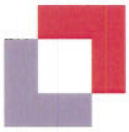
Assessment of the Federal Royalty-in-Kind ("RIK") Program and Development of RIK Business Plan

Final Report: The RIK Blueprint for the Future-
A Five-year strategic business plan for the
Federal RIK Program

September 30, 2003



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1 Introduction

The Minerals Management Service ("MMS") awarded a contract to Lukens Energy Group ("LEG") to assess and develop a long-term business plan for the MMS royalty-in-kind ("RIK") program. The purpose of this contract is to assist in the continuing development of a top tier professional organization within MMS responsible for managing activities associated with commodity sales and exchanges of royalty crude oil and natural gas. Contract work includes assessments of and recommendations on operational and technical issues and development of a 5-year Business Plan.

The project scope was divided into five distinct requirements as outlined below:

1. Complete evaluation of effectiveness of the current RIK business model and operational processes and recommend areas for improvement. Includes a review of the crude oil marketing practices of the Canadian Province of Alberta.

2. Provide recommendations for improvements in RIK performance measurement tools and metrics.

3. Recommend alternative approaches for marketing strategies and risk assessment for RIK sales volumes.

4. Complete assessment and recommendations on the operational processes, organizational structures, and human resources to effectively support the permanent federal RIK program, including outsourcing opportunities.

5. Provide a 5-year strategic business plan for the Federal RIK Program for the period 2004-2008. Include action items, timelines, and milestones to achieve the RIK expansion goals.

Analysis and observations included in this report rely largely upon information and material provided by the Minerals Management Service of the United States' Department of the Interior. Any conclusions LEG has made are based on this shared data. While LEG used reasonable care and skill in applying methods of analysis, LEG has utilized such information without auditing or verification unless noted otherwise.

2 Executive Summary

The Minerals Management Service has been actively engaged in developing a Royalty in Kind program for the past three years as part of a Roadmap to the Future that was developed in 2000. The Roadmap has taken the federal RIK program from a pilot phase to an operational model. This document outlines a RIK Blueprint for the Future and develops a strategic plan to guide the Minerals Management Service over the next five years. The five-year business plan incorporates an RIK commercial framework and detailed business plan to facilitate a permanent RIK program.

Assessment of the Current RIK Program

The MMS has been conducting operational RIK pilot programs continuously since 1998. Following is an overall assessment of the RIK program to–date:

- The MMS RIK existing business model has performed remarkably well over the last 3 years.
- The business model has been able to respond to a volatile marketplace.
- The current model has been able to accommodate government-mandated programs.
- The contracting and bid-out process has continued to improve.
- MMS's level of commercial experience/expertise has increased, however, expertise is thin.
- The ability to contract with transportation systems and processing facilities has been a contributing factor to the success of the RIK program, but additional authority is needed to enter into beneficial longer-term contracts.
- Evaluating multiple marketing alternatives will be crucial for the successful expansion of the future RIK model.
- RIK operational functions are in the process of migrating from a mostly manual process to an automated process.
- The Alberta RIK program appears to be simpler than the MMS environment and model.

The RIK Blueprint for the Future

The MMS has continued to evolve the RIK program from a comprehensive pilot program to a well-developed operational program. Based on their experience to date, MMS management has decided to proceed with a permanent RIK program. The Blueprint for the Future and associated five-year business plan help to delineate a focused effort by MMS management to define and project a top tier professional organization that has the capabilities to meet the stated goals and objectives.
There are six key principles that provide overall guidance:

1. Maximize net revenue for the RIK share of production consistent with the permanent business model
2. Meet or exceed Fair Market Value ("FMV") benchmarks that are established in accordance with statutory requirements
3. Maintain flexibility in responding to the nation's strategic energy initiatives
4. Continue to focus on Gulf of Mexico ("GOM") as a strategic core area, while working with producing states to identify and develop onshore opportunities
5. Efficiently manage administrative costs of the RIK program
6. Maintain the highest ethical and professional standards

RIK Blueprint - Goals and Objectives

MMS management has established specific Goals and Objectives during the five-year horizon of the business plan as outlined below.

- Realize maximum benefits to the public, consistent with the permanent business model, by optimizing RIK volumes
    - Projected oil RIK volumes will range between 164,000 and 219,000 barrels per day
    - Projected RIK gas volumes will grow from .5 bcf/d to a level of 1.0 to 1.4 bcf/d
- Achieve incremental net revenue benefits by $50 million over the 5-year plan
- Complete reorganization within MMS to fully implement the permanent RIK program
- Implement a systematic decision making and performance monitoring process
- Complete personnel staffing of key business functions
- Develop a high quality marketing portfolio of assets and customers
- Develop procedures to measure and monitor administrative expenses on a BOE basis
    - Target reduction of RIK administrative expense per BOE by 10% over the 5 years
- Develop procedures to measure and monitor Transaction Cycle Time ("TCT")
    - Target of reducing TCT by 10% over the 5-year time horizon
- Develop procedures to measure and monitor Revenue Collection Time ("RCT")
    - Target of meeting 95% of revenue collections within a 25 day collection cycle

RIK Blueprint - Framework

Key building blocks are needed to develop a framework for the RIK Blueprint for the Future. Following is a brief outline of the building blocks detailed in this document.

Performance Measurement

To support decision-making and the performance measurement process, it is essential to develop metrics that are drivers of the business model and reflect MMS' business goals and objectives. The recommended metrics are net revenue or net revenue/volume, revenue collection time ("RCT"), bad debt expense/revenue, administrative expense/volume, and transaction cycle time ("TCT"). The specific goals of the metrics are to:

- Provide a platform for RIK decision-making, tracking RIK performance relative to a fair market value benchmark, and measuring administrative efficiency.
- Ensure compliance with statutory and regulatory guidelines. This includes ensuring compliance with FMV requirements.
- Be adaptable as the MMS business model evolves.

Enhanced Marketing Strategies
The framework of a future RIK business model builds upon the current operational structure and allows for additional capabilities and controls necessary to implement the enhanced marketing strategies. Following are the specific marketing strategies that are reviewed and recommended.

- Diversify sales portfolio
- Aggregate volumes through pipeline pools
- Optimize processing contracts
- Optimize production area transportation
- Pursue production exchanges

Organizational structure
The proposed RIK organization structure builds upon elements of the existing structure. Some of the main changes in the organizational structure involve better delineation of functions between the front office/mid office/back office, providing greater policy oversight, establishing a separate group to perform economic and quantitative analysis and establishment of a Houston office presence.

Process, Procedures, Systems
In the proposed business processes, the changes occur primarily in front office functions to accommodate the addition of enhanced marketing strategies. Some of these functions include:

- RIK optionality analysis
- Designing marketing portfolios
- Deal origination functions
- Contract bid analysis
- Scheduling gas pipeline pools

Personnel Skill Sets
MMS should hire or otherwise retain personnel in key positions with significant commercial experience in oil and natural gas marketing. It is recommended that MMS obtain/increase the level of experience and expertise of its personnel specifically in the following functional areas:

- Front office marketing
- Economic and quantitative analysis
- Scheduling
- Legal support
- Contract administration

RIK Blueprint - Five-Year Timeline

The overall timeline of the five-year plan is designed to allow MMS sufficient time to complete the organizational changes, process improvements and personnel enhancements during the first and second year of the plan. After the first year, the performance measurement processes should be fully operational. When the permanent RIK framework is operational, MMS will be in a better position to take advantage of market opportunities through implementation of the enhanced marketing strategies and optimally expand RIK volumes. All the specific goals and objectives are designed for completion by the end of the five-year business cycle.

Business Plan Segment	*Implementation Steps*
Mobilize to Implement the Blueprint for the Future	Retain necessary approvals and publish Blueprint Retain necessary assistance for implementation phase
Implement Policies and Performance Measurement Procedures	Establish Risk Policies & Guidelines Develop and test performance metrics Implement performance metrics / Personnel training
Systems Implementation & Process Controls	Systems implementation - continued assessment Improve business processes
Organizational Structure and Human Resource Enhancement	Restructure RIK organization Acquire commercial skill set Run ongoing training program for commercial functions
Expand Marketing Strategies	Develop, implement & utilize expanded marketing strategies Complete WY assessments Develop specific opportunities with States
Assess & Improve Business Plan Performance	Conduct ongoing detailed analysis of RIK program Assess & improve business plan performance Create new 5 year business plan for 2009-2013

3 Background

The Minerals Management Service ("MMS") is responsible for the federal Royalty in Kind ("RIK") program. MMS takes physical ownership of crude oil and natural gas royalty production and distributes and markets such production. MMS has worked for several years to understand the possible benefits of a permanent RIK program. Studies have indicated that RIK could be a benefit to MMS if conducted in the appropriate manner and with sufficient controls. Successful pilot programs have confirmed this assessment. An internal MMS royalty-in-kind needs assessment concluded that additional capabilities and resources would be needed to support a permanent RIK program of significant scale. The needs assessment also concluded that technical assistance will be needed to optimize the RIK business model and associated strategies.

3.1 Statutory Guidelines

The Department of the Interior has managed mineral leasing on Federal lands since the Minerals Leasing Act ("MLA") was passed in 1920. Included in the MLA is a provision that enables MMS to take royalties-in-kind. Other legislation that enables RIK comes from the 1953 Outer Continental Shelf Lands Act ("OCSLA"), as amended, and provisions in lease language. In recent years, MMS has exercised its option to take oil & gas royalties-in-kind.

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..."*
>
> *Sec. 192 "... the Secretary of the Interior may sell the current product (oil or gas) at private sale, at not less than the market price..."*

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:

> *27(a)(1) "... all royalties or net profit shares, or both accruing to the United States under any oil and gas lease issued or maintained in accordance with this Act, shall, on demand of the Secretary, be paid in oil or gas."*
>
> *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...."*

In addition, for the last several years, Congress has passed budget appropriations language that explicitly authorized RIK for the following fiscal year. Following is an example of the language:

> *"Provided further, That MMS may under the Royalty-in-kind pilot program 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 or upstream pooling points, and to process or otherwise dispose of royalty production taken in-kind."*

The proposed comprehensive energy legislation, currently before Congress, includes several additional RIK provisions and 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..."*
>
> - Allows entering into multi-year contracts for transportation, processing and disposing of royalty production
>
> *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."*
>
> - MMS to provide a yearly report to Congress describing the methodology and benefits of taking royalties-in-kind, including administrative saving/costs

3.2 Review of Previous RIK Pilots and other Studies

MMS has explored the benefits of taking royalties-in-kind through a series of pilot programs. The pilots have proven that RIK can succeed operationally while at the same time representing a viable option when compared to royalty-in-value. The initial goals of the pilot programs were to increase accuracy and certainty, provide revenue neutral or better results to MMS, and reduce administrative burden on the lessees and the government. In 2001, these goals were updated to include implementing RIK where and when it is an improvement over RIV, minimizing the cost of royalty administration, reducing transaction cycle timing, and accelerating the timing of revenue collections.[1] The Mineral Revenue Management (MRM) RIK office has been responsible for the administration and implementation of RIK pilot projects and ongoing activities. The RIK office has expanded and developed expertise in the marketing of federal oil and gas volumes during the last three to four years. Following is a brief recap of those activities:

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[1] *Road Map to the Future*, January 2001.

RIK Pilots

- *1995 GOM RIK gas pilot* – Conducted for the entire 1995 calendar year, MMS took approximately 45.6 bcf of gas in-kind and revenues totaled over $72.6 million. The pilot was considered an operational success, proving that the concept of taking royalty gas in-kind is feasible. It also highlighted several concerns that were critical for the design of future pilots.

- *Wyoming RIK oil pilot* – This oil RIK pilot project began in October 1998 and is still in operation. MMS took 1.6 million bbl in-kind between October 1998 and March 2000.[2] MMS reported on the performance of the pilot on March 1, 2001. The assessment concluded that the pilot had reduced the period of value uncertainty from years to months, marginally increased the net revenues from the royalties, and provided the foundation for administrative savings in future programs. Assessment compared actual RIK proceeds with royalty in-value proceeds from leases in the same geographic area and data from the Wyoming Severance Tax Commission.

- *Texas 8(g) RIK gas pilot* – This pilot began in June 1999 and is still ongoing. From June 1999 through December 2000, MMS and the State of Texas General Land office ("TGLO") sold over 28.6 million Dth of gas under this pilot for a total value of $99,620,227. MMS and TGLO reported on an assessment of the pilot on March 27, 2002.[3] The assessment concluded that the RIK program resulted in a marginal uplift over the Royalty-in-Value ("RIV") due primarily to lower transportation costs. The assessment was based on measurements of a) historical RIK values from the pilot, b) published market indices and c) un-audited RIV values from leases in the same geographic area as the RIK pilot program.

