Indiana Coal to SNG
Project Overview

- Gasification of Indiana coal to produce substitute natural gas (SNG) for Indiana consumers

- Letter of Intent negotiated with Indiana utilities that includes target price, SNG volume, 30 year term and other contract provisions

- 30-year SNG purchase contracts will be based on a fixed pricing formula that removes commodity risk

- Contracts will be approved by Indiana Utility Regulatory Commission (IURC) and backed by state legislation to affirm “no look back”

- Private construction financing will insulate federal guarantee from construction and startup risks

- Federal loan guarantee for 80% of Project costs will have near-zero credit risk

- Superior environmental performance will include CO$_2$ isolation and a geologic sequestration demonstration
**Development Team**

<table>
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<tr>
<th>Leucadia National Corporation</th>
<th>E3 Gasification LLC</th>
<th>Johnston &amp; Associates</th>
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<td><strong>Subsidiary: Indiana Gasification LLC</strong></td>
<td><strong>Development Partner</strong></td>
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<td><strong>Project Developer/Owner</strong></td>
<td><strong>Principals authored Harvard “3Party Covenant” study and testified to Congress on the benefits of federal loan guarantees for gasification project development</strong></td>
<td><strong>Headed by former Senator Bennett Johnston, Johnston &amp; Associates provides strategic public and legislative affairs consultation and representation to a broad range of some of the world’s largest and most progressive private and public entities.</strong></td>
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<td><strong>- New York Stock Exchange listed company (Ticker Symbol: LUK)</strong></td>
<td><strong>- The company’s President, William G. Rosenberg, also serves as a Senior Fellow at the Harvard Kennedy School of Government</strong></td>
<td><strong>- Senator Johnston began his political career in the Louisiana Legislature, where he spent eight years. He then served 24 years in the United States Senate.</strong></td>
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<td><strong>- Diversified holding company engaged in a variety of businesses, including energy, telecommunications, healthcare services, manufacturing, banking and lending, real estate activities, winery operations, mining, and property and casualty reinsurance.</strong></td>
<td><strong>- Formerly, Mr. Rosenberg served as Assistant Administrator of EPA; Assistant Administrator of the Federal Energy Administration; and Chairman of the Michigan Public Service Commission</strong></td>
<td><strong>- As a member of the Senate Committee on Energy and Natural Resources from its creation, and as its Chairman and Ranking Member for much of that time, Senator Johnston was either directly or indirectly responsible for all energy legislation considered by the Congress between 1973 and 1996.</strong></td>
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<td><strong>- Headquartered in New York City, with corporate operations in Salt Lake City and San Diego, and affiliate operations located throughout the world</strong></td>
<td><strong>- Mr. Rosenberg has 30+ years experience with public and private finance and energy and environmental policy</strong></td>
<td><strong>- Headed by former Senator Bennett Johnston, Johnston &amp; Associates provides strategic public and legislative affairs consultation and representation to a broad range of some of the world’s largest and most progressive private and public entities.</strong></td>
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<td><strong>- LUK has achieved a compounded annual return to shareholders &gt;20% since 1978</strong></td>
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**Physical Project**

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<th>Location</th>
<th>- Southwest Indiana proximate to coal, interstate natural gas pipelines, transmission and water resources (site acquisition in process)</th>
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</table>
| Fuel              | - 3 million tons Indiana coal per year  
|                   | - Negotiations well underway for 30-year supply  
| Output            | - 40 BCF substitute natural gas (SNG) per year  
|                   | - 134 MW net electric power  
| Configuration     | - 3 operating + 1 spare GE gasifiers  
|                   | - Rectisol™ for acid gas and CO₂ separation  
|                   | - Steam turbine generation using excess steam  
| Operator          | - Negotiations underway with Eastman Gasification Services regarding co-development and operating agreement  
| Environmental     | - Extremely low emissions of regulated pollutants (NOₓ, SO₂, PM, Hg)  
|                   | - Separation of “sequestration ready” CO₂ stream  
|                   | - Development of geologic sequestration demonstration  

![Diagram](image)

*Information should be considered preliminary subject to ongoing feasibility studies.*
Why Indiana?

