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Under Secretary of Defense (Policy)

1997 Summer Study

ASIAN ENERGY: SECURITY IMPLICATIONS

Organized by the
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27 July - 6 August 1997
Newport, Rhode Island

*Asian Energy:
Security Implications*

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PREFACE

The following report provides a summary of a Summer Study conducted for the Under Secretary of Defense (Policy). The Summer Study, directed by Andrew W. Marshall and James G. Roche with the working group chaired by S. Enders Wimbush, met from 27 July - 6 August 1997 at the Naval War College, Newport, Rhode Island. This was the eleventh in a series of summer studies undertaken to review fundamental issues and questions of importance to the defense planning process.

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Introduction

Energy is one of the few things most people agree nations will fight for. In the next several decades, a profound shift will occur in the energy-consuming world. Asia will become the world's leading consumer, and China's energy demand within Asia will grow dramatically. If present trends continue, growing demand will outstrip new supply. New production from known energy sources, for example in the Caspian or North Sea, will be unable to meet the new demand. As a consequence, by the years 2015-20 a greater and greater percentage of Asia and China's energy requirements for oil will have to be satisfied by producers in the Persian Gulf. Where Asian countries will find and secure the energy supplies to satisfy their demand, what strategies they use to obtain it, how they go about countering the energy strategies of their opponents, and the problems these interactions pose to US strategic and operational planning are the subjects of this Summer Study.

Participants

Chairman: Enders Wimbush, SAIC

Paul Bloch, Naval Postgraduate School

Victor Cha, Georgetown University

Charles Collier, Department of Energy

Robert Ellsworth, Robert Ellsworth & Company, Inc.

Robert Ebel, Center for Strategic and International Studies

David Epstein, OSD/Net Assessment

Aaron Friedberg, Princeton University

Graham Fuller, RAND Corporation

Frank Gunter, Marine Corps

Juli MacDonald, SAIC

Gary Marfin, Conoco Inc.

Drew Overpeck, Texaco Inc.

Lucian Pugliaresi, LPI Consulting, Inc.

Charles Wolf, Jr., RAND Corporation

Objectives

Our objectives are to identify, describe and analyze a limited number of alternative energy worlds through the vehicle of complex scenarios. The time horizon for the scenarios is approximately 2020.

Scenarios by their nature are speculative. The scenarios in this briefing are neither predictive nor inclusive, nor are they based necessarily on observable trends. Rather, they are highly imaginative descriptions of things that could happen, not things that necessarily will happen or that the DoD expects to happen. The scenarios presented here are intended to suggest how the alternative energy futures might arise and where they might lead; where conflicts might occur; and how U.S. interests might be challenged. There are many possible scenarios, and this study does not claim to present the entire range of possibilities. Rather, in order to explore issues that could challenge DoD planners in the future, these scenarios have a systematic downside bias — that is, we have chosen to focus on worlds in which things can go wrong.

Our purpose in using this approach is to uncover the implications of these new worlds for DoD planners. For example, scenarios like these raise the possibility that planners may wish consider the need for new or enhanced capabilities and reexamine those that are already planned to determine if they will address the challenges of these alternative futures effectively; to envisage new threats and missions, in terms both of the appearance of new actors and of the behavior of familiar actors who might choose different strategies or new ways to implement old strategies in response the new conditions; or to identify and understand a range of new operating conditions that could place new demands on US forces.

Objectives

- Focus on long term (2020)
- Analyze limited set of alternative energy futures -- NOT PREDICTIVE or INCLUSIVE
- Emphasis on downside scenarios
- Analyze implications for DOD

Research Questions

We have asked ourselves, first, what strategies Asian actors will pursue to assure and secure adequate supplies of energy under these changing conditions? Where will the energy come from? What are the dimensions and dynamics of their possible energy strategies? What will actors' specific aims and goals look like? What kind of alliances might their search for energy security lead them into? How will other actors in the region respond to the perception and/or implementation of these strategies?

Second, we have explored how different actors' strategies might collide and lead to conflict, and how states might act to implement their own strategies while defending against those of other actors. We assume that most Eurasian states will respond to a more complex and problematic energy future by developing strategies to secure sufficient energy for themselves. Given that most energy will come from only a few sources through vulnerable sea-lanes of communications (SLOCs) and pipelines, it is reasonable to anticipate that the strategies of different states will sometimes, perhaps frequently, conflict.

Third, an important part of our task is to identify 2nd and 3rd order consequences of potential competition and conflict over energy. For example, how might a concern for acquiring energy and securing its transport lead countries to change their military force design or the direction of military investment? Energy dynamics have a worldwide dimension. Thus, conflict that arises over energy or in which energy is a factor could have a cascading effect that goes well beyond the point of conflict. The scenarios seek to track and assess potential action and reaction to energy-related conflict through several iterations.

Fourth, we have asked how energy figures in conflicts that arise from other causes? Will opponents' energy supplies, transport systems or other infrastructure become a focus of attack or interdiction in other countries' strategies?

Research Questions

- How can the Asian nations secure adequate supply?
- Where will their energy strategies collide?
- What are 2nd & 3rd order consequences of these energy conflicts?
- What is the energy component of conflict from other causes?

Implications for DOD (1)

Each alternative energy world scenario concludes with a specific set of capability issues that should be of interest to DoD. These can be summarized in four categories of implications:

- Major New Actors and Coalitions
- New Operating Conditions
- Major New Missions
- New or Enhanced Capability Requirements

Implications for DOD⁽¹⁾

- **Major New Actors & Coalitions**
- **New Operating Conditions**
- **Major New Missions**
- **New or Enhanced Capability Requirements**

Implications for DOD (2)

Major New Actors and Coalitions

Our scenarios suggest that conflict and competition over energy could pose major new regional threats to US planners. Military planners may be faced with new regional threats which are more powerful, more aggressive and may possess new means of leverage over the US and its allies. For example, in several of the scenarios, China becomes a more dangerous and contentious actor in Asia and the Gulf both in satisfying its own energy needs and by using the energy dependencies of other regional states as levers to reduce US influence. Its actions to secure energy sources to meet its growing demand could have many consequences, including: 1) creating insecurities among other Southeast Asian states; 2) "vassalizing" Central Asian states, in the sense that these states become economically dependent on and politically subservient to China; 3) seizing and controlling energy rich geography (e.g., Spratlys) or foreign producers of energy (e.g., Russian Far East); or 4) developing hostile alliances with energy suppliers, for example with US adversaries in the Persian Gulf.

In these scenarios, growing Asian – specifically Chinese – dependency on the Gulf creates the potential for increased Chinese involvement with rogue energy suppliers whose interests are antithetical to those of the US. The US could find itself faced with protecting our traditional allies in the Gulf from a much more powerful and aggressive threat, e.g., an alliance of Iran, Iraq, Russia and China armed and supported by Chinese and Russian military technology and resources.

Implications for DOD(2)

Major New Actors & Coalitions

- China becomes a more dangerous actor in Asia and Gulf
- Possibility of hostile alliance involving China-Iran-Iraq-Russia

Implications for DOD (3)

New Operating Conditions

As energy demand among US allies in Asia grows and competition for existing supply heats up, the development of vulnerable energy interdependencies could give rise to conditions in which traditional US allies make maintaining secure, interdependent energy flows a higher strategic priority than honoring military commitments to the US. As several scenarios describe, the US could find itself without access to military facilities and bases in both Northeast Asia and the Persian Gulf that we now take largely for granted.

The scenarios suggest that conflict occurring in these alternative energy worlds could find the US operating in extreme environmental conditions, e.g., Siberia and the Gulf.

While the scenarios suggest that the US may lose the services of some allies in the event of conflict in which energy is an issue or a catalyst, it might also discover potential new allies with similar interests among states with which we currently may not envisage future military collaboration. Some potential allies, in fact, might be current adversaries. Potential new allies, under various conditions, could include India, Russia, Iran, Indonesia, and Vietnam. Such new military alignments could present new opportunities for strategic partnering or utilizing bases in strategic locations, particularly for SLOC protection. However, realizing these new opportunities will require surmounting a number of political and operational challenges.

Implications for DOD(3)

New Operating Conditions

- Loss of US bases in northeast Asia and Gulf
- Environmental Extremes
- US may gain new allies with similar interests (India, Iran, Russia, Indonesia, Vietnam)

Implications for DOD (4)

Major New Missions

The energy-related scenarios suggest that the US military could face a number of major new missions. These could include breaking naval and air blockades that threaten to deny energy to our allies; protecting SLOCs from enhanced naval and missile threats; protecting sea-borne energy supplies from non-traditional threats, such as piracy or sabotage; defending allies' energy infrastructure as a way to forestall threats or blackmail; or interdicting adversaries' energy supplies.

Implications for DOD(4)

Major New Missions

- Breaking naval and air blockades/exclusion zones
- Protecting sea-borne oil supplies and energy infrastructure from non-traditional threats, e.g., piracy
- Interdicting/denying energy supplies to adversary

Implications for DOD (5)

New or Enhanced Capability Requirements

If the US is denied use of traditional overseas bases, as several scenarios suggest, the US may require new or enhanced approaches to achieving power projection from CONUS to deal with a range of potential conflicts. For example, having no ports in theater will require increased underway replenishment capabilities, a more extensive network of bases and ports enroute to theater, and an ability to rotate maritime forces out of CONUS-sustaining bases, rather than from in-theater bases. Requirements to support troops will require long distance logistics for food, fuel, munitions and repair parts and maintenance out of theater, which result in reduced sortie generation rates and fewer operationally-ready forces. Operation from CONUS might also suggest roles for space-based systems that have global reach and instant access to the theater to provide surveillance, anti-missile, or other capabilities.

To add to its CONUS-based projection capabilities, or perhaps as an alternative to them, the US may need to seek new military alliances and basing facilities with some states and in some regions where there is little apparent need today. The alternative energy worlds described here suggest that finding new and/or alternative sources of close logistical support will be imperative.

Implications for DOD(5)

New or Enhanced Capability Requirements

- Power projection from CONUS
- Space-based anti-missile systems
- New military alliances/bases for regional logistic support

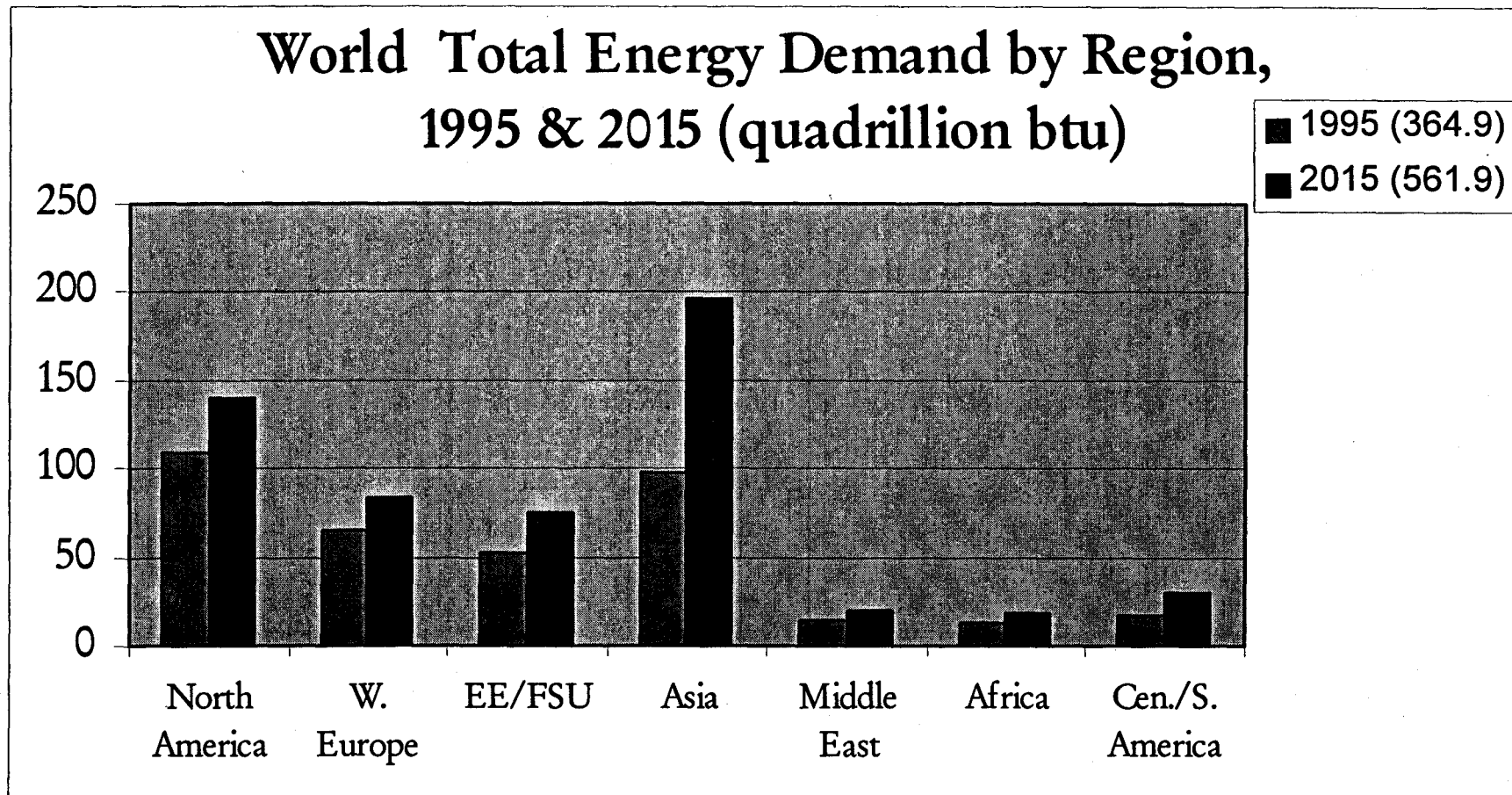
World Total Energy Demand

The developments in energy supply and demand that form the backdrop to our study are now becoming clear. Asia is entering a period in which its demand for energy will grow explosively, while new sources of energy supply remain problematic.