- *GOM RIK gas pilot* – The Gulf of Mexico gas pilot program began in 1999 and has since been combined with the Texas 8(g) program. Current volumes are close to 500 mmcf/d. The valuable commercial experience MMS gained through this relatively large program will play a key role in the future of RIK operations.

- *GOM RIK oil pilot* – The Gulf of Mexico oil pilot program, beginning in 2000, also led to valuable experience and has since been rolled into the SPR program.

- *RIK oil Strategic Petroleum Reserve ("SPR") program* – The SPR program was set into motion on December 22, 1975 when the Energy Policy and Conservation Act was signed into law. RIK oil has been used to assist in volume additions to the SPR on two occasions:

    - In 1999-2000, MMS and Department of Energy ("DOE") worked together to achieve an objective of 28 million barrels of crude oil fill.
    - Starting in 2001, MMS and DOE initiated a 120 million barrel fill program to reach the SPR's full capacity of 700 million barrels. This program is on going.

- *RIK Small Refiner Program* – Although the Small Refiner Program has been in operation since the mid 1970's, it began utilizing the RIK bid-out process in January of 2000 and since then has generated over $1.3 billion in revenue on sales of 54.6 million barrels of oil.

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[2] *Wyoming Oil Royalty In Kind Pilot, 18 Months and Counting*, March 1, 2001.
[3] *The Texas General Land Office/MMS 8(g) Gas Royalty in-Kind Pilot, A Report*, March 27, 2002.

Other Studies

Several studies were completed to measure the performance of the RIK program and to assess whether the program adds value relative to the RIV program.

- *1997 MMS RIK Feasibility Study* - The overall conclusion of the study is that an RIK program could be workable, revenue neutral or positive, and administratively more efficient for MMS and industry. The study formed the basis for the decision to proceed with RIK pilots in Wyoming and the Gulf of Mexico. Key elements of a successful RIK strategy would include:
    - Downstream Market Presence: To be revenue neutral/positive, an MMS RIK program must participate in downstream services, most likely through contracting with energy marketers.
    - Aggregation: Substantial volumes could provide MMS and its marketing agents with increased market opportunities primarily through assurance of supply.
    - Administrative Relief: The greatest relief would accrue under a broadly-applied, multi-year program through decreased reporting to MMS and discontinuation of audits of the producers' shares.
- *Inspector General ("IG") study* – Completed in August 2002, this report reached the following conclusions[4]:
    - RIV is much more susceptible to underreporting than RIK
        - RIV allows lessees to report valuation basis and take deductions for transportation and processing costs
    - RIK is substantially less susceptible (to underreporting) because valuation is established by fair-market sale, MMS receives actual proceeds from sales, MMS negotiates and pays actual transportation and processing costs
    - There are opportunities to improve controls within the RIK process: gas imbalance, credit approval, manual data entry, and limitation on sales contract length
- *General Accounting Office ("GAO") study* – Study completed in January 2003 by GAO concluded that MMS has made progress in implementing some components of management controls for its RIK pilots such as addressing risks associated with oil and gas sales and developing written procedures.[5] Main recommendations were that MMS:
    - Clarify its strategic objectives for the RIK program and link these objectives to statutory requirements.
    - Gather key information to monitor and evaluate the program prior to further expansion of the program.

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[4] United States Internal General's Office. *Evaluation of Vulnerabilities to Underreporting: Royalty-in-Value versus Royalty-in-Kind*. August 2002.

[5] United States General Accounting Office. *A More Systematic Evaluation of the Royalty-in-Kind Pilots is Needed*. January 2003.

Alberta RIK Review

Lukens Energy completed a review of the Alberta RIK Program, in March 2003. The Alberta crude oil RIK program is considered a success and could offer guidance for the MMS RIK program. It is important to recognize distinct differences between the structure and operating parameters in Alberta versus the United States. Figure 1 highlights several key areas where we have compared and contrasted the Alberta program with the MMS program.

Figure 1. Alberta RIK program versus MMS RIK program

Alberta	MMS
No RIV Option – Alberta has a mandated RIK program	Although the MMS RIK/RIV option can add value, it also introduces a certain level of complexity
Less oversight of the Alberta RIK program partly due to the stability and longevity of the program in Alberta	Considerable oversight of MMS' RIK pilot program
Only conventional oil is handled in the Alberta RIK program	MMS' RIK model includes both oil & gas
The oil infrastructure in Alberta is well developed and less complex	More complex oil and gas infrastructure in the US
Alberta has straightforward benchmarks (i.e. Canadian posted prices)	Multiple indices – benchmarks are generally not well defined
Alberta outsources the marketing function to agents	MMS does not use marketing agents
Alberta cites reduction in administrative expenses	MMS cites reduction in administrative expenses
Royalty volumes are variable – depend on price levels	Royalty volumes are more certain

There are significant differences between the Canadian and US energy markets and their respective political environments. In our opinion, the Alberta business model appears to be structurally simpler than the MMS model. As a mature RIK program with significant operational experience, the Alberta program offers useful insights to the MMS program, such as:

- The online information systems developed by the Crown for the Alberta RIK program could provide insight for MMS in designing its system to collect and disseminate market intelligence and other information relevant to the RIK program.
- The Alberta RIK program has adopted straightforward benchmarks (i.e. Canadian posted prices), that are considered liquid and transparent, to measure its performance.
- Alberta's outsourcing of the marketing function has, among other things, allowed for efficient movement of Crown barrels to distant markets (such as Rocky Mountain and Chicago refiners). Out-sourcing the marketing function could be a feasible option for MMS in certain markets (e.g. Wyoming oil RIK).

4 Current RIK Business Model

4.1 Accomplishments over the Last Three Years

The current MMS RIK business model was developed during 2000 and culminated in the publication of "Road Map to the Future" in January 2001. The Road Map outlined certain specific and measurable goals to take the MMS from a pilot phase to the operational phase of the RIK program. The seven primary goals laid out in that document have been achieved (at least at some level). These goals were:

- Implement RIK where and when it is an improvement over royalty-in-value
- Leverage the MMS position as an asset holder
- Take advantage of inter-agency synergies
- Reduce transaction cycle timing
- Minimize the cost of royalty administration
- Accelerate timing of revenue collections
- Adopt energy industry business practices and controls wherever feasible

Overall, the MMS RIK business model has performed remarkably well over the last three years. Most of the action items have been addressed or accomplished. The following tables highlight the current status of the action items.

Focus Area and Action Elements	Time Line	Status
Building Core Business Processes and Organization Structure		**On-Going**
1. Mobilize Operational Model Organization	2/01	Complete
2. Conduct Evaluation of Wyoming and Texas 8(G) RIK Pilot Efforts	1/01-3/01	Complete
3. Perform portfolio analysis of GOM, utilizing filtering criteria developed from past pilots; develop prioritized listing of high RIK-potential properties.	3/01-6/01	Complete
4. Advance near-term opportunity for GOM crude oil.	2/01-8/01	Complete
5. Develop a process for and conduct ongoing MRM efforts to obtain property, logistics and processing information on high potential RIK properties.	4/01-Beyond	On-Going
6. Develop the RIK performance baseline addressing key operational preferences and external performance metrics.	4/01-9/01	On-Going
7. Complete detailed design of the top-down planning and control process and the framework for the RIK performance measurement.	1/01-6/01	On-Going
8. Align MRM resources consistent with the scale and scope of the RIK activity.	1/01-Beyond	On-Going
9. Conduct Operational Model Operations, evaluate pilots, refine business processes, and support development of technology solutions in a live environment.	3/01-9/03	Complete
10. Develop functional requirements for RIK core business process and technology infrastructure, fully integrated with CAM and financial management operations.	4/01-12/01	Complete
11. Develop and execute plan for human resource transition, training, and development.	4/01-12/03	On-Going

Acquiring Technology Solutions		Complete
1. Develop preliminary acquisition strategy, including sequencing of deliverables, and identify funding approach.	1/01	Complete
2. Prepare OMB 300(b) and related documentation for submission and approval.	1/01	Complete
3. Obtain Department of the Interior Information Resource Management Review Council Approval to proceed.	3/01	Complete
4. Conduct ongoing detailed analysis of RIK pilots and Operational Model and develop preliminary designs for gas, liquids, and trading/risk management systems.	4/01-12/01	Complete
5. Request proposals and modify contract for software, integration, and operations.	10/01-3/02	Complete
6. Prepare and implement contract management plan, including requirements, design and implementation of solutions, integrated with the CAM and Financial systems.	4/02-9/03	Complete

Changing Information Reporting Requirements		On-Going
1. Define production data elements and report formats.	4/01-9/01	Complete
2. Define RIK transactional data elements and alternative means for obtaining data.	4/01-12/01	Complete
3. Prepare proposed form changes (and related regulation changes), conduct customer and constituency outreach, and submit changes for OMB approval.	4/02-9/02	Complete
4. Provide OMB approved reporting formats to industry for systems modification.	1/03	Complete
5. Prepare and issue new operator reporting handbooks to industry.	4/03-6/03	Complete
6. Conduct operator reporting training for revised forms and requirements.	7/03-10/03	On-Going
7. Conduct MRM in-house training on new production reporting forms.	6/03-9/03	On-Going
8. Institute new reporting requirements.	12/03	On-Going
9. Develop system capability to capture alternative data sources.	12/03	On-Going

Outreach and Communications		On-Going
1. Prepare comprehensive outreach and communications plan to integrate with MRM Reengineering Communications strategy.	4/01-6/01	Complete
2. Conduct ongoing outreach and communications with customers, clientele, and MMS employees.	7/01-12/03	On-Going

4.2 Systems Development and Process Improvements

In order to understand the control processes embedded in the MMS RIK transaction cycle, LEG compared and contrasted the MMS process controls with normally accepted industry practices. The control points include not only the active marketing and contracting responsibilities, but also the checks and balances that ensure accuracy and dependability. MMS has adopted a number of industry practices involving process controls. Transition from a mostly manual system to an automated system will facilitate the on going control and monitoring function. The business cycle typically consists of identifying select properties, developing an appropriate bid document, making a decision based on an expected RIV value, completing necessary credit checks, entering into the sales contracts, and then following through with collection and reconciliation of any volume imbalances.

- Existing and proposed oil and gas management systems: MMS has developed and implemented customized and off the shelf commercial oil & gas management systems needed for ongoing process functions. Operations were designed to move from a mostly manual process in pilot phase to a system-based approach in operational phase. The gas management system was implemented in January of this year and has been utilized for 10 monthly business cycles. The liquids management and risk management systems were recently put in a production environment. The risk management system should be fully functional in late 2003 or early 2004. Overall, our review indicates that the RIK design elements appear to conform to acceptable industry standards for process controls. As in any major system project, close monitoring is needed to ensure that elements of the operational system are implemented as designed.
- Contracting: MMS has adopted a number of industry standards in its contracting process. From a control perspective, the contract review and development function seems to have sufficient separation of duties, with front office, mid-office and administrative contract group involvement. However, effective contract management with expansion of contracting options will require increased commercial knowledge and experience in the mid-office function to respond to contract interpretation and enforcement. Experienced oil & gas contract and commercial legal assistance will also be required.
- Credit evaluation and monitoring: MMS currently uses a two-step process in credit evaluation. There is a broad screening process used to pre-qualify potential bidders, then a more rigorous evaluation involving the use of two separate credit calculation methods. Credit exposure calculations are conducted at the beginning of every sale and are updated intermittently over the term of a sale. If a company exceeds the MMS-established line of credit, then a sale can be terminated unless the firm provides additional collateral. Daily analysis of credit exposure should be incorporated into the mid-office capabilities.
- Managing volume imbalances: Keeping current with operator gas imbalances should continue to be a priority issue. Systems modules, recently implemented, should provide some assistance in capturing information and performing imbalance comparisons.

4.3 Description and Assessment of Current Business Model

The RIK business model was originally set up to operate pilot programs with the potential to develop and evolve into an operational program. The current business model has served MMS well, especially in the pilot program phase. It has allowed MMS to expand its RIK volumes to about 500 mmcf/d for GOM gas and about 190,000 bbl/d for crude oil and to develop its processes and controls with a relatively straightforward marketing strategy. A key to this strategy is offering standard industry contracts with acceptable terms and conditions that attract sufficient market participants at a desired point of commodity transfer. The business model is based on a competitive bid-out process that was initially developed with industry input and has been refined by MMS personnel over the past three years.

The RIK business model has been able to respond to a volatile marketplace. Increased price volatility, concern about price transparency, and the demise of merchant energy marketers have posed significant challenges. These factors have contributed to a concern about market liquidity, credit worthiness, and number of market participants. The following description and assessment establishes a frame of reference for further discussion of a business model of the future.

