DEVELOPMENT

CHAPTER 9: KEY ISSUE 3
p. 314-327

Vocab: 63-74
Notes: p. 3-4
DO NOW: BINDER ✓
Open up your binders to your vocabulary and take out your questions.

DO NEXT: RECITE & REVIEW
Review the vocab & questions with a neighbor. Make sure to give good examples.
Learning Goal

• I can describe the distribution of fossil fuels and alternative energy sources.
• I can explain the difference between proven and potential reserves.
• I can describe the role of OPEC and changes in the price and availability of petroleum.
World Energy Demand

What accounts for most of the world’s energy consumption?

- **Petroleum**: 33.2%
- **Natural Gas**: 22.1%
- **Coal**: 27.9%
- **Other**: 16.8%
Changing U.S. Energy Demand

How have sources of energy shifted over time in the United States? What contributed to this change?
Fossil Fuels

Coal
MDCs and LDCs each have $\frac{1}{2}$ of reserves
USA has $\frac{1}{4}$ of MDCs

Petroleum
LDCs have 85% of reserves

Natural Gas
LDCs have 90% of reserves
MDCs < 10% (mostly USA)
Share of World Energy Demand

How do LDCs and MDCs compare in their use of energy?
COAL

Proven Reserves

**Proven**
Supply remaining in deposits that have been discovered

**Potential**
Undiscovered but thought to exist
PETROLEUM

Proven Reserves

Proven
supply remaining in deposits that have been discovered

Potential
undiscovered but thought to exist
NATURAL GAS
Proven Reserves

Proven
supply remaining in deposits that have been discovered

Potential
undiscovered but thought to exist
How can potential reserves become proven reserves?

① Exploration for new, undiscovered fields.

② Enhanced recovery from already discovered fields.

③ Need for more economically feasible, environmentally sound technology to extract unconventional sources.
Unconventional Sources

Oil / Tar Sands

Natural Gas through Hydraulic Fracturing / Fracking
Describe the role of **OPEC** and changes in the price and availability of petroleum.

**46** Organization of Petroleum Exporting Countries

group of oil-rich LDCs that united to take control of their oil fields and prices from big oil companies (1960s)

Ex: SW Asia and N Africa → Algeria, Iraq, Iran, Kuwait, Libya, Qatar, Saudi Arabia, UAE
Organization of the Petroleum Exporting Countries (OPEC) refuses to sell oil to countries (including the United States) that supported Israel in its 1973 War with its Arab neighbors.

OPEC lifts boycott but raises prices.

Revolution in Iran and Iran-Iraq War triggers oil shortages and higher prices.

End of Iran-Iraq war brings increased supplies and lower prices.

Prices rise as demand for oil in developing countries increases.

Oil Companies in developed countries control supply of oil in Southwest Asia and keep prices low.
U.S. Petroleum Consumption, Production, & Imports

How has US consumption and production of petroleum changed over time?
World Uranium Reserves

What are the advantages and disadvantages of nuclear energy as an alternative energy source?
**Operation: Develop an LDC**

<table>
<thead>
<tr>
<th></th>
<th>Afghanistan</th>
<th>Pakistan</th>
<th>Bangladesh</th>
<th>Yemen</th>
<th>Somalia</th>
<th>Sudan</th>
<th>Mali</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HDI score</strong></td>
<td>0.468 (ranked 169)</td>
<td>0.537 (ranked 146)</td>
<td>0.558 (ranked 142)</td>
<td>0.500 (ranked 154)</td>
<td>0.364 (ranked 165)</td>
<td>0.473 (ranked 166)</td>
<td>0.407 (ranked 176)</td>
</tr>
<tr>
<td><strong>Life expectancy</strong></td>
<td>60.95 years</td>
<td>66.57 years</td>
<td>70.66 years</td>
<td>63.11 years</td>
<td>55.05 years</td>
<td>62.06 years</td>
<td>55.03 years</td>
</tr>
<tr>
<td><strong>Avg years of schooling</strong></td>
<td>3.21 years</td>
<td>4.73 years</td>
<td>5.07 years</td>
<td>2.51 years</td>
<td>n.a.</td>
<td>3.14 years</td>
<td>1.99 years</td>
</tr>
<tr>
<td><strong>GNI per capita</strong></td>
<td>$1,903.66</td>
<td>$4,651.64</td>
<td>$2,713.09</td>
<td>$3,945.18</td>
<td>n.a.</td>
<td>$3,428.12</td>
<td>$1,499.38</td>
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<tr>
<td><strong>Resources</strong></td>
<td>gold, copper, lithium, uranium, iron ore, cobalt, natural gas, oil</td>
<td>natural gas, some oil, hydro power potential, coal, iron ore, copper, salt</td>
<td>fertile soils, natural gas, timber, coal</td>
<td>Main: oil, natural gas Some: coal, gold, lead, nickel, copper</td>
<td>uranium, iron ore, tin, gypsum, copper, salt, natural gas</td>
<td>petroleum, copper, iron ore, silver, gold, tungsten, zinc</td>
<td>gold</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>unstable, but democracy starting</td>
<td>democracy, struggling to control domestic insurgents</td>
<td>democracy, uses international development aid</td>
<td>transitioning gov’t after Arab Spring uprisings</td>
<td>transitional gov’t after 20 years without one</td>
<td>dictatorship</td>
<td>collapsing since 2012, fragile gov’t</td>
</tr>
</tbody>
</table>
Homework

THURSDAY
Read: Chapter 9, KI 4
Vocab: #16-21; 47-48; 54-62

FRIDAY
Europe Map Quiz