining transparent market indicators to act as the benchmark for RIK performance

F. Methodology

1. The key requirements in creating a methodology for RIK performance measurement are:

a) The benchmark should be created using a well-defined and repeatable procedure.

b) The benchmark methodology should prescribe maintaining detailed documentation within a performance measurement system.

c) The benchmark methodology should ensure reasonable statistical accuracy.

d) The benchmark methodology should have reasonable labor requirements.

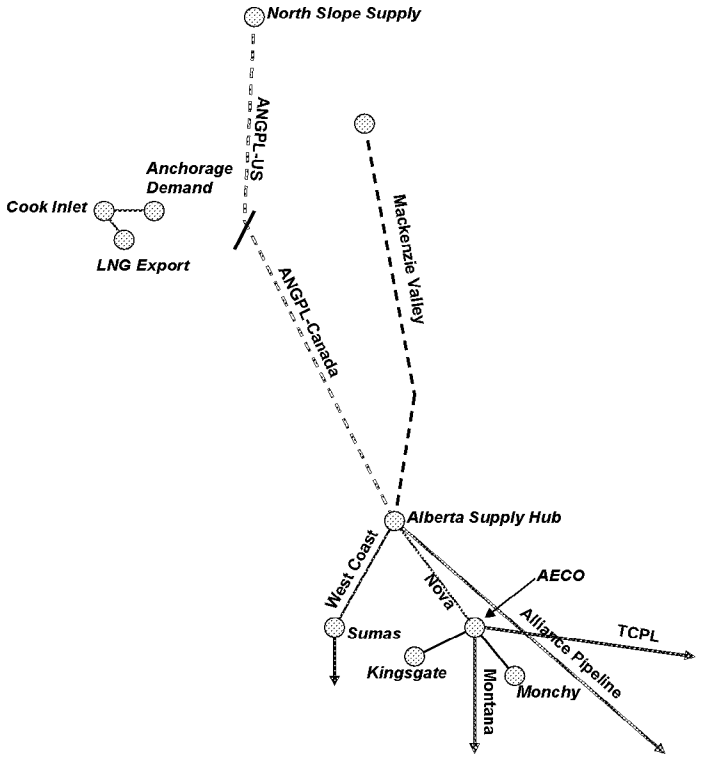
e) The benchmark methodology should be based on transparent market intelligence, as much as possible, when sufficient RIV data of reasonable accuracy is not available.

f) The benchmark methodology should differentiate between forward-looking decision analysis and backward-looking performance measurement.

V. SUMMARY OF CONTRACTING CONSIDERATIONS

A. Multiple prospective market areas

1. As shown in Figure No. 6, there are several prospective markets for Alaska royalties.



B. Competitive Bid out process

1. Location of custody transfer

   a) Tailgate of Central Treatment Facility or other transfer metering point

   b) Delivered to production area pooling point

   c) Delivered and sold at downstream market center(s)

2. Term of contract

   a) Short term-monthly

b) Seasonal

c) Yearly

3. Reflection of current market value

a) Wholesale spot market tied to one or more market indices

b) Determine base and swing components

4. Ability to negotiate final deal with bid finalists

C. Negotiated Contract Process

1. Fixed price deals

2. Limitation on term to match customer needs

a) Short term-monthly

b) Mid term-Seasonal

c) Long term – multi year

3. Contract with LDC or Power Segment. Participation in LDC bid program

4. Negotiated Transportation/processing agreements

a) Limitation on term

b) Dedication of volumes