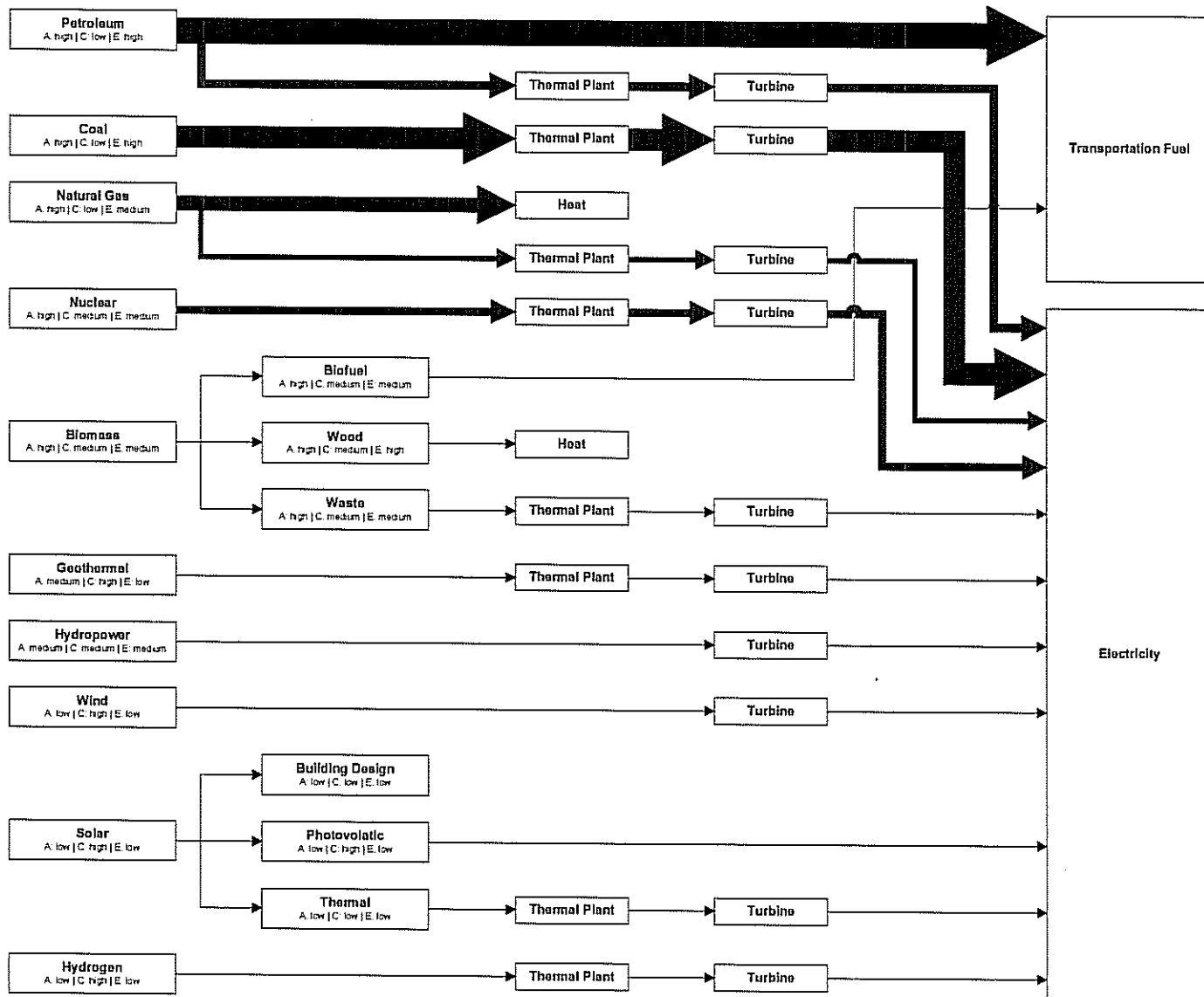


Energy Security: National Perceptions and Policies

