Energy Investment Opportunities

“Louisiana Energy Projects – Economic Impact?”

Monthly Roundtable
March 13, 2009
What’s **HOT** in Louisiana besides the food?
Today’s Agenda

Where We Stand in the Energy Sector

- New Gas Fields
- New Pipelines
- New Natural Gas Storage Facilities
- New Chemical Plants
- New Refineries
- New Power Generation Plants
- New Gasification Projects
- Alternative Energy

Economic Development Incentives
Why choose Louisiana?
Louisiana is “open for business”
Industry-friendly environment (regulatory, government, public)

Louisiana invites foreign investment & global partnerships

*International holdings total nearly $21 Billion, (9th largest state in USA)*

Louisiana is the ‘Gateway to the World’

*The Port of New Orleans is America’s gateway to the global market, conducting trade with 191 countries around the world*

Louisiana is the hub of America’s energy market

-- 2nd in total refining capacity - 2.8 million bpd
-- 19 produce 16.9 billion gallons of gasoline per year

Louisiana has “Fast Track” permitting

Louisiana Energy Profile Quick Facts

- Louisiana ranks #1 in oil production when OCS and state production are combined.
- The Louisiana Offshore Oil Port (LOOP) is the only port in the United States capable of accommodating supertankers.
- Louisiana is headquarters to the U.S. Strategic Petroleum Reserve, with half of the SPR storage capacity located in the state.
- The Henry Hub, located along Louisiana’s coastline, is the index point for natural Gas spot and futures trading in the United States, providing access to major markets throughout the country.
- Louisiana’s LNG import terminals at Lake Charles are the largest of five existing LNG import sites in the United States.


*Energy Information Administration, Updated March 5, 2009*
New Pipeline Projects

- Tiger Pipeline
  - 2.0 Bcf/day

- Regency
  - 1.1 Bcf/day

- Midcontinent
  - 1.5 Bcf/day up to 1.8 Bcf/day

- 2010 H2 Pipeline System
  - 650MM SCFD capacity
Tiger Pipeline

Cost: $1 - $1.2 billion depending upon the final throughput capacity design
Capacity: up to 2.0 Bcf/day
In-Service: First half of 2011
Description: 180 miles of 42" natural gas pipeline with 4 potential compressor stations
Location: pipeline will commence at an interconnect with Houston Pipeline Company in Panola County, TX and will follow in an easterly direction to the Perryville Hub in Richland Parish, LA.
Supply Source: Haynesville Shale, Bossier Sands, and Fort Worth Basin production areas
Regency Intrastate Gas LLC
Proposed Haynesville Expansion
Mid Continent Express Pipeline

Cost: $1.27 billion
Route: From the southeast corner of OK, across northeast TX, northern LA, central MS and into AL
Owner: Midcontinent Express Pipeline LLC (MEP), a joint venture between Kinder Morgan Energy Partners, L.P. and Energy Transfer Partners, L.P.
In-service date: Apr 1, 2009 - OK through Delhi, LA.; Aug 1, 2009 - remaining pipeline to near Butler, AL
Capacity: 1.5 billion cubic feet per day (Bcfd) with a planned expansion to 1.8 Bcfd by adding compression
Hydrogen Pipeline System

2010 H2 Pipeline System:
Single 175 mile system
650MMSCFD Capacity
5 Large SMR’s
15 total sources
New Power Generation Plants

Rodemacher Power Station 3
Cleco
Many, LA
Projected Cost: $1 billion
Anticipated completion date: Sept-Oct of 2009

Proposed
Little Gypsy 3 Repowering Project
Entergy
Montz, Louisiana
Projected Cost: $1.7 billion, including financing costs
Projected Completion: 2013
New Gasification Projects

Proposed
Leucadia
Lake Charles
$1.6 billion

Proposed Project
not announced
Convent
$736 billion
New Chemical Plant Projects

- **AD-EAS**
  - Location: Red River
  - Value: $350 million

- **Catalyst**
  - Location: Lafayette
  - Value: $21 million

- **Shintech**
  - Location: Plaquemine
  - Value: $2 billion

- **SNF**
  - Location: Plaquemine
  - Value: $350 million

- **Westlake Chemical**
  - Location: Geismar
  - Value: $300 million

- **Petroplex Tank Farm**
  - Location: St. James
  - Value: $250 million

- **Criterion**
  - Location: Port Allen
  - Value: $300 million
New Refinery Expansions

- **Placid**: Port Allen, $300 million
- **Exxon**: Baton Rouge, $500 million
- **Valero**: Norco, $2.7 billion
- **Marathon**: Garyville, $3.2 billion
- **Proposed INCA**: St. James, $250 million
- **Alon**: Krotz Springs, $33 million
New Gas Fields

- Haynesville Shale
- Cotton Valley Shale
- Austin Chalk
- Coal seam natural gas
The Haynesville Shale runs under a massive swath of northwest Louisiana, about 3.5 million acres and counting. The map is an envisioning of the shale in its entirety by the Louisiana Office of Mineral Resource.

