

Energy Choices Around The World

A WebQuest for Comparing Energy Choice Among Different
Countries

Designed for the Math Science Partnership Summer Institute
Richard Stockton College
Summer 2008

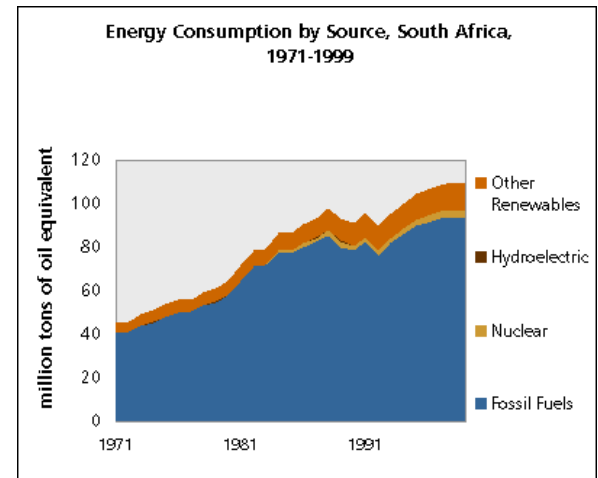
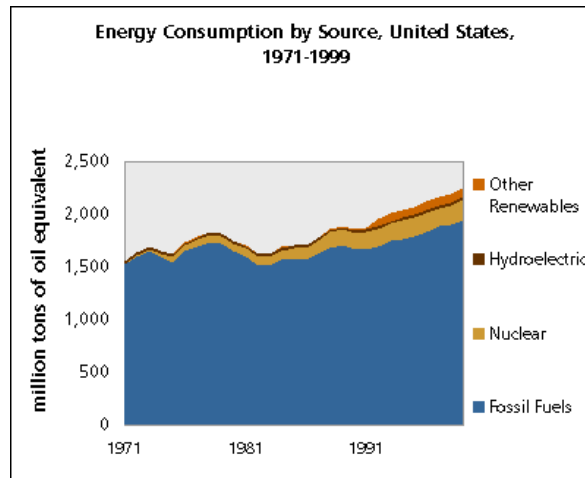
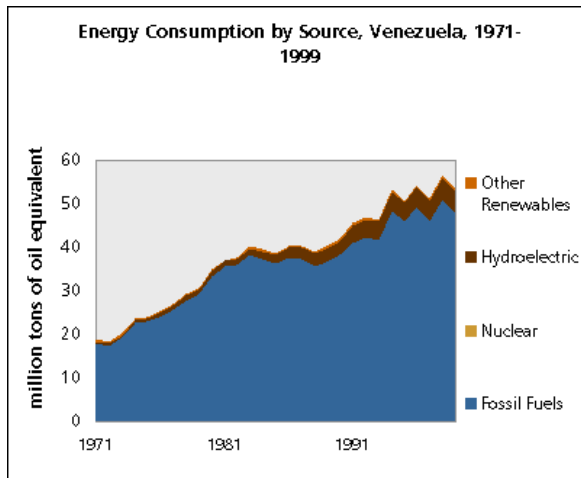
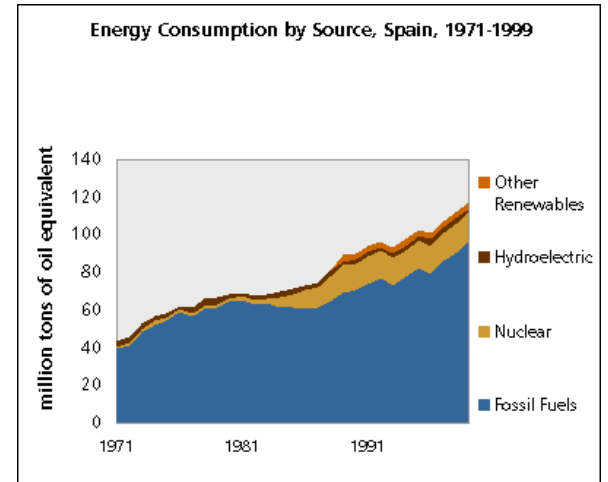
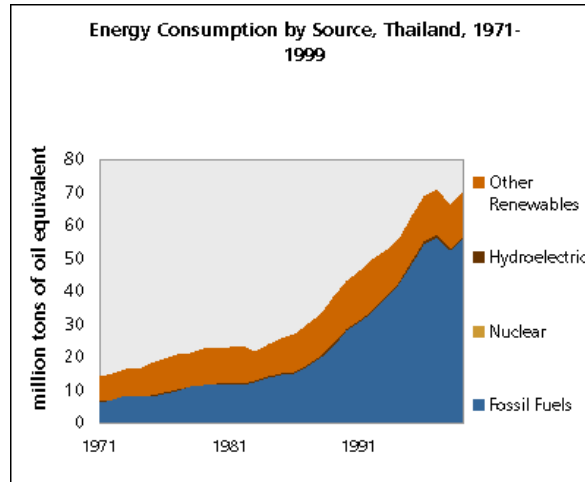
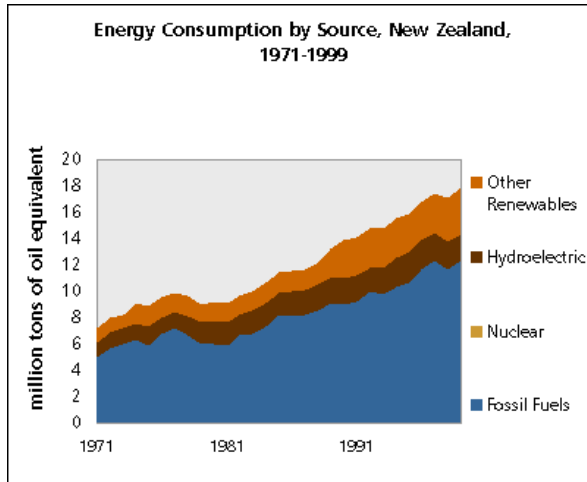
Team II

