Sustainable Development & The War on Terror:
The Role of Conservation, Alternative Energy, & Foreign Aid

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“We have a serious problem: America is addicted to oil, which is often imported from unstable parts of the world.”

- President George W. Bush,
  State of the Union Address
  Jan. 31, 2006
1997 Global Energy Consumption by Type
(Quadrillion BTUs)

- Oil: 41%, 154 quadrillion BTUs
- Natural Gas: 22%, 82 quadrillion BTUs
- Coal: 24%, 93 quadrillion BTUs
- Nuclear: 6%
- Renewables (Hydro, Solar, Wind...): 7%

Total Consumption - 380 Quad BTUs

Source: U.S. Dept. of Energy
World Energy Consumption by Fuel Type
1970-2020

History

Projections

Oil
Natural Gas
Coal
Renewables
Nuclear

Quadrillion Btu

CONSUMPTION PER REGION

- Europe and Eurasia: 25.9%
- Asia Pacific: 28.8%
- North America: 30.1%
- Central and South America: 6%
- Middle East: 5.9%
- Africa: 3.3%

Source: BP, Report 2004
Since 1990, the US & China alone have increased oil consumption by over 7 million barrels per day.
Where is the Oil?
Comparison of ANWR to Continental U.S.
Conservation

President Carter encourages conservation in a fireside address
Total = 3,883 Billion Kwh
Electric Utility Plants = 63.4%
Independent Power Producers & Combined Heat & Power Plants = 36.6%

- Coal: 50.8%
- Nuclear: 19.7%
- Hydroelectric: 6.9%
- Petroleum: 3.1%
- Other Gases: 0.4%
- Other Renewables: 2.3%
- Other: 0.2%
US Oil Consumption

Transportation 67%

Industrial 25%

- Residential 4%
- Commercial 2%
- Electric Power 2%

Source: Union of Concerned Scientists, October 2005
Debate Percolates over CAFE Standards

Rent this hummer at www.FirstClassLimos.net
Who gets what from a litre of oil in the G7?

2006

- **USA**: 26%
- **Canada**: 30%
- **Japan**: 38%
- **Germany**: 49%
- **Italy**: 53%
- **France**: 53%
- **United Kingdom**: 55%

Legend:
- Blue: Purchase of crude oil (FOB)
- Yellow: Industry Margin (e.g. transport, insurance, refining and other costs)
- Red: National government taxes

USD/litre
The More Gas Prices Change, The More CAFE Standards Stay the Same

- **1978**: 19.9 MPG
- **1981**: $3.61/Gallon
- **1987**: 26.2 MPG
- **1998**: $1.39/Gallon
- **2004**: 24.7 MPG
- **2006**: $2.65/Gallon
Markey-Platts Bill, HR 1506

- Raise fuel economy standards 4% year
- 35 mpg fleet-wide average by 2018
- Subsequent increase to 40 mpg by 2022