Four factors in particular drive our inquiry. These are based for the most part on linear projections, so one should make allowances for events which produce non-linear effects, e.g., major technical breakthroughs that occur on the supply or demand side or national economic growth rates among energy consuming countries that are less than anticipated.

The first factor is the accelerated growth in demand for energy in Asia. In the next decade, Asia will generate a larger increase in oil demand than all of the OECD (Organization of Economic Cooperation and Development) countries combined, adding an additional demand of approximately 10 million bpd. Experts debate if Asian demand will be "very huge" or only "huge," if it will require the equivalent of a Saudi Arabia or only a Kuwait.

World Total Energy Demand



Source: US Energy Information Agency, *International Energy Outlook*, 1997

China's Energy Demand

Energy demand in China will be particularly strong, the fastest growing in Asia. Energy demand growth is currently estimated 5 percent per annum. China's supply problem is compounded by its uncertain indigenous oil and gas supplies. In fact, China became a net importer in 1994, and by 2005 it will import nearly half of its oil. Most of this will come from outside of Asia, largely from the Persian Gulf.

China's Energy Demand

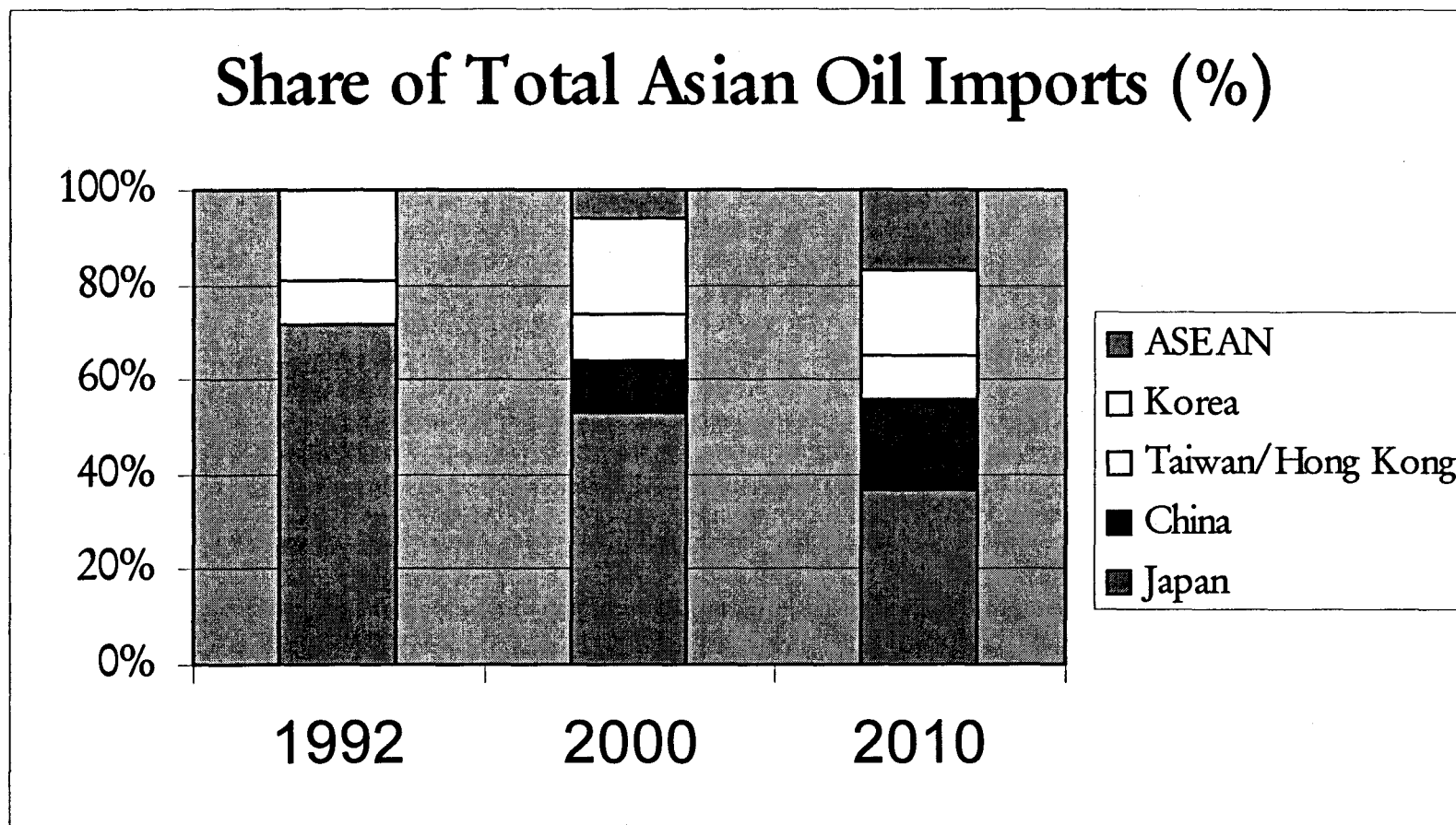
- China's energy demand is the fastest growing in Asia -- estimated 5% annually.
- China became a net oil importer in 1994; today it imports 600,000 b/d. By 2010, this is expected to grow five-fold to over 3 million b/d.
- If current trends continue, more than 90% of its imports could come from the Persian Gulf by 2015.

More Competition for Supply

The second driver is heightened competition in Asia's regional energy market. This regional energy market, traditionally dominated by Japan, is now characterized by a number of rapidly growing economies, all of which will be seeking to meet their growing energy demands. As the graph illustrates, Japan's share of oil imports will decline due to the growing demand of other regional consumers with energy-intensive economies; growing, energy-consuming middle classes; and few effective energy-conservation measures. China and the economies of the Association of Southeast Asian Nations (ASEAN) will make up the largest increase in imports between 2000 and 2010.

Increasing competition for supply would be of little interest in an energy market with adequate supplies, and in fact this is likely to be the case under today's conditions. However, excess capacity will dwindle due to greater demand. If the market is disoriented for political or military reasons, or if large consumers like China allow strategic concerns to take precedence over market forces as several scenarios suggest is possible, then the enhanced competition in Asia for a share of the available supply assumes greater importance.

More Competition for Supply



Source: APEC International Advisory Committee for Energy Intermediate Report, June 1995

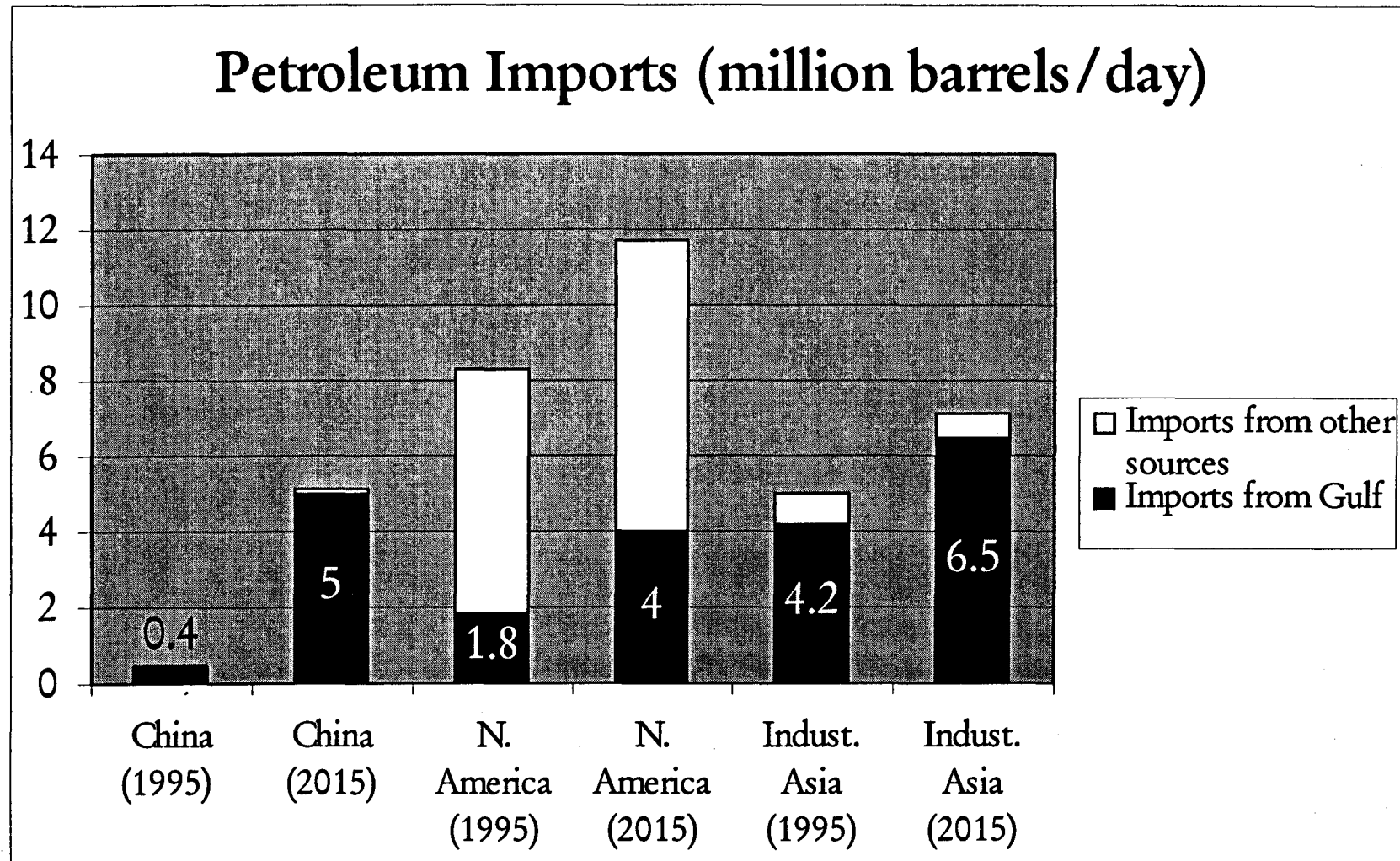
Continued Predominance of the Gulf

If no substantial new discoveries are made elsewhere, if alternative fuels remain uneconomic, or if there are no significant technological breakthroughs to increase supply or lower demand, Asia's dependence on the Persian Gulf for oil imports will increase from approximately 75 percent today to over 90 percent within two decades. This will result in at least a doubling of the flow of oil from the Persian Gulf through vulnerable SLOCs to Japan, Korea, China and ASEAN. To put some real numbers on this, in 1996, 7 million b/d of oil was shipped through the Straits of Malacca; by 2015 this volume will be at least 14 million b/d. In terms of tanker traffic, approximately 1100 supertankers will pass through the Strait of Malacca in 1997. In a decade, the number could be several times as many.

Linear projections indicate that China will remain heavily dependent on energy from this source. In 2015, it will import 5 out of 5.1 million b/d from the Persian Gulf.

Regardless of new oil discoveries made elsewhere, the Gulf will continue to have the largest reserves, the lowest cost of production and the largest surge capacity. All of these will work to increase dependence on Persian Gulf producers.