- Generally, MMS sells natural gas at or near the lease or the first onshore market center. The strategy for crude oil is very similar in the Gulf of Mexico. For Wyoming oil, the sales generally occur at the lease. Length of contract terms is less than or equal to 1 year with seasonal or annual terms for gas and annual or semi-annual terms for crude oil. A choice of multiple pricing methods is accepted with index-based and NYMEX based prices allowed in the bidding process. MMS is essentially a commodity "price taker."
- Over time, MMS has negotiated transportation and processing agreements with many of the gas transportation systems and processing facilities in the GOM. Up to this point, these contracts have provided much of the RIK advantage through more efficient aggregation of gas and decreased costs. MMS is engaged in very limited risk management activity with baseline credit monitoring but no price hedging positions.
- The model is not designed to maximize net revenues in the downstream value chain; rather, it is designed to minimize downside risk while providing a viable alternative to RIV. MMS in-kind sales must meet a fair market value test.
- The business model is designed to reduce the transaction cycle time, thereby reducing administrative expenses. In addition, the adopted commercial business practices allow for a 5-day improvement in collecting oil & gas receipts in comparison to RIV.
- The current business model has been able to accommodate and react to government-mandated programs, such as the Strategic Petroleum Reserve ("SPR") fill program and Small Refiner Program. MMS has managed the government's Small Refiner program by conducting a bid process, since 2000, for all eligible small refiners for the volumes allocated to the program. In addition, MMS has actively participated with the DOE in managing the fill objectives of the Strategic Petroleum Reserve through a bid-out process where MMS takes the crude oil through RIK and solicits bids to move the RIK oil onshore utilizing buy-sell transportation arrangements. The continued commitment of approximately 80% of the total crude oil royalty volume to the SPR fill program and the Small Refiner Program has reduced the strain on the current business model and allowed time to design and implement oil & gas management systems as part of an operational program.

- MMS has developed a level of commercial expertise that is adequate for the current business model and marketing strategies; however, the depth of expertise and experience is thin. There is a need to increase the knowledge base and depth, especially in deal origination and negotiations, quantitative analysis, transportation operations, and credit analysis.
- The ability to contract with transportation systems and processing facilities has been a contributing factor to the success of the RIK program. Expanded contracting options should be explored to allow greater flexibility in the RIK program.
- MMS has experienced success in leveraging gas volumes where there are multiple market options. Analyzing alternative strategies has confirmed the value of developing enhanced analytical capabilities to better understand and evaluate complex options. The ability to evaluate multiple alternatives will be crucial for the successful expansion of the RIK model.
- MMS has utilized an analytical decision process to evaluate taking properties in-kind. Expanding this process and developing performance metrics and a more systematic methodology of performance measurement will be critical for an expanded RIK program.
- RIK operational functions are migrating from a mostly manual process to an automated process. The current systems' design and build-out appear to encompass adequate commercial process control features. As in any system implementation, close monitoring is required to ensure that the process and control features are implemented as planned.
- Managing and reconciling gas imbalances is an area that needs close monitoring. A key element is the ability to get third party information in a timely manner.

5 The RIK Blueprint for the Future

5.1 Assumptions Driving the Five-year Business Plan

In developing the RIK Blueprint and 5-year business plan, we have incorporated several major overarching assumptions that influence key parameters and establish a frame of reference to drive the five-year plan. Assumptions are made regarding pending legislation, ongoing government programs, and macro economic indicators. Following are ten basic assumptions LEG made while developing the RIK Blueprint for the Future for the Minerals Management Service.

5.1.1 Energy legislation will be passed

The comprehensive energy legislation[6], currently before Congress, will be passed into law. Included are four key provisions that will influence elements of the five-year plan.

- The current version of the Energy Bill creates more flexibility for RIK contracting as it allows for multi-year transportation and processing agreements.
- The proposed legislation calls for the expansion of the Strategic Petroleum Reserve ("SPR") from 700 million barrels to 1 billion barrels.
- Statutory language has been included to allow "preference" for RIK gas that is used in the Low Income Home Energy Assistance Program ("LIHEAP").
- The current language calls for specific reporting requirements to Congress on the MMS RIK program.

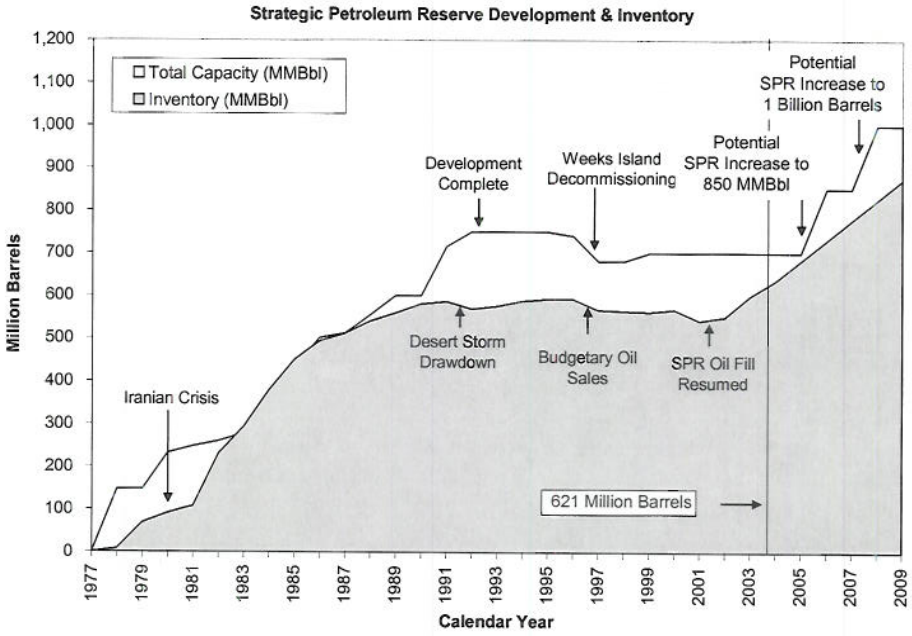
5.1.2 Executive orders will continue the SPR fill program through 2008

It is assumed that the Strategic Petroleum Reserve ("SPR") crude oil fill program will continue during the five-year plan. This is partly due to the continued heightened level of security in America and a continued desire to reduce exposure to foreign crude oil imports. The SPR inventory as of mid September was 621 million barrels[7]. Assuming a continuation of the approximately 130,000 barrels per day fill rate, the reserve would not reach its capacity of 700 million barrels until mid 2005. (See figure 2) We assume that before 2005; the Department of Energy will initiate efforts to expand the existing capacity to 1 billion barrels, with possibly an intermediate expansion of the existing SPR caverns to 850 million barrels. With the anticipated expansions, there will be adequate capacity to continue the fill program thru 2008.

[6] House Resolution 6 ("HR6") was passed by the U.S. House of Representatives on April 11, 2003. 108th Congress, 1st Session. HR6 was passed by the U.S. Senate on July 31, 2003.

[7] Department of Energy – Fossil Energy website (http://www.fe.doe.gov/programs/reserves/)

Figure 2. Strategic Petroleum Reserve and Inventory



5.1.3 Continuance of the Small Refiner Program

The Small Refiner Program has been in existence since the mid 1970's. Periodically, the Department of Interior ("DOI") completes a "needs" assessment to determine if eligible small refiners continue to require access to domestic crude oil at competitive prices. For purposes of this report, it is assumed that DOI will continue to extend the Small Refiner Program over the next five years and the program will maintain volumes at the current levels of approximately 60,000 barrels per day.

5.1.4 RIK gas for a potential LIHEAP program not in base case, but could significantly increase gas volumes

Current RIK language in the proposed energy bill provides for a "preference" to the Low Income Home Energy Assistance Program ("LIHEAP"). Since it is unclear, at this time, if the preference language will lead to increased usage of RIK gas for LIHEAP, we have not assumed LIHEAP gas volumes in the base case. However, if RIK volumes are utilized to satisfy requirements of the LIHEAP program during the five-year horizon, the required RIK gas volumes could be significant and push the RIK volumes to the upper end of any projected range. In addition, if RIK gas to LIHEAP occurs at significant volumes, potential changes to the business plan would be required.

5.1.5 Royalty relief will have a material impact on available royalty volumes

The existing and proposed MMS royalty relief incentive programs will have a material impact on the available oil & gas volumes in the Gulf of Mexico ("GOM"). Three major categories of royalty relief were considered in developing the projected available royalty volumes.

- The Deep Water Royalty Relief Act ("DWRRA") as instituted in 1996 and revised in 2000, includes royalty relief projects granted to-date and estimates of potential royalty relief production in the future.
- The incremental impact on deep-water royalty relief considering the pending court action in the "Santa Fe" case.
- The deep gas prospects in the shallow waters of the GOM outer continental shelf.

Based on information provided by MMS, we have included the projected impact of royalty relief in both the high and low cases for available royalty volumes for oil and gas in the Gulf of Mexico. Since the Santa Fe decision is still pending in federal court, we have excluded any potential additional royalty relief volumes that would occur if an appeals decision affirms the lower court decision. The deep shelf gas relief volumes are included, where applicable, in the projected range. Figure 3 shows the projected royalty gas volume range after considering the impact of royalty relief; while Figure 4 shows the available royalty oil volume range after considering the royalty relief assumptions. We have also assumed a weighted average royalty percentage of 15 percent in calculating the available royalty volumes. This was estimated based on 2001 volume weighted production in the GOM. It is recognized that the weighted average royalty percentage may decline with increased royalty relief. The available royalty volumes are important in developing the RIK volume projections.

Figure 3. Range of available royalty gas in GOM

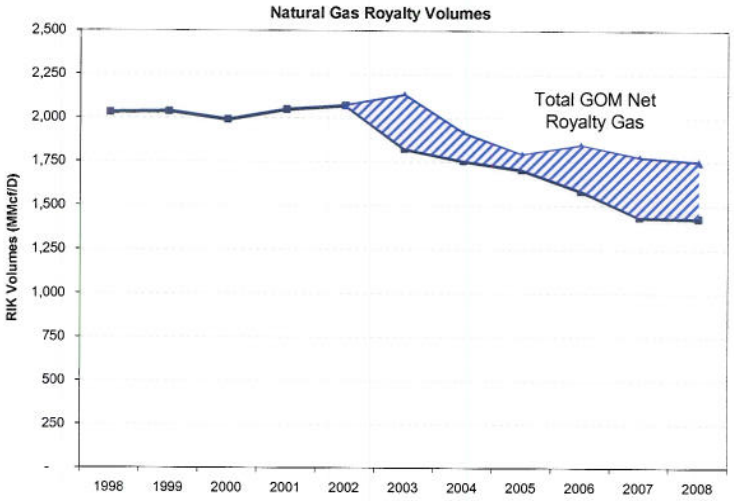
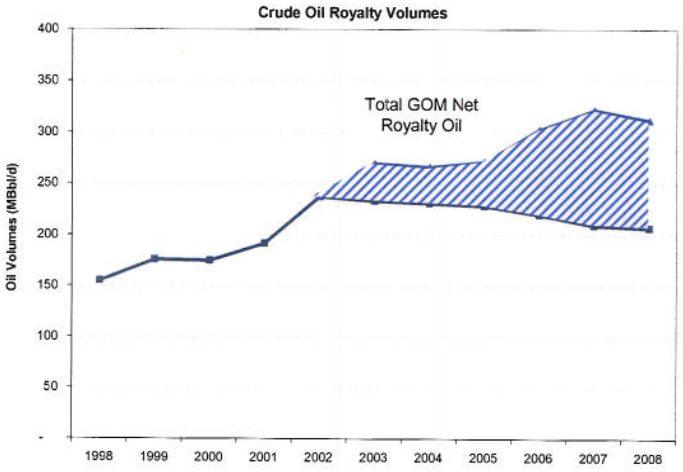


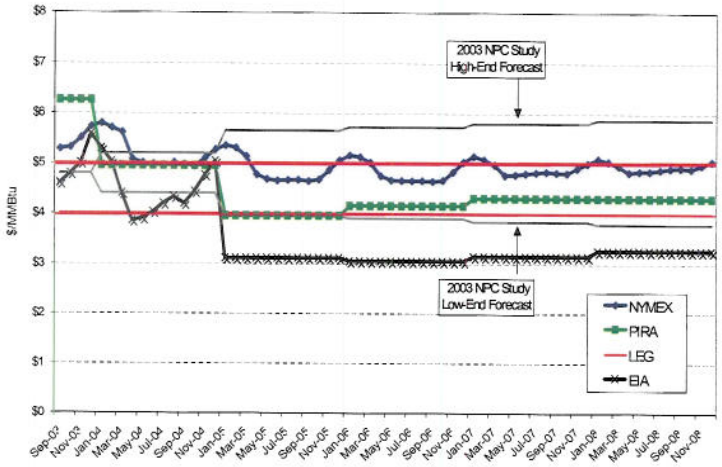
Figure 4. Range of available royalty oil in GOM



5.1.6 Natural gas prices will stay within the $4 to $5/ mmbtu range

Various industry sources predict natural gas prices over the next five years will be within a range of between $3/mmbtu to just over $6/mmbtu (see figure 5)[8]. The recently published Natural Petroleum Council ("NPC") study suggests a range of prices from about $4 to $6 during the five-year window. LEG believes a reasonable range for natural gas prices over the next five years is between $4 and $5 per mmbtu. Generally flat North American production, increased demand, and a long lead time for LNG imports, and other factors lead to the view that gas prices over the next five years will be higher than historic averages, while continuing to exhibit high volatility. The price of natural gas is important to future RIK strategies since its projected levels support the uplift expectations and volume projections.

