Dave Ballard
Matt McCleary
Bob Green
Mike Rowlands
Rhyno Stinchfield
Tom Kaiserski
“Perspectives on Montana’s Petroleum Industry”

Big Sky EDA
March 3, 2011

Dave Ballard
President
Ballard Petroleum Holdings LLC
Billings, Montana
Ballard Petroleum Profile

- Private partnership engaged in exploration and production of oil and gas in the northern Rocky Mountains region since 1992.
- Presence in Billings began in 1963, Balcron Oil Company
- Currently produce 1200 BOEPD, 98% oil, Powder River Basin
- 108 active wells / 72 company operated
- 27 employees in the Billings corporate office
- 10 employees in Gillette field office

Managing Partners:
- William W. Ballard, CEO and Chairman
- David W. Ballard, President
- Jeffrey S. Ballard, Sr. Vice President

Managing Staff:
- Dennis Campbell, VP Land
- Steve Van Delinder, Director of Exploration
- Craig Marshall, CFO
- Jim Else, Director of Engineering and Operations
The Petroleum Industry in Montana

Transportation

Refiners

Service Companies

Producers
Billings Larger Employers Affiliated With Oil & Gas Industry

- ExxonMobil
- ConocoPhillips
- CHS Refinery
- SM Energy
- Ballard Petroleum Holdings, LLC
- Energy Consultants, LLC
- Augustus Energy Partners
- Macum Energy
- Herco (Land Broker Services)
- Noram Wellsite Services
- Sunburst Consulting
- Welter Consulting
- Hohn Engineering
- Competition Wireline
- Sanjel (USA) Training Center
- WyoBen
- Diamond B Companies
- Empire Steel Manufacturing
- Roscoe Steel
- Energy Labs
- Beal Trucking
- Hi-Ball Trucking
- Crowley, Fleck Law Firm
- Eide Bailly, LLP CPA
- Galusha, Higgins, and Galusha-CPA
- Tetra Tech/Maxim Technologies
- Bison Consulting
- Crazy Mountain Oil & Gas Services
- Teppco Energy
Montana’s refineries
182,000 barrels of crude per day
7.6 million gallons of products per day.
Over 60% exported to other states.

Crude Source for Montana Refineries
Montana 2%, Wyoming 13%,
Canada 85%
Industry Economic Impacts 2009

- 0.7% of MT’s Jobs
- 2-3 Times MT’s Average Annual Wage (with Benefits)
- One-Eighth of MT’s Total Value Added
- 4,600 Employees in Exploration, Production, or Refining
- Refining Wage: $91,000
  Transportation Wage: $64,000
  Extraction Wage: $57,000
  Total Wages ~ $300 Million
- $1.7 Billion Upstream, $8.2 Billion Refining
  Total economic impact: 12,000 Jobs, $9 BILLION
Oil and Natural Gas Production Tax Revenue Collections

11-Year State Share: $754,490,290
11-Year Local Share: $730,403,908
TOTAL $1,484,894,198
## Top 20 Producers for 2009

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>BOPD</th>
<th>MCFPD</th>
<th>BOEPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Encore / Denbury</td>
<td>17,123</td>
<td>23,659</td>
<td>21,066</td>
</tr>
<tr>
<td>2</td>
<td>Fidelity Exploration &amp; Production Co.</td>
<td>-</td>
<td>113,830</td>
<td>18,972</td>
</tr>
<tr>
<td>3</td>
<td>Enerplus Resources USA Corporation</td>
<td>11,126</td>
<td>13,892</td>
<td>13,442</td>
</tr>
<tr>
<td>4</td>
<td>Continental Resources Inc</td>
<td>9,469</td>
<td>8,424</td>
<td>10,873</td>
</tr>
<tr>
<td>5</td>
<td>XTO Energy Inc. / ExxonMobil</td>
<td>8,180</td>
<td>7,831</td>
<td>9,485</td>
</tr>
<tr>
<td>6</td>
<td>Burlington Resources O&amp;G / ConocoPhillips</td>
<td>7,104</td>
<td>4,366</td>
<td>7,831</td>
</tr>
<tr>
<td>7</td>
<td>Devon Energy Production Co., LP</td>
<td>-</td>
<td>35,420</td>
<td>5,903</td>
</tr>
<tr>
<td>8</td>
<td>St. Mary Land &amp; Exploration / SM Energy</td>
<td>4,149</td>
<td>4,379</td>
<td>4,879</td>
</tr>
<tr>
<td>9</td>
<td>Noble Energy, Inc.</td>
<td>-</td>
<td>14,827</td>
<td>2,471</td>
</tr>
<tr>
<td>10</td>
<td>NFR Bear Paw Basin, LLC</td>
<td>57</td>
<td>13,674</td>
<td>2,336</td>
</tr>
<tr>
<td>11</td>
<td>EOG Resources, Inc.</td>
<td>1,660</td>
<td>1,945</td>
<td>1,985</td>
</tr>
<tr>
<td>12</td>
<td>Newfield Production Company</td>
<td>1,619</td>
<td>1,001</td>
<td>1,786</td>
</tr>
<tr>
<td>13</td>
<td>Petro-Hunt, LLC</td>
<td>1,495</td>
<td>1,369</td>
<td>1,723</td>
</tr>
<tr>
<td>14</td>
<td>Slawson Exploration Company Inc</td>
<td>1,309</td>
<td>1,726</td>
<td>1,596</td>
</tr>
<tr>
<td>15</td>
<td>Omimex Canada, Ltd.</td>
<td>161</td>
<td>7,622</td>
<td>1,431</td>
</tr>
<tr>
<td>16</td>
<td>TAQA North USA, Inc.</td>
<td>1,000</td>
<td>457</td>
<td>1,076</td>
</tr>
<tr>
<td>17</td>
<td>Citation Oil &amp; Gas Corp.</td>
<td>1,035</td>
<td>206</td>
<td>1,069</td>
</tr>
<tr>
<td>18</td>
<td>MCR, LLC</td>
<td>585</td>
<td>2,403</td>
<td>986</td>
</tr>
<tr>
<td>19</td>
<td>Helis Oil and Gas Company / Energy Consultants</td>
<td>292</td>
<td>3,725</td>
<td>913</td>
</tr>
<tr>
<td>20</td>
<td>Whiting Oil and Gas Corporation</td>
<td>655</td>
<td>609</td>
<td>757</td>
</tr>
</tbody>
</table>
Montana Production and Penetrations

Updated as of May, 2009

About 45,000 Wells Drilled
4400 Producing Oil Wells, 6500 Gas Wells
Drilling for Natural Gas
North Central Montana Location
Bakken Oil Well Frac Stimulation
Richland County, Montana
Oil Tank Battery
Montana Monthly Oil Production
Vertical vs. Horizontal Wells
January, 1986 through December, 2007
Bell Creek CO₂ Project – Overview Map

Bell Creek Field
- Current Production 1,233 BOPD
- CO₂ Flood Potential = 30 MM barrels
- Peak CO₂ Oil Rate Uplift = 7,000 barrels per day

Cedar Creek Anticline
- Current Production 1,233 BOPD
- CO₂ Flood Potential = 197 MM barrels
Have we reached peak production yet?