Continued Dominance of the Persian Gulf



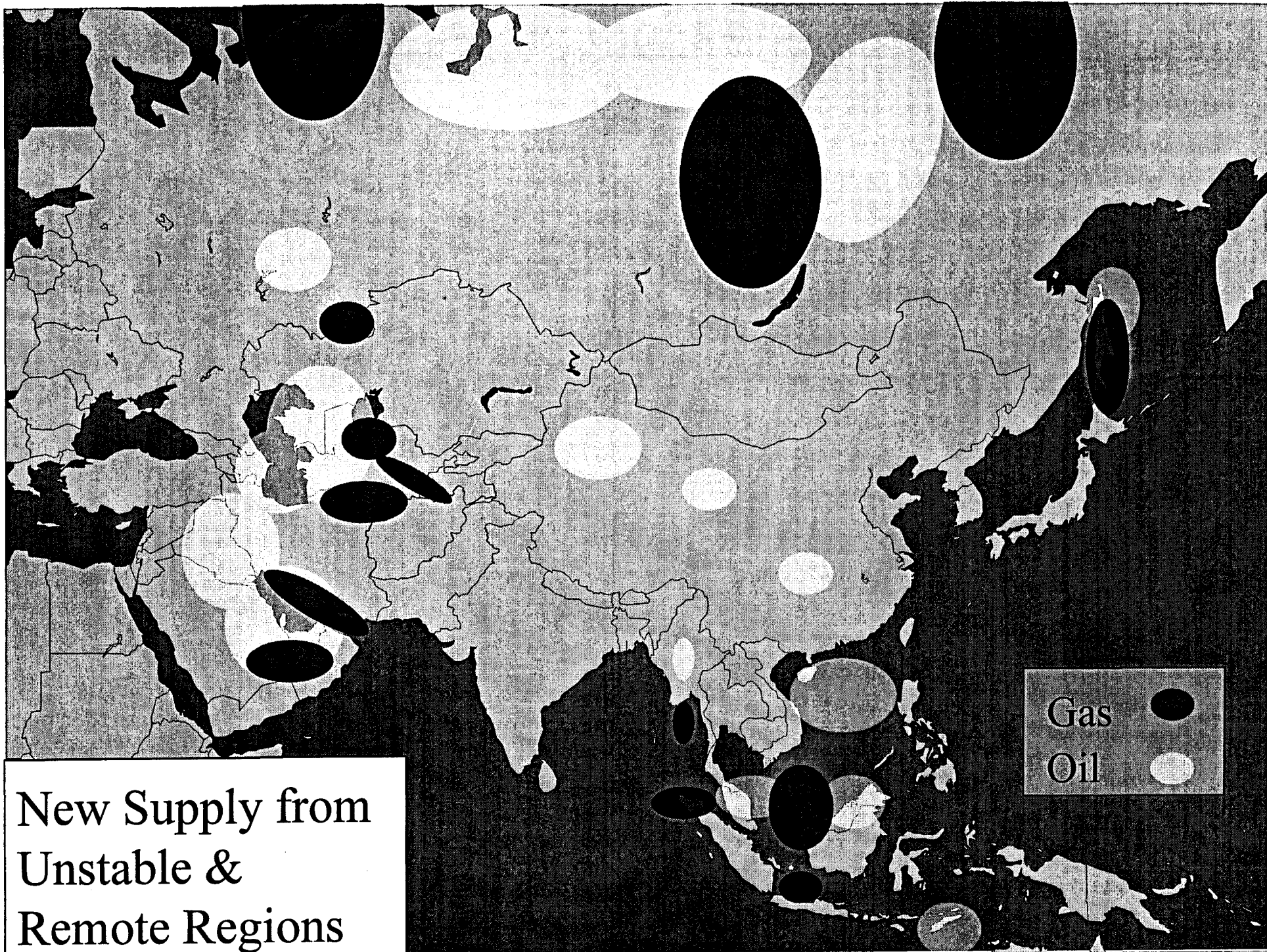
Notes: Industrialized Asia includes Australia, Japan and New Zealand.

Source: US Energy Information Agency, *International Energy Outlook*, 1997

Non-Persian Gulf Oil and Gas Deposits

If new sources of supply do not live up to expectations — for example, if Caspian oil and gas cannot be delivered efficiently to the market and remain trapped in the region — then Asia's and China's dependence on the Persian Gulf could be even greater. In fact, much of the non-Persian Gulf supplies of oil and gas in Eurasia pose difficult extraction challenges and are located in hard to reach and potentially unstable regions. The transport of Caspian and Central Asian oil and gas remains uncertain due to continued instability in the region, the politics of pipelines, and rough terrain.

Legal and territorial disputes among two or more states will complicate exploration and development across Asia. Such disputes remain an issue in the Caspian, and continue to stall exploration in Sakhalin, South China Sea and even in the Gulf. Although most of these areas are undeveloped and under-explored, increased demand could lead one country to seize the resources for its own use, raising tension and insecurity in the region and potentially increasing energy prices worldwide.

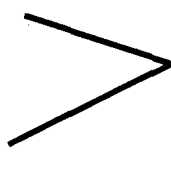


New Supply from
Unstable &
Remote Regions

Conventional Wisdom

Under current geopolitical and economic conditions, supply from the Persian Gulf and elsewhere should be adequate to meet Asian demand. Thus, extending today's world into the future might provide the right answer. This is a world of supply and demand being largely in balance, with the market effectively adjudicating, who gets what for how much. No paradigm-shifting technological developments are evident; rather, "technology creep" increases efficiencies gradually over time, causing incremental changes on both the supply and demand sides. In this world, many of the players share an interest in making certain that energy gets to the market. Although some states are interested in acquiring proprietary sources of supply, they are not subverting the market. In a word, energy in this world is fungible.

Conventional Wisdom

- Growing energy demand
 - Sufficient energy supply
- 
- Energy
balance/fungibility
- Market adjudicates and regulates
 - Incremental impact of technology
 - Shared political interests to delivering energy to markets

Unconventional Reality (1)

The conventional wisdom may come true, but a strong case can be made for thinking about the unconventional reality, even in the speculative way we think about it in these scenarios. The unconventional reality is that while just about everyone believes new sources of supply will reduce the importance of the Persian Gulf and that new sources of supply offer a respite from the troubles of the Gulf, in fact Asia's dependency on the Persian Gulf, and much of the rest of the world's, will grow, not lessen, in the next few decades. Many states that currently export to the world market will become net importers in the next twenty years due to depleted resources and growing domestic demand (e.g., Indonesia, Vietnam, Malaysia). New supply- or demand-side energy technologies that might reduce this dependence significantly are not now visible; moreover, if they become available, they are unlikely to come on-line immediately or simultaneously.

Similarly, alternative fuel programs, including nuclear, have long lead times even when the economic incentive to develop them is clear. With today's abundant supply of oil and gas, no strong incentive exists. While most states will probably seek to diversify their energy sources, this will not be a solution to Persian Gulf dominance.

The Unconventional Reality(1)

It is an irony that everyone thinks new sources of supply will avoid Persian Gulf dependency, but that dependency will actually grow.

The Unconventional Reality (2)

The unconventional reality is that new sources of energy may be no more secure than the Persian Gulf. Most new exploration and production in Eurasia is in politically unstable areas. Reserves are unproven. Extraction in many areas is difficult and costly. Transport is complex, expensive and insecure.

The Unconventional Reality(2)

New sources of energy may be no more secure than Persian Gulf.

The Unconventional Reality (3)

The unconventional reality is that as demand in Asia grows, any interruption to energy supply — whether from military conflict, political upheaval, natural or environmental disaster, or choice that is not driven by market considerations — will have negative consequences for all consumers because the market's surge capacity will diminish as demand grows. In this environment, states will be acting rationally if they seek new kinds of energy security such as strategic petroleum reserves, control of pipelines, alliances that assure and secure supply, or proprietary supply agreements.

Alternatively, some states may use military means to secure supply for themselves or to deny supply to an opponent. As these scenarios suggest, new military confrontations could arise for both reasons, leading to conflict in the Persian Gulf between the US and Eurasian adversaries and in Asia between Asian actors themselves.

The Unconventional Reality(3)

Any substantial energy interruption has negative consequences for all consumers because of limited surge capacity. Therefore, seeking new sources of energy security (e.g., strategic petroleum reserves, pipelines, alliances, proprietary relationships) is rational.

The Unconventional Reality (4)

The unconventional reality is that growing energy interdependency is a double-edged sword. It fosters cooperation and prosperity, which everyone encourages, but it can also create strategic vulnerabilities that disadvantage the US. For example, Asian energy interdependence in which the US plays little or no part might be exploited by one state — in these scenarios by China — in ways that discourage other states — Japan and Korea, in this case — from supporting the US in an Asian conflict. Energy interdependence thus creates the conditions for strategic blackmail.

The Unconventional Reality(4)

Growing energy interdependency is a double-edged sword. It fosters cooperation and prosperity but can create strategic vulnerability and new points of leverage.

National Energy Strategies: China

It is in this latter world, the world of unconventional realities, that Asian nations must develop energy strategies. Because energy security is likely to become a more prominent component of national security, we may expect that each nation's military investment will reflect its energy strategy. We can infer from what we see today the outlines of some of these energy strategies. Some, like China's, are coming into focus; others are largely notional. However, we need to be alert to signposts that may reveal the energy component to military planning.

China's fallback position is always to burn its own coal of which it has the world's largest reserves, but doing so will probably have environmental consequences which China will seek to avoid. China has recently shown that it is prepared to pay above market prices to develop a significant system of land-based oil and gas delivery from Central Asia, Iran and Russia, perhaps to reduce its dependence on Persian Gulf sources, which could be vulnerable to SLOC interdiction.

China has also sought to diversify its sources in a deal with Venezuela. As one of the largest bidders, China National Petroleum Corporation (CNPC) paid \$118 million – \$73.8 million more than the next bid – for the Intercampo Norte field. It also paid \$240.7 million for the Caracoles field. A representative from Canadian Petroleum observed, "We were bidding on economics. China, by contrast, was bidding on strategic supply." China has also signed a proprietary agreement to develop Iraqi resources.

China has made no secret of its claims to what it seems to think are oil rich properties in the South China Sea and even to territories claimed by Indonesia and the Philippines.

China seeks to diversify by expanding its nuclear and hydroelectricity sectors. China's nuclear program is the fastest growing in the region. By 2015, China is projected to have at least 18.7 gigawatts of nuclear capacity, more than eight times its current capacity. Several hydroelectric projects are also under construction in China; the most prominent is the Three Gorges Dam project. Although these sectors are growing, they will satisfy a relatively small portion of China's overall energy demand.

China may focus on developing the military capability to protect its long, land-based pipeline routes; on a naval build-up to protect its vulnerability to SLOC intervention and perhaps to control energy-rich properties in nearby waters; and on developing long-range precision strike to protect surrounding waters.

National Energy Strategies

CHINA

Energy Strategy

- Burn own coal
- Build land-based pipelines from Central Asia and Russia
- Sign proprietary arrangements
- Control energy-rich maritime properties
- Expand nuclear and hydroelectricity

Military Investment Strategy

- Naval build-up to protect SLOCs; control maritime properties
- Army, Air Force, missile development to protect pipelines
- Military alliances in Middle East
- Long-range precision strike to protect surrounding waters

Energy Strategies: Japan & Korea

The energy strategies of Japan and Korea look roughly similar.

Both Japan and the Korean peninsula have no indigenous resources to speak of and are, therefore, highly dependent on imported energy. They have tried to reduce their energy vulnerabilities and import dependency by diversifying both suppliers geographically and the types of fuels they consume. For oil, both remain highly dependent on the Persian Gulf; however, they also have been purchasing more crude from North America, Latin America and Africa. Both countries also have shown an interest in developing and transporting oil – and gas – via pipeline from Central Asia and the Russian Far East to meet their growing demand. Pipeline feasibility studies for such projects have been conducted for several decades. Japanese oil companies are increasingly involved in development of oil and gas in the Caspian and Central Asia.

Concurrently, they have promoted consumption of other fuel types. Japanese investment in liquid natural gas (LNG) infrastructure is substantial, making it the world's largest LNG consumer. Japan has several exclusive, long-term agreements to import LNG, the largest with Indonesia. As existing contracts expire in the next couple of years, Japan has indicated it seeks to diversify away from one dominant LNG supplier. Long-term LNG contracts help to secure supplies at a fixed price for up to 20-25 years. Korean consumption of natural gas and LNG is also growing rapidly. Nuclear energy, although controversial and unpopular, remains an important and growing component of both countries' energy strategy. Coal is primarily used for electricity generation in both countries. Due to environmental considerations, demand for coal will grow at a slower rate than other fuel types, particularly in Japan.