- Governor Mitch Daniels supportive
  - Consistent with Home Grown Energy Plan
  - Establish state-federal partnership under loan guarantee program

- Utility regulatory framework
  - Binding regulatory approval of long-term gas purchase contracts

- Engaged utility commission & consumer counselor
  - Knowledgeable about gasification
  - Supportive of long-term natural gas hedging

- Abundant coal supplies and transport options
  - Lower cost high sulfur coal reserves
  - Rail, barge, truck

- Major interstate gas pipelines that crisscross coal region
  - Panhandle Eastern, Texas Eastern, Texas Gas, Midwest Gas Transmission, ANR
Financial Structure

• Patterned after Harvard “3Party Covenant”

• 30-year SNG purchase agreements with Indiana gas utilities (for 100% of SNG output) backed by IURC prudence approval and legislation affirming “no look-back”
  - Long-term contracts with pricing formula based on CPI indices that eliminates natural gas commodity risk
  - Contracts assure revenue to cover debt obligations
  - Central to achieving near-zero credit risk for federal government

• Private construction financing
  - Federal government takes no construction or start-up risk
  - Private construction lenders underwrite project (benefits federal government evaluation of guarantee)
  - Federal guarantee in place only after construction, commissioning and sustained commercial operations--significantly lower risk for federal government than projects seeking guarantees for construction loans

• Federal loan guarantee on long-term debt lowers cost of capital to reduce SNG price
  - Full faith and credit of United States Government behind guaranteed debt
  - 80% debt/equity ratio with virtually all long-term debt covered by guarantee
  - 30-year amortization
  - Availability of federal credit significantly lowers SNG price

• 20% equity investment by owner
  - $350 million investment
  - Equity takes development and FEED risk
  - Equity takes primary risk of operating performance
  - Strong incentive for equity owner to ensure project performance
## Structure Works for All Parties

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<th>Provides</th>
<th>Receives</th>
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| **Federal Government** | -- Near-zero credit risk  
-- State regulatory credit support  
-- “Self-pay” for scoring  
-- Replicable achievement of energy security/environmental objectives |
| -- Loan guarantee on long-term debt  
-- Lower cost of capital | |
| **Utilities** | -- IURC approval of cost recovery  
-- No look back assurance  
-- Long-term price hedge  
-- Lower cost, less volatile gas supply |
| -- Long-term SNG (and power) purchase agreements | |
| **State Regulatory Commission** | -- Long-term supply and price hedge  
-- $5.5 billion expected consumer savings  
-- Reduced price volatility  
-- Increased jobs and development |
| -- Approval of SNG contracts for pass-through of cost | |
| **Owner** | -- Reasonable risk/reward return |
| -- Development capital  
-- Construction financing  
-- 20% equity  
-- Expertise in development, construction & operation | |
### Public Benefits

| Economic Benefits | - Long-term physical price hedge  
|                  | - Reduced price volatility and uncertainty  
|                  | - Expected benefits to Indiana consumers of $5.5 billion over life of contract |
| Supply Diversity | - 30 year long-term gas supply under fixed pricing formula  
|                  | - Gas from coal produced in-state  
|                  | - Supply and prices not subject to extreme weather (cold snap, hurricanes) or geopolitical events (including terrorist attacks), or world oil markets |
| Energy Security  | - Use of abundant domestic (Indiana) coal resource  
|                  | - Reduced reliance on LNG imports from unstable regions  
|                  | - Supports energy independence objectives  
|                  | - Replicable across country |
| Environmental Performance | - Separation of CO₂ stream (sequestration ready) & geologic sequestration demo at plant with expectation of broader sequestration in future as greenhouse gas programs evolve  
|                  | - Very low emissions of regulated pollutants (NOx, SO₂, PM, mercury)—expect about 1/10th of IGCC levels  
|                  | - Low water consumption (closed-loop) and waste production (useable by-products) |
| Economic Development | - Create and restore jobs and wealth to communities that will host $1.5 billion plant and mines  
|                  | - 1,000 construction jobs for four years, 300 full-time mining jobs, 1,800 other jobs associated with mining 3 million tons/yr, and at least 150 full-time SNG plant jobs |
| Technology Advancement | - Commercial deployment of modern gasification technology to convert domestic coal into SNG  
|                  | - Advancement of CO₂ sequestration through demonstration project and availability of isolated CO₂ stream (which may facilitate sequestration and use for enhanced oil or methane recovery) |
Consumer Savings