Montana Oil & Gas Production in BOE
Projected to 2050 With New Play Success

- Existing Oil
- Existing Gas
- New Oil Plays
- W. MT 'Waterton' Gas Play
- Bell Creek, Cedar Creek CO₂
- Bakken Play Expansion
1982 – Sanjel Cementers begin pumping operations

1997 – Sanjel Corporation formed to provide both Pumping and Stimulation services

1998 – Sanjel USA established to offer services in the United States

2000 – Fracturing service line added to corporate service offering

2005 – Sanjel International established to extend service lines outside North America
Maintenance and Training Center

Billings, MT
Training Center

- Currently at 3 employees
- Two Week New Hire Training
- Supervisor Training
- Safety Training
- 40-50 employees will come to Billings monthly
  - Hotel
  - Restaurants
  - Airline tickets
  - Entertainment
Maintenance Center

- Employee 30 people at full capacity
- 25% will be internal transfers
- 75% will be new hires from Billings area
- Facility will be full operation mid to late summer

Billings Area Support
- Supplies
- Parts
- Materials
- New Equipment
- Major Equipment Repair
Sales and Operations Office
Downtown Billings, MT
Downtown Office

• Supports operations, sales, and engineering
• Currently employee 3 people
• Add an additional 3-4 people in next year
• Hold numerous meetings in Billings
Future of Sanjel USA
Future

- Oil demand
- Supply Issues
- Middle East Turmoil
- Domestic Production
- Unconventional Oil Plays
- Expansion
  - Williston Basin
  - Powder River Basin
  - DJ Basin
  - Central and Northern Montana
Any Questions?
Economic Impact of Energy Development:
Cloud Peak Energy in Montana

March 3, 2011
Bob Green
Cautionary Note Regarding Forward-Looking Statements

This presentation contains “forward-looking statements” within the meaning of the safe harbor provisions of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements are not statements of historical facts, and often contain words such as “may,” “will,” “expect,” “believe,” “anticipate,” “plan,” “estimate,” “seek,” “could,” “should,” “intend,” “potential,” or words of similar meaning. Forward-looking statements are based on management’s current expectations or beliefs, as well as assumptions and estimates regarding our company, industry, economic conditions, government regulations and other factors. These statements are subject to significant risks, uncertainties and assumptions that are difficult to predict and could cause actual results to differ materially from those expressed or implied in the forward-looking statements. For a description of some of the risks and uncertainties that may adversely affect our future results, refer to the risk factors described from time to time in the reports and registration statements we file with the Securities and Exchange Commission, including those in Item 1A "Risk Factors" of our most recent Form 10-K and any updates thereto in our Forms 10-Q and current reports on Forms 8-K. There may be other risks and uncertainties that are not currently known to us or that we currently believe are not material. We make forward-looking statements based on currently available information, and we assume no obligation to, and expressly disclaim any obligation to, update or revise publicly any forward-looking statements made in our presentation, whether as a result of new information, future events or otherwise, except as required by law.
Cloud Peak Energy Inc.

- Cloud Peak Energy Inc. – IPO November 2009
- Traded NYSE – ticker symbol “CLD”
- Only NYSE-traded mining company HQ’d in WY
- Third largest coal producer in the US
- Formerly Rio Tinto Energy America, formed by acquisitions 1993–98
  - 2008 Rio Tinto decided to divest to reduce Alcan purchase debt
  - Rio Tinto sold Jacobs Ranch Mine to Arch Coal in 2009 pre-IPO
A Focus on Safety and the Environment

Top 25 Coal Producing Companies - 2010 Preliminary Incident Rates (MSHA)

Source: MSHA.
Note: Total Incident Rate = (total number of employee incidents x 200,000) / total man-hours.
(1) Cloud Peak Energy has combined Kiewit and Level III Communications data as reported by MSHA.

No SMCRA environmental violations since 2002
Cloud Peak Energy Operations

Spring Creek Mine
237 employees
Most employees from Sheridan

Cordero Rojo Mine
558 Employees
Most employees from Gillette and Wright

Antelope Mine
547 Employees
Most employees from Douglas and Gillette

Cloud Peak Energy Corporate
229 Employees
Most employees from Gillette
Powder River Basin

- Largest source of coal mined in the US
- One of the world’s largest coal deposits
- 120 miles east-west - 200 mi. north-south
- 40% of US electricity coal is from PRB
Cloud Peak Energy Profile

Company Overview

Third largest U.S. coal producer

2010 coal production: 93.8 million tons

2010 proven & probable reserves: 970 million tons

Operates Spring Creek Mine - largest coal mine in Montana - 19.3 million tons produced in 2010

Employs 1,500 people - 237 at Spring Creek Mine
Reach of PRB Coal is Growing

- Large reserve base
- Low-cost coal supply
- Surface mining
- Supportive local environment for coal mining
- Low sulfur content
- Ample rail capacity

Source: SNL
Historic U.S. Coal Supply by Region

Total U.S. Coal Supply up 6% since 1990

Other basins – down 14%
IB – down 24%
NAPP – down 21%
CAPP – down 39%
PRB - up 137%

Sources: MSHA, PIRA
Increasing Long-Term International Demand Supports Powder River Basin Exports

- U.S. exports through November 2010 up nearly 38% (54M tons 2009 to 74M tons 2010)

- PIRA & DTC estimates total 2010 exports approximate 80M tons – a 30% increase over 2009

Sources: PIRA, DTC
Pacific Rim thermal import demand has experienced strong growth and it is forecast to continue:

- Over the last 10 years, China went from net exporter to net importer.
- India imports increased by 80 million mt over last 10 years.
- Pacific Rim thermal demand is forecast to grow by 1 billion mt over next 10 years and imports are forecast to supply 100 million mt of this growth.