Figure 5. Natural Gas price forecasts at Henry Hub



Source: EIA's Short-Term and Annual Energy Outlooks, PIRA forecast, NPC 2003 Report, NYMEX website

[8] NYMEX, EIA, PIRA, NPC Study, and CERA natural gas price forecasts for Henry Hub

5.1.7 Oil & gas infrastructure will be sufficient to meet capacity demand

The existing oil and gas infrastructure (pipeline systems and processing facilities), coupled with projected expansions, will be adequate to meet the anticipated RIK volume growth in the GOM. MMS will continue to have access to transportation and processing capacity, which will allow development of the expanded marketing strategies. In addition, it is anticipated that additional infrastructure capacity will be developed in the Rocky Mountain region, which may allow consideration of taking RIK gas in the Rockies.

5.1.8 LNG imports will not grow till the 4th or 5th year of the plan

Currently there are four LNG import terminals in North America. A number of LNG regasification projects are being proposed on the east coast, gulf coast, and west coast. It is anticipated that one or possibly two regasification facilities will be built and put in operation on the gulf coast during the five-year period. The proposed LNG import terminals could impact the available capacity of the GOM pipeline and processing infrastructure and thereby restrict MMS's ability to access those facilities. Although one or two regasification terminals may obtain full permitting approvals within the next two years, it will take at least 4 years until any terminal is in full operation, given a 2 to 3 year construction cycle.

5.1.9 Deep shelf gas production in the GOM will not impact available infrastructure capacity

New discoveries in the GOM deep shelf gas (below 15,000 feet) could bring production on stream relatively quickly. As pointed out earlier, most of the new gas will be subject to royalty relief; however, significant non-royalty volumes could have an impact on the existing shelf infrastructure. Based on the uncertainty of deep gas discoveries, we are assuming that MMS will continue to have access to the transportation and processing capacity, especially in the first 3 years of the 5 year plan.

5.1.10 Continued Partnership with Wyoming, Louisiana, and Texas

MMS will continue its RIK partnership with the State of Wyoming, Louisiana, and Texas over the course of the five-year business plan. It is assumed that the Wyoming oil RIK program will continue although volumes may decline from current levels. We also assume that natural gas in Wyoming will be evaluated to determine if RIK gas can add value over the traditional royalty-in-value (RIV) option. In addition, Louisiana and Texas will continue to partner with MMS on RIK volumes in the 8 (g) section of the GOM.

5.2 Principles of the RIK Blueprint

The MMS has continued to evolve the RIK program from a comprehensive pilot program to a well-developed operational program. Based on their experience to date, MMS management has decided to proceed with a permanent RIK program. The Blueprint for the Future and its five-year business plan help to delineate a focused effort by MMS management to define and project a top tier professional organizational that has the capabilities to extract incremental net value from RIK volumes. There are six key principles that provide overall guidance:

1. **Maximize net revenue for the RIK share of production consistent with the permanent business model**

   An underlying premise of the royalty-in-kind program is to develop and implement commercial activities that will maximize net revenue to the federal government for all volumes taken in-kind, based on a conservative risk profile. The level of RIK volumes will be dictated by the ability to enhance net revenues over the traditional RIV option.

2. **Meet or exceed FMV benchmarks that are established in accordance with statutory requirements**

   This principle clearly aligns the RIK objectives with statutory guidelines in optimizing the RIK / RIV decision process. The FMV benchmarks will be developed using commercial fair market measures and estimates of what a comparable RIV program would yield for a specified field or area.

3. **Maintain flexibility in responding to the nation's strategic energy initiatives**

   The permanent RIK program must be able to react to executive order mandates, as well as, leverage synergies between MMS and other governmental Agencies.

4. **Continue to focus on Gulf of Mexico as a strategic core area, while working with producing states to identify and develop onshore opportunities**

   Recognizes that over 80% of the available RIK volumes are in the GOM. Also recognizes a strong commitment to promote RIK with producing states as a collaborative partnership.

5. **Efficiently manage administrative costs of the RIK program**

   Recognizes that one of the main advantages of RIK is the ability to streamline the royalty collection process, increase the certainty of royalty payments, and reduce administrative expenses for both MMS and industry.

6. **Maintain the highest ethical and professional standards**

   The permanent RIK program must continually maintain the highest standards in carrying out its goals and objectives.

5.3 Goals and Objectives

MMS management has established specific Goals and Objectives during the five-year horizon of the business plan as outlined below:

5.3.1 Realize maximum benefits to the public by optimizing RIK volumes

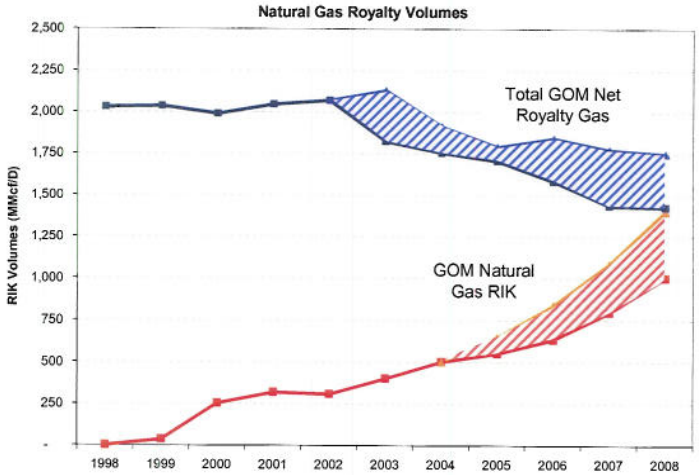
MMS's experience to-date has shown that RIK can provide incremental benefits through increased net revenue and reduced administrative expenses. MMS's experience also shows that RIK may not be appropriate for all properties. Therefore a major goal during the five-year horizon is to realize the optimal level of RIK volumes that maximizes benefits to the public. Following are oil and gas volume projections, which suggest that the optimal level will be within a range that considers the variability of available royalty volumes.

Royalty-in-kind gas volumes will increase through 2008

When the projected royalty relief assumptions are factored in, available royalty gas volumes range from 1.75 bcf/d to 1.9 bcf/d in 2004 and 1.4 bcf/d to 1.75 bcf/d in 2008. (See Figure 6)

A projection of RIK royalty gas is also shown in Figure 6. The RIK gas volumes should increase from a 2004 level of about .5 bcf/d to a range between 1.0 bcf/d and 1.4 bcf/d. Growth of RIK gas volumes is projected at an optimal level consistent with expectations of being equal to or exceeding appropriate FMV benchmarks.

Figure 6. Total royalty gas available and RIK projection



	2002	2003	2004	2005	2006	2007	2008
High RIK / High Royalty	15%	19%	26%	36%	45%	61%	80%

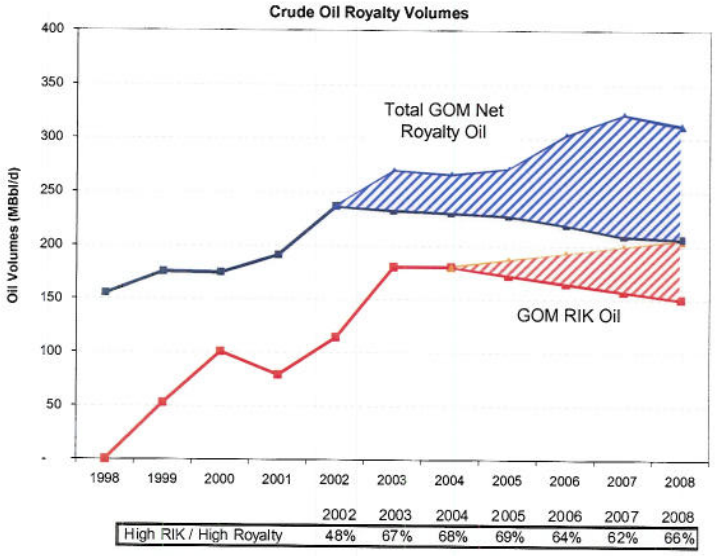
Source: EIA's 2003 Annual Energy Outlook, MMS's May 2003 GOM OCS Daily Oil & Gas Production Rate Projections From 2003 Through 2007.

RIK oil volumes are projected in a range between 164,000 and 219,000 barrel per day

Based on EIA and MMS projections, gross GOM oil production estimates are generally flat until 2005 when several large deep-water fields are anticipated to come on stream. When the projected royalty relief assumptions are factored in, available royalty oil volumes range from about 230,000 bbl/d in 2004 to between 206,000 and 312,000 bbl/d in 2008 (see Figure 7).

Projected RIK oil volumes, in the GOM, are expected to range between 150,000 bbl/d and 205,000 bbl/d, as shown in Figure 7, based on a major assumption that the SPR fill program will continue, at some level, through 2008. The GOM volume projections include approximately 50,000 barrels per day for the Small Refiner Program and a range of 100,000 to 140,000 barrels per day for the SPR fill. The projected RIK oil volumes stay at a relatively constant 60-70% of available royalty volumes. When Pacific and Wyoming volumes are included, total RIK oil volumes are projected between 164,000 barrels per day and 219,000 barrels per day.

Figure 7. Total GOM royalty oil available and RIK projection



	2002	2003	2004	2005	2006	2007	2008
High RIK / High Royalty	48%	67%	68%	69%	64%	62%	66%

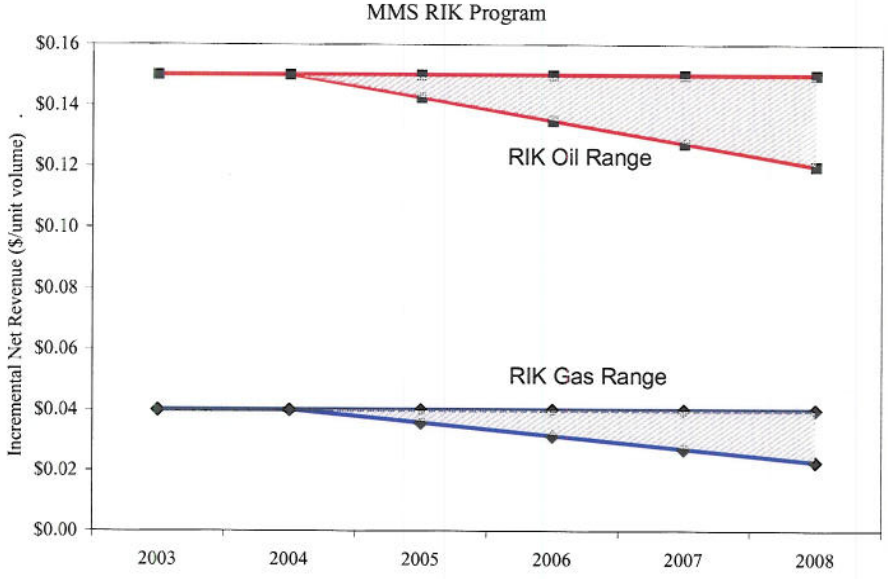
Source: EIA's 2003 Annual Energy Outlook, MMS's May 2003 GOM OCS Daily Oil & Gas Production Rate Projections From 2003 Through 2007.