- Carnegie Mellon University professors evaluated the economic benefits of Indiana SNG for Indiana natural gas consumers
  - Study used decision analysis techniques for assessing uncertain outcomes
  - Evaluated the current EIA forecast of future gas prices in the context of EIA’s historical forecast accuracy compared to the Indiana SNG price structure

- Study concluded: “Not only are the costs lower with the SNG project, the risks are lower as well”
  - Ratepayers expected to save \$3.7 billion (nominal) in costs alone
  - The value of risk reduction is another \$1.85 billion (nominal) for a total of \$5.5 billion benefit to Indiana consumers
  - Significant immediate risk reduction
  - Significant long-term cost savings
  - No coal or natural gas commodity risk borne by ratepayers
  - No upfront cost is borne by ratepayers
SNG is a Secure Domestic Gas Supply Option

U.S. Natural Gas Supply Forecast

- Lower 48 Onshore
- Lower 48 Offshore
- Alaska
- LNG Imports
- Mexico & Canada

Project Schedule

- Near-term project development activities
  - Signed letters of intent with gas distribution utilities (October, 2006)
  - Governor's public endorsement (October, 2006)
  - Petitions filed with IURC (November, 2006)
  - File for federal loan guarantee (November, 2006)

- Complete feasibility assessment
  - SNG and power purchase agreements
  - Site control, fuel plan, technical and economic evaluations
  - Conditional commitment for federal guarantee

- Enter into Front End Engineering & Design (FEED) 2nd quarter 2007
  - Development cost of $20-30 million
  - Apply for permits at same time

- Close financing and start construction 2008
- Begin operations 2011
Federal Loan Guarantee Commitment

- Indiana SNG supports national policy objectives for energy security, environmental performance (including CO₂ mitigation), and technology advancement

- Federal government loan guarantee will have near-zero credit risk
  - Structure removes coal supply and natural gas price commodity risks
  - Construction and start-up risks taken by private owner and lenders
  - Assured revenue stream from utility ratepayers is backed by utility contracts, commission approval, and affirming state legislation
  - Significant equity investment and incentive for equity owner to ensure project performance

- Need Conditional Commitment by 2nd Quarter 2007 to enter FEED
  - Invitation to make full Application
  - Negotiate term sheet with DOE
  - Receive Conditional Commitment by 2nd Quarter 2007
  - Financial closing 2nd Quarter 2008

- $2 billion program cap should not preclude near-zero credit risk projects
  - Near-zero credit risk Projects could be treated outside of cap
  - Firm $ cap could be removed and replaced with focus on credit risk exposure
  - Conditional commitments could be provided in first round to qualified Projects that achieve near-zero credit risk
## Conclusion

- Indiana SNG is a win-win-win for DOE, Indiana and the Nation

- Indiana SNG is uniquely structured to achieve near-zero credit risk yet benefit economically from the use of a federal loan guarantee

- Indiana SNG is exactly the type of project contemplated by Title 17 of the Energy Policy Act of 2005

- Indiana SNG needs to be invited by DOE to make a full Application and then negotiate a Conditional Commitment by 2\textsuperscript{nd} Quarter 2007 to proceed with FEED

- Indiana SNG will set a precedent for the use of federal loan guarantees to stimulate advanced energy technologies that improve energy independence and security with no budget scoring and near-zero credit risk