The Japanese government strongly advocates conservation as a means to reduce dependency on imported energy of all types. Due to these measures and structural shifts in its economy, Japanese energy demand growth rates have slowed. As South Koreans achieve economic prosperity, conservation does not appear to be part of a collective national strategy. A growing energy-intensive economy and a prospering, energy-consuming middle class will drive South Korea's increasing future energy demand.

How will Japanese and Korean energy vulnerabilities be reflected in their military strategies? Their heavy dependence on long haul, sea-borne oil and gas increases the importance of naval and submarine capabilities to protect the SLOCs. We may also expect to see investment in high-tech pipeline security systems.

National Energy Strategies

JAPAN & KOREA

Energy Strategy

- Diversify suppliers
- Nuclear, gas, oil, coal
- Conservation (Japan)
- Exclusive arrangements
- Reduce dependence on SLOC transport

Military Investment Strategy

- Naval build-up to protect SLOCs/chokepoints
- Alliances
- Pipeline security forces, technologies
- Long range precision strike

Energy Strategies: India

India's demand for energy is great and growing. Indigenous resources satisfy some of the demand, but India will continue to be dependent on the Persian Gulf to a significant degree. A key element of India's energy strategy is likely to be to secure pipeline connections to outside gas producers, including to Central Asia, Oman, Iran, Bangladesh and Burma/Myanmar. With one-sixth of the world's coal reserves, India has a backup, albeit one that is environmentally damaging. India's energy strategy will likely focus on securing supply within its region, which means in Bangladesh, Burma/Myanmar and its own troubled province of Assam.

India's nuclear program will continue to grow; twelve new plants are planned or under construction. If current trends continue, its nuclear capacity will grow by 5.3 percent annually for the next fifteen years.

India can be expected to invest in naval capabilities for SLOC protection and a variety of naval, ground and air assets to guard pipelines, if they are built. Importantly, India is likely to seek military alliances that are intended primarily or in part to safeguard energy production and transport.

National Energy Strategies

INDIA

Energy Strategy

- Reduce reliance on Gulf
- Access pipelines from Central Asia
- Burn own coal
- Expand nuclear
- Seek access to nearby resources (e.g., Bangladesh, Burma/Myanmar)

Military Investment Strategy

- Naval build-up to protect SLOCs
- Army, Air Force, missiles to protect pipelines
- Energy/military alliances
- Long-range precision strike to protect surrounding waters

Energy Strategies: Russia

Russia controls the world's seventh largest proven oil reserves and the largest gas reserves, with an estimated 57 billion barrels and 1,977 trillion cubic feet, respectively. Despite its drop in production since 1990, Russia remains a gas and oil exporter, partly due to declining demand domestically and in the new states. Oil and gas exports are key sources of hard currency for the Russian economy.

However, to maintain export flows, Russia must attract foreign investment – both capital and technology. Developments of the untapped oil and gas resources in the Russian Far East desperately require foreign investment to build both the extraction and transport infrastructure. The international interest in developing Russian oil and gas is high, particularly in the Russian Far East, where the resources can be transported to large Asian markets via pipelines. Logically, Russia's military strategy with regard to its energy priorities should focus on pipeline and infrastructure protection.

Another Russian priority is likely to be to influence the disposition of energy resources that reside in its former Caucasian and Central Asian republics. As the new Central Asian and Caucasian states succeed in attracting investment and developing their oil and gas resources, Russia could be increasingly reluctant to see its influence challenged, especially if Russian influence is replaced by Chinese influence, and it may choose to build forces that can capture and hold these resources in the event of conflict.

Russia is the only state that is not dependent on SLOCs to satisfy its energy demand. Russia may be more concerned with ground and air capabilities – as opposed to naval capabilities – to protect indigenous resources and pipeline infrastructure.

National Energy Strategies

RUSSIA

Energy Strategy

- Maintain exporter status
- Encourage foreign energy investment
- Control adjacent energy transport (i.e., pipelines, access)

Military Investment Strategy

- Ground/air capabilities to protect indigenous resources
- Projection capabilities to control/project adjacent resources

Energy Strategy Conclusions

Energy strategies could provide insights into what the military requirements might be for major Eurasian actors. We understand little about how most Asian states think about their longer-term energy needs, and we have almost no understanding about their energy strategies, if indeed they have them. Consequently, the state of our understanding of the connection between Asian states' energy strategies and their military strategies is poor. For example, we know little about how Eurasian states might address their energy concerns in terms of military planning, development and acquisition. Can we assume that states that anticipate threats to energy transported by sea will attempt to build navies to guard SLOCs and strategic chokepoints? Similarly, might states whose strategies call for actively interdicting or threatening to interdict SLOCs and chokepoints seek bases from which to operate in critical areas? Can we anticipate the formation of alliances that are intended both to secure energy and protect its transport, for example naval cooperation between vulnerable states, as the logical result of energy strategy translating into military strategy?

At this juncture, it is probably safe to say that all of the main Eurasian actors, except Russia, will seek to diversify sources and kinds of energy; will remain heavily dependent on the Persian Gulf for supply; and will seek out energy alliances that both provide supply and protect energy transport.

Energy Strategy Conclusions

- All states, *except Russia*, will:
 - seek energy diversity of supply
 - depend heavily on Persian Gulf
 - look for energy alliances
 - need SLOC and chokepoint protection
- Russia will seek to develop and protect its own resources.

Scenarios

The team concentrated on pursuing assumptions about the world that differ – both subtly and radically – from what is described above as the conventional wisdom. We constructed four sets of scenarios – worlds — which show how energy is either a driver of conflict or a critical factor in a conflict that has other causes. Each of these worlds challenges US interests in different ways and suggests different kinds of implications for DoD. As noted earlier, the scenarios are speculation about things that could happen, and they are intended to stimulate DoD thinking about problems that could arise. But they are neither predictive nor inclusive, and they have a systematic downside bias.

Scenarios

- I. Energy War in Siberia
- II. Perils of Interdependence
- III. Cold War in the Gulf
- IV. High Price Spike

Energy War in Siberia (Title Slide)

This category of scenarios emphasizes the cascading effects of how one country's search for greater energy security creates insecurities among other actors, leading to a growing nexus of anxieties that could lead to conflict.

I. Energy War in Siberia

Energy War in Siberia (1)

China unveils a number of signposts that it intends to secure a significant part of its future energy supplies from inner Eurasia by pipeline. Over a 10 -15 year period, it builds and, with some Japanese assistance, finances several long-haul oil and gas pipelines from Central Asia, principally from Kazakstan, Uzbekistan, Turkmenistan and Iran. Simultaneously, China embarks on a number of energy deals with the Russians to bring Siberian gas to northern China. Throughout the same period, China invests heavily in exploration and production of indigenous resources, notably in the Tarim basin, and it begins to develop a strategic petroleum reserve.

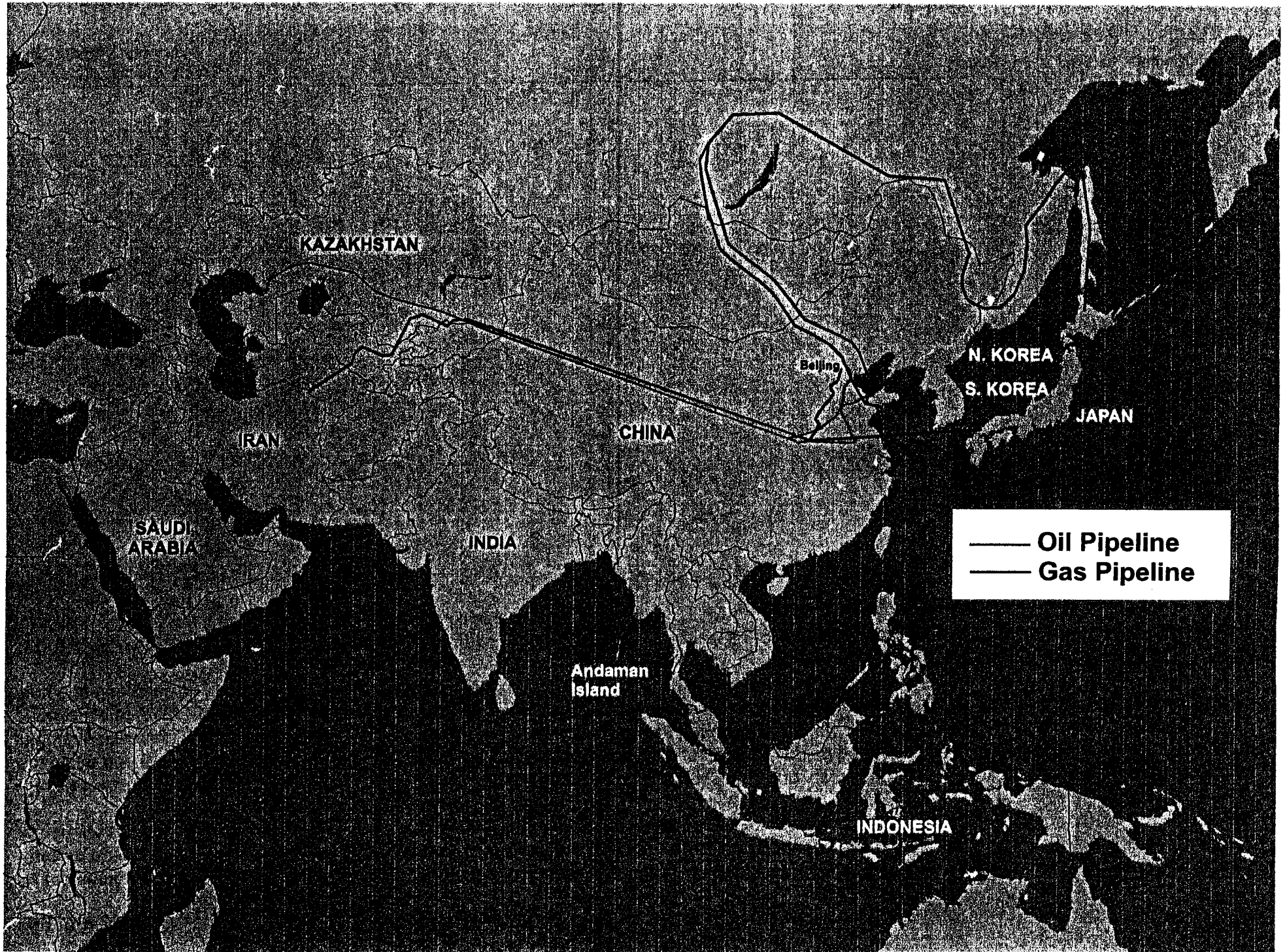
These are not necessarily market driven moves, given the abundance of less expensive energy in the Persian Gulf. To the contrary, China has decided that it is willing to pay a strategic premium for this additional security, and its moves to acquire proprietary rights to significant supplies of Central Asian and Russian energy are part of a larger strategic plan to lessen energy dependence on the Middle East.

As the result of China's growing economic and political pressure on Central Asian energy producers over time, within 15 years Kazakstan, Uzbekistan, and Turkmenistan become economic vassals of China. Kyrgyzstan, which has no energy of note but is caught geographically in the middle, also eases into China's sphere of influence.

Chinese migration into Russia accelerates, as more and more labor is required to develop the energy complexes, to create an agricultural base and to perform manual labor. Russian leaders, under a barrage of anti-Chinese popular sentiment from most parts of Russia, seek to balance the growing Chinese influence with Japanese influence. It settles the Kuriles issue and invites Japan to invest heavily in Siberia and the Russian Far East to develop oil and gas resources.

I. Energy War in Siberia(1)

- China builds pipelines to Central Asia and Russia.
 - Central Asian states become vassals.
 - Chinese migration to Siberia/Russian Far East (RFE) accelerates.
 - Russia, Japan settle Kuriles dispute; Japan invests heavily in Siberia/RFE.



KAZAKHSTAN

IRAN

SAUDI ARABIA

INDIA

CHINA

Beijing

N. KOREA

S. KOREA

JAPAN

Andaman Island

INDONESIA

— Oil Pipeline
- - Gas Pipeline

War in Siberia (2)

As the numbers of Chinese laborers climb, so too do the incidents of conflict with the local Russian populations. Action and reaction follow. A Russian nationalist backlash builds in Russia, culminating with the Russians threatening to shut down the gas pipeline to China unless China withdraws several hundred thousand Chinese settlers. China balks; the Russia army forces some Chinese back into China.

China moves its military north in force to seize these isolated Russian oil and gas fields and, coincidentally, billions of dollars of Japanese and American energy company assets. Russian troops are no match for the Chinese and are rolled back. Russia appeals to US and Japan to intervene, claiming that the Chinese will never leave Siberia and the Russian Far East voluntarily, that this invasion will result in permanent annexation of the territory to China. Russian officials cite historic Chinese irredentist claims on the region. They also note that Russia may be forced to use nuclear weapons, given the depleted state of its conventional military forces.