5.3.2 Enhance net revenue benefits by $50 million over the 5-year plan

Based on historical RIK performance data (actual and estimated) over the last 3-5 years, MMS has obtained an increase of about 1% in net revenues over RIV. This enhancement does not include administrative savings associated with RIK. In order to project a net revenue benefit over the five-year business plan, we made several simplifying assumptions including:

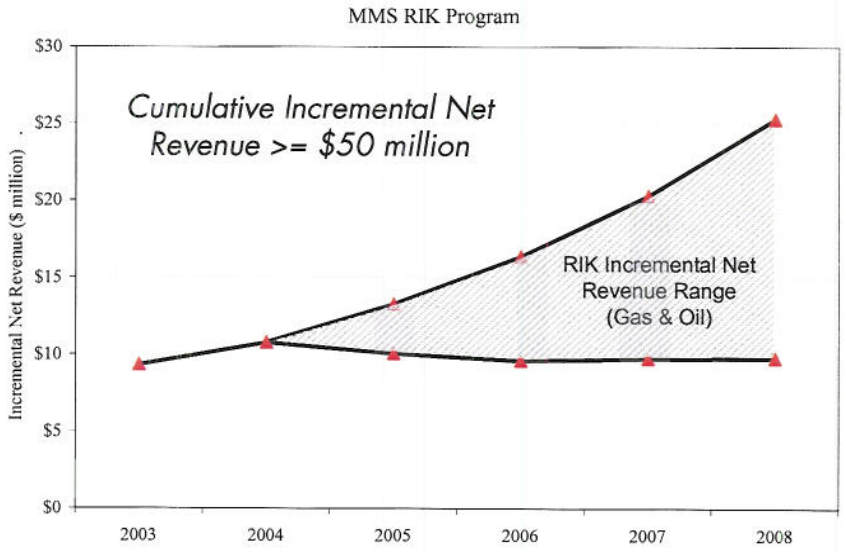
1) Many gas properties with the greatest optionality value have already been converted to RIK, therefore incremental net revenues from newly added properties are likely to be lower.
2) MMS will see an increase in incremental net revenues as it gains additional expertise and adopts more enhanced marketing practices.
3) The combined impact of these two assumptions is expected to either keep the incremental gas uplift constant or decrease slightly as the total volumes are increased. This results in an incremental increase starting at about $.04 per mmbtu and declining to about $.02 per mmbtu during the five years. (See Figure 8)
4) For oil, we started with an incremental increase of only .5 % or about $.15 per barrel and reduced it to about $.12 per barrel. A conservative assumption since we are only counting Small Refiner volumes.
5) We also excluded 130,00 bbl/d of SPR fill from the incremental net revenue calculation.

Figure 8. Incremental net revenue per unit



When the incremental net revenue assumptions are combined with the RIK volume projections, it produces a range of projected incremental net revenue. (See Figure 9) The chart shows that a cumulative incremental net revenue is expected over the five year period of approximately $50 million, using the lower end of the volume projection range.

Figure 9. Incremental net revenue projection



5.3.3 Complete reorganization of MRM to fully implement the Permanent RIK Program

This objective will complete the recommended organizational structure and process control recommendations that are a basic building block for the permanent RIK framework. When completed MMS will realize the internal controls and efficiencies of a top tier commercial marketing group.

5.3.4 Implement a systematic decision making and performance monitoring process

This objective includes implementation of the RIK gas, liquids, and performance measurement systems along with the processes and procedures that will allow MMS to determine FMV benchmarks and measure RIK performance relative to the benchmarks.

5.3.5 Complete personnel staffing of key business functions

Identification of specific personnel requirements and filling those skill set requirements will allow the RIK team to enhance their commercial experience and expertise. Includes front office, back office, and mid office personnel.

5.3.6 Develop a high quality marketing portfolio of assets and customers

Complete implementation of the enhanced marketing strategies and diversify the asset profile and the customer portfolio base. This effort will likely require commercial consulting assistance.

5.3.7 Reduce administrative expenses

This goal includes developing the processes and procedures to capture the direct and indirect administrative expenses for RIK and be able to compare to RIV expense on a volumetric basis. MMS has established a target of reducing RIK administrative expenses on a volumetric basis (using barrel of oil equivalent or BOE) by 10% over the 5-year horizon.

5.3.8 Develop procedures to monitor Transaction Cycle Time - TCT

Transaction cycle time is defined as the time from the end of the production month until all transactions and related activities are completed. TCT activities include: preparing and mailing invoices, collecting payment from the sales transaction, completing internal accounting and reporting, and reconciling any volume imbalances. In addition to the goal of developing procedures to monitor TCT, MMS has also established a target of reducing TCT by 10% over the 5-year time horizon.

5.3.9 Develop procedures to monitor Revenue Collection Time - RCT

One of the advantages of RIK over RIV is a structural difference in the collection time of royalty payments. Traditional RIV collections are due at the end of the month following production, or approximately 30 days. Most RIK commercial transactions are due within 25 days after the production month, depending on when gas invoices are issued. In addition to a goal of developing procedures to monitor RCT, MMS has established a target of meeting or exceeding 95% of revenue collections within a 25 day collection cycle.

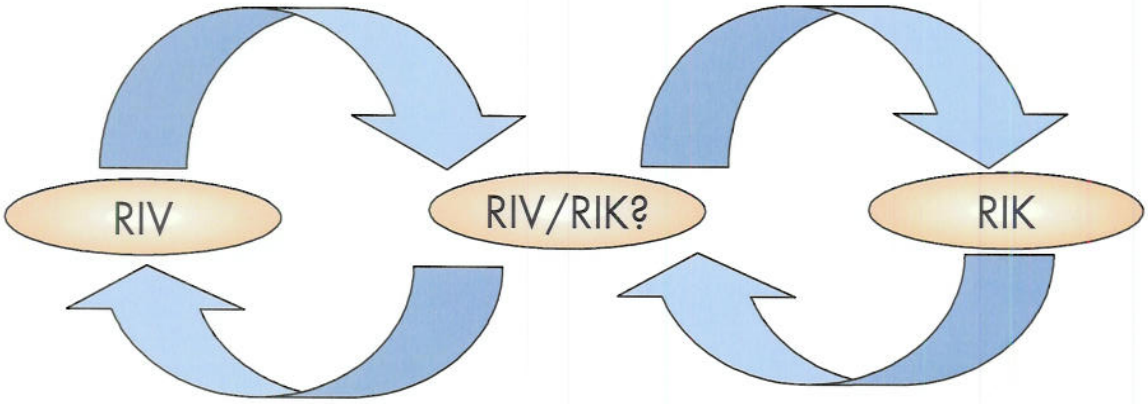
6 The RIK Blueprint - Framework for the Future

The key building blocks for the framework of a permanent RIK program include: 1) Performance measurement, 2) Enhanced marketing strategies, 3) Organizational structure, 4) Process, procedures, systems, and 5) Personnel skill sets.

6.1 Performance Measurement

As the MMS RIK program develops, it is important to define the metrics by which it will be measured. Figure 10 illustrates a decision-making and measurement framework. The goal of the decision-making process is to support the RIK versus RIV decision, as well as decisions on RIK commercial options and alternative marketing strategies. The goal of the measurement process is to measure the performance of the RIK program relative to market benchmarks.

Figure 10. Decision making and measurement framework



As with any commercial enterprise, implementing asset management strategies requires an understanding of the risks and rewards associated with each strategy and its potential impact on the organization. Lukens Energy Group has completed an assessment of the MMS RIK program and developed recommendations for performance metrics and measurement. Based on this assessment, it is recommended that MMS implement:

- Metrics that support the future business model. The recommended metrics are net revenue/unit volume, revenue collection time ("RCT"), bad debt expense/revenue, administrative expense/volume, and transaction cycle time ("TCT").
- An improved process for developing a performance benchmark that is consistent across all regions. This process includes establishing a benchmark market price and a benchmark adjustment factor that together comprise a systematic process to identify fair market value.
- An improved process for making decisions between royalty-in-value ("RIV") versus RIK, and decisions on RIK commercial options and alternative marketing strategies.
- A systematic process for measuring performance of the RIK program against the FMV benchmark that improves the consistency, reliability, and timeliness.

To support decision-making and performance measurement processes, it is essential to develop performance metrics that reflect MMS' business objectives. The specific goals of the metrics are:

- Provide a platform for RIK decision-making, tracking RIK performance relative to a fair market value ("FMV") benchmark, and measuring administrative efficiency and payment collection.
- Ensure compliance with statutory and regulatory guidelines. This includes ensuring compliance with FMV guidelines and requirements to estimate what RIV proceeds would be for RIK volumes.
- Be adaptable as the MMS business model evolves.
- Support the development of marketing strategies during the five-year RIK business plan, including the assessment of alternative marketing strategies.

6.1.1 Net Revenues

Net revenue or net revenue/unit volume is proposed as the major metric for measuring performance. For royalty collections, net revenue is the realized market price for oil and gas sales plus/minus adjustments to achieve the realized value of the commodity. Adjustments include the cost of transportation, processing, and quality. The net revenue metric meets the objectives discussed in the previous section. The metric provides a foundation for:

- Measuring performance of the RIK program relative to a FMV benchmark and other benchmarks.
- Making decisions on RIK versus RIV.
- Making decisions on RIK commercial options and alternative marketing strategies.

6.1.2 Credit & Collection Metrics

The following two metrics are proposed to track and manage credit exposure and collection of cash receipts:

- Bad debt expense/revenues is the proposed credit metric. Bad debt expense is credit exposure that has a minimal chance of being collected. A decision to recognize bad debt loss should be made within one year from when the accounts receivable went delinquent. A specific bad debt target will be established based on MMS historical experience and commercial benchmarking surveys.
- Revenue collection time ("RCT"). RCT is a measure of the number of days after the production month that MMS takes to collect outstanding receivables for the production month. Currently, the RIK program has an RCT objective of 25 days as compared to an objective of 30 days for RIV.

6.1.3 Efficiency Metrics

The following two metrics are proposed to track and monitor administrative efficiency:

- Administrative expense/unit volume. Administrative expenses include direct costs for personnel, contracting, business expenses, and indirect costs associated with accounting, IT/systems and legal expenses. The metric uses royalty volume rather than royalty revenue so that results from different periods are comparable and is consistent with the net revenue metric. To effectively implement this metric, administrative expenses should be allocated based on commodity type (oil/gas), and special programs such as the Small Refiner Program and the Strategic Petroleum Reserve ("SPR") Program, etc. Although this metric can be measured against commercial benchmarks, it is most useful when measured against the comparable administrative expenses of the MMS RIV option.
- Transaction cycle time ("TCT"). TCT measures the time it takes for completing the entire RIK transaction process. This includes collecting payments and reconciling volume imbalances by comparing volumes at receipt and delivery points to source documentation. MMS has an existing business objective of a TCT of about 120 days.

6.2 Establishing a Net Revenue Benchmark

This benchmark is intended to represent a range of FMV that actual RIK net revenues can be measured against. It should be updated periodically to reflect structural changes in the market.

The benchmark consists of a price index and an adjustment factor. The price index represents market prices at one or a collection of market centers or pooling points near the lease property, and the adjustment factor includes fees for transportation, processing and other factors. The adjustment factor can be either positive or negative.

The process for establishing the proposed benchmark and measuring performance against the benchmark consists of the following two steps:

1. Establish benchmark price.
2. Establish benchmark adjustment factor.

6.2.1 Establish Benchmark Price

This process determines the benchmark price or basket of benchmark prices to use. Transparency and liquidity of available price indices is important. Overall confidence in the liquidity and transparency of price indices seems to be improving due to revised reporting procedures and published guidelines from the Federal Energy Regulatory Commission and other groups[9].

- Determine monetization chain required to move wellhead production to market.
- Survey the industry indices or pricing sources available along the monetization chain to value the production.
- Determine the pricing point(s) that is closest to the lease properties being evaluated.
- Determine which indices or pricing sources most accurately represent the market price of production, after considering liquidity of the indices.

[9] Federal Energy Regulatory Commission, Guidelines on Price Indices for Both Natural Gas and Electric Industries, July 23, 2003, Docket No. PL03-3-000; Committee of Chief Risk Officers, "Best Practices for Energy Price Indices," February 27, 2003.

6.2.2 Establish a Benchmark Adjustment Factor

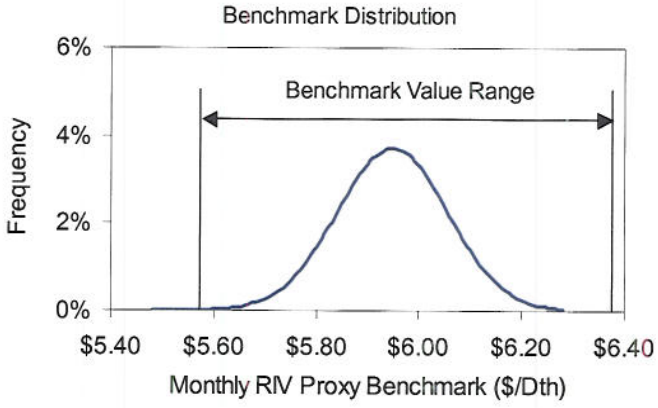
Following the selection of a benchmark price, the next step in the process is to estimate the benchmark adjustment factor. For an RIV property, the benchmark adjustment factor is the difference between royalty payments, on a per unit basis, and the benchmark price.

There can be significant variability in all the drivers of the adjustment factor because producers and marketers pursue different strategies and contract options for transportation, processing, and marketing. As a result, **the adjustment factor is not a single value but rather a range of values.** The adjustment factor includes transportation fees, processing fees, quality differences and price variability. Price variability can result from selling on different indices from the benchmark or selling under different contract terms.

For a group of properties, the adjustment factor can be estimated from I) historical RIV information from the RIK properties, II) historical RIV information combined with market intelligence, and III) market intelligence.