Source: PIRA
International Sub-Bituminous Markets

Spring Creek Mine - Montana
Coal quality - 9,350 Btu
Converts to 4,850 Kcal/kg NAR

Is a premium sub-bituminous coal in the international market.

Desired Calorific Values (CV) by South Korean Utilities Between 3700 - 5000 Kcal/kg NAR

- Spring Creek Mine 9350 Btu Coal
- Typical PRB 8800 Btu Coal
- Indonesian Coal

Source: Company estimates
Spring Creek Mine Exports 2010

Spring Creek Mine to Westshore Terminal, Roberts Banks, BC
3.3 million short tons shipped via 200+ trains approximately 1,600 miles

Westshore Terminal to Asian Destinations
19 capes plus
Outlook for Powder River Basin

- PRB has massive quantities of coal – hundreds of years of production
- There is substantial rail access
- Domestic demand for PRB coal is expanding; CAPP production in decline
- Economic reach of PRB coal is growing – Asia, Europe
- Strong international demand – need additional port capacity
- Key uncertainties – domestic energy policies & regulatory environment
Spring Creek Tonnage

Million Tons

Spring Creek Coal Works for Montana

In 2010 Spring Creek spent over $8 million on goods & services from Montana businesses:

Modern Machinery & Billings Tractor and Equipment, Viva LaBroom, The Tire Guys, Big Horn Environmental Sciences to name a few

237 Full Time Employees

Average compensation package $104,000
(Includes salary, health insurance, 401k matching plan, life insurance etc)

Personal State Income Tax: $1 million

CPE paid $43 million in 2010 direct Montana taxes:

MT Coal Severance Tax: $25 million
Gross Proceeds & Resource Indemnity: $9 million
State Royalties: $7 million
Property and other taxes: $1 million

CPE paid $39 million in 2010 federal taxes & royalties
$16 million coming back to Montana
And coal mining is only a temporary land use . . .
Forward-Looking Information

This presentation contains “forward-looking statements” – that is, statements related to future, not past, events. In this context, forward-looking statements often address our expected future business and financial performance, and often contain words such as “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” or “will.” Forward-looking statements by their nature address matters that are, to different degrees, uncertain. For us, particular uncertainties arise from changes in the demand for our coal by the domestic electric generation industry; from legislation and regulations relating to the Clean Air Act and other environmental initiatives; from operational, geological, permit, labor and weather-related factors; from fluctuations in the amount of cash we generate from operations; from future integration of acquired businesses; and from numerous other matters of national, regional and global scale, including those of a political, economic, business, competitive or regulatory nature. These uncertainties may cause our actual future results to be materially different than those expressed in our forward-looking statements. We do not undertake to update our forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by law. For a description of some of the risks and uncertainties that may affect our future results, you should see the risk factors described from time to time in the reports we file with the Securities and Exchange Commission.
Arch Coal is a leader in the U.S. coal industry

- One of the world’s **largest** and **most efficient** coal producers
  - Represent **15 percent** of the U.S. coal supply
  - National, diverse reserve base, skewed heavily toward growth regions
  - Leader in **safety** and **environmental** performance
  - Ship coal to domestic/international steel manufacturers and international power producers

- **Arch’s value proposition** is anchored by …
  - Leading position in the Powder River Basin
  - Largest producer in Western Bituminous Region
  - Low-cost producer in Central Appalachia
  - Significant exposure to metallurgical markets
  - Undeveloped reserves in the Illinois Basin & Montana
Arch’s foundation is built upon three key pillars

| Safety                        | • Goal is to operate world’s safest coal mines  
|                              | • Best safety record among major coal peers  
|                              | • Sustained focus on continuous improvement  
|                              | • Safe mines are productive and profitable  |
| Stewardship                  | • Best-in-class environmental compliance  
|                              | • Award-winning stewardship practices  
|                              | • Good corporate citizen in our communities  
|                              | • Supplier of clean coal technologies  |
| Shareholder Value            | • National, diversified U.S. coal producer  
|                              | • Low-cost position in core operating regions  
|                              | • Very low level of legacy liabilities  
|                              | • Prudent stewards of capital  |
Our operations are constantly striving to improve upon already industry-leading safety rates

- Record **safety** lost-time and total incident rates in 2010
  - Five operations completed 2010 without a lost-time incident

- Earned nine national and state awards for **safety excellence**
  - Honored with a 2010 national **Sentinels of Safety certificate** from the U.S. Department of Labor

- In 2010, **11** individual mines, preparation plants and facilities achieved a **Perfect Zero** with either zero reportable injuries or zero environmental violations

---

**Lost-Time Safety Incident Rate**
(per 200,000 employee-hours worked)

- Arch five-year average = 0.85
- Industry five-year average = 3.03

---

**ACI Total Incidence Rate**
(per 200,000 employee-hours worked)

Sources: ACI, MSHA, State environmental agencies
2010 marked our fifth consecutive year of improving environmental performance

- Arch’s **environmental compliance record** is the best in the U.S. coal industry
  - Received only 6 total SMCRA violations in 2010, a 45% improvement over 2009
  - 11 subsidiary mines and facilities achieved zero SMCRA violations in 2010

- Earned **seven** national or state awards for excellence in environmental compliance

**Environmental Compliance**

(SMCRA violations based on state reports)

2006 2007 2008 2009 2010

Arch five-year average = 12.6

**2010 State and National Awards**

- National Excellence in Surface Mining
- Virginia Excellence in Reforestation Award
- National Public Outreach Award
- Pollution Prevention Award
- Turkey Habitat Award
- Excellence in Reclamation Award
- State Construction Award

*Sources: ACI, state environmental agencies*
Arch’s national scope of operations and reserve base includes presence in five major U.S. coal basins

**Western Bituminous**
1. West Elk
2. Skyline
3. Dugout Canyon
4. Sufco
5. Arch of Wyoming

**Powder River Basin**
1. Black Thunder
2. Coal Creek
3. Otter Creek reserves

**Central Appalachia**
1. Mountain Laurel
2. Coal-Mac
3. Cumberland River
4. Lone Mountain

**Illinois Basin**
1. Knight Hawk*
2. Lost Prairie reserves

---

**4.7-Billion-Ton Reserve Base**

- **NPRB** (1,500 Million)
- **CAPP** (336 Million)
- **SPRB** (2,053 Million)
- **ILB** (1) (306 Million)
- **WBIT** (455 Million)