This scenario ends with China in control of large chunks of Russian territory, which it moves quickly and forcefully to settle with Chinese peasants. After some failed diplomacy, Japan and Russia appeal to the US.

I. Energy War in Siberia(2)

- Chinese laborers cause disruptions in Siberia.
- Russian nationalist backlash; Chinese expelled; Russia threatens energy shut-off.
- China seizes Siberian fields.
- Russia and Japan appeal to US.

Military Implications

Problem: The US has been asked to confront China in Siberia to protect Japanese, Russian and US interests and energy assets. Operations, including a possible land war, would be conducted at great distances from US facilities and with no existing lines of communication (LOCs).

A ground operation in Siberia could be compared to conducting an operation in the area the size of Canada in arctic conditions with fewer LOCs available. Assuming the Chinese will have seized the infrastructure in and around the energy resources, the only LOCs are likely to be the few railroads that run east-west.

How could US forces obstruct the chokepoints for the Chinese infantry heading northward? Precision strike technology might be applicable, but identifying Chinese LOCs or nodes could be difficult.

How would the military deploy troops under these conditions? What kind of logistic support is possible?

Are direct attacks on Chinese forces in Siberia feasible? How could the US accomplish this?

What are other means of leverage could the US exert over the Chinese in this scenario to avoid deploying ground troops? Would it require military action? Could the US exploit China's energy vulnerabilities?

I. Military Implications

Problem: Possible land war in Siberia severely stresses US capabilities:

- Great distance from bases*
 - Non-existent lines of communication (LOCs)*
 - Harsh weather conditions*
 - Large Chinese infantry*
- How would the US conduct and support operations in this theater?
 - What other leverage could the US exert over China outside of Siberian theater?

Perils of Interdependence (Title Slide)

The second alternative energy world demonstrates the perils of energy interdependence. The scenario assumes that only subtle changes to the conventional wisdom take place. It assumes US political and military predominance; a healthy global economy, with robust growth in Asia; energy sufficiency and moderate prices; and a world of low political anxieties. The shared hope among states of the region is that the increasing energy and economic interdependencies – for example in shared energy pipelines – will translate into more political cooperation.

II. Perils of Interdependence

Perils of Interdependence (1)

This scenario demonstrates how the evolution of energy interdependence in northeast Asia – encouraged by everyone – leads to China being able to neutralize Japan and Korea as military allies of the US in the event of a conflict, in this case over Taiwan.

From 2000 - 2015, the existence of large quantities of Russian gas in Siberia (Sakha 9.6-13.0 tcm, Irkutsk 0.8 tcm) and offshore Sakhalin (0.4 tcm) is proven. The close proximity of the gas to growing markets propels Russia, Japan, Korea and China to cooperate on the construction of a pipeline loop system that feeds primarily Japan and Korea, with a branch that feeds demand in northeast China and Beijing. Japan, Korea and especially China are under pressure from the global environmental community for failing to pursue environmental remediation and air quality programs aggressively. Gas-to-liquid technology is considered vital to the area in order to provide an alternative fuel for transportation that is environmentally friendly. However, it will not be a solution to the energy demands, thereby further increasing enthusiasm for the gas loop project.

Although the US has no direct interests in the project, it fully supports the collaborative project and multilateral cooperation. Korean unification in 2005 enhances the impetus toward regional energy interdependence and accelerates the project. As a result of prosperity and significant economic growth, all nations in the region are strengthened and more confident. Relations between the US and its regional allies could not be better. Troops are still stationed on the Korean Peninsula, and the 7th Fleet remains in Japan.

II. Perils of Interdependence(1)

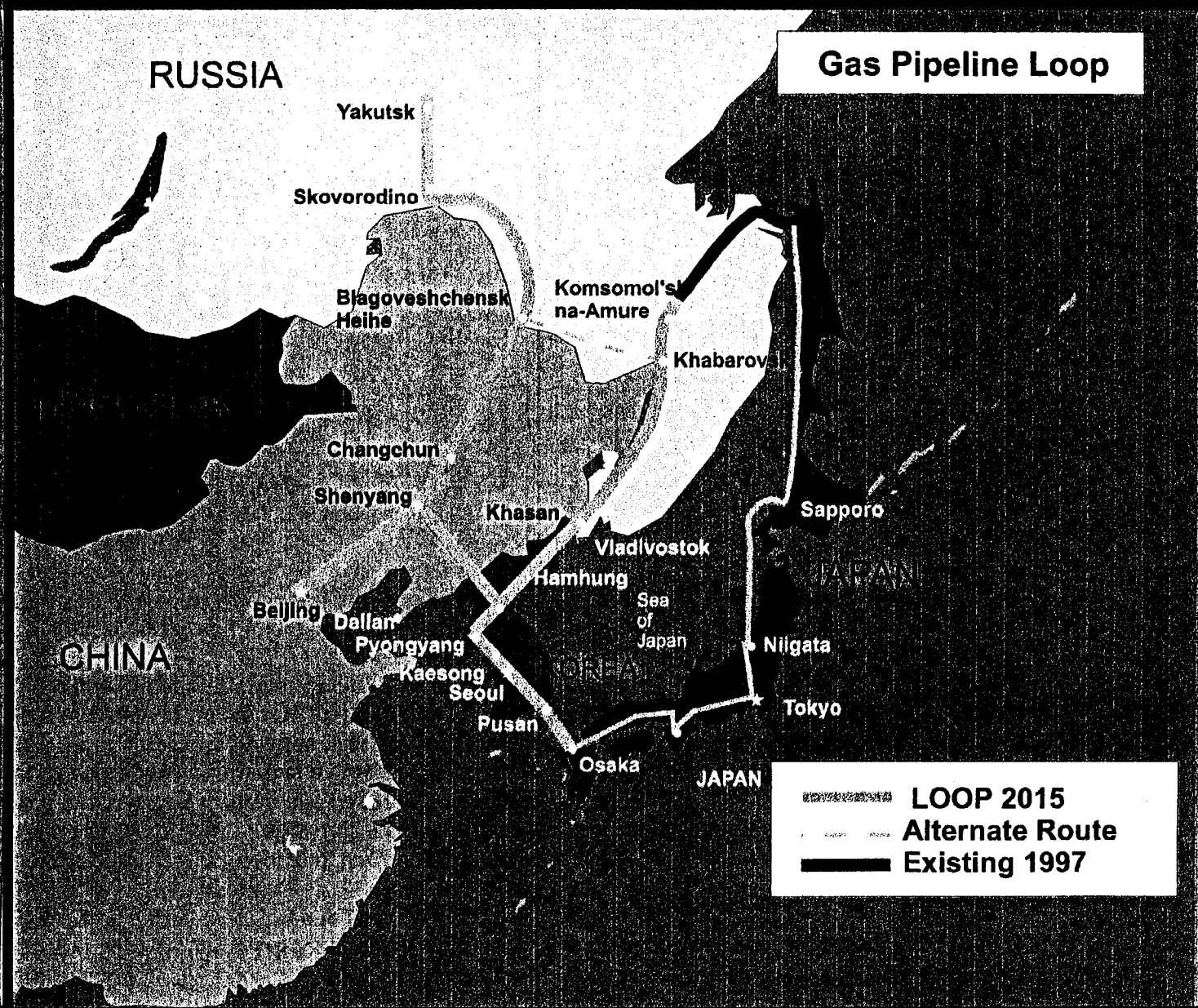
- Russian gas from Siberia and Sakhalin creates a regional market.
- Pipeline “loop” is feasible: national motives for participation differ.
- Korean unification
- US authority and influence unchallenged.

Loop Map

This loop is not imaginary. In fact, a plan for such a pipeline network has existed for some time, and parts of it have already been built. According to energy company specialists who joined our deliberations, the Loop probably will be built as planned, and it will be in place by 2015.

The western loop through China and Korea has 4 pipes. The eastern loop through Japan is offshore and has only 2 pipes. The Japanese and Korean segments connect at Pusan. The Japanese segment is smaller and offshore due to internal political debates over public safety and land use issues. Since its segment is smaller and carries less volume, Japan also receives gas coming through Korea. LNG continues to account for a large portion of Japanese demand, however, it is increasingly replaced with natural gas, which requires less processing.

By 2017, both Japan and Korea could receive up to 100 percent of their natural gas from this source, although both continue to receive LNG by ship from Southeast Asia and the Persian Gulf. China receives some gas from the Loop but is not dependent on it. This asymmetry creates conditions that China can exploit.



Perils of Interdependence (2)

Taiwan feels increasingly isolated by the Loop and anxious about Korean unification. After a series of confrontations with China, Taiwan declares independence and appeals to the US for support. To the US, it is unclear whether Taiwan or China precipitated the crisis, so it takes Taiwan's side. The US calls on Japan and Korea to join it in opposing China.

China goes on a diplomatic offensive in Seoul and Tokyo. It maintains that the Taiwan crisis is an internal issue to be settled by the Chinese and promises that it will do its utmost not to allow this instability to affect gas supplies through the Loop or the transport of oil and LNG through the SLOCs. The implicit threat is that Korean and Japanese opposition could lead to disruptions in energy supplies flowing from the north and coming from the south. Two days later, there is a massive puncture of one of the lines from Shenyang to northern Korea. To make China's message even clearer, Chinese-speaking pirates hijack a LNG shipment to Japan. In the most diplomatic language, both Japan and Korea politely support the US's efforts to bring stability to the region in principle. However, they stress that they must remain neutral in this dispute, and they deny the US the use of bases against China.

This scenario ends with Japan and Korea effectively neutralized from assisting the US in a conflict with China. The larger point is that the energy interdependence that everyone applauded and encouraged proved to be a double-edged sword.

II. Perils of Interdependence(2)

- Taiwan declares independence and Chinese impose naval/missile blockade -- instigator is ambiguous. Taiwan requests US support.
- US asks for Japanese and Korean support.
- China diplomatic offensive -- threatens to cut loop and interdict SLOCs.
- Japan and Korea diplomatically withdraw support for US.

Military Implications

Problem: The US is faced with a Chinese military threat to Taiwan, one of its strongest and longest-standing political commitments. Japan and Korea choose not to assist the US militarily or to allow the US use of bases and other military facilities in either country. The US has no other allies in the region. This situation creates a number of military challenges.

First, can the US operate from CONUS in a conflict like this? If so, what kind of systems and weapons may be required to operate at such long distances? Does operating from space provide any answers?

Second, where might the US look for other possible US allies in the region, and what kinds of investments are required to make them viable?

Third, should the US consider preemptive/prophylactic action to head off the possibility that China's blackmailing of Japan and Korea over energy can succeed? What kinds of assurances are required, for example a commitment to safeguard the Loop, SLOCs and other energy infrastructure?

II. Military Implications

Problem: *US confronts China without traditional allies or access to bases and facilities in region. Can the US:*

- Conduct operation from CONUS or space?
- Find new allies in region?
- Diminish China's threat to Japan/Korea by protecting energy infrastructure?

Cold War in the Gulf (Title Slide)

The world in which these scenarios take place is one characterized by heavy intertwining of strategic and economic interests that drive the activities and actions of states. Crises created for the US are more strategic than economic. In this world the US finds itself up against a powerful Eurasian coalition.

III. Cold War in the Gulf

Cold War in Gulf (1)

Three general trends are shaping the world in which this set of scenarios plays out.

First, the US could be pulled away from the Gulf. US policy will be challenged internally by budget constraints, lack of public support, and congressional actions, particularly if there are acts of terrorism aimed against the US troops/facilities in the region. The US has and will continue to diversify its sources of energy supply. It will be less dependent on the Middle East than in the past, as it buys from Latin American and West African producers and increasingly uses natural gas. The belief that the oil market is fungible and that market forces will balance supply and demand serves to reduce the strategic importance of Gulf oil suppliers for the US.

Second, the US could be pushed away from the Gulf. The US is no longer as welcome as it has been in the past. US presence in many of the Arab Gulf states is perceived as a liability more than an asset for the governments, particularly as the US tries to become involved in domestic affairs. Anti-American sentiment grows and is seen as the source of many of the domestic problems.

Third, there are strong incentives for other actors to become involved in the Persian Gulf, especially Asian actors. Asian energy dependence is growing dramatically. New actors are becoming commercially involved in the region. Japanese and European companies are growing investors, particularly in the energy sectors of all the energy producing states. In addition, increased Western and Japanese investment in the Caspian region creates a heightened interest in the Persian Gulf as a transit region, directly affecting their investments.