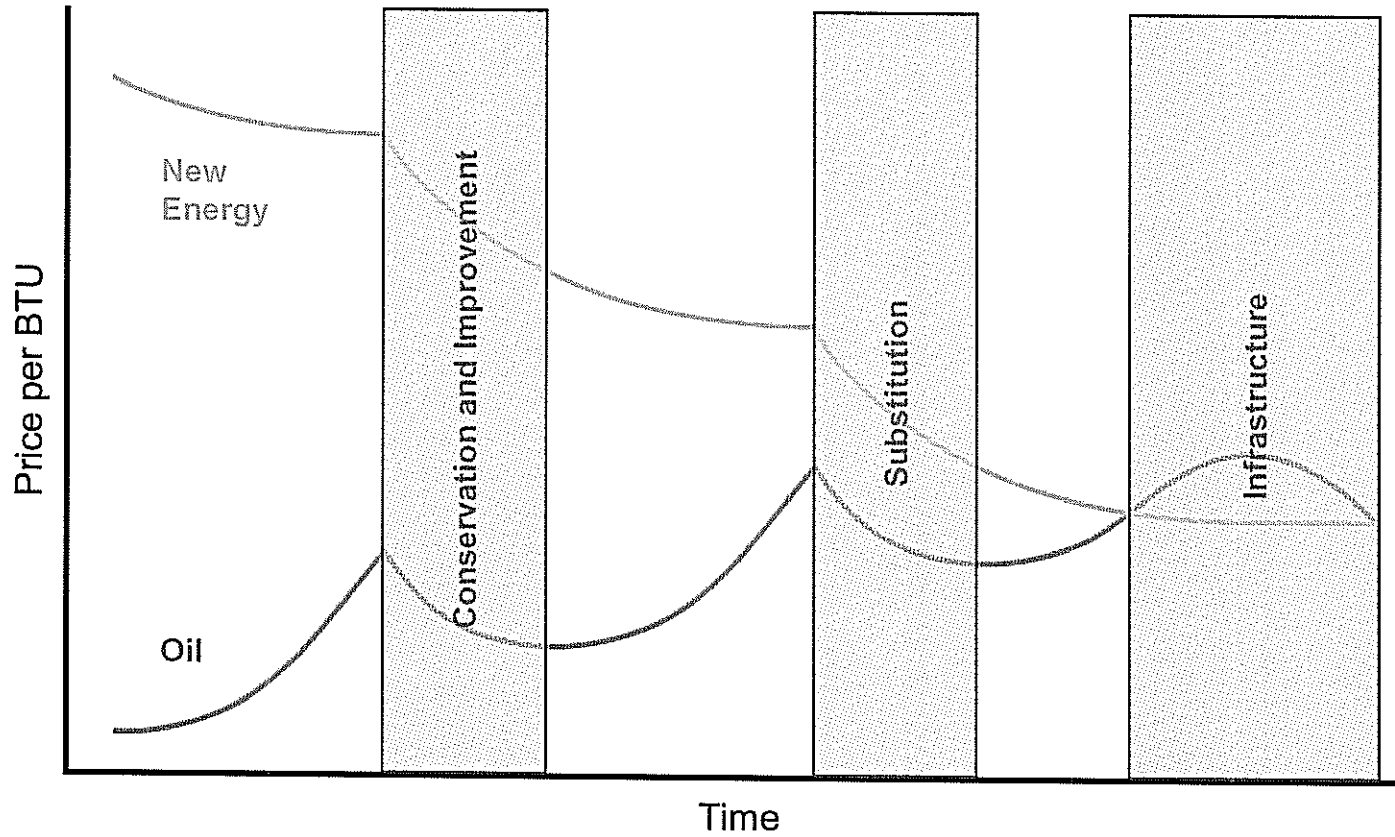
Foreign Policy Research Institute
July 14, 2010