(1) Pro-forma reserves at 12/31/09

---

*49% equity interest

---

**Sources:** ACI, Ventyx
Arch has growing access to seaborne coal markets

**East Coast**
- Own 22% interest in DTA in Newport News, VA
- Throughput capacity of ~20 million tpy
- Expect met sales of at least 7 million tpy in 2011
- Steam sales could grow as Europe recovers
- Access to other East Coast terminals

**Gulf Coast** (New Orleans)
- Ownership and throughput rights on river facilities in Kentucky and Illinois
- Flexibility to ship and blend coals from all of our regions (and Illinois Basin coal with our 49% stake in Knight Hawk) to overseas markets

**West Coast**
- Secured 38% interest in Millennium Bulk Terminals in Washington state
- Agreement with Ridley Terminal in Canada
- Amassed reserves in Montana, which has a transportation cost advantage to West Coast

Arch expects to export roughly 7 million tons in 2011
Arch is a top producer in each of nation’s key low-sulfur coal-producing basins

2010 Tons Sold
(in million tons)

2010 Tons Produced
(in millions of tons, excludes brokerage)

Southern Powder River Basin
- Peabody: 140
- Arch Coal: 128
- Cloud Peak: 74
- Alpha: 49

Western Bituminous
- Arch Coal: 16
- Pacificorp: 9
- Peabody: 8
- Chevron: 5

Central Appalachia
- Alpha: 53
- Patriot: 17
- Arch Coal: 12
- Consol: 10

(1) Includes reported Massey tons sold and tons produced.

Sources: ACI, Ventyx, SEC filings
Arch is the second largest producer in the Southern Powder River Basin

Major Producers in Southern Powder River Basin (2010, in millions of tons)

- Peabody
- Arch
- Cloud Peak
- Alpha
- Kiewit

8,800 Btu • 8,400 Btu

- The southern PRB is the largest coal supply region in the U.S., fueling nearly 40% of domestic steam coal demand

Sources: ACI, Ventyx
The Powder River Basin is the nation’s largest and fastest growing coal supply region

Historical Production in the Southern PRB
(in millions of tons)

- Over the past 17 years, PRB has become the nation’s largest and most prolific supply basin
- PRB has low geologic risk and significant economies of scale
- Expect continued expansion on the national and international stage

Source: Platts
Montana coal represents a remarkable energy asset

- Montana has just scratched the surface of its potential as an energy supplier
- Arch’s Wyoming operations provide 1,800 direct jobs and contribute millions to the Wyoming tax base each year

### Top Five States U.S. Demonstrated Coal Reserve Base (in short tons at 12/31/2009)

<table>
<thead>
<tr>
<th>Top Five States</th>
<th>U.S. Demonstrated Coal Reserve Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montana</td>
<td>119,017 Million</td>
</tr>
<tr>
<td>Illinois</td>
<td>104,222 Million</td>
</tr>
<tr>
<td>Wyoming</td>
<td>61,563 Million</td>
</tr>
<tr>
<td>West Virginia</td>
<td>31,955 Million</td>
</tr>
<tr>
<td>Kentucky</td>
<td>29,234 Million</td>
</tr>
</tbody>
</table>

Source: NMA, EIA demonstrated reserve base in short tons at 12/31/2009
Arch could become a major coal producer in Montana

- Northern Powder River Basin production totaled **44 million tons** in 2010
- Arch secured ~**1.5 billion tons** of Otter Creek coal reserves from GNP and the state of Montana
- The development of these reserves will strengthen Arch’s ability to **competitively** serve the northern U.S. power generation market
- This development also will provide an additional supply source to **export** into the Pacific Rim via the West Coast

Sources: ACI, Ventyx
Current Status of Future Otter Creek

- Office has been established in Billings
- Permit consultants have been secured
- Environmental studies have been initiated
- Preliminary mine planning has been completed
- Began stakeholder outreach meeting with:
  - Powder River County
  - Rosebud County
  - Ashland
  - Northern Cheyenne
- Intend to maintain aggressive schedule for permitting process
Future Otter Creek Coal Mine

- **Planned location**: Powder River County, Montana
- **Mine type**: Surface mine
- **Main equipment**: Dragline - Truck and shovel
- **Capacity**: Could be up to 20 million tons per year
- **Timing**: Expect all major permits in hand in several years
- **Employment**: Up to 300 permanent jobs
  - Utilize Black Thunder to begin employee training
- **Start date**: Dependent on market conditions and other factors
Our national network of mines can provide training and best practices for hot-start opportunity at Otter Creek
State of Coal Markets
Coal is – and will remain – a dominant fuel source in the United States and around the world.

### U.S. Electrical Generation by Source (2010, through November)

- **Coal**: 45%
- **Natural gas**: 24%
- **Nuclear**: 19%
- **Hydro**: 6%
- **Other renewables**: 5%
- **Oil**: 1%

**Coal** accounts for over 90% of America’s fossil-fuel resource base.

- **Natural gas** oversupply may not be sustainable. The ability to expand share significantly and affordably remains questionable.
- **Since 2000**, **nuclear** utilization has been ~90% and the fleet is aging. More than 20 new units are needed by 2030 just to maintain current share.
- **Hydro** power is concentrated in the Northwest. No net additions to capacity are anticipated.
- **While renewables** can play a larger role (beyond 5%), they face enormous hurdles to achieve baseload status.

