The Medicine Bow Project--- A New Force in Energy

- DKRW Advanced Fuels LLC (“AF”) is a leading developer of the commercial use of gasification and liquefaction technologies to produce synthetic fuels for transportation and industrial use from solid fuel feedstocks --- including coal and petcoke.
- A key feature of the AF strategy is to minimize the carbon footprint of producing synthetic fuels utilizing carbon capture and sequestration technology in order to provide a cleaner product to the energy markets and reduce carbon emissions at the margin.
- The flagship AF project is the Medicine Bow Project which is designed to produce 10,000-20,000 barrels per day of regular gasoline for the Denver market using the GE gasification technology and ExxonMobil Methanol to Gasoline technology --- AF has sufficient coal reserves to grow this production to 42,400 barrels per day
- AF, as a first mover in these technologies globally, is developing a franchise that will create substantial value for AF shareholders as energy markets continue to grow and producing conventional crude oil becomes substantially more expensive and environmentally challenging.

A new force in the synthetic fuel market --- a leader in utilizing new technologies to produce liquid fuels
Medicine Bow: Key Strategy Highlights

- Product choice: Liquids (Transportation Fuels)
- Technology choices: Credible and Financeable
  - Gasification: GE
  - Cleanup: Selexol
  - Methanol: Davy
  - Liquids: Exxon MTG
- Long term off-take agreements
  - Gasoline
  - CO₂
- EPC contract
- Greenhouse Gas Mitigation: Capture CO₂
- Scale choice: 10,000-20,000 bpd

Coal to transport fuel (gasoline, diesel) projects are complex and have high up front development costs --- The strategy choice and crisp execution of the strategy are critical to project success
Meeting the World Demand for Liquid Transport Fuels

There is a significant incremental market for unconventional fuels: AF has a leading position in the race to fill this gap with fuels produced from gasification & liquefaction.
### US Energy Security and MTG Synthetic Oil Reserves

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>US Coal Reserves</td>
<td>262 Billion Tons</td>
</tr>
<tr>
<td>US Synthetic Oil Potential*</td>
<td>437 Billion Barrels</td>
</tr>
<tr>
<td>Saudi Oil Reserves 2009 **</td>
<td>265 Billion Barrels</td>
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<tr>
<td>Ratio US Synthetic/Saudi</td>
<td>165 Percent (%)</td>
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*Conversion of US coal at rates equivalent to Medicine Bow

**BP Statistical Review of World Energy June 2010

Converting our coal to liquids would give the US 165% of Saudi Arabia’s oil reserves
All technologies used in the process have been built and run at similar commercial scale. Each section is built at appropriate competitive scale and fully integrated.
Key data

- Location: Medicine Bow, Carbon County, Wyoming
- Project will own the Coal
- Mine is permitted to start construction
- Arch will operate the mine
- Coal reserves: over 180mm ST, bituminous
- Project will control coal reserves

Project controls coal reserve with 60 years of feedstock supply -- key project collateral.
Denbury is an independent oil and gas company engaged in acquisition, development and exploration activities
  – Major player in tertiary oil recovery methods
  – Significant operations and acreage in the Rockies, Permian Basin, Mid-Continent and Gulf Cost

Merged with Encore Acquisition Company in 2009 to create one of the largest crude oil-focused independent North American exploration and production companies with one of the largest CO₂ EOR platforms
  – Owns oil fields for EOR operations estimated to have more than 725 million barrels in potential reserves
  – Owns the largest CO₂ reserves east of the Mississippi used for tertiary oil recovery, equaling approximately 11.9 tcf*
    *Proved, probable and possible
  – Controls over 835 miles of CO₂ pipelines
Significant Opportunity for CO₂ - EOR Operations

Demand for CO₂

- U.S. oil production capacity from EOR projects is relatively small in comparison to potential capacity due to lack of CO₂ supply
  - Currently 100 CO₂-EOR projects producing 250,000 bpd
  - Approximately 1 billion barrels of proven reserves that can be recovered from CO₂-EOR, and estimates of nearly 85 billion barrels that are technically and economically recoverable
- Advanced Resources International (“ARI”), an oil and gas research and consulting firm, identified 1,100 large oil reservoirs that are favorable for CO₂-EOR operations, equaling 85 billion barrels
- Wyoming and its neighboring states have strong demand for CO₂
  - Rocky Mountain Region requires 10 trillion cubic feet of CO₂ and another 22 tcf of recycled CO₂ to recover 4 billion barrels
  - Williston Basin requires 2 tcf of CO₂ and another 4 tcf of recycled CO₂ to recover 2.5 billion barrels
  - Wyoming has 1.1 billion barrels requiring 4.5 tcf of CO₂