Figure 11. RIK performance benchmark

An example of a benchmark value range estimated for December 2001. The benchmark consists of a price index and an adjustment factor. The December 2001 ANR FOM price used in the benchmark was $5.88/Dth. On a going forward basis, the benchmark has to be updated monthly because it is based on monthly prices.



6.3 Decision Analysis – Looking Forward

The purpose of decision analysis is to determine whether royalty production should be taken in-kind or in-value and support decisions on alternative RIK commercial options and marketing strategy development. In order to measure RIK performance from various alternatives for decision analysis purposes, it is necessary to acquire and maintain historical and forward-looking market intelligence pertaining to the different alternatives on a regular basis. It is assumed that the established benchmark behavior will continue during the future period being evaluated.

The RIK/RIV decision will be driven by comparing the selected RIK alternative with the appropriate FMV benchmark. A range of uncertainty is already built into the FMV benchmark. The two main decision criteria for RIK alternatives are:

1. The RIK alternative should have a higher expected value than the FMV benchmark.
2. The RIK alternative should have downside revenue within the established range of the FMV benchmark.

6.3.1 Decision Processes

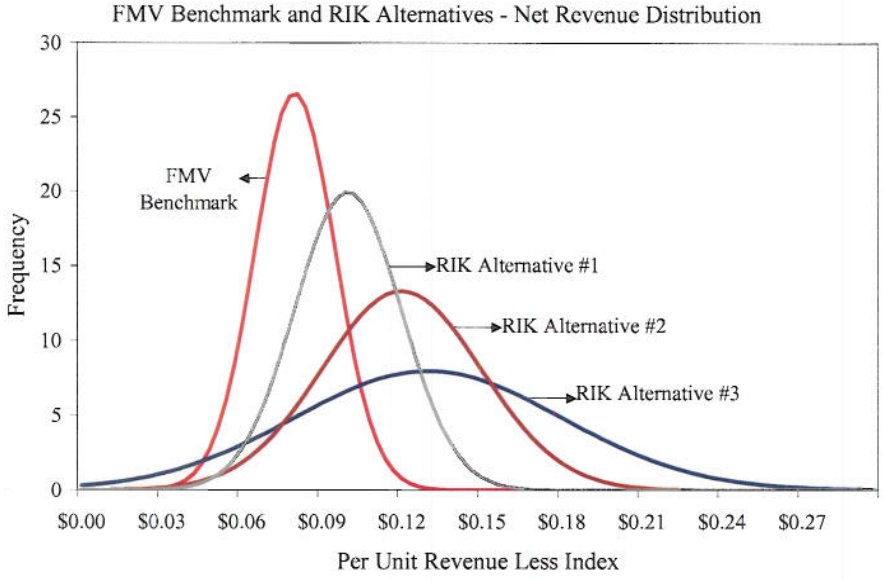
The decision-making process consists of the following steps:

1. Define decision – potential uses of the decision analysis process include:
    a) Deciding whether royalty should be taken in-kind or in-value
    b) Valuation of alternative RIK commercial options
    c) Developing a general marketing or business plan strategy
2. Define FMV benchmark distribution – mean expected revenue and downside revenue.
3. Define expected net revenues and downside revenues for all the alternatives.
4. Eliminate alternatives with lower expected revenues than the FMV benchmark.
5. Eliminate alternatives with lower downside revenues than the FMV benchmark.
6. Choose the alternative RIK option (See figure 12) that has the highest expected net revenue or risk adjusted net revenue.

Other adjustments such as administrative expenses or the savings from accelerated revenue collection need to be determined on a forward looking basis for each RIK alternative and incorporated with the net revenue metric to aid in decision-making, since they can be key factors offering advantages to one alternative over another.

Although this approach focuses on the net revenue (or net revenue/volume) metric for decision-making, other factors, such as capabilities of the RIK department and systems limitations, also need to be considered in making decisions.

Figure 12. FMV Benchmark and RIK alternatives



6.4 Measuring RIK Performance – Looking Backward

The performance of the RIK program can be measured relative to the FMV benchmark at appropriate measurement levels, time horizons and frequencies. Actual RIK performance is measured using a framework similar to that of the benchmark. Net revenue from the RIK program is calculated as revenue from selling the royalty share of production at the realized market price plus/minus adjustments to achieve the realized market price of the commodity. Adjustments for gas include the cost of transportation, processing, and administration. For oil, they include adjustments for transportation, quality, and administration. Adjustments also include savings such as those from accelerated revenue collection. In order to normalize the comparison for different volumes, the net revenue per unit of production is measured. The net revenue thus calculated is compared against the benchmark to assess the performance of the RIK program.

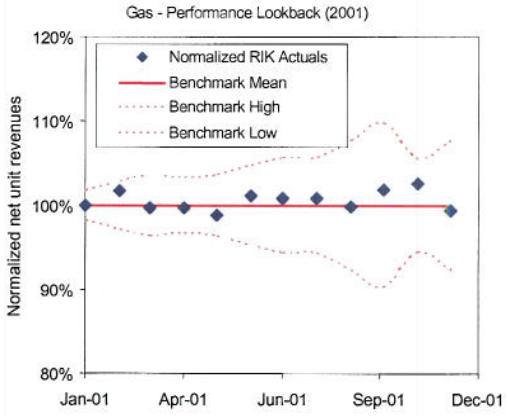
To assess performance during a year, it is essential that the measurements can at least be conducted on a monthly or quarterly basis. The performance measurement process should provide the flexibility to measure performance on an RIK program level, a commodity level, a geographic level, and a property level.

Figure 13 is an example of measuring the performance of an RIK property relative to the example FMV benchmark developed in Section 6.2.

Figure 13. Measuring performance against an FMV benchmark

An example of measuring performance against an FMV benchmark. The values are normalized with respect to the benchmark. The benefit of normalization is that it provides a graphical understanding of the performance relative to the benchmark.

The actual RIK results exceed the expected FMV data in 6 of 12 months and they are within the benchmark range throughout the year. On average, the RIK actuals for the year exceed the FMV benchmark.



6.4.1 Incorporating Other Adjustments

The above example does not incorporate administrative expenses or the savings from accelerated revenue collection. At a minimum, the overall administrative expenses could be developed for RIV and RIK each year to provide a differential expense on a per-unit basis. The impact of reducing RCT by accelerating the collection process can also provide benefits to MMS and these savings should be included in estimating the net revenue.

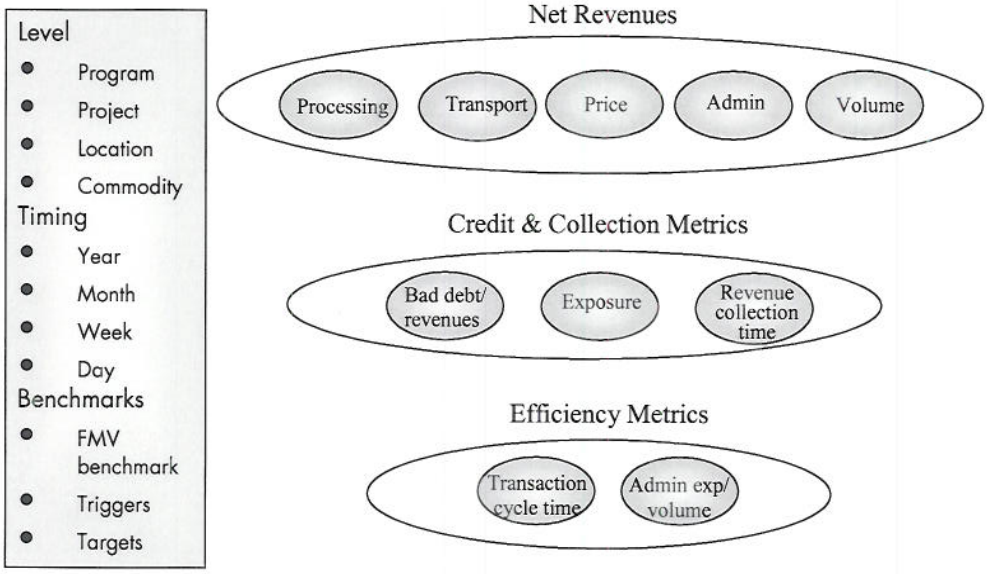
Measurement of RIK performance at regular intervals is key to conducting a periodic comparison with the FMV benchmark. Specifically, the performance metrics link the performance of the RIK program to the broader business objectives and statutory requirements.

6.5 Performance Monitoring - Current

A performance dashboard is an effective tool to monitor and track a business at regular intervals. The intention of a performance dashboard is to provide the most recent performance information to management and enable management to take swift action in the event of an indicator exceeding a pre-defined limit or expectation.

Figure 14 shows a proposed performance dashboard for monitoring and tracking the RIK program. It includes the three main performance metrics proposed in this report - net revenues, credit and collection, and efficiency. Central to the dashboard design are the benchmarks and targets that the metrics are compared against as well as the level and the interval at which they are measured.

Figure 14. Proposed performance dashboard for the RIK program



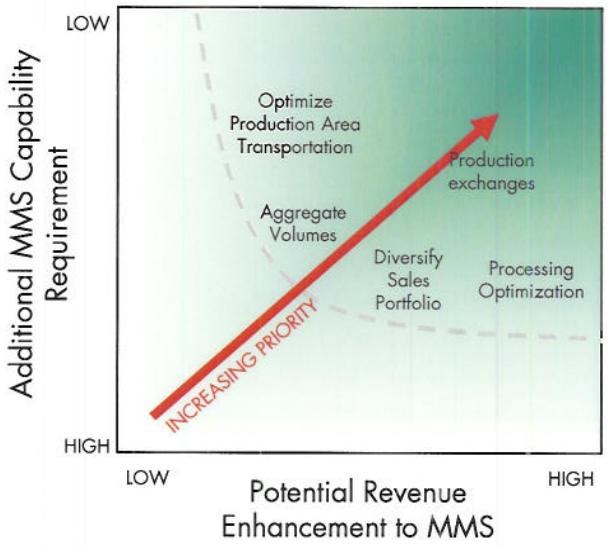
6.6 Enhanced Marketing Strategies

Lukens Energy Group examined potential strategies that MMS could adopt to enhance net revenue by capitalizing on market trends, managing uncertainty and better optimizing current practices. The concepts underlying several strategies analyzed within the context of marketing natural gas are applicable to the crude oil market.

Figure 15 shows the qualitative analysis approach that was used to filter a wide range of potential marketing strategies by considering the expected revenue enhancement versus the additional capabilities that would be required.

Figure 15. Alternative RIK strategies

Alternative strategies considered were prioritized based on revenue enhancement potential for MMS and the additional capabilities and requirements of implementing the strategies. Strategies having the highest revenue potential with the lowest additional capabilities and requirements were considered for analysis.



Based on an assessment of the qualitative fit of the strategies for MMS and the estimated risk-return impact of the alternative strategies, the following is a brief overview and discussion of the recommended strategies along with expanded activities and resource requirements.

In implementing the enhanced marketing strategies, MMS needs to consider the portfolio impacts of the different strategies recommended. Several of the recommended strategies are not mutually exclusive and should be pursued at the same time; however, adoption of certain strategies may preclude other strategies.

Diversify sales portfolio

Diversifying MMS' sales portfolio can provide incremental benefits to MMS. The strategy is to expand the customer base beyond normal bid-out participants, include local distribution companies, electric utilities and large industrial buyers/consumers and enter into shorter or longer-term deals to market royalty volumes. Increased sales to end-users can diversify MMS' credit exposure across different industry sectors. Similarly, diversifying term of sales allows MMS to determine optimal contract terms based on supply/demand fundamentals and to reduce uncertainty. Some of the strategies may require the ability to enter into multi-year contracts in order to take advantage of existing market opportunities.

Expanded Activities

- Selecting properties for end-user bid-out process
- Developing marketing relationships with end-users
- Determining the length and timing of contracts
- Market analysis and deal/risk analysis
- Designing offers and negotiations for local distribution companies and mid-stream marketers

Resource Requirements

- Natural gas and oil marketing experience/expertise
- Energy commodities risk management experience
- Analytical skills for market analysis, risk analysis

Aggregate volumes through pipeline pools

This strategy considers the advantage to MMS from managing production uncertainty and exposure to daily price variability by using natural gas pipeline pooling mechanisms. The pooling mechanism allows MMS to carry over production volume imbalances from day to day within a specified tolerance limit rather than relying largely on a combination of base and swing volumes, as MMS currently does. This strategy is especially advantageous when MMS is able to aggregate production from multiple fields on a single pipeline and when the production volumes are fairly predictable. MMS needs to develop internal capabilities to manage gas volumes in pipeline pools on selected pipeline systems.