**Source:** EIA, Electric Power Monthly
Coal use keeps energy costs low – and makes American businesses more competitive

**U.S. Fuel Prices**

($ per million Btu at 2/18/11)

- **PRB**
  - **8800**
- **WBIT**
  - **11,700**
- **CAPP**
  - **12,000**
- **Natural Gas**
  - **$2.90**
- **Crude Oil**
  - **$3.88**
- **FOB rail**
  - **(2Q11)**
- **Wellhead**
  - **(prompt month)**

**Electricity Costs**

(cents per kilowatt hour)

**High Coal Use States**¹

- Wyoming: 6.1
- Kentucky: 6.5
- West Virginia: 6.6
- North Dakota: 6.8
- Utah: 6.8
- Montana²: 7.4

**Low Coal Use States**³

- Connecticut: 18.2
- New York: 15.7
- New Hampshire: 15.2
- New Jersey: 14.8
- Rhode Island: 14.2
- California: 13.6

¹ States in which coal represents more than 80% of electricity generation
² In Montana, coal represents about 60% of electricity generation
³ States in which coal represents less than 20% of electricity generation

Sources: EIA, Platts, Argus Coal Daily and NYMEX
We expect growth in domestic coal supply to increasingly shift westward over the next five years

- **Southern PRB** has low geologic risk, significant economies of scale and is the *most cost competitive supply*
- Expansions are underway in the Illinois Basin, but additions will be offset by depletions to some degree
  - Expansion in the high-chlorine segment could prove overly ambitious
- Expect northern PRB growth to target northern U.S. and seaborne markets
- **Appalachia region** is in decline due to reserve degradation and depletion

**Expected Growth in Supply by Basin, Net of Depletions and Reductions**

(2010-2015, in millions of tons)

**Sources:** MSHA and ACI
Global coal supply flows continue to shift – and create further opportunities for U.S. coal exports

**Seaborne Coal Trade**
(1.1 billion tons, 2010)

**USA:** growing seaborne supplier with excess export capacity; emerging supplier to Pacific Rim

**Australia:** continued growth in exports to Asia with port/rail constraints not keeping pace with demand; decreasing exports to Europe

**Indonesia:** aggressive planned expansion of exports; growing domestic demand; coal quality declining rapidly

**South America:** infrastructure constraints; political uncertainty; growing regional coal burn; emerging supplier to Pacific Rim (~20% of Colombian exports moved to Asia-Pacific in 2010)

**Russia:** coal exports to Asia are increasing; coal exports to Europe are decreasing waning

**Europe:** coal production declining; growing coal burn in eastern Europe; traditional import supply

**South Africa:** Over 60% of coal exports moved to Asia in 2010; domestic needs and infrastructure constraints limit export growth
We see expanded export opportunities for PRB coal during the next five years

- Global demand expected to grow at 4% annually
- Growth in seaborne coal supply is likely to undershoot demand dramatically
  - Cumulative supply deficit of ~300 million tons by 2015
  - Enormous opportunity for PRB to step in, if port capacity can be developed on West Coast
  - Likewise, export opportunities via the Gulf are starting to emerge

![Annual Supply Deficit in Seaborne Coal Trade](image)
Energy, the Environment and Clean Coal Technologies
While coal mining is viewed as invasive, there are significant land use advantages – particularly in the PRB

- The Powder River Basin contains more than **100 billion tons** of coal
- The PRB supplies 45% of America’s coal – and over **20% of its power**
- There are ~ **80 million tons of coal per square mile** in the PRB
- Consequently, the industry is removing the coal from beneath only ~ **6 square miles** per year
  - Together Wyoming and Montana total over 200,000 square miles
- Another 30% of U.S. coal comes from underground mining
- Only 10% of U.S. coal is mined in **steep terrain** with surface techniques
Coal is increasingly clean...and will become more climate-friendly with time and funding

Since 1970

- Coal-based electricity increased 150%
- U.S. population increased 50%
- GDP increased 204%
- Emissions of NOx, SO2 and PM10 down 63%

Emissions of NOx, SO2 and PM10 (Particulate Matter)

Source: NMA, EPA, EIA
Arch is funding research and development projects dedicated to advancing clean coal technologies.

<table>
<thead>
<tr>
<th></th>
<th>Department of Energy</th>
<th>National Carbon Capture Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Washington University</td>
<td>Consortium for Clean Coal Utilization</td>
</tr>
<tr>
<td>3.</td>
<td>University of Wyoming</td>
<td>School of Energy Resources</td>
</tr>
<tr>
<td>4.</td>
<td>Tenaska, Inc.</td>
<td>Trailblazer Energy Center</td>
</tr>
<tr>
<td>5.</td>
<td>ADA</td>
<td>Environmental Solutions</td>
</tr>
</tbody>
</table>

Dedicated **millions** for university, public and private research and development.
“Economic Impact of Energy Development in our Community”

Rhyno Stinchfield, CEO
March 3rd, 2011
Wind

Development of Montana’s Energy Resources
# Montana

A Leader in Wind Potential in the United States*

<table>
<thead>
<tr>
<th></th>
<th>State</th>
<th>Rank</th>
<th></th>
<th>State</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Texas</td>
<td>11</td>
<td>10,000</td>
<td>New Mexico</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>Montana</td>
<td>2</td>
<td>4,700</td>
<td>Illinois</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>Kansas</td>
<td>3</td>
<td>4,700</td>
<td>Wisconsin</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>Nebraska</td>
<td>4</td>
<td>4,600</td>
<td>Missouri</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>North Dakota</td>
<td>5</td>
<td>4,000</td>
<td>Michigan</td>
<td>16</td>
</tr>
<tr>
<td>6</td>
<td>South Dakota</td>
<td>6</td>
<td>3,900</td>
<td>Indiana</td>
<td>17</td>
</tr>
<tr>
<td>7</td>
<td>Oklahoma</td>
<td>7</td>
<td>3,300</td>
<td>Ohio</td>
<td>18</td>
</tr>
<tr>
<td>8</td>
<td>Minnesota</td>
<td>8</td>
<td>3,300</td>
<td>Arkansas</td>
<td>19</td>
</tr>
<tr>
<td>9</td>
<td>Wyoming</td>
<td>9</td>
<td>3,200</td>
<td>Oregon</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>Iowa</td>
<td>10</td>
<td>3,200</td>
<td>Kentucky</td>
<td></td>
</tr>
</tbody>
</table>

(*Harvard Univ. Study in TWh)
Demand for Wind Power

Renewable Portfolio Standards

- California: 33% by 2020
- Colorado: 30% by 2020
- Nevada: 25% by 2025
- Oregon: 25% by 2025
- Washington: 15% by 2020
Jobs

Creating New Jobs in Montana
Montana Economic Prosperity

- A typical 100 MW wind energy project supports between 100 and 155 construction phase jobs and 10-11 permanent operation and maintenance jobs (normally 20-25 years). Judith Gap, a 140 MW wind project, currently employs 12 full-time staff and 75% of the construction costs for building the Judith Gap wind farm went to Montana based contractors.

- A typical lease is $4,000-$10,000 per turbine per year ($2,000-$5,000 per MW). Families can continue traditional ways of working their land while diversifying their incomes and securing their future.