The Persian Gulf, with its high stakes, is an ideal theater to play out larger geopolitical concerns. The Gulf becomes a secondary theater for US-China mastery in Asia, just as the Gulf was a secondary theater for the US-USSR cold war confrontation. Some actors' motivations in the region may be driven by larger strategic concerns, not simply by energy or economic interests.

III. Cold War in the Gulf(1)

- US may be “pulled” away from Gulf.
- US may be “pushed” away from Gulf.
- New actors with own agendas

Cold War in the Gulf (2)

This scenario demonstrates the emergence of two tiers of power blocs emerging across Eurasia: a northern land bloc and a southern sea-based bloc, both with economic and ideological components.

The Northern Bloc is a politically-driven, ideological power bloc of anti-US, anti-hegemonic strategic actors who seek to diminish US control of the international order. That bloc consists of Russia, China, Iran, and Iraq which create a northern tier, land-locked, pipeline alliance across Eurasia.

Russia and China help strengthen the military capabilities of Iran and Iraq and all share a desire to see the US leave the Gulf. Russia, Iran and Iraq share a common desire to see energy prices rise in the world. China, as a consumer, wants lower prices but is compensated by Russia on Siberian gas deals and swaps oil for weapons with Iraq and Iran. China sees great strategic benefit in the arrangements.

The bloc will have the ability to manipulate energy supplies in the north in ways to influence the politics of Japan and Korea. China's ability to exercise strategic freedom in the region is enhanced.

III. Cold War in the Gulf(2)

Northern Bloc:

- Russia, China, Iran & Iraq
- Land-locked pipeline alliance
- Ability to manipulate energy supplies in north to influence Japan and Korea

Cold War in Gulf (3)

The US-led, sea-based Southern bloc is formed in reaction to the northern bloc. It consists of Saudi Arabia, still heavily dependent upon the US for the security of the royal family; the small, oil producing, Arab Gulf states; India; and ASEAN, which has a direct stake in sea lanes and protection from China. All have an interest in protecting SLOCs. In this world, India is in the US-led bloc to secure its sea-borne Persian Gulf supply; however, it worries that the Northern bloc could interdict pipelines to India from Central Asia. India is clearly a swing state in this world. Without a potent combination of energy guarantees, e.g., pipeline and SLOC protection from the Northern bloc, India might be factored as a US adversary.

Japan and Western Europe are essentially neutral opportunists who have interests in both camps. Japan is concerned with SLOC and US strategic protection but is also involved in investments in Russian Far East, China and Iran. Europe wants low prices and leans towards the US bloc, but fears a politically polarizing world and US heavy-handed confrontational politics in the Gulf.

III. Cold War in the Gulf(3)

US-led Southern Bloc:

- US, Saudi Arabia, U.A.E., Kuwait, Bahrain, Qatar, India & ASEAN states
- Formed in reaction to Northern Bloc
- Focus on securing SLOCs

Neutral Opportunists:

- Japan and Europe distance themselves from US.
- Shared interests with both blocs

COLD WAR IN THE GULF.



Focus of Action

The northern bloc accuses the Saudis of "overproduction," and seeks to bring Saudi Arabia over to its side and to lower production. It employs a variety of threats and enticements to do so, especially given the shaky internal character of the regime and Saudi Arabia's broad unpopularity in the Muslim world for its total dependence upon the US. The US military presence in the Gulf is portrayed as the source of regional tensions.

China and Russia sell arms to Iran and Iraq (including aircraft, ballistic and cruise missiles, and perhaps also chemical, biological, and nuclear weapons), and they provide military advisers and technical assistance in maintaining Iranian and Iraqi forces and facilities. Chinese pilots fly Iranian and Iraqi aircraft; Chinese ground crews operate Iranian and Iraqi missiles and air defense systems; Chinese satellites provide overhead imagery and communications. Eventually, Iran and Iraq invite China to send significant ground forces. At this point, Kuwait, UAE, Bahrain and Qatar opt out of the Southern bloc.

With Chinese assistance, Iran prepares to "regulate" the flow of oil out of the Gulf through the Straits of Hormuz. Chinese anti-shipping missiles are installed at fixed installations and on board patrol boats; Chinese satellites and patrol aircraft locate and track tankers; Chinese submarines loiter at the mouth of the Gulf; the Chinese install intelligent, remotely activated mines and homing torpedoes.

This scenario ends with a US that has lost all allies in the region except Saudi Arabia facing heavily armed Iran and Iraq and a China that is projecting power and casting hungry eyes on the Saudi energy riches. The potential for the Saudi regime to collapse under these conditions is great. A new regime could deny US access to its military facilities and bases.

III. Focus of Action

- Northern bloc coerces Saudi Arabia to lower production.
- Exploits Saudi Arabia's broad unpopularity in the Muslim world for its total dependence upon the US.
- China and Russia arm Iran and Iraq.
- Iran "regulates" flow of oil from Gulf.
- China projects power: exports weaponry; permissive on WMD.

Military Implications

Problem: The US, as the guarantor of security for Saudi Arabia and the Arab Gulf states, is faced with the specter of a power-projecting China that is acting in concert with powerful, well-armed regional actors who seek to control the flow of oil from the Persian Gulf.

The challenges to US capabilities are formidable. First, in the event that the Saudi regime falls the US may not have access to bases and other military facilities in the region.

Second, the US may require the capability both to protect the SLOCs to our allies and to deny or interdict energy supplies to adversaries.

Third, Iran and Iraq, armed by China and Russia, are now in possession of more sophisticated weapons, possibly WMD, which are concentrated in a small theater.

Finally, under extreme conditions should the US consider occupying Saudi Arabia to keep energy flowing?

III. Military Implications

Problem: Saudi Arabia threatened by power-projecting China in concert with well-armed, hostile regional actors.

- US may not have use of Saudi bases.
- Requirement to protect SLOCs (for allies), and interdict SLOCs (against China).
- Iran/Iraq with WMD in small theater.
- Occupy Saudi Arabia?

High Price Spike (Title slide)

The world in which this category of scenarios takes place is characterized by an event that causes energy prices to spike. Unlike most spikes, this one is sustained over a long period, perhaps as long as 5-6 years for two main reasons. First, the initial event has a strong ideological flavor that alters perceptions in the marketplace about when prices might moderate. Second, the new market psychology causes a number of actors to behave in ways that they would avoid in normal market conditions. Their actions trigger a series of lesser spikes, which impede already high prices from dropping.

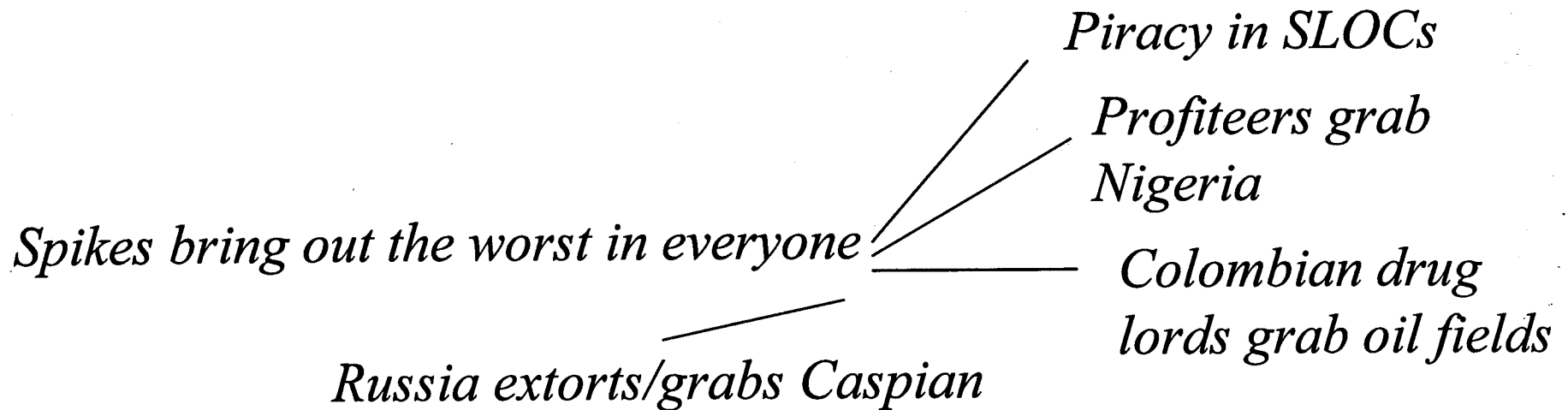
IV. High Price Spike

High Price Spike (1)

The precipitating event that sends oil prices high initially is a coup in Saudi Arabia that topples the Saudi royal family, which is replaced by a radical ideological Muslim fundamentalist regime. The new rulers have no incentive to continue Saudi oil production at current levels in order to pay for the extravagant lifestyles of the deposed princes and their large extended families or to please the West, so they remove 4 million b/d from the market. No quick fix to this lost production is evident, as it had been, for example, after the Gulf War when the US announced that it would restore Kuwait's burning oil wells to production, a move which sent the price of oil immediately and dramatically downward. Instead, the new market psychology is one of uncertainty. Moreover, "aggravating cases" are also possible because high prices can bring out the worst in greedy players. Drug Lords in Colombia may move on Colombian oil fields and may threaten Venezuela (which might involve the US), "profiteers" in Nigeria may emerge, or Russia may move to assert primacy in the Caspian. The incidence of piracy on the SLOCs increases by an order of magnitude. Any of these factors will add uncertainty to the market and would almost invariably work to keep prices high, at least for the near-term. Thus, the market price of energy is kept high by a series of smaller, widely dispersed events that impede the market from returning to normal.

IV. High Price Spike

- Precipitating event: Coup in Saudi Arabia removes 4 million barrels/day of oil from market.
- Belief that prices will remain high alters behavior.



Response to High Price

In trying to envision military implications of this high price scenario, we considered the range of possible responses by those most injured by the price hike. The normal economic responses — conservation, fuel switching, investing in new production — we set aside, focusing instead on responses with a military dimension. This might include:

- seizing by force some existing source of oil production or reserves — a way for a consuming country to bypass market prices for itself, or for any profiteer to turn those prices to his advantage (by becoming a seller);
- extorting delivery of supplies at a below-market price by the threat of military force; or
- driving that price back down by restoring the lost production. In our scenario, this would mean seizing control of Saudi Arabia.

Who would do these things? Those with the strongest incentive are those who are hurt most by high prices; those with the most opportunity are those located and armed within reach of the targets. It need not be an “economically rational” response, since countries may have other grievances or motives, and the oil situation may simply add to the list.

IV. Response to High Price

- Seize existing sources of oil production
- Extort delivery at below market prices
- Restore lost production

Specific Scenarios

We identified a fairly lengthy list of specific cases, and tried to narrow the list by identifying those that would most likely involve the United States. But any number of these cases could occur in combination. If several of these occurred, simultaneously or in succession, perceptions of turmoil and actual disruptions caused by fighting would further boost the price of oil; and the likelihood of some US response would probably increase. Representative scenarios include:

- China takes the Spratlys to ensure access to reasonably priced energy. ASEAN countries and oil companies seek US assistance to interdict supplies to Chinese troops on the rigs; to assist ASEAN in retaking the rigs; to prepare to defend the ASEAN nations against Chinese missiles; and to attack Chinese missile positions if China fires on ASEAN countries.
- China moves into the Siberian gas/oil fields. Russia and Japan appeal for assistance, creating a situation similar to that in Energy War in Siberia.
- China and Korea extort oil from Japan, which seeks US aid in defending the SLOCs.
- US occupies Saudi Arabia to restore production.
- Another country or combination of countries seeks to restore Saudi oil to the market. The scenarios suggest opportunities for either China and Pakistan or India and Pakistan.

IV. Specific Scenarios

- China seizes Spratlys. ASEAN and oil companies seek US assistance.
- China moves into Siberian gas/oil fields. Russia, Japan, and oil companies seek US assistance.
- China and Korea extort oil from Japan. Japan seeks US assistance.
- US occupies Saudi Arabia.
- China/Pakistan, India/Pakistan occupy Saudi Arabia.

Military Implications

This category of scenarios reinforces the capability requirement issues in other scenarios, namely an ability to operate at long distances without local logistic support; to operate in difficult environments; and to operate without traditional allies, bases or facilities.

In this type of world, the US military could be called upon to respond nearly simultaneously to numerous crises occurring in different parts of the world. Such a situation would require that the US military have sufficient capabilities to support the rapid deployment, employment, and sustainment of the wide array of forces that would be needed to conduct disparate operations in situations that are both hostile and increasingly complex.