Expanded Activities

- Production uncertainty analysis
- Volume monitoring and periodic imbalance correction
- Dealing with purchasers and pipelines on volume adjustments and cash outs
- Scheduling activities include volume nominations, confirmations, tracking

Resource Requirements

- Detailed knowledge and understanding of GOM gas infrastructure
- Analytical expertise for production forecast analysis
- Imbalance management & accounting experience
- Scheduling experience

Pursue production exchanges

Production exchanges between MMS and a selected counterparty could enable both parties to leverage their specific expertise to obtain optionality and aggregation advantages. Both parties could also benefit from administrative savings that can be obtained by focusing marketing efforts in key areas rather than across widespread and marginal properties. MMS should pursue production volume exchanges for crude oil and natural gas with select producers or other counterparties to leverage MMS position and take advantage of identified optionality.

Expanded Activities

- Analysis of revenues from selected properties
- Determination of properties that are candidates for exchanges
- Negotiation with producers on exchange contracts
- Optimization of exchanged volumes
- Monitoring performance at exchanged properties for future decision-making
- Volume reconciliation
- Exchange contract administration

Resource Requirements

- Increased natural gas and oil marketing experience/expertise
- Detailed knowledge of production area and associated infrastructure
- Increased analytical skills - economics background helpful

6.7 Organizational Structure

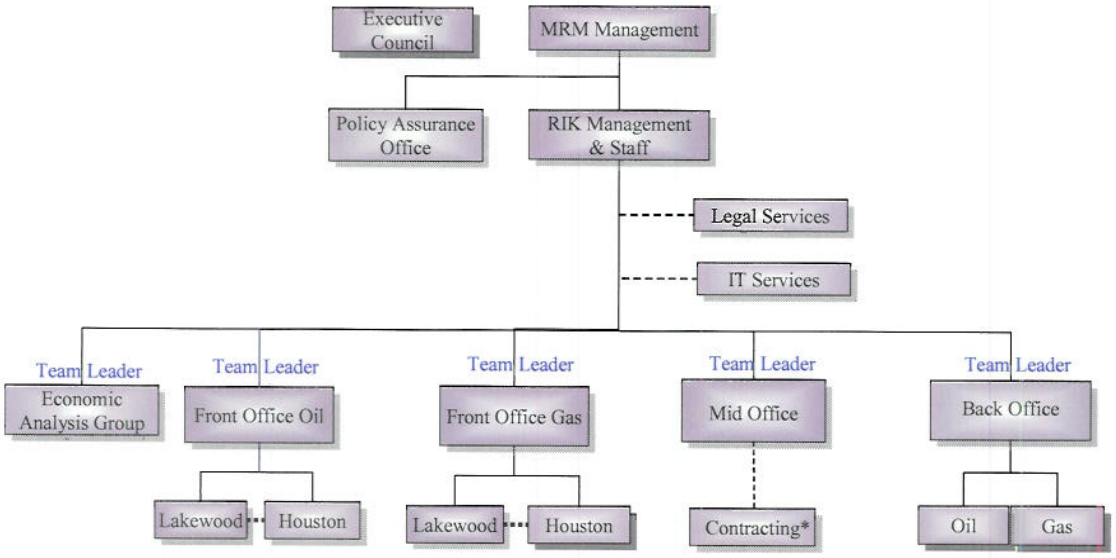
The current organizational structure was established in 2000 following a reorganization of the MRM group within MMS. A separate RIK management responsibility was established with functional groups for natural gas and crude oil marketing of RIK volumes. These groups consisted of the front office function for each commodity with a common mid office created for contract management, credit management and deal validation. Some of the supporting back office functions were to be performed by other organizations within MMS.

Due primarily to operational efficiencies, this organizational structure has evolved over the last three years. Several traditional back office functions have migrated to the RIK front office over this time period. As an example, managing and reconciling volume imbalances are currently being handled out of the RIK oil and gas front office. This change was based on a need for volume imbalances to be managed and reconciled on a more current basis.

The current RIK organization has approximately 46 personnel. Support functions for the RIK management include four analysts reporting to the RIK management. There are currently nine personnel in RIK Gas Operations and twenty personnel within RIK oil operations, including five back office personnel based in Houston dedicated solely to the Small Refiner Program.

Figure 16 shows the proposed organization structure of a permanent MMS RIK program. Some of the main changes in the organizational structure involve better delineation of functions, providing greater policy oversight, establishing a separate group to perform economic and quantitative analysis and establishment of a Houston office presence. The proposed organizational structure is designed to provide for an efficient and effective "end to end" process for the commercial RIK functions.

Figure 16. Proposed organization structure of MMS RIK program



* Reporting to Administration and Budget Office

Delineation of Functions: As a best practice, the Committee of Chief Risk Officers ("CCRO")[10] recommends a three-office organizational structure. The RIK Roadmap to the Future also discussed the industry framework of organizing functions into front office (agreements and logistics), mid office (contract administration, control/risk management) and back office (settlement and accounting) as a framework for RIK operations within MRM. The initial design of the RIK Office created a front and mid office within the RIK structure with back office functions being provided by other organizations within MMS. We believe this has led to some inefficiencies that can be addressed by clearly segregating the Front, Mid, and Back office functions.

It is recommended that MMS separate the functions of the front, middle and back offices in order to increase the efficiency of the RIK organization and provide a greater level of control and oversight. All three functions should report within the RIK organizational structure. Team leaders are required for each group in order to provide a single point of authority and responsibility for designated activities and interactions with RIK management as well as other organizations.

Policy Oversight: The RIK program is exposed to certain risks associated with a commercial enterprise such as volume risk, credit risk and contract risk. As in commercial organizations, it is essential for MMS to adopt and follow clearly defined risk guidelines or policies. A risk policy will describe the risk tolerances and limits for the RIK organization. There is a need for a senior level oversight function within MMS to perform functions equivalent to the Risk Committee and/or Chief Risk Officer in commercial firms that typically develop guidelines and ensure compliance with corporate risk policies.

It is recommended that the MMS Executive Council provide an ongoing policy oversight function within MMS for the RIK commercial operations. The Executive Council should provide overall risk policy guidelines, guidance on FMV benchmarking, and guidance on RIK performance standards. The policy oversight should be comprised of MMS senior management and supported by a Policy Assurance function that has in-depth knowledge of RIK commercial activities and experience with commercial risks. The Policy Assurance function should utilize the resource base of the Economic Analysis Group for quantitative and analytical support.

Economic Analysis Group: In today's natural gas and crude oil marketing environment, the use of sophisticated analysis to examine various marketing opportunities has increased the complexity in making marketing decisions. Although the MMS RIK team currently has a few individuals who are adept at working with spreadsheets and developing straightforward analyses, they do not have the analytical background or experience necessary for more complex analysis.

It is recommended that MMS develop a group within the RIK organization that has the responsibility and necessary resources to coordinate the economic and quantitative function. This function will be a resource base for RIK commercial business decision analysis, working closely with RIK management in Lakewood and front office personnel on emerging strategies and portfolios. In addition, the Economic Analysis Group will be a resource for the Policy Assurance function.

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[10] The CCRO is an association of representatives from 31 entities involved in North American merchant energy trading. The CCRO issued a set of "white papers" on November 19, 2002. These white papers are the culmination of a first round of work based on a compilation of the best practices identified from the member companies.

Houston Presence: The MMS RIK organizational team is headquartered in Lakewood, Colorado with almost all management and staff located in the Denver area offices. Developing and managing the commodity bid-out packages, communicating with prospective customers, and negotiating transportation agreements has required frequent trips to Houston, where the majority of producers, purchasers and other counterparties are located. For the most part, the MMS staff has been able to work out of the Lakewood office with minimal impact on the RIK program.

It is recommended that MMS consider developing a presence for their RIK front office team in Houston as part of its overall front office operations. The Houston presence is predicated on the need for crude oil and natural gas marketers to have access to their counterparts in the industry and maintain the level of experience and expertise required for an expanded business model.

Outsourcing: MMS needs to increase its level of experience and expertise in order to adopt more advanced marketing strategies proposed in the expanded business model. This can be accomplished through aggressive internal hiring and training over several years or can be obtained through selective contracting with outside resources.

It is recommended that MMS consider contracting for outside expertise for advanced economic and quantitative analysis to support deal structuring and valuation related to RIK optimization strategies. Access to outside commercial expertise in implementing this business plan will be essential to successful development of a top tier professional RIK operation.

Support Functions:

- Commercial Legal Services: It is recommended that RIK management have direct access to commercial legal support. A specific person should be identified to provide the specialized commercial oil and gas contracting legal advice and support that the MMS RIK program requires. It is preferable to have legal support physically on-site with a direct or indirect reporting relationship to the RIK management.

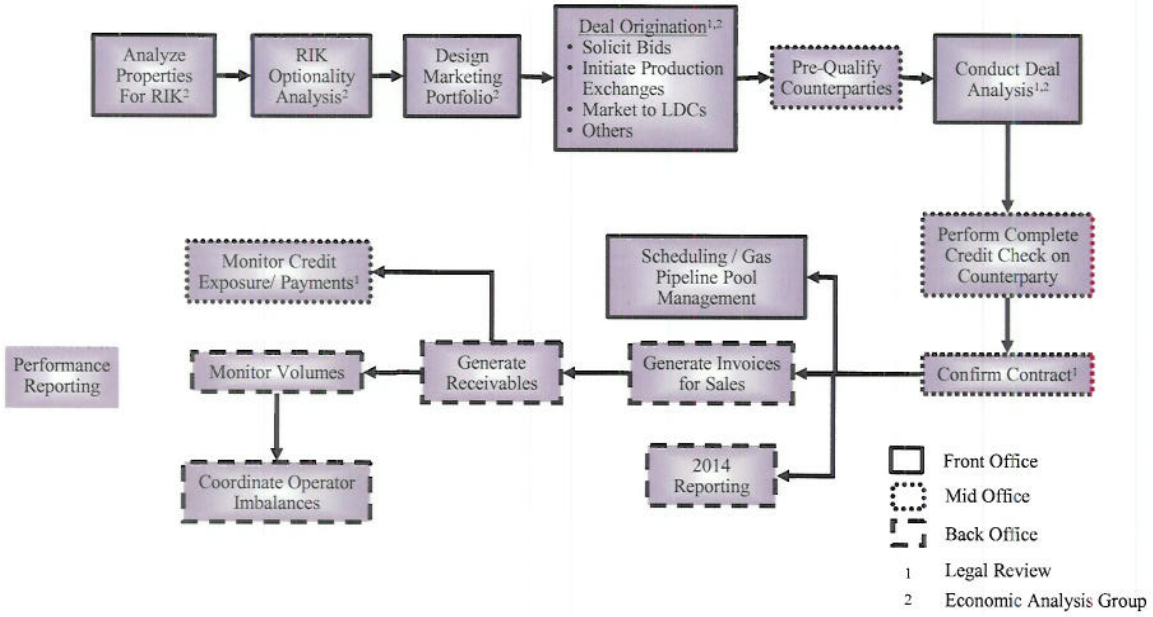
- Information Technology: It is recommended that 2 to 3 personnel within MMS' information technology group be assigned to provide direct support to the RIK program to ensure system reliability as well as respond to ad hoc requests for reports and system modifications.

- Contract Administration: It is recommended that MMS develop in-house expertise in commercial oil and gas transactions and contracting practices to provide the advice and oversight required in resolving contract modification or interpretation issues that might arise with the expanded business model.

6.8 Process & Procedures

In the proposed business process, (see Figure 17) the major changes occur in the front office functions with the addition of more advanced marketing strategies. The mid office should take responsibility for certain functions now performed in the front office, such as monitoring accounts receivable balances. Clearer delineation of the back office within the RIK group will shift some responsibilities that are currently performed within the front office, such as managing imbalances, to the back office. Figure 17 highlights the business cycle for the three major offices (front, mid, back) while noting the assistance of support functions such as legal review and economic analysis.

Figure 17. Proposed business cycle



RIK Optionality Analysis

Once a property has been designated to the RIK program, an analysis of the optionality available to maximize revenue from the property is undertaken by the RIK front office, using market intelligence in coordination with the Economics Analysis Group to determine the optimal value from various marketing alternatives. This analysis would involve considering such things as: 1) whether a production exchange should be negotiated for the property, 2) whether volumes from the property should be pooled on a pipeline's pooling system, 3) whether a portion of the volumes from the property should be targeted for sale to end-users, and 4) whether volumes from the property should be sold at different times to diversify the value obtained from the property. The Front Office and the Economic Analysis group will work closely on the analysis.

Design Marketing Portfolio
Based on the analysis in the previous step, a portfolio of marketing strategies is determined for each property. This portfolio will be designed to incorporate the optimal combination of strategies that yields maximum revenues from the property with minimum downside risks. The process for designing how to obtain counterparties for each marketing strategy is also part of designing the marketing portfolio for a property. The Front Office and Economic Analysis Group will closely coordinate this effort.