Felix K. Chang

Energy Makes the World Go Round

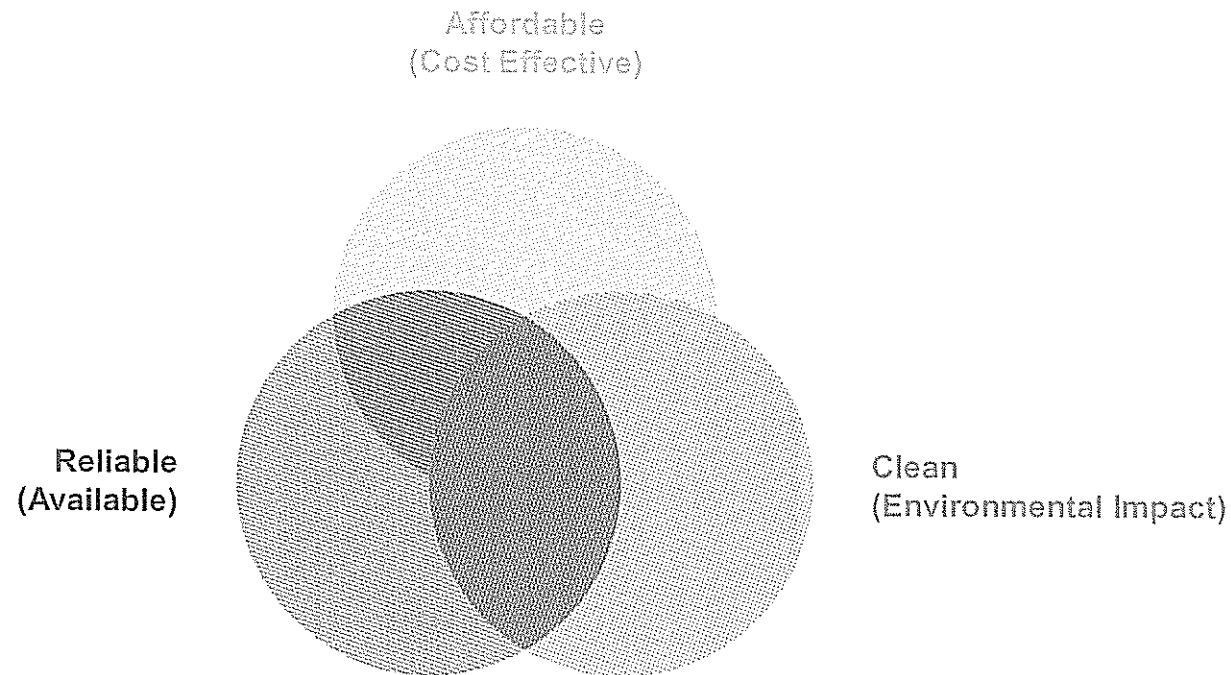


Oil, Peak Oil, and Peak Oil Prices



Energy Security

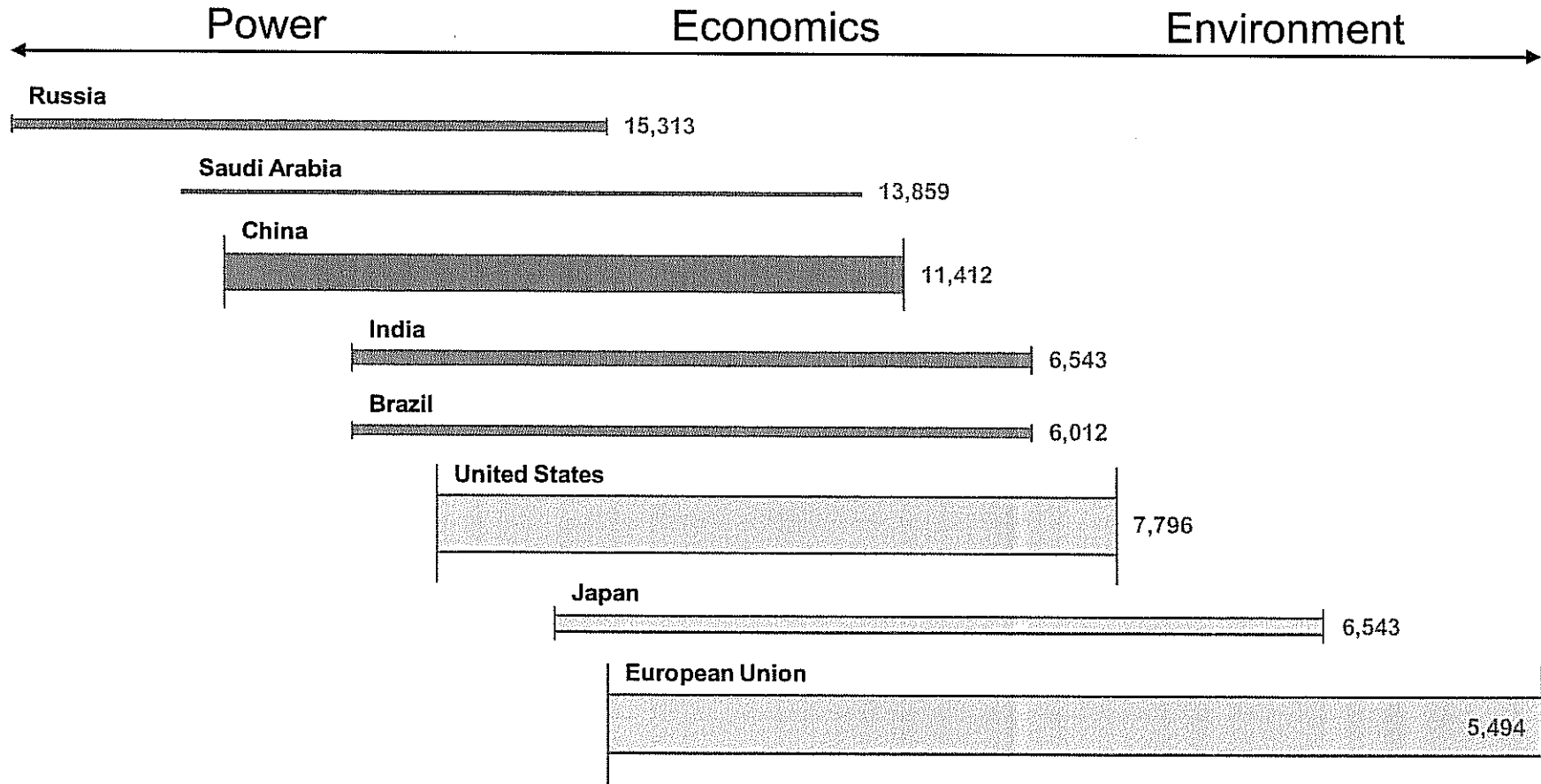
Energy security is defined as the availability of a reliable, affordable, and clean supply of energy