*Potential Haynesville Shale in N. La.*

*The outline is only the interpretation by the Office of Mineral Resource of the area which may have potential in the Haynesville Shale geologic play, but should not be taken as the only interpretation of Haynesville Shale potential.*

Source: State of Louisiana Mineral Board

The Times
Haynesville Shale

266 Total Wells Permitted

- Producing 46
- Permitted, waiting on completion 101
- Permitted, drilling in progress 40
- Permitted, not drilling 73

Source: http://dnr.louisiana.gov/haynesvilleshale/
Cotton Valley Shale

- Located above the Haynesville Shale in Northwest Louisiana
- 7,800-10,000 feet deep
- High drilling success rates (99+%)
- Wells cost 40% less than the Haynesville Shale wells
- Natural gas wells are very economical

Source: http://www.haynesvilleshale.com/cottonvalley.html
Austin Chalk

- Has thicker sands in Louisiana, thus leading to greater production than in Texas
- Located above the Tuscaloosa through Central to South Eastern Louisiana
- Will prove practical to use the Tuscaloosa well bores to complete in the Chalk, saving considerable drilling costs

Source: http://www.oilgastech.com/ventures.htm
Coal Seam Natural Gas

- Found in the northern portions of Louisiana at relatively shallow depths (2,500-4,500 ft)
- Underlies 70+% of the state
- Currently there are 44 producing wells
- The average cost to drill and complete a well is only about $250,000 per well. Early tests have established the gas content in the coal as economical.

*The companies drilling the wells have not divulged much information about the production or drilling details publicly. Until many more wells are drilled, exact boundaries cannot be determined.*

Source: Louisiana Department of Natural Resources
Enhanced Oil Recovery (EOR)

Justification for EOR in Louisiana

- Crude oil production has dropped 20% from 1970.
  - In 1970, domestic production of crude oil averaged 9.64 million barrels per day (MMbbl/d). In 2008, total US domestic crude oil production, including Federal offshore, averaged 7.80 MMbbl/d.
- A large portion of Louisiana's general revenue is from offshore oil.
- The Louisiana economy is also highly dependent on a large variety of service companies that depend on onshore and offshore oil production.
- In the Gulf of Mexico and offshore Louisiana state waters, 60% of the original oil-in-place will remain unrecovered with traditional recovery practices.

Source: Louisiana Department of Natural Resources, US Department of Energy
Benefits of EOR in Louisiana

- Assuming that 3.6 billion barrels of oil are developed over a 40-year time frame, by 2025 this would amount to:
  - Incremental crude oil production of 200,000 to 250,000 barrels per day
  - More than 8,000 jobs retained
  - Increased economic activity in Louisiana amounting to more than $500 million per year
  - Increased state and federal revenue of more than $250 million per year

Source: LSU Center for Energy Studies, US Department of Energy
Enhanced Oil Recovery (EOR)

EOR By CO₂ Injections
- CO₂ is injected into the reservoir
- The injected gas expands pushing additional oil to a production wellbore
- Between ½ and ⅔ of injected CO₂ returns with the produced oil. The remaining CO₂ is trapped in the oil reservoir by different means.

CO₂ Storage
CO₂ Pipeline Grid

PHASE 1
- New Orleans
- Baton Rouge
- Lafayette
- Lake Charles

PHASE 2
- Lafayette
- Baton Rouge
- New Orleans

PHASE 3
- Monroe
- Shreveport
BUSINESS INCENTIVES AND PROGRAMS
State Business Incentives

ENTERPRISE ZONE PROGRAM
  • Provides Louisiana income and franchise tax credits to a business increasing employment by 10% within the first 12 months or adding at least 5 new jobs in the first two years

QUALITY JOBS
  • Encourages businesses to create well-paid jobs with a basic health care insurance plan

INDUSTRIAL TAX EXEMPTION PROGRAM
  • Reduces local property taxes for 10 years on a manufacturer’s investment in buildings, machinery and equipment on the plant site

INDUSTRY ASSISTANCE PROGRAM
  • Tax exemption to Louisiana manufacturers and their contractors with facilities in the state who give preference and priority to Louisiana manufacturers, suppliers, engineers, contractors and labor

RESEARCH & DEVELOPMENT TAX CREDIT
  • Applies to existing businesses with operating facilities in Louisiana to establish or continue research and development activities within the state and to encourage expansion

*Louisiana invites corporate headquarters relocations*
Federal Business Incentives

RENEWAL COMMUNITY TAX CREDITS
Stimulates economic development in distressed areas of urban and rural communities through federal income tax credits and other incentives

NEW MARKETS TAX CREDIT
Fosters investment in urban and rural low-income areas with a 5-6% tax credit on the investment for up to 7 years

GULF OPPORTUNITY ZONE ACT OF 2005
GO Zone bonds

- $1.2 billion available for rebuilding
- $1.98* billion in approved applications, projecting:
  - 3,600+ jobs retained
  - 8,000+ new jobs
  - 18,000+ construction jobs
- 50 percent bonus depreciation
- Bonds and bonus depreciation recently extended by Congress through 2010

*+/− 5% standard deviation
Gulf Opportunity Zones and Renewal Communities
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Thank you!

For a copy of this presentation or to talk about investment opportunities in Louisiana, contact:

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