- The four commercial wind projects currently operating in Montana, which total 384 MW, generated $5.4 million in property taxes in 2010. By 2018, this amount will grow to $9.0 million annually. On average, 65.5% of this goes to local governments while 34.5% goes to the state.

- 1,000 MW of wind development would create 1,000 – 1,550 construction phase jobs and over 100 permanent jobs. In addition, it would generate between $4 million and $10 million in annual lease payments, and $5 million - $10 million in annual property tax payments.
Wind Energy Supply Candidates

Wind Turbine Mfg
Wind Blade Mfg
Machine Tooling Co’s
Gearbox Mfg
Machine Tool Co’s
Bearings
Hydraulics
Electrical Components
Electric Motors and Generators
Transformers
Measuring & Control Devices

Industrial Fans & Blowers
Metal Fabricators
Tower Fabricators
Turbine Service Co’s
Wind Power Research Co’s
Environmental Engineering
Transmission Engineering
Tower Erecting Contractors
Electrical Contractors
Concrete Construction
Transportation
Wind tower manufacturer chooses Cheyenne for $40 million facility

The Billings Gazette | Posted: Tuesday, February 15, 2011 7:29 pm

CHEYENNE, Wyo. — In what's hoped will be the start of a flourishing industry in Wyoming, Gov. Matt Mead and state business officials announced Tuesday that construction will begin this spring on a $40 million wind tower manufacturing facility near Cheyenne.

As Wyoming's first-ever wind energy manufacturing facility, the 30-acre facility will be a milestone in efforts to build a manufacturing sector around the state's mushrooming wind energy industry.

Co-owned by Spanish-based steel company Corporacion Gestamp and Ohio-based Worthington Industries, the facility will create about 150 jobs, company officials said. Starting early next year, the companies plan to start shipping annually more than 300 steel wind tower sections, each measuring between 80 and 100 feet long.

The facility will also serve as North American headquarters for Worthington Industries' wind energy division, said company president Ralph Roberts.
Nevada Wind Turbine Factory to Create 1,000 Jobs, Backers Say

By JOHN COLLINS RUDOLF Bloomberg

A consortium of Chinese and American renewable energy firms said last week that they had chosen Nevada as the location of a 320,000-square-foot wind turbine manufacturing and assembly plant.

The turbine plant, whose precise site has yet to be announced, will create an estimated 1,000 long-term manufacturing jobs in the state and is expected to be up and running by 2011.
Montana State University Billings
College of Technology
Vertical Axis Turbine

Suppliers

Steel Framework: Roscoe Steel, Billings, MT
Engineering: Krivonen & Associates, Billings, MT
General Contractor: CEI Electric, Billings, MT
Tip of the Iceberg
Thank You
The Economic Contribution of Colstrip SES

PPL Montana
Lisa Reid Perry
March 04, 2011
Colstrip Steam Electric Station

- In operation more than 20 years
- Occupies less than 3 square miles in Rosebud County
- Six owners
- Operated by PPL Montana
- Largest Industrial Facility in the State of MT
What would the economy of MT look like without Colstrip?

- Smaller
- Less Prosperous
- Less Populous

Colstrip is responsible for:

- 3,740 jobs in the state
- $360 million of personal income
- $638 million in net output produced
- 7,700 additional people
Colstrip Plant Employs:

- 393 people directly
- $43.1 million in compensation
  - Includes benefits
- Average worker: $100,000
  - Highly skilled / educated workforce
- 180 year round contractors
  - Maintenance, operations, refurbishing
Western Energy Coal Mine

- 373 employees
- $39 million in annual compensation
- $74 million in goods and services
Colstrip Jobs

- A broad spectrum of skills and occupations
  - Construction
  - Extraction
  - Maintenance
  - Transportation
  - Sales
  - Management
  - Teachers, Police, City, Support
Colstrip Spending

- $146.5 million to purchase coal
- $35 million in goods and materials
- $91.6 million in contracts with vendors
  - Includes overhaul
Colstrip Taxes

- $104 million annually
- $68.2 million to the state
- $35.7 million to counties, schools, tax districts
  - Both facility and employees
Colstrip Impact

- Primarily Eastern and South Central MT
- 800 people between 40-44 living in MT
- Over 3500 people in MT between 20-55
- 2000 people between 5-19 attributable to Colstrip
Colstrip Contribution

- Poorly understood?
- Taken for granted?
- JOBS, JOBS, JOBS!
Economic Impact of Energy Development in our Community
Billings, March 3, 2011

PO Box 200501
Helena MT 59620-0501
406.841.2030
commerce.mt.gov/energy
EPDD Mission

- Create high quality jobs
- Increase tax base
- Increase Montana energy production
A Diverse, Balanced Energy Portfolio

Traditional Energy Resources

- Coal
- Oil
- Natural Gas

Renewable Energy Resources

- Wind
- Geothermal
- Hydroelectric
- BioEnergy
Montana Energy Resources

- #1 in U.S. coal deposits
- #1 in wind potential class 3 and above. #2 in overall potential
- Over 50 wind farms in various levels of production
- More than 15 locations for potential geothermal energy
- Oil production doubled in the last decade
MONTANA IS
COAL COUNTRY
Turning our coal advantage into jobs & growth
Montana is Coal Country

Montana’s Coal Reserves

120 Billion Tons

28% Nation’s Coal

8% World’s Coal
Montana’s on the Move

The numbers tell the tale!

Montana Coal Production (with Signal Peak)

Source: US Department of Energy

*35% Increase from 2004*
Hotspots for CO₂ Sequestration in Montana

TERRESTRIAL HOTSPOTS
- Afforestation Opportunities
  - Regional capacity: ~ 44.6 TgCO₂e/yr

Agricultural Sinks
- Counties with ≳ 45 TgCO₂e/yr/Mi²
  - estimated capacity given a 25% increase in no-till practices.

GEOLOGIC HOTSPOTS
- Flood Basalts
- Sedimentary Basins (labeled)
- Saline Aquifers
- Coal Fields
- Oil Fields
- Gas Fields

Notes: TgCO₂e = Million metric tons carbon equivalent
This map is a draft, dated 9 August 2006. For additional details, see: http://carbonatlas.bigskyco2.org/
MONTANA IS OIL and GAS COUNTRY

BOOSTING MONTANA’S STAPLE ENERGY INDUSTRY!
Bakken Formation, U.S. Williston Basin

The Bakken Formation was deposited in the more central and deeper portion of the Williston Basin, Montana and North Dakota.