ARI Estimates for Recoverable Oil (billion barrels)

<table>
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<tr>
<th>Region</th>
<th>Incremental Technically Recoverable Oil (billion barrels)</th>
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<tbody>
<tr>
<td>Alaska</td>
<td>12.4</td>
</tr>
<tr>
<td>California</td>
<td>6.3</td>
</tr>
<tr>
<td>Gulf Coast (AL, FL, MS, LA)</td>
<td>7</td>
</tr>
<tr>
<td>Mid-Continent (OK, AR, KS, NE)</td>
<td>10.6</td>
</tr>
<tr>
<td>Illinois / Michigan</td>
<td>1.2</td>
</tr>
<tr>
<td>Permian (W TX, NM)</td>
<td>15.9</td>
</tr>
<tr>
<td>Rockies (CO, UT, WY)</td>
<td>3.9</td>
</tr>
<tr>
<td>Texas (East / Central)</td>
<td>17.6</td>
</tr>
<tr>
<td>Williston (MT, ND, SD)</td>
<td>2.5</td>
</tr>
<tr>
<td>Louisiana Offshore</td>
<td>5.8</td>
</tr>
<tr>
<td>Appalachia (WV, KY, OH, PA)</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>84.8</strong></td>
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ARI – Oil Fields in Rocky Mountain Region

ARI – Oil Fields in the Williston Basin
**Project Wells-to-Wheels CO₂ Emissions Profile**

Medicine Bow “Well-to-Wheels” CO₂ emissions are better on a lifecycle basis than all other US refining alternatives. Compared to the marginal alternative, Canada Oil Sands, Medicine Bow will save 11.7 million tons of CO₂ emissions over the life of the Project.
Medicine Bow - “Clean Gasoline”

• Attributes of MBFP’s “Clean Gasoline”

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<tr>
<th></th>
<th>Conventional Gasoline</th>
<th>Advanced Fuels &quot;Clean Gasoline&quot;</th>
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<tbody>
<tr>
<td>Sulfur:</td>
<td>30 ppm</td>
<td>1 ppm</td>
</tr>
<tr>
<td>Benzene:</td>
<td>0.62%</td>
<td>0.30%</td>
</tr>
<tr>
<td>WTW CO₂ Footprint:</td>
<td>96.6 kg/mmbtu</td>
<td>75.2 kg/mmbtu*</td>
</tr>
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*Assumes purchase of "green" power.

• Modeled economics do not reflect a potential price premium for clean gasoline or carbon taxes that may be levied on conventional refiners that would increase the price of gasoline.

AF is producing “Clean Gasoline” - substantially lower in local pollutants and CO₂ emitted during the refining process per barrel produced than conventional gasoline.
Medicine Bow Project - Landmark Energy Asset

Unique opportunity to achieve national strategic goals toward improving energy security and developing new clean coal technologies

- Project utilizes and integrates existing process technologies to transform abundant U.S. coal reserves to low sulfur, low benzene gasoline
- With reserves of about 270 billion tons of coal, representing 94% of the combined Btu value found in all U.S. coal, natural gas and oil reserves, the U.S. could leverage IGL processes to displace foreign oil
- Captured CO₂ will be sold for EOR operations, which are expected to produce an additional 22,000 bpd of oil from existing oil fields in the region
  - First commercial scale CO₂ capture and sequestration project in U.S.

IGL projects produce a better CO₂ footprint than traditional refining

- The gasoline product has a “wells-to-wheels” lifecycle CO₂ emissions profile significantly lower than the gasoline replaced in the Denver market
  - The Project’s gasoline product has net CO₂ emissions of 45 lbs per barrel compared to 352 lbs per barrel for Alberta syncrude and 200 lbs per barrel for Arabian Light syncrude
- IGL conversion process with CO₂ sequestration captures approximately 95% of the CO₂ produced

The conversion process is significantly more environmentally friendly than traditional refining and coal-related processes

- Sulfur and mercury levels are reduced to extremely low parts per billion levels
- Project consumes minimal amounts of water, using less than 1/2000 the water needed by a pulverized coal facility with carbon capture and storage technology
- Zero-discharge facility other than storm water

Conversion of low cost feedstock to high end product

- Historically, coal has had a lower cost per MMBtu compared to both U.S. crude oil as well as U.S. natural gas
- Project captures the spread between coal Btus and refined transportation products, converting the low cost feedstock into the highest end product for coal
- Cost per MMBtu for coal in the future is expected to remain relatively flat whereas the cost for crude oil is expected to increase by 141% from 2011 through 2035

Historical and Projected Cost per MMBtu

MBFP Project builds on successes of Eastman Chemical and TECO electric to become an important first mover in transportation fuels and sequestration in the United States