- Less CO2: 1.6 million barrels day less
- Reduces Imports: At 40 mpg would save same amount oil US currently imports from Middle East
- Good for Consumer: Reduction in spending for gasoline equals or exceeds any increase in vehicle cost
<table>
<thead>
<tr>
<th>Energy Source</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total a</td>
<td>98.961</td>
<td>96.464</td>
<td>97.952</td>
<td>98.714</td>
<td>100.278</td>
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<tr>
<td>Fossil Fuels</td>
<td>84.965</td>
<td>83.176</td>
<td>84.070</td>
<td>84.889</td>
<td>86.186</td>
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<tr>
<td>Coal</td>
<td>22.580</td>
<td>21.952</td>
<td>21.980</td>
<td>22.713</td>
<td>22.918</td>
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<tr>
<td>Coal Coke Net Imports</td>
<td>0.065</td>
<td>0.029</td>
<td>0.061</td>
<td>0.051</td>
<td>0.138</td>
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<tr>
<td>Natural Gas b</td>
<td>23.916</td>
<td>22.861</td>
<td>23.628</td>
<td>23.069</td>
<td>23.000</td>
</tr>
<tr>
<td>Petroleum c</td>
<td>38.404</td>
<td>38.333</td>
<td>38.401</td>
<td>39.047</td>
<td>40.130</td>
</tr>
<tr>
<td>Electricity Net Imports</td>
<td>0.115</td>
<td>0.075</td>
<td>0.078</td>
<td>0.022</td>
<td>0.039</td>
</tr>
<tr>
<td>Nuclear Electric Power</td>
<td>7.862</td>
<td>8.033</td>
<td>8.143</td>
<td>7.959</td>
<td>8.232</td>
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<tr>
<td>Conventional Hydroelectric</td>
<td>2.811</td>
<td>2.242</td>
<td>2.689</td>
<td>2.825</td>
<td>2.725</td>
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<tr>
<td>Geothermal Energy</td>
<td>0.317</td>
<td>0.311</td>
<td>0.328</td>
<td>0.339</td>
<td>0.340</td>
</tr>
<tr>
<td>Biomass d</td>
<td>2.907</td>
<td>2.640</td>
<td>2.648</td>
<td>2.740</td>
<td>2.845</td>
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<tr>
<td>Solar Energy</td>
<td>0.066</td>
<td>0.065</td>
<td>0.064</td>
<td>0.064</td>
<td>0.063</td>
</tr>
<tr>
<td>Wind Energy</td>
<td>0.057</td>
<td>0.070</td>
<td>0.105</td>
<td>0.115</td>
<td>0.143</td>
</tr>
<tr>
<td>Employment &amp; Job Quality</td>
<td>Unemployment</td>
<td>Per capita income</td>
<td>Percent in poverty</td>
<td>Job satisfaction</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
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<tr>
<td>Human &amp; Environmental Health</td>
<td>Population growth rate</td>
<td>Life expectancy</td>
<td>Deaths per births</td>
<td>Disease rates</td>
<td></td>
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<tr>
<td></td>
<td>Drinking water quality</td>
<td>Air pollution</td>
<td>Changes in land use</td>
<td>Percentage of forest area protected</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Literacy rate</td>
<td>Access to education</td>
<td>Internet access</td>
<td>Female-to-male education differential</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>Total U.S. Development Assistance and Aid, 1960–2004 ($Billions)</th>
<th>GDP Per Capita When First Received U.S. Assistance</th>
<th>GDP Per Capita in 2004</th>
<th>State of Economic Liberalization (2006 Index)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Israel</td>
<td>$48.7</td>
<td>$5,564 (1960)</td>
<td>$17,752</td>
<td>Mostly Free</td>
</tr>
<tr>
<td>Egypt</td>
<td>$42.9</td>
<td>$459 (1960)</td>
<td>$1,663</td>
<td>Mostly Unfree</td>
</tr>
<tr>
<td>India</td>
<td>$37.5</td>
<td>$175 (1960)</td>
<td>$538</td>
<td>Mostly Unfree</td>
</tr>
<tr>
<td>Vietnam</td>
<td>$22.8</td>
<td>$199 (1984)*</td>
<td>$500</td>
<td>Mostly Unfree</td>
</tr>
<tr>
<td>Pakistan</td>
<td>$20.7</td>
<td>$186 (1960)</td>
<td>$566</td>
<td>Mostly Unfree</td>
</tr>
<tr>
<td>South Korea</td>
<td>$12.1</td>
<td>$1,110 (1960)</td>
<td>$12,743</td>
<td>Mostly Free</td>
</tr>
<tr>
<td>Indonesia</td>
<td>$9.3</td>
<td>$196 (1960)</td>
<td>$906</td>
<td>Mostly Unfree</td>
</tr>
<tr>
<td>Turkey</td>
<td>$9.1</td>
<td>$1,570 (1968)*</td>
<td>$3,197</td>
<td>Mostly Unfree</td>
</tr>
<tr>
<td>Brazil</td>
<td>$8.4</td>
<td>$1,332 (1960)</td>
<td>$3,675</td>
<td>Mostly Unfree</td>
</tr>
<tr>
<td>Russia</td>
<td>$8.1</td>
<td>$2,693 (1989)*</td>
<td>$2,302</td>
<td>Mostly Unfree</td>
</tr>
</tbody>
</table>

* Earliest year for which GDP per capita data are available.

**Sources:**
- World Bank, World Development Indicators Online 2005, at publications.worldbank.org/WDI (March 21, 2006);
U.S. Foreign Aid and Human Development

- 10 Least Developed Countries on Earth*
- Top 10 Countries Receiving the Most Foreign Aid from the U.S. in 2005

Official Development Assistance (ODA) from the U.S. in 2005

- $2.62 billion
- $10.23 billion


siatastic.com
FUNDING THE GLOBAL “WAR ON TERROR”
BILLIONS OF U.S. TAX DOLLARS

based on past years, we estimate there will be $20 billion in supplemental war spending for FY2008*
Net Official Development Assistance - As % of Gross National Income, 2005

- UN Target 0.7
- Average country effort 0.47
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