Deal Origination
In this process, MMS issues invitation for offers ("IFO"), enters into negotiations for production exchanges, or enters into negotiations with other counterparties in order to obtain bids for its various marketing strategies. As part of a marketing strategy, this process could also involve negotiation of transportation and processing agreements, where required.

Conduct Bid Analysis
Once MMS receives offers from counterparties, this stage involves analyzing the offers to identify those providing the highest value to MMS prior to the bid solicitation phase. Once the bid analysis is completed, a complete credit check is performed on the counterparty and the contract is confirmed.

Scheduling Gas Pipeline Pools
An added operational process will be to manage scheduling of gas volumes on selected pipeline systems. The recently implemented gas management system will provide tools to facilitate the ongoing daily monitoring aspects of this process function.

6.9 Personnel Skill Sets

As part of the permanent RIK program, it is suggested that MMS hire or otherwise retain personnel in key positions with significant commercial experience in oil and natural gas marketing in the Gulf of Mexico and Rocky Mountain regions to assist in implementing more sophisticated marketing strategies. MMS should be flexible in its employment contracting to attract and retain the necessary level of experience. Contracting procedures and terms should be defined such that there is no conflict of interests. It is recommended that MMS obtain/increase the level of experience and expertise of its personnel specifically in the following functions:

- Front office marketing
- Economic and quantitative analysis
- Scheduling
- Legal support
- Contract administration

Specific additions to the RIK team include: Oil Marketer, Gas Marketers, Gas Schedulers, Oil Scheduler, experienced economics/quantitative analyst.

Additions to the RIK staff (8-10) will not have a significant impact to the size of the RIK organization since they will be offset by efficiencies created when the commercial gas and liquids management systems are fully functional.

6.10 Future RIK Business Model

The current RIK strategies and organizational structure have been effective for the existing business model. The framework of a future RIK business model builds upon the current structure and allows for the additional capabilities and controls necessary to implement the enhanced marketing strategies as outlined in this report. The future RIK business model will allow MMS to maximize the value of increasing volumes of royalty production over the five-year plan.

The following description highlights key elements and establishes a frame of reference for the future RIK business model.

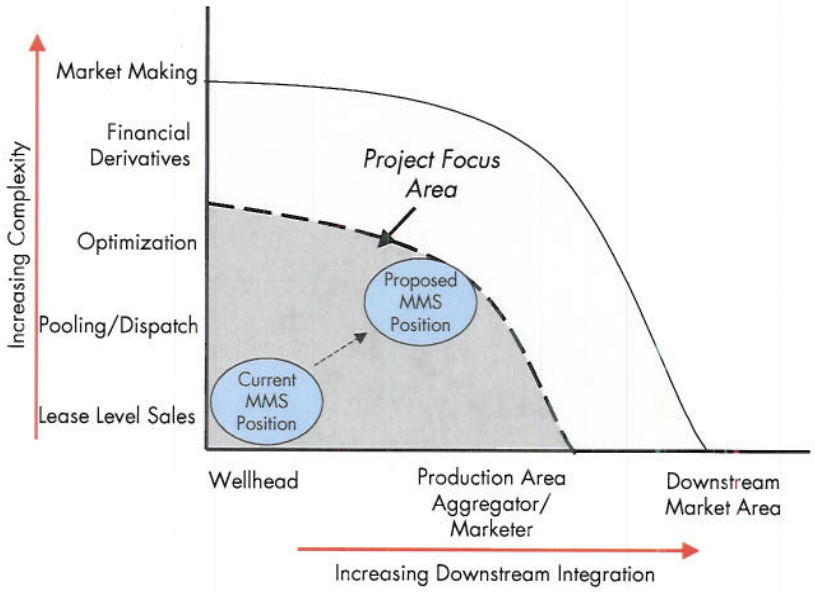
- MMS will continue to sell natural gas at the FMP or the first onshore market center. The commercial strategy for crude oil will be very similar in the Gulf of Mexico. However, the future model will provide more flexibility to the RIK team in developing strategies that expand the customer base and allow even more competition for RIK volumes. Certain strategies will enhance aggregation options through negotiated contracts and production exchanges.
- Some of the strategies may require the ability to enter into multi-year contracts in order to take advantage of market opportunities, especially in the transportation and processing areas or to attract additional high margin customers. In some cases longer term transportation, processing, and exchange agreements will allow for more efficient aggregation of gas and oil, thereby providing decreased costs and increased net revenue.
- The future model is designed to maximize net revenues for those properties that are in the RIK portfolio. However, the future model framework stays within a conservative risk profile. MMS will continue to be a commodity "price taker."
- The model incorporates a systematic benchmarking and performance measurement process that will allow for quantitative comparisons of expected values and risk profiles. MMS in-kind sales will continue to meet a fair market value test.
- The business model is designed to further reduce the transaction cycle time, thereby reducing administrative expenses on a volumetric basis.
- The future business model will continue to accommodate and react to government-mandated programs, such as the Strategic Petroleum Reserve ("SPR") fill program, Small Refiner Program, and possibly Low Income Home Energy Assistance Program (LIHEAP). It is expected that MMS will remain actively engaged with the DOE in managing the fill objectives of the Strategic Petroleum Reserve during the five-year plan.
- The proposed organizational framework will significantly increase the commercial capabilities and expertise, especially in deal origination, negotiations, quantitative analysis, transportation operations, and credit analysis. This effort will likely require commercial consulting assistance.
- Developing expanded analytical capabilities will allow better understanding and evaluation of complex options and alternative strategies. The flexibility to evaluate multiple alternatives will be crucial for the successful expansion of the RIK model.

- RIK operational functions will have completed migration from a mostly manual process to an automated process. Implementation of the gas and liquid systems will provide greater control and monitoring features.

The proposed RIK framework and business model increases the capabilities in originating and negotiating transportation, processing, exchange and commodity sales agreements. The model requires an increased level of personnel experience and expertise, and organizational structure to allow flexibility in a changing environment and to take advantage of economies of scale as the RIK program expands. As Figure 18 points out the RIK business model with increased capabilities will allow MMS to take advantage of additional market opportunities as an aggregator/marketer.

Figure 18. Proposed shift in MMS business model

The chart shows the proposed movement from MMS's current position due to the adoption of the new marketing strategies and enhanced capabilities.



7 The RIK Blueprint - Five Year Business Plan

The major action items and timelines for the five-year business plan are outlined below. Specific action items are grouped into six major categories:

1. Mobilize to Implement RIK Blueprint
2. Implement Policies and Performance Measurement
3. Systems Implementation and Process Controls
4. Complete Organizational Structure and Human Resource Enhancements
5. Implement Expanded Marketing Strategies
6. Assess and Improve Business Plan

7.1 Mobilize to Implement the RIK Blueprint for the Future

Initial action items necessary to initiate mobilization of the five-year plan.

	Mobilize to Implement the Blueprint for the Future	Start	End
1	Secure necessary approvals	Oct-03	Dec-03
2	Finalize and publish MMS version of RIK Blueprint	Oct-03	Mar-04
3	Retain necessary assistance for implementation phase	Oct-03	Apr-04

7.2 Implement Policies and Performance Measurement

A very critical element of the permanent RIK program and business plan is completing the necessary work to develop and implement risk policy guidelines and the series of metrics and performance measurement tools that are recommended. The major action items and their timelines are itemized below:

	Implement Policies and Performance Measurement Procedures	Start	End
Establish Risk Policies & Guidelines		Jan-04	Aug-04
1	Develop RIK Program Risk Policy & Procedures	Jan-04	Aug-04
Implement performance metrics		Oct-03	Mar-05
2	Develop and test performance metrics	Oct-03	Jan-04
3	Evaluate and implement FMV benchmarks for royalty production	Oct-03	Mar-04
4	Implement performance measurement procedures	Jan-04	Dec-04
5	Develop & implement performance metrics and reporting process for administrative expense, credit, TCT and RCT	Apr-04	Mar-05
6	Develop & implement personnel training on statistical elements of benchmarking & measurement	Jan-04	Dec-04
7	Develop & implement process for conducting detailed evaluation and external reporting of performance	Oct-03	Dec-04

7.3 Systems Implementation and Process Controls

Over the past 3 years, MMS has developed RIK systems that have allowed the RIK team to move from a primarily manual process to a systematic process. The basic systems platform was completed in late 2002 and the natural gas module was put into operation in February of 2003, while the oil module was brought online in July 2003. MMS has focused its resources on testing the new systems and training key personnel to better understand and utilize the systems features. Going forward there is a need to analyze the system features that need improvements and modifications and allow even greater efficiency. In addition, specific action items are needed to improve and enhance internal processes to accommodate certain enhanced marketing strategies.

Systems Implementation and Process Controls	Start	End
Systems implementation - continued assessment	Oct-03	Mar-05
1 Assess gas system implementation	Oct-03	Dec-03
2 Assess oil/liquids system implementation	Oct-03	Mar-04
3 Complete system implementation of performance measurements	Oct-03	Sep-04
4 Identify gaps between "as built" and "as needed" systems	Oct-03	Apr-04
5 Complete modification or updating of oil/gas systems	Apr-04	Mar-05
Improve business processes	Apr-04	Beyond
6 Conduct ongoing analysis to improve volume imbalance reconciliation	Apr-04	Jun-05
7 Develop improved processes for updating credit evaluation exposure	Apr-04	Beyond
8 Develop & implement pipeline pool scheduling procedures	Apr-04	Jun-05
9 Complete assessment of internal & external data gathering & reporting requirements	Jul-04	Jun-05
10 Implement changes to data gathering and reporting requirements	Jul-05	Jun-06

7.4 Complete Organizational Structure and Human Resource Enhancements

There are a number of recommended action items required to complete the permanent RIK framework. These include organizational structure improvements and adding capabilities to the human resource base that will bring specific commercial expertise and experience to the RIK program.

Organizational Structure and Human Resource Enhancement	Start	End
Restructure RIK organization to increase efficiency and control	Jan-04	Jun-04
1 Organize and staff economic analysis group	Jan-04	Jun-04
2 Develop policy oversight function	Jan-04	Jun-04
Acquire commercial skill set	Jan-04	Beyond
3 Enhance legal representation with commercial contracting experience	Jan-04	Dec-04
4 Acquire and develop experienced commercial marketers	Jan-04	Dec-04
5 Acquire experienced contracting and scheduling personnel	Jan-04	Dec-04
6 Conduct evaluation for outside quantitative resources	Jan-04	Dec-04
7 Run ongoing training program for marketing and scheduling functions	Jul-04	Beyond

7.5 Implement Expanded Marketing Strategies

In addition to the organizational and human resource improvements, a number of action items are related to implementation of the enhanced marketing strategies. Several of the strategies will require increased analytical capabilities and will evolve over the five-year plan as market opportunities develop and MMS is in a better position to identify and act on the opportunities.

	Expand Marketing Strategies	Start	End
Expand marketing activities		Mar-04	Beyond
1	Develop & implement opportunities for production exchange agreements	Nov-04	Beyond
2	Develop & explore opportunities to diversify portfolio of contracts and customers	Oct-04	Beyond
3	Advance opportunities to increase value through optimizing processing contracts	Jul-04	Beyond
4	Develop and execute plan to aggregate volumes through pipeline pools	Jul-04	Jul-05
5	Advance opportunities to optimize production area transportation	Jul-05	Jun-06
6	Expand marketing to LDC's for supply diversity	Oct-05	Dec-07
7	Complete assessment for increased LNG imports	Mar-04	Mar-05
8	Assess & develop specific opportunities with Producing States	Jul-04	Dec-06
9	Complete feasibility study of Wyoming RIK gas	Mar-04	Mar-05
10	Evaluate Wyoming outsourcing opportunities for oil & gas	Apr-04	Dec-05

7.6 Assess and Improve Business Plan

It is important to continually revisit and update the five-year business plan and make adjustments and improvements as necessary. Changes in market structure or business practices require that MMS maintain the five-year plan as a living document that is responsive to changes in the environment.

	Assess and Improve Business Plan	Start	End
1	Conduct ongoing detailed analysis of RIK program	Jan-04	Beyond
2	Assess performance and update RIK business plan	Jan-06	Jun-06
3	Implement enhanced processes as called for by 2006 RIK assessment	Jul-06	Jun-07
4	Create new 5-year business plan for 2009-2013	Jan-08	Dec-08

7.7 Overview of 5-year Business Plan Timeline

The overall timeline of the five-year plan is designed to allow MMS sufficient time to complete the organizational changes, process improvements and personnel enhancements during the first and second year of the plan. After the first year, the performance measurement processes should be fully operational. When the permanent RIK framework is operational, MMS will be in a better position to take advantage of market opportunities through implementation of the enhanced marketing strategies and optimally expand RIK volumes. All the specific goals and objectives are designed for completion by the end of the five-year business cycle.

Figure 19. 5-year Business plan timeline