Matthew T., Annie K., Colleen J., Christine D.




Based on a template from [The WebQuest Page](#)







Main sources of energy and the energy usage





The positives and negatives of the energy sources

Energy Source	Positives	Negatives
Oil 	Systems already in place for refinement & use Currently abundant	Not an endless supply Major factor in greenhouse gas emissions Available from a limited number of politically distasteful sources (ie. Middle East, Alaska, offshore drilling)
Coal 	Systems already in place for refinement and use Currently abundant	Not an endless supply Major factor in greenhouse gas emissions
Natural gas 	Systems already in place for refinement Currently abundant – especially in United States Burns clean	Not an endless supply Uses for transportation not as fully developed as possible.

The positives and negatives of the energy sources

Energy Source	Positives	Negatives
Wind 	Clean & renewable Abundant in some areas	Unsightly turbines (NIMBY factor) Relies on a changeable factor
Solar 	Clean & renewable Abundant	Solar cells cost currently prohibitive
Nuclear 	Clean production of power Abundant fuel	Waste products dangerous and need expensive handling Possibility of meltdown – TMI, Chernobyl
Synthetic / Biofuel 	Abundant source (ie. corn)	Expensive to produce Creates environmental problems

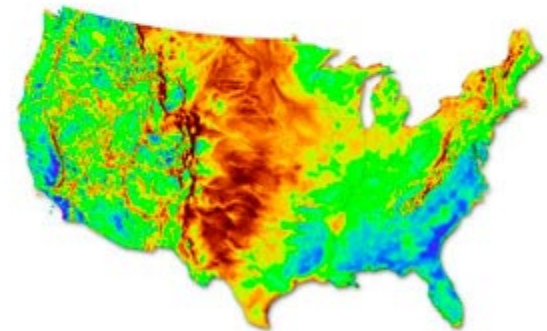
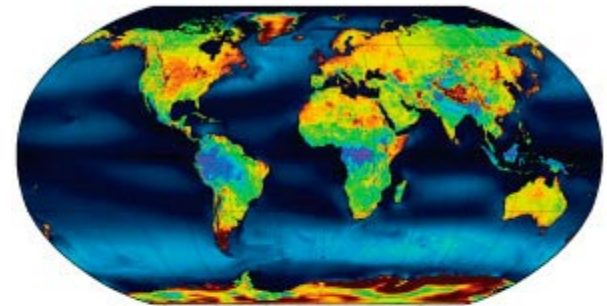
The positives and negatives of the energy sources

