Tomorrow’s Miners: The Challenge

Who Are They
Where Will They Come From
&
How Will They Be Trained

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THE CHALLENGE

Replenishing The Diminishing Experienced Work Force In The Coal (Mining) Industry
PRODUCTION

The Opportunity
COAL IS BACK AGAIN

- Average price of a ton of coal is up >30% from 2003
- Metallurgical market prices up to +$100.00 per ton
- Cost of BTU value for coal is about 1:5 in relation to gas and oil
- China building their infrastructure, thus the steel market is back
U.S. Coal Forecast

• Coal market rising
• Coal production projected to increase at 1.3% per year
• Aging workforce
• A “lost generation” of potential labor
• Recruitment and Training will be one of the most pressing issues for the industry in the next 5 years
Figure 106. Coal production by region, 1970-2025 (million short tons)

Source: 2004 EIA Annual Energy Outlook
WORKFORCE

The Required Resource
2 Distinct Groups

- Machine Operators
- Laborers
- Helpers

- Professionals
- Mining Engineers
Typical Mine Demographic

![Bar chart showing employee age distribution with age ranges and corresponding percentages: 20-29 - 6%, 30-39 - 20%, 40-49 - 31%, 50-59 - 35%, 60-69 - 8%, 70+ - 0%.]
Three Age Groups as Percent of Mining Workforce by Year

Excludes oil and gas extraction
Age Groups as Percent of Coal Workforce by Year

### Annual Mining Wages vs. All Industries, 2002

<table>
<thead>
<tr>
<th>State</th>
<th>Annual Mining Wages</th>
<th>All U.S. Industry</th>
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<tbody>
<tr>
<td>Alaska</td>
<td>$64,102</td>
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<td>Wyoming</td>
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<td>Ohio</td>
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<tr>
<td>All U.S. Industry</td>
<td>49,251</td>
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</tbody>
</table>
Coal Miner Profile

• Average Age – 50

• Earnings
  – Average Hourly - $21
  – Average Weekly - $964
  – Average Annual - $50,000 to $70,000

• Education
  – 77% have no formal education beyond high school
Profile - continued

• Education
  – Less than high school education – 23%
  – High school diploma – 54%
  – Vocational school diploma – 8%
  – Some college – 10%
  – College degree – 5%

• Work Experience (median years) – 20

• Job related training during last 2 years – 35 hours

• Greatest asset – “can do” attitude
Figure 109. U.S. coal mine employment by region, 1970-2025 (number of jobs)

Source: 2004 EIA Annual Energy Outlook
DEMAND FOR MINERS

The Unknown Commodity
Work Force Issues

• Lost generation of miners due to lack of employment (1980 - …)
• No experienced miners in the wings
  – left during shut downs and found employment outside the coal fields
  – those unemployed are also maxed out on age
• Increased demand for coal with an aging workforce that needs replenished to be at even the present rate of production
Hurdles For Recruitment

• Perception of the industry as providing unstable employment
• Coal mining in not valued as a safe and healthy career
• Skill level requirements have increased
• Limited educational institutions and methodology to train new miners
• Inadequate monies spent to train and introduce potential labor force to industry
How Do We Get It Done?

• Opportunities exist for the industry, federal and state agencies to develop cooperative programs to meet future workforce needs

• Traditional training methods will need to be revised for the next generation of miners
  – Innovative virtual reality based programs
  – Technical training to address skill gaps

• Focus on training a new management pool for the industry (supervisory personnel)
Where Do They Come From

**Laborers**
- DOL/ETA
  - President’s High Growth Job Training Initiative
    - Industry, local/state agencies, training institutions, technical schools

**Engineers**
- Mining Schools
  - 14 schools remain
    - Aging faculty and facilities
      - NIOSH Research Grants
      - Private Foundations/Endowments
High Growth Job Training Initiative

- A demand driven workforce system to prepare workers for job opportunities in high growth/high demand and economically vital industries.
- Directed by partnerships that include business and industry, education and training providers and the public workforce system.
- Working collaboratively with business and training providers to develop workforce solutions.
Role of the Partners

• **Industry** defines the workforce challenges and identifies skill sets and competency models.

• **Educational institutions and training providers** assist in developing competency models and curriculum.

• **The public workforce system** accesses human capital and places trained workers in jobs.
Benefits of the Partnership

• Find the right workers, with the right skills, at the right time.
• Qualified workers
• Reduction in recruiting/training costs
• Retention
• Diversity
Energy Industry’s Issues

• Industry is expanding but its workers are nearing retirement.
• Technology skills are growing in importance.
• The industry suffers from an image problem among young people.
• Workers are needed now but require significant training before they are fully capable on the job.
Targeted Industries

• Biotechnology
• Health Services
• Transportation
• Construction
• Aerospace

Results
• 48 Grants
• 33 States
• $93.6 million
Additional Recommendations

• Partner with community colleges, votech & 4-year universities to strengthen programs preparing students to enter the recruitment pipeline in the “energy” industry

• Create an “energy” industry approach to attract diverse candidate pools through internships

• Ensure students graduating from high school have sufficient math and science skills to meet the needs of the “energy” sector.
Recommendation’s - Continued

• Identify critical skills group with high potential for retirement and implement mentor process

• Identify, replicate and expand highly successful regional training programs – Centers of Excellence
Thank You