Each succeeding member of the Bakken Formation is of greater areal extent.
Reston, VA, 4/10/2008 – “North Dakota and Montana have an estimated 3.0 to 4.3 billion barrels of undiscovered, technically recoverable oil in an area known as the Bakken Formation.”

“The Bakken Formation estimate is larger than all other current USGS oil assessments of the lower 48 states and is the largest "continuous" oil accumulation ever assessed by the USGS.”
MONTANA IS WIND COUNTRY
Western States Wind Energy Potential

Wind Electricity Potential (GWh/yr) Class 4-7

Montana’s Wind Electricity Potential

Wyoming’s Wind Electricity Potential

<table>
<thead>
<tr>
<th>State</th>
<th>Total Potential (GWh/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montana</td>
<td>830,504</td>
</tr>
<tr>
<td>Wyoming</td>
<td>733,350</td>
</tr>
<tr>
<td>New Mexico</td>
<td>208,090</td>
</tr>
<tr>
<td>Colorado</td>
<td>198,197</td>
</tr>
<tr>
<td>California</td>
<td>60,068</td>
</tr>
<tr>
<td>Washington</td>
<td>27,172</td>
</tr>
<tr>
<td>Oregon</td>
<td>20,572</td>
</tr>
<tr>
<td>Nevada</td>
<td>17,539</td>
</tr>
<tr>
<td>Utah</td>
<td>9,908</td>
</tr>
<tr>
<td>Idaho</td>
<td>9,748</td>
</tr>
<tr>
<td>Arizona</td>
<td>7,268</td>
</tr>
</tbody>
</table>

= scale of wind resources relative to Montana's
Renewable Portfolio Standards in the West

- WA 15% by 2020
- MT 15% by 2015
- OR 25% by 2025 (large utilities)
  5-10% by 2025 (smaller utilities)
- NV 25% by 2025
- CO 20% by 2020 (IOUs)
  10% by 2020 (co-ops and large munis)
- CA 20% by 2010 and Goal of 33% by 2020
- UT 20% by 2025
- NM 20% by 2020 (IOUs)
  10% by 2020 (co-ops)
- AZ 15% by 2025

*Minimum solar or customer sited generation requirement
Source: Energy Strategies adapted from information from DSIRE, www.dsireusa.org
Montana wind projects

Montana has the fastest national growth rate for wind energy, going from 1 MW of installed capacity in 2005 to 386 today.

• Near term development could add up to an additional 700 MW

• 50 projects in various stages that could produce over 5,000 MW
MONTANA POWER CAN SERVE THE PACIFIC NW, THE SOUTHWEST AND CALIFORNIA
Montana Transmission for America

High-capacity, high-voltage interstate lines
- Montana Alberta Tie Line
- Mountain States Transmission Intertie
- Chinook
- Wind Spirit

Wind Collector Systems
- NorthWestern Energy
- Wind Spirit
Transmission Project Advancements in 2010

Montana Alberta Tie Ltd (MATL)
- 600 MW capacity
- 1st fully merchant line in the West

- 180 construction jobs, 20 permanent
- Provides capacity for $1.2 billion of Wind Farm development

- EPDD Assistance
  - Regulatory and Financing technical assistance
Wind Project Advancements in 2010

- Rim Rock Wind Farm (proposed)
  - 309 MW
  - $700 million investment

- EPDD Assistance
  - Regulatory and Financing technical assistance
Oil Project Advancements in 2010

- Keystone XL Pipeline
  - Baker on-ramp open season a success, will provide capacity for 65,000 Bbl/day
  - $60 million annual tax revenues

- EPDD Assistance
  - Pipeline and interconnection technical assistance
Coal Project Advancements in 2010

• Ambre Energy
  - Mine development/expansion
  - Port development

• Otter Creek Lease
  - $86 million bonus bid
  - Mine development/RR coordination
Hydro Project Advancements in 2010

- Turnbull Hydroelectric Project
  - 13 MW
  - $10 million investment
  - No change in irrigation capability

- EPDD Assistance
  - Facilitated water rights solution
## Economic Benefits
### Glacier and Rim Rock

<table>
<thead>
<tr>
<th>US$ millions</th>
<th>Glacier 1</th>
<th>Glacier 2</th>
<th>Rim Rock</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>25 Years</td>
<td>25 Years</td>
<td>25 Years</td>
<td></td>
</tr>
<tr>
<td>Property Taxes</td>
<td>57.0</td>
<td>49.6</td>
<td>166.8</td>
<td>273.4</td>
</tr>
<tr>
<td>Montana Energy Tax</td>
<td>1.6</td>
<td>1.5</td>
<td>6.7</td>
<td>9.9</td>
</tr>
<tr>
<td>Landowners Royalty</td>
<td>30.5</td>
<td>27.8</td>
<td>85.9</td>
<td>144.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>89.1</strong></td>
<td><strong>78.9</strong></td>
<td><strong>259.4</strong></td>
<td><strong>$427.4</strong></td>
</tr>
<tr>
<td><strong>Total per Year (Average)</strong></td>
<td><strong>3.6</strong></td>
<td><strong>3.2</strong></td>
<td><strong>10.4</strong></td>
<td><strong>$17.1</strong></td>
</tr>
</tbody>
</table>

Source: NaturEner
## Economic Benefits
### Glacier and Rim Rock

<table>
<thead>
<tr>
<th>Job Type</th>
<th>Glacier</th>
<th>Rim Rock (est.)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>19</td>
<td>28</td>
<td>47</td>
</tr>
<tr>
<td>Direct Construction</td>
<td>206</td>
<td>303</td>
<td>509</td>
</tr>
<tr>
<td>Indirect Construction</td>
<td>80</td>
<td>117</td>
<td>197</td>
</tr>
<tr>
<td>Material Suppliers</td>
<td>181</td>
<td>266</td>
<td>447</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>486</strong></td>
<td><strong>714</strong></td>
<td><strong>1,200</strong></td>
</tr>
</tbody>
</table>

Source: NaturEner
Economic Benefits of Select Projects

- TransCanada Keystone XL Pipeline and Baker on-ramp
  - $1.1 billion in capital investment in Montana
  - $60 million in annual property taxes
  - 790 Construction jobs
  - 15 permanent jobs
  - 65,000 bbl/day on-ramp will provide more market access for Montana producers
- Arch Coal Otter Creek Mining Operation
  - 500+ construction jobs
  - 200 permanent jobs per mine (2 mines proposed)
  - $5 billion potential in state and local taxes over the life of the mine
Economic Benefits of Select Projects

