DO NOW

What is the difference between a baseload and a peak power plant?
DO NOW

ENERGY SOURCE: COAL
USE
PRODUCTION
IMPACT

DO NOW

Baseload Plant - delivers a constant supply of power, the minimum power needed

Peak Plant - electricity plant that runs only when demand is high
ENERGY SOURCE: COAL

22% of US energy use comes from coal
30% of world energy use is from coal
• 60% growth in 10 years - WHY?

US produces more coal than it uses
• 90% of coal use in US is for producing electricity

ENERGY SOURCE: COAL

WHY COAL?
• Cost
• Abundance
  • Estimated at about 200 years in US
ENERGY SOURCE: COAL

PRODUCTION
• Underground Mining (31% of production)
  • 50% of coal must be left to avoid roof collapse
  • Dangers of land subsidence (sinking)
  • Dangers of Black Lung - results in death, caused from inhaling coal dust
• Surface/Strip Mining (69% of production)

ENERGY SOURCE: COAL

PRODUCTION
• Surface/Strip Mining (69% of production)
  • Dynamite is used to blast the top layer off of mountains to get at coal seams
  • Totally destroys the ecology of the region
    • Forest are cut
    • Streams are buried by waste
  • Proponents: trees are required to be replanted & flat land is valuable for development
ENERGY SOURCE: COAL

ENVIRONMENTAL IMPACT

ECOLOGICAL DESTRUCTION DUE TO STRIP MINING

CARBON DIOXIDE EMISSIONS

• Cause of global warming/climate change
ENERGY SOURCE: COAL

ENVIRONMENTAL IMPACT

CO2 from US Electricity Generation Sources - 2013

<table>
<thead>
<tr>
<th>Source</th>
<th>Million metric tons</th>
<th>Share of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>1,575</td>
<td>77%</td>
</tr>
<tr>
<td>Natural gas</td>
<td>442</td>
<td>22%</td>
</tr>
<tr>
<td>Petroleum</td>
<td>23</td>
<td>1%</td>
</tr>
<tr>
<td>Other⁴</td>
<td>11</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Total</td>
<td>2,063</td>
<td></td>
</tr>
</tbody>
</table>

ENERGY SOURCE: COAL

CLEAN COAL?

Debate over term
Refers to Carbon Capture & Storage
• Traps and stores CO₂ underground
• Not yet tried on a larger scale
• Incredibly expensive to retrofit plants