Energy Source	Positives	Negatives
<p>Hydroelectric</p> 	<p>Renewable</p>	<p>Major environmental impact upstream and downstream of a dam Only available in areas with swift-moving water (Niagara Falls) or where a dam can create a lake (Hoover Dam)</p>
<p>Geothermal</p> 	<p>The USA is the world leader in online capacity of geothermal energy and the generation of electricity from geothermal energy. Provides the third largest domestic source of renewable electricity after hydroelectricity and biomass.</p>	<p>Only concentrated in the West. Currently produces less than one percent of total U.S. electricity supply.</p>

Five energy policy recommendations for the United States government

- Building wind facilities in the corridor that stretches from the Texas panhandle to North Dakota could produce 20% of the electricity for the United States at a cost of \$1 trillion. It would take another \$200 billion to build the capacity to transmit that energy to cities and towns.
- That's a lot of money, but it's a one-time cost. And compared to the \$700 billion we spend on foreign oil every year, it's a bargain.

Wind speed over land



3TIER
U.S. National Wind Map
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Five energy policy recommendations for the United States government

- Utilize a cheap new replacement for foreign oil.
- Natural gas and bio-fuels are the only domestic energy sources used for transportation.
- Natural gas is the cleanest transportation fuel available today.



The Honda Civic GX Natural Gas Vehicle is the cleanest internal-combustion vehicle in the world according to the EPA.

Five energy policy recommendations for the United States government

- Adopt an energy conservation plan similar to the one passed in Spain recently.
- The measures approved go from the 20 percent reduction of traffic speed for vehicles in big cities and the encouragement to use public transport, to the use of more buses in cities of more than half a million inhabitants.
- Officials will draft a pilot project to introduce a million electric and hybrid (fuel-gas) vehicles in the country in 10 years.
- Traditional incandescent bulbs will be replaced for low-consumption lamps and 49,000,000 saving bulbs will be handed free of charge between 2009 and 2010.
- Another measure establishes a minimum room temperature of 26° C (78.8 F) during the summer and maximum 21° C (69.8 F) in wintertime in all air-conditioned non-residential buildings, except for hospitals and other considered special.



Five energy policy recommendations for the United States government

- Invest in solar power research to develop cheaper solar cells that can be available to the general public.
- A new report finds that solar power's contribution could grow to 10% of the nation's power needs by 2025.
- Solar photovoltaic companies will also need to streamline installations and make solar power a "plug-and-play" technology, that is, it must be simple and straightforward to buy the components of the system, connect them together, and connect the system to the power grid.



Five energy policy recommendations for the United States government



Off-set individual's carbon footprint

- Carbon offsets enable people and organizations to reduce their carbon footprint. Carbon Offsets allow carbon dioxide, one of the main green house gases, to be either taken out of the atmosphere or reduced in another part of the world. There are several ways of off-setting your carbon footprint.
- You can plant a tree, or a few trees. Trees "breathe in" carbon dioxide and "breathe out" oxygen. This process is called "carbon sequestration"
- You can purchase carbon dioxide credits and then not use them. This stops other people, organizations and countries using them.
- Invest or donate to companies / organizations, who are researching and developing renewable and sustainable technologies.
- You can buy energy efficient technologies and donate them to developing countries.
- Purchase power from 'green' or renewable energy providers – and reduce your carbon footprint
- Select products that you need from companies who themselves have responsible environmental policies, or who offset the carbon footprint on the products you purchase