- **Turnbull Hydroelectric Project - 13 MW**
  - $10 million capital investment
  - 30 construction jobs
  - 1.5 permanent jobs

- **NorthWestern Energy Mill Creek Regulating Plant - 150 MW**
  - $206 million capital investment
  - 75 construction jobs
  - 11 permanent jobs

- **Basin Electric Natural Gas Peaking Plant - 91 MW**
  - $100 million capital investment
  - 50 construction jobs
  - 7 permanent jobs

- **Basin Electric Waste Heat Recovery Plant - 5.5 MW**
  - $10 million in capital investment
  - 10 construction jobs
  - 1 permanent jobs
## Montana Wind Energy Tax Payments

<table>
<thead>
<tr>
<th>Project</th>
<th>MW</th>
<th>Property Taxes 2010</th>
<th>~ Property Taxes After Tax Abatement Expiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glacier Wind Farm</td>
<td>210</td>
<td>$3,708,734</td>
<td>$6,200,000 (expires 2018)</td>
</tr>
<tr>
<td>Judith Gap</td>
<td>135</td>
<td>$1,441,874</td>
<td>$2,300,000 (expires 2015)</td>
</tr>
<tr>
<td>Diamond Willow</td>
<td>30</td>
<td>$81,369</td>
<td>$110,000 (expires 2017)</td>
</tr>
<tr>
<td>Horseshoe Bend</td>
<td>9</td>
<td>$211,888</td>
<td>$350,000 (expires 2017)</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>384</td>
<td>$5,443,865</td>
<td>$8,960,000</td>
</tr>
</tbody>
</table>
# Economic Benefits of Transmission Development (MT DLI)

## Economic Impacts Estimates for Montana Transmission Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>2007 Real Dollars of Montana Capital Expenditure</th>
<th>Direct Jobs</th>
<th>Direct Jobs per Year</th>
<th>Total Jobs</th>
<th>Total Jobs per Year</th>
<th>Direct Impact (2010 Dollars)</th>
<th>Total Impact (2010 Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTI</td>
<td>$616,431,000</td>
<td>742</td>
<td>186</td>
<td>1203</td>
<td>301</td>
<td>$68,865,272</td>
<td>$120,046,544</td>
</tr>
<tr>
<td>MATL</td>
<td>$162,132,000</td>
<td>360</td>
<td>180</td>
<td>720</td>
<td>360</td>
<td>$52,492,984</td>
<td>$92,173,816</td>
</tr>
<tr>
<td>NEW Collectors</td>
<td>$842,455,000</td>
<td>2082</td>
<td>416</td>
<td>3980</td>
<td>796</td>
<td>$272,759,520</td>
<td>$482,279,520</td>
</tr>
<tr>
<td>Grasslands</td>
<td>$1,474,639,000</td>
<td>1776</td>
<td>592</td>
<td>2878</td>
<td>959</td>
<td>$164,735,952</td>
<td>$287,169,472</td>
</tr>
<tr>
<td>TransCanada Chinook Line</td>
<td>$939,502,000</td>
<td>1131</td>
<td>283</td>
<td>1833</td>
<td>458</td>
<td>$104,947,160</td>
<td>$182,945,424</td>
</tr>
<tr>
<td>NorthWestern Upgrades (Colstrip)</td>
<td>$215,751,000</td>
<td>546</td>
<td>273</td>
<td>1034</td>
<td>517</td>
<td>$86,951,160</td>
<td>$140,643,872</td>
</tr>
<tr>
<td>Total:</td>
<td>$4,250,910,000</td>
<td>6,637</td>
<td>1930</td>
<td>11648</td>
<td>3391</td>
<td>$750,752,048</td>
<td>$1,305,258,648</td>
</tr>
</tbody>
</table>

(Note: Figures are rounded to the nearest whole number.)
Montana Economic Impacts of 1000 MW & 6000 MW of Wind Development

<table>
<thead>
<tr>
<th></th>
<th>1000 MW</th>
<th>6000 MW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIRECT IMPACTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payments to Landowners</td>
<td>$2.7 million/yr</td>
<td>$16.2 million/yr</td>
</tr>
<tr>
<td>Local Property Tax Revenue</td>
<td>$14.9 million/yr</td>
<td>$89.4 million/yr</td>
</tr>
<tr>
<td>Construction Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jobs</td>
<td>1706 jobs</td>
<td>10,236 jobs</td>
</tr>
<tr>
<td>Local Economic Impact</td>
<td>$188.5 million</td>
<td>$1.13 billion</td>
</tr>
<tr>
<td>Operational Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jobs</td>
<td>271 long-term jobs</td>
<td>1626 long-term jobs</td>
</tr>
<tr>
<td>Local Economic Impact</td>
<td>$21.2 million/yr</td>
<td>$127.2 million/yr</td>
</tr>
<tr>
<td><strong>INDIRECT &amp; INDUCED IMPACTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jobs</td>
<td>1505 jobs</td>
<td>9030 jobs</td>
</tr>
<tr>
<td>Local Economic Impact</td>
<td>$118.1 million</td>
<td>$708.6 million</td>
</tr>
<tr>
<td>Operational Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Jobs</td>
<td>276 jobs</td>
<td>1656 jobs</td>
</tr>
<tr>
<td>Local Economic Impact</td>
<td>$22.6 million/yr</td>
<td>$135.6 million/yr</td>
</tr>
<tr>
<td><strong>TOTAL (construction + 20 yrs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Economic Benefit</td>
<td>$1.2 billion</td>
<td>$7.2 billion</td>
</tr>
<tr>
<td>New Local Jobs During Construction</td>
<td>3211 jobs</td>
<td>19,266 jobs</td>
</tr>
<tr>
<td>New Local Long-term Jobs</td>
<td>547 jobs</td>
<td>3282 jobs</td>
</tr>
</tbody>
</table>

Source: 2008 US DOE data for 1000MW of wind energy generation extended to 6000 MW
Select project targeted in-service dates

- MSTI – 2015
- Chinook – 2015
- Grasslands Wind Spirit – 2016
- Many Stars CTL – 2016
- MATL has been in the making for over 5 years
Energy Promotion & Development Division

Thank You

PO Box 200501
Helena MT 59620-0501
406.841.2030
commerce.mt.gov/energy