Indiana Energy Landscape

presented to

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presented by

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Outline

• Characteristics of Indiana’s existing generation
• Emissions
• Consumers
• Prices
• Summary

NOTE: All data from Energy Information Administration unless otherwise noted
Fuel Sources for Electric Power in 2005

- Indiana numbers do not include out-of-state generators that serve Indiana customers
  - Cook (nuclear) in Michigan
  - Madison (natural gas) in Ohio
  - Trimble County (coal) in Kentucky

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Indiana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>50 %</td>
<td>96 %</td>
</tr>
<tr>
<td>Nuclear</td>
<td>20 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>15 %</td>
<td>3 %</td>
</tr>
<tr>
<td>Petroleum</td>
<td>6 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Renewables</td>
<td>8 %</td>
<td>0.4 %</td>
</tr>
</tbody>
</table>
In 2006….

- Indiana produced 3.2 % of the electricity generated in the U.S.
- Indiana produced 6.2 % of the electricity generated from coal in the U.S.
- Indiana produced 0.3 % of the electricity generated from natural gas in the U.S.
Coal-fired Generating Capacity by Decade Installed

<table>
<thead>
<tr>
<th>Decade</th>
<th># of units</th>
<th>MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940s</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>1950s</td>
<td>20</td>
<td>1847</td>
</tr>
<tr>
<td>1960s</td>
<td>12</td>
<td>2275</td>
</tr>
<tr>
<td>1970s</td>
<td>17</td>
<td>6938</td>
</tr>
<tr>
<td>1980s</td>
<td>9</td>
<td>5736</td>
</tr>
<tr>
<td>1990s</td>
<td>2</td>
<td>289</td>
</tr>
</tbody>
</table>
Projected Resource Requirements

Source: *Indiana Electricity Projections: The 2007 Forecast*, State Utility Forecasting Group
Coal Developments

• IMPA share of Prairie State (IL), Trimble County (KY), and Thoroughbred (KY)
• Duke Energy integrated coal gasification unit at Edwardsport
• Proposed syngas facility
Natural Gas Developments

• Hoosier Energy – Wabash Valley Power proposed purchase of Holland combined cycle facility (IL)

• NIPSCO proposed purchase of Sugar Creek combined cycle facility (IN)
Wind Developments

• Benton County Wind Farm
  – Duke Energy and Vectren
• Fowler Ridge Wind Farm
  – Indiana Michigan
• Hoosier Wind Farm
  – Indianapolis Power & Light
• NIPSCO pending purchases (IA and MN)
Summary of Generation Characteristics

• Indiana is heavily reliant on coal for electricity generation
  – But becoming slightly less so

• The existing fleet has been in place for 20 to 50 years

• New resources will be needed in the near future
2006 CO$_2$ Emissions
(metric tons)
2006 NO\textsubscript{x} emissions (metric tons)
2006 SO$_2$ emissions (metric tons)
Emissions Trends for Indiana Electricity Industry
(normalized to 1990 values)
Emissions

• Indiana ranks in the top 5 in emissions of CO$_2$, SO$_2$, and NO$_x$
  – Reliance on coal
  – Large industrial sector
• Emissions levels have decreased substantially for SO$_2$ and NO$_x$ (and CO$_2$ has grown slower than sales)
• Uncertainty over future rules
  – Mercury, CO$_2$
2006 Residential Electricity Sales (MWh)
2006 Commercial Electricity Sales (MWh)
2006 Industrial Electricity Sales (MWh)
2006 Total Electricity Sales (MWh)
Indiana Electricity Consumers

• Indiana has a large industrial base
• Indiana’s industries tend to be electric intensive
  – Steel
  – Aluminum
  – Chemicals
  – Transportation equipment
Indiana Real Electricity Prices
(Investor-owned utilities, 2005 cents/kWh)

Source: Indiana Electricity Projections: The 2007 Forecast, State Utility Forecasting Group
2006 All Sector Electricity Retail Price (cents/kWh)

IN 6.46 - rank #10

U.S. average 8.90
Summary

• Coal is the dominant fuel for electricity generation
• The industrial sector is very significant
• Emissions are relatively high but falling
• Prices are relatively low but rising