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## Foreword

*Jennifer I. Considine and Mary Lashley Barcella*<sup>1</sup>

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In a tribute and memorial to Melvin A. Conant, the authors reprint below two articles from his publication, *Geopolitics of Energy*. The first article, “The geopolitics of oil” (Conant, 1994), was written as he retired from his position as editor of the publication. In it he defines the term “geopolitics” and gives a general outline of the factors affecting the primary energy sources that are vital for the well-being and security of developed and developing nations around the globe. These factors include the location of energy sources and strategic reserves; domestic and foreign government policies affecting energy supply and distribution; price; anticipated demand and supply and the geopolitics of choice for importers and exporters alike; and a host of other important considerations listed in detail further on. Although the articles were written well over 20 years ago – and did not foresee the emergence of technologies such as hydraulic fracturing that have enabled a renaissance in US tight oil and natural gas production – they nevertheless have significant relevance to contemporary issues in the geopolitics of energy, drawing the reader’s attention to the global supply and demand balance, US special relationship with Saudi Arabia, East Asian supply prospects, tension in the Gulf and the role of Russia.

The second article, from 1979, is an insightful analysis of US energy politics that shows how little has changed in US energy and environmental policymaking in the last 40 years.

## THE GEOPOLITICS OF OIL<sup>2</sup>

### MELVIN A. CONANT<sup>3</sup>

*Oil is high profile stuff, for it fuels much more than automobiles and airplanes. Oil fuels military power, national treasuries, and international politics. Because of this it is no longer a commodity to be bought and sold within the confines of traditional supply and demand balances. Rather, it has been transformed into a determinant of well-being, of national security and international power for those who possess this vital resource, and the converse for those who do not.*

*Robert E. Ebel*<sup>4</sup>

This is the opportunity for your retiring Editor to reassess the importance of the geopolitics of energy – most particularly of oil – in light of changes in international politics and the oil system over the past 20 years. Most important is the peaceful ending of the Cold War. Next is the resurrection of private oil companies' investing internationally, and then the proliferation of "privatization" commitments when only two decades ago, OPEC members had ousted private international oil companies everywhere from their upstream sector as they had earlier from their downstream. Then, one has to recognize the changes in how oil is priced and the expanded influence of international financial markets on oil trades. The number of "dry" barrels sold/bought can be misleading for it is the number of "wet" barrels exchanged which count in terms of oil geopolitics.

The concept of oil "geopolitics" embraces a host of considerations: location; sovereignty; domestic and foreign government policies affecting exploration, development, and access to oil itself; price, and therefore such considerations as revenue to the state and return on investments to private enterprise; a government's objectives in relations with other countries and companies; and, in a larger sense, anticipated demand and supply and the geopolitics of choice for importers between sources of oil and alternative fuels whenever available.

Politics becomes a factor whenever and however a *government* chooses to act with respect to its own assets or intervenes in those of another state. While oil geopolitics is often referred to in terms of suppliers, it should never be forgotten that whatever the policies and actions of oil import dependent consumer states – especially OECD countries – insuring their access to oil remain of highest importance. The key example is, of course, the U.S. special relationship with Saudi Arabia. Nor can it be forgotten that increasing oil demand, almost everywhere but especially in East Asia, has stark implications for the Middle East Gulf countries and Venezuela, which are destined to play an even larger role in providing oil to the world. The IEA foresees such "an explosive growth in import dependence by the industrialized nations and by the rapidly growing Asian economies . . . that by 2010 these countries may require 27 MMB/D *more* oil from the Middle East and Venezuela than they do today."<sup>5</sup> China is now assumed to be among those countries certain to become dependent on the Gulf and the time is rapidly approaching when India will be on the list as well. Herein lies the continuing relevance of geopolitics. There is no reasonable expectation that huge discoveries, greater expenditures on alternative fuels, or much greater efforts at conservation or environmental controls will profoundly alter this prospect within the next decade and a half.