Moreover, this set of scenarios suggests a range of possible outcomes that the US may wish to prevent or otherwise influence in less conventional military ways, e.g., preventing successive spikes that are caused by different actors responding to an initial surge in energy prices that results from a major event. Preventing or rectifying the causes of the successive spikes could pit the US against organized crime, ethnic separatists, and other non-state actors of various sorts. To deal with these eventualities, US military planners may wish to explore capabilities that usually fall under the headings of operations other than war (OOTW), special operations or low intensity conflict.

IV. Military Implications

Problem: Potential for large- and small-scale conflicts worldwide.

- Increased OOTW threats
- Widely dispersed, simultaneous conflicts
- Preemptive, prophylactic actions to prevent spikes

Recurring Geopolitical Issues

This study demonstrates that energy is a potential driver of conflict, and that the geopolitical dynamics of different states' quest for sufficient energy and secure access to it could pose a number of significant challenges to US thinking and planning. A number of themes recur in these scenarios.

First, energy could become an especially important factor in the strategic decision-making of both Japan and Korea, causing them to act in ways that may be contrary to US interests. A key finding of this study is the probability of both Japan and Korea to straddle difficult issues when energy is used as a lever against them. Both depend on imports for most energy; both are at the end of long delivery systems that transit potentially hostile territory; and both are likely to become more interdependent for energy with other regional powers, who may or may not be friendly to the US. Energy may thus become the catalyst for blackmail by China that, at least, neutralizes Japan and Korea in times of conflict, making them unavailable to assist the US.

Second, the scenarios suggest that China may have the most to gain by exerting "energy" leverage and the most leverage available, particularly against Japan and Korea. But — and this is a big but — China's vulnerability to having its energy interdicted is also likely to increase because of its reliance on long-haul, sea-borne energy from the Gulf and extended, exposed pipelines across Eurasia. This raises the possibility that other regional actors — Japan might be a good candidate — or the US develop military strategies that emphasize these Chinese energy vulnerabilities, perhaps by developing more effective naval interdiction and chokepoint control capabilities, or long-range, high precision strike that can cripple pipelines and distant energy infrastructure.

Third, in all scenarios the US lacks reliable allies. In most cases, the US is forced to operate without bases and facilities on which it has traditionally relied; in others, it faces conflict in remote regions where it currently lacks regional allies and appears to have little interest in acquiring new ones. In thinking about how energy may change the geopolitical landscape in the future, US planners may wish to consider pursuing alliances with new partners, some of whom are perhaps old adversaries but may share similar interests and concerns. Potential allies suggested by the scenarios are India, Iran, Indonesia, Russia and Vietnam. Two states — India and Iran — in particular are pivotal in these energy worlds. Shifting either one from an adversary to ally or vice versa causes a significant change in the geopolitical dynamic.

Fourth, Central Asia is vulnerable from all sides, particularly if, as our scenarios assume, Russia remains militarily weak for at least the next few decades. Energy competition creates conditions in which one side or another absorbs the new states and their resources. In these scenarios, Central Asia almost always falls to an adversary. If the independence of these new states is to become a US political priority, US planners will wish to ponder how this can be achieved when energy is driving conflict, or how Central Asia's energy resources might be protected if they are attacked.

Fifth, among Eurasia's principal powers only Russia has energy independence. In the context of these scenarios, this is a remarkable asset, as it provides Russia with what may be a unique opportunity to choose sides. Russia is not easily threatened over energy issues, except in its far eastern regions, where China has a clear interest in securing access to Russian gas and oil.

Finally, all scenarios point to the central importance of the Persian Gulf, and SLOC and chokepoint protection.

Recurring Geopolitical Issues

- Japan/Korea straddle -- split interests.
- China's energy vulnerabilities are great and increasing.
- U.S. lacks allies -- Need to consider others. (e.g., Russia, Iran, India, Indonesia, Vietnam).
- Vulnerability of Central Asia.
- Russian freedom to choose sides -- free from energy dependency.
- Control of the Persian Gulf, SLOCs, and chokepoints is the key.

Recurring DOD Challenges

Similarly, challenges to US military capability recur.

First, the scenarios suggest that the US military may be required to operate in theaters that are exceedingly remote from CONUS and underdeveloped logistically (e.g., Siberia, South China Sea, Gulf). Supporting infrastructure in places like Siberia is non-existent. In areas where supporting infrastructure is more robust, the US could lose the use of bases and facilities. The regions represented in these scenarios range from the coldest to the hottest climates on this planet. Such extreme weather conditions pose unique challenges.

Second, these scenarios suggest that defending LOCs/SLOCs and energy infrastructure could be important missions. The US will need to be able to operate in near-real time globally with air/missile defense – cruise and ballistic; to conduct anti-submarine warfare; and to ensure SLOC protection with naval and submarine capabilities, with or without indigenous support.

Third, US planners should consider how the US can exploit adversaries' energy vulnerabilities by identifying critical targets, such as pipelines, SLOCs, chokepoints, or other energy infrastructure. Can the US protect the flow of oil to its allies and simultaneously interdict the supplies of its adversaries?

Fourth, US planners will wish to ponder how new and/or different military alliances might enhance US capabilities and operations.

Finally, to operate effectively in new regions, under new conditions, and with new objectives, as suggested by the scenarios, US planners should consider gathering more robust intelligence on the rapidly changing energy systems and infrastructure of both US allies and adversaries in Asia. For any sensible action to be possible – offensive or defensive – military planners will need access to highly detailed intelligence of these areas and infrastructure systems.

Recurring DOD Challenges

- Prepare for potential operations in theaters remote from CONUS and underdeveloped logistically with little or no indigenous support (Siberia, South China Sea, Gulf)
- Defend/control LOCs, SLOC, chokepoints and pipelines against broader threat spectrum
- Exploit adversaries' energy vulnerabilities
- Examine existing military alliances; explore new military alliances

Follow-on Issues (1)

As noted above, these scenarios suggest a number of operational issues that deserve further examination. At a broader level, we need to consider the implications of states adopting strategies to attack or seize opponents' energy infrastructure or systems. What might these conflicts look like, and who are the possible actors? What role might the US play in these conflicts?

It will be important to identify the links between energy strategies and military strategies among the key Eurasian actors by asking how a concern for energy security might drive the military planning and force design of the different states. What capabilities might they seek; what kind of forces might they build; and what kinds of alliances might they enter to enhance future energy security?

Finding new allies in Eurasia and the Asia-Pacific region could be an important issue for the US in the next 20 years. We might profitably examine possible alternative futures for the main alliance candidates, chart pathways to these futures, identify the main drivers and determine where the interests and objectives of these states might intersect or conflict with those of the United States.

Environmental security issues lurked in the background of this study, but all participants believe that they deserve serious consideration as potential drivers and catalysts of energy security issues. For example, a nuclear accident in Japan or a worsening of air or water pollution caused by burning high-sulfur coal in China could cause social reactions that precipitate different energy choices and, hence, create different energy security problems. Similarly, environmental consequences of energy-related conflict — sinking super-tankers or interdicting pipelines — could affect national security thinking in many ways.

Follow-on Issues (1)

- Examine specific operational challenges (e.g., Siberia, South China Sea, Gulf, international straits)
- Identify links between energy strategies and military strategies (ours and theirs)
- Explore potential new allies for US in Eurasia-Pacific
- Analyze environmental security issues

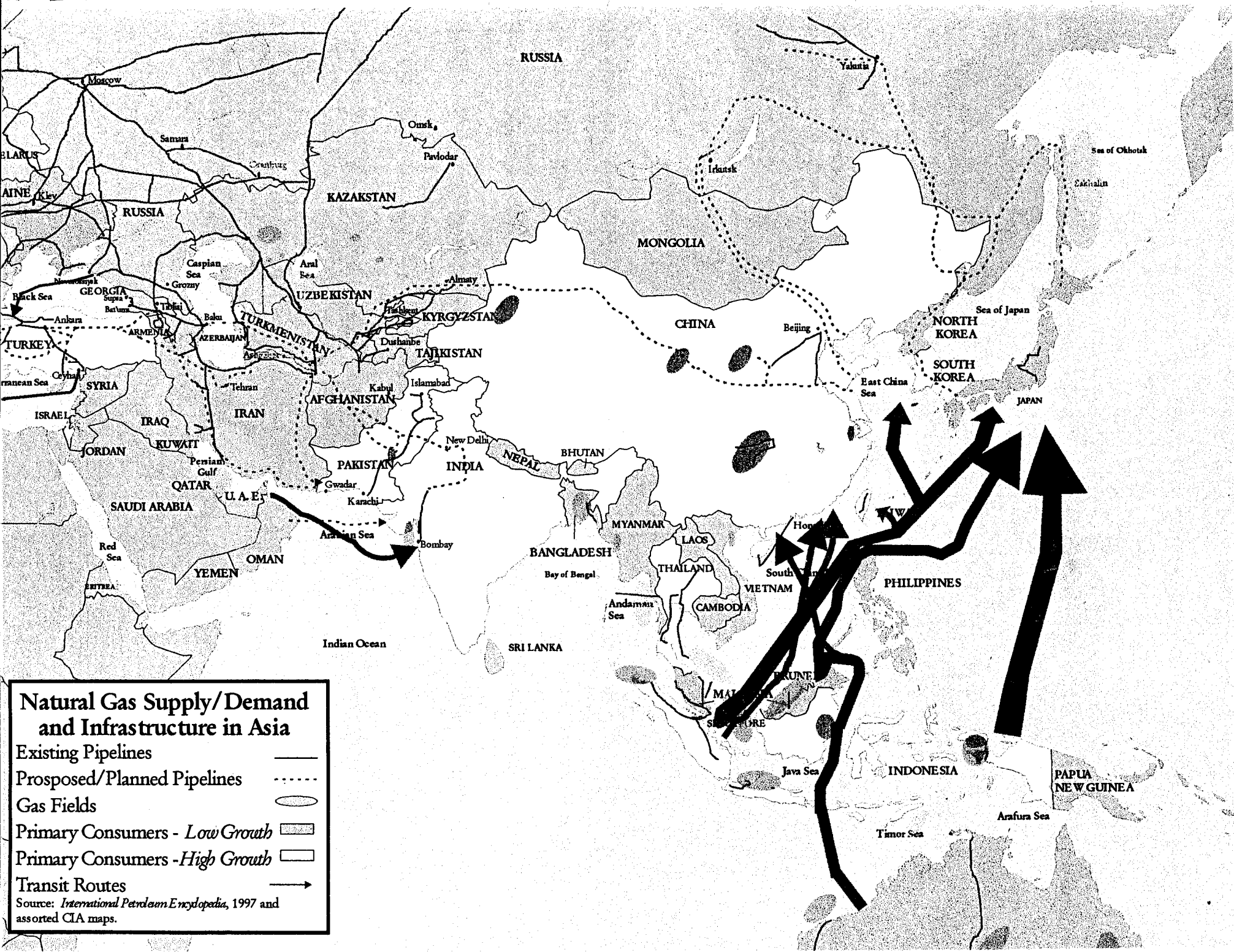
Follow-on Issues (2)

The study only touched on the potential impact of non-state actors as factors in energy security. Many energy security issues are likely to occur in areas of the world where non-state actors have considerable influence.

Changing geopolitical environments will also affect the way countries view their own energy security issues and those of other states. A strong and vibrant Russia or a weak and imploding China could alter some of the basic assumptions that create the energy security landscape in these scenarios. So, too, could an increased emphasis on environmental protection.

Finally, technologies that affect both energy supply and demand sides could offer the possibility of increasing supplies or lowering demands, which would influence most energy security issues. Over time, new technologies that create energy and old technologies that are made efficient and cost-effective might change the way energy is produced and consumed in important ways, with obvious implications for energy security considerations.