Energy Security Perceptions

	Power	Economics	Environment
Underlying concern	How to gain more secure access	How to improve economic conditions	How to maintain a healthy environment
What is the role of energy?	To compel or deter others	To create wealth and employment	To promote human wellbeing
What are the primary issues?	How to control parts of the energy value chain	How to stabilize prices	How to address climate change
What are the overarching solutions?	Create energy dependence or independence	Increase and diversify energy production towards market-efficient resources	<ul style="list-style-type: none">- Increase conservation and energy intensity- Diversify energy production towards renewable resources

National Perceptions of Energy Security



Notes:

1. Height reflects the GDP of the country or region in 2009, in U.S. dollar PPP
2. Number reflect the energy intensity of the country or region in 2007, in BTU per 2005 U.S. dollar PPP

Energy Security Policy Preferences

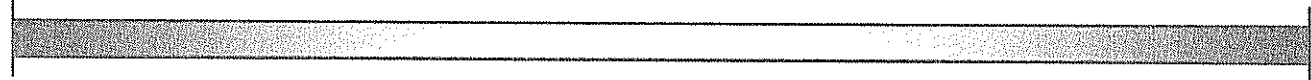
Power

Economics

Environment

Attitudes

Government role in energy resource stewardship



Transportation Fuels

Difficult to switch inputs, because supporting infrastructure is not flexible

- Increase control over production and distribution through national oil companies or state means
- Use price controls

- Decrease restrictions on oil companies
- Promote private investment in conservation, substitution, and infrastructure

- Increase fuel taxes and efficiency standards
- Use grants for conservation, substitution, and infrastructure

Electricity

Easy to switch inputs, because supporting infrastructure is flexible

- Increase control over production and distribution through national utilities
- Use price controls

- Decrease restrictions on natural gas and nuclear companies
- Promote private investment in conservation, substitution, and infrastructure
- Use carbon cap-and-trade

- Increase electricity taxes and mandates for renewable energy consumption
- Use carbon tax

Oil Industry Transformation

Resources	Capital	Technology	Models
1870s-1970s			
Western governments	Oil majors	Oil majors	Oil majors dominate industry (Standard Oil)
1980s-1990s			
Developing world governments	Oil majors and national oil companies	Oil majors and oilfield services companies	Oil majors partner with national oil companies (Exxon and Saudi Aramco)
2000s-2010s			
Developing world governments	Oil majors and national oil companies	Oil majors and oilfield services companies	National oil companies partner with oilfield services companies (China National Petroleum Corporation and Halliburton)

Energy Security Ahead

- Power
 - International politics will have an increasing impact on access to oil
 - Developed world will begin changing its transportation fuel (and chemicals) infrastructure
- Economics
 - State-owned enterprises will increase their influence in the oil industry
 - International energy companies will shift their focus from oil to natural gas
- Environment
 - Debate will shift from novel to practical solutions (e.g., natural gas and nuclear)