Appendix of Maps



BLARUS

AINE

TURKEY

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SAUDI ARABIA

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MONGOLIA

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KYRGYZSTAN

TAJIKISTAN

AFGHANISTAN

INDIA

NEPAL

BHUTAN

BANGLADESH

MYANMAR

LAOS

THAILAND

CAMBODIA

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Orenburg

Omsk

Pavlodar

Irkutsk

Yakutsk

Sea of Okhotsk

Sea of Okhotsk

Aral Sea

Caspian Sea

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Tbilisi

Baku

Aspiz

Tehran

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CHINA

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NORTH KOREA

SOUTH KOREA

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Sea of Japan

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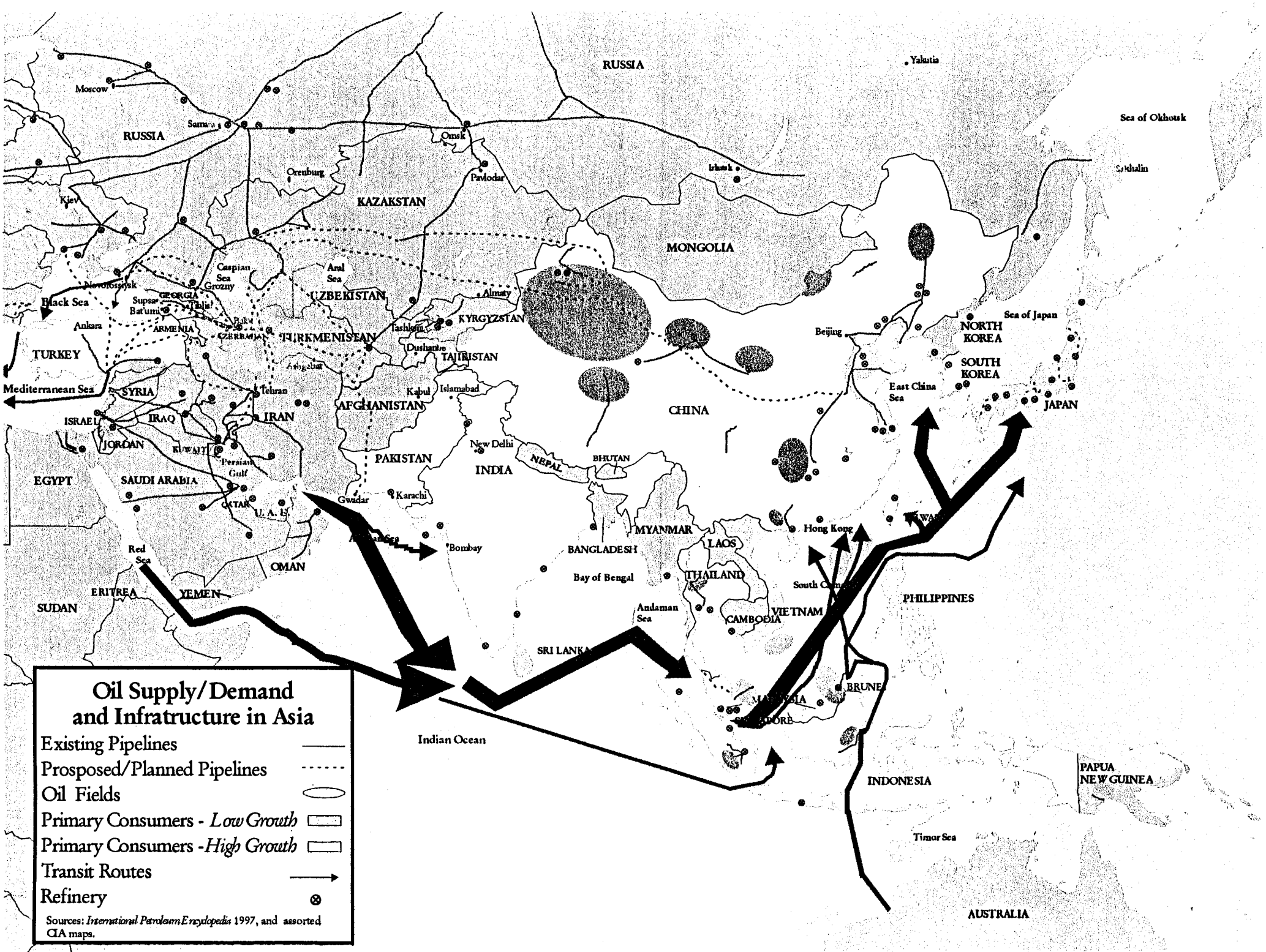
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Oil Supply/Demand and Infrastructure in Asia

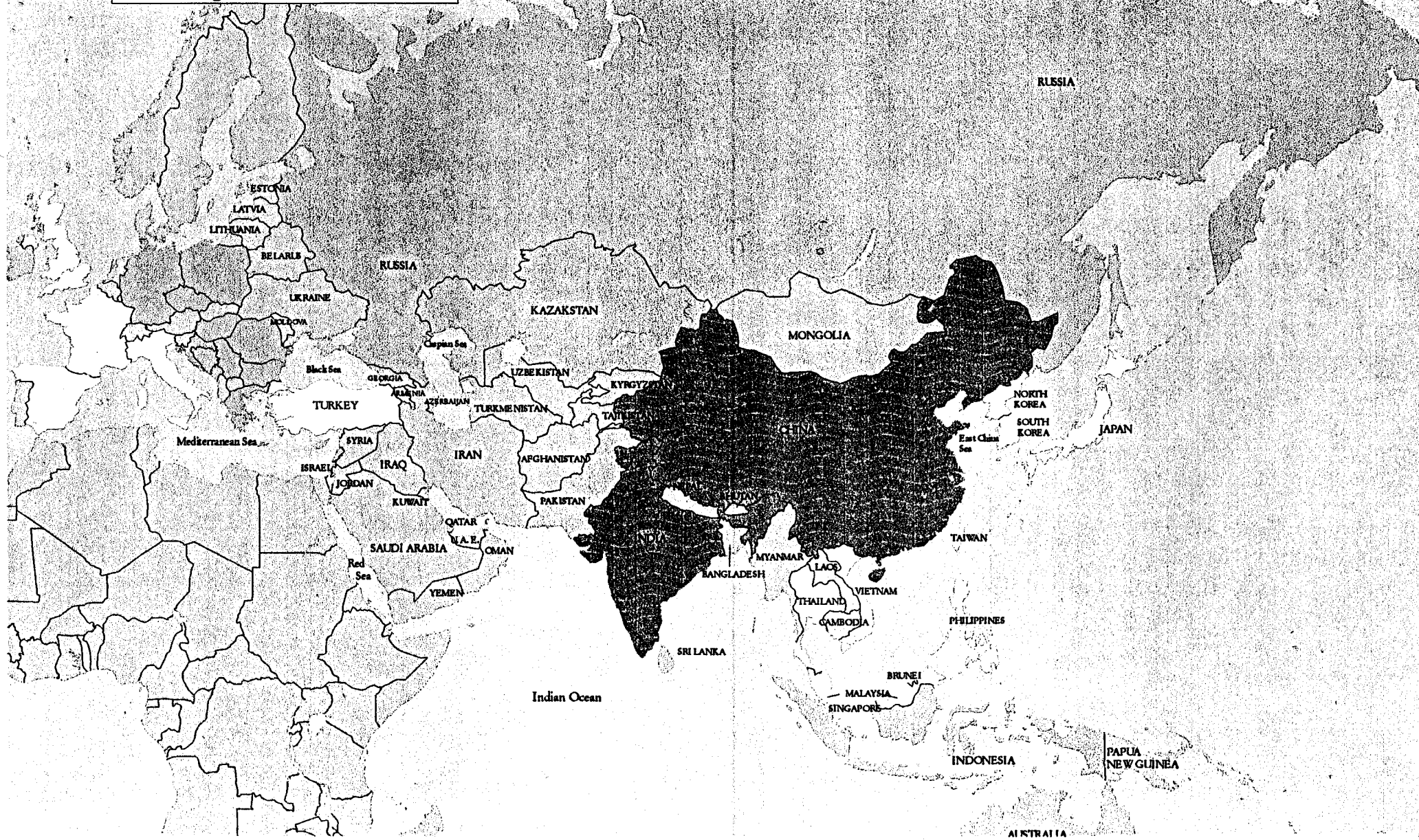
- Existing Pipelines ———
- Proposed/Planned Pipelines - - - - -
- Oil Fields ○
- Primary Consumers - *Low Growth* □
- Primary Consumers - *High Growth* □
- Transit Routes →
- Refinery ⊗

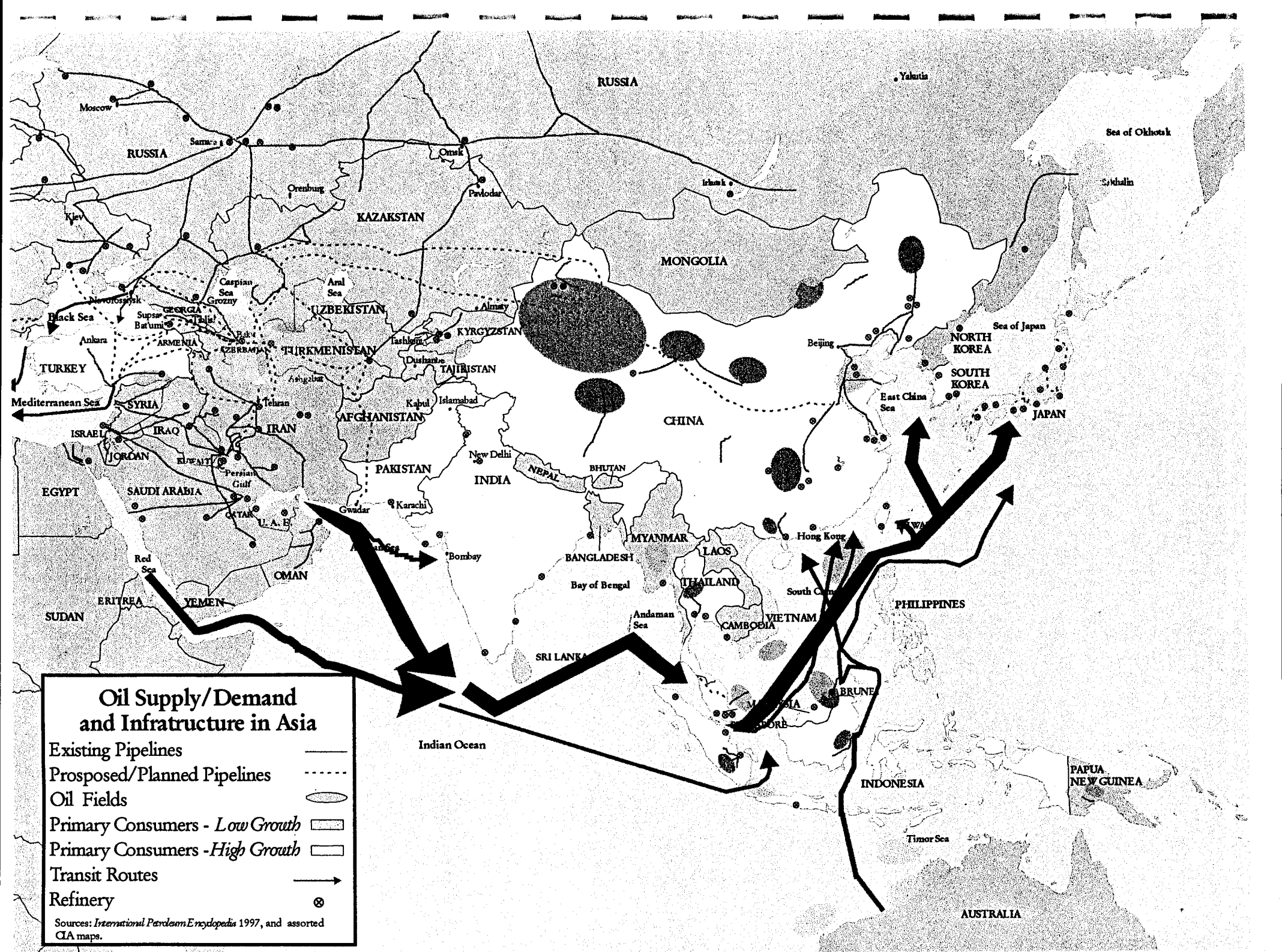
Sources: *International Petroleum Encyclopedia* 1997, and assorted CIA maps.

Coal Supply/Demand in Asia and Europe

- Coal Producers
- Coal Consumers
- Coal Producer/Consumer

Source: DOE, Energy Information Administration,
International Energy Outlook 1997.





RUSSIA

Yakutia

Sea of Okhotsk

Sikhlin

KAZAKHSTAN

MONGOLIA

UZBEKISTAN

KYRGYZSTAN

TJIKMENISTAN

TAJIKISTAN

AFGHANISTAN

INDIA

CHINA

NORTH KOREA

SOUTH KOREA

JAPAN

TURKEY

SYRIA

IRAQ

IRAN

PAKISTAN

INDIA

NEPAL

BHUTAN

MYANMAR

LAOS

THAILAND

CAMBODIA

VIETNAM

PHILIPPINES

EGYPT

SAUDI ARABIA

OMAN

SUDAN

ERITREA

YEMEN

SRI LANKA

INDONESIA

PAPUA NEW GUINEA

AUSTRALIA

Indian Ocean

Timor Sea

Hong Kong

South China

BANGLADESH

Bay of Bengal

Andaman Sea

VIETNAM

PAPUA NEW GUINEA

INDONESIA

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South China

Nuclear Capabilities in 2015

Projected to have
nuclear capabilities
in 2015



Source: DOE, Energy Information Administration,
International Energy Outlook 1996