Accordingly, given the rivalries between key Gulf producers, the United

States will have to perform as the “policeman of the Gulf,” to defend both its own interests in the region’s oil and the interests of its allies – such as Europe and Japan – in assuring their own supplies from the Gulf.

With this outlook, producers have concerns about the motives and tactics of neighboring states; some of them are suspected of territorial ambitions including seizure of oil fields and pipelines. Against such threats a producer may want to forge political and security alliances with other states, most notably with the United States, which today is virtually alone in being able to provide the force needed to keep the peace. It is likely there will be a *continuing* U.S. presence in the Gulf; what is *certain* is continuing change in relations among the key producers, and between key producers and the United States. As a practical matter, the United States will be the “policeman of the Gulf” *for as long as the American public is willing to perform that role* – a crucial qualification.

Each of these factors has long-term importance. From time to time, any one of them can become more or less important depending on changing circumstances. Still, the fundamentals of geopolitics remain constant and should never be assumed to have disappeared.

In short, “geo” refers to the *location* of oil reserves; “politics” reflects the decisions of importing and producing *governments* affecting access to supplies. The basic ingredients will always be a mix of politics, economics, and security objectives. All of the factors have to be kept in mind since overlooking one or more may invite serious trouble.

The most basic of geopolitical factors rest on judgments as to present and future sources and volumes of oil production. Every few years, Joseph P. Riva, Jr. has provided readers of *Geopolitics of Energy* with his expert appraisal of likely trends in the finding of oil and, with larger sources in mind, how long a producer is likely to remain a major actor. (See his “Current World Oil Status” in *Geopolitics of Energy*, May 1, 1994.) Table I.1 illustrates the foreseen change in the roster of suppliers.

The basic facts about the geopolitics of oil are on this list. The oil importing nations know their reliance on imported oil will include the largest producers over the next 50 to 100 years, and longer, with the greatest concentration in the Middle East. Very few of the producers, if any, will put their trust in simple “market forces,” hence the continuing importance of political decisions and relationships affecting the availability of exporters’ oil in times of peace or of emergency. Most larger oil exporters will seek to affect oil price through some form of cartel action, particularly if the number of OPEC members shrinks. How these producers interact will vary from time to time: how key importers deal with the larger oil producers will also vary. But in most cases, oil exporters’ strategies will aim for higher oil prices and/or reserved market shares, and they will not be

*Table I.1 Sustainability of current oil production 1994*

The Next 10 Years	The Next 50 Years	The Next 100 Years	Longer
United States	Brazil	Azerbaijan	Turkmenistan
Canada	Russia	Yemen	Uzbekistan
United Kingdom	Malaysia	Mexico	Kazakhstan
Australia	Qatar•	WORLD	Venezuela
Trinidad	Algeria•	Iran•	Saudi Arabia
Angola	Nigeria•		UAE
Indonesia•	India		Iraq•
Colombia	China		Tunisia
Egypt	Ukraine		Kuwait
Argentina	Libya•		
Norway	Brunei		
Ecuador	Romania		
Oman			

*Note:*

- OPEC Members

Aggregate sustainability of total current world oil production, assuming continuous effi production

above using statecraft to achieve that objective when reliance on “market forces” is not seen to satisfy their needs and political ideologies. Yet even here conflicts are ever-present. The needs of a heavily populated Iran, for example, will not be satisfied by tactics which could meet the requirements of thinly populated Saudi Arabia.

Well beyond the end of the twentieth century the Middle East Gulf will be the largest repository of conventional crudes, with the natural gas reserves of Iran and the Arab Gulf second only to those of the former Soviet Union. Supplies of both fuels are far beyond the capacity of most producing countries to consume. The Gulf will thus remain the largest source of internationally traded oil (and perhaps of natural gas) and, at the same time, an area of politically troubled inter-governmental relations, even wars – the essence of geopolitical concerns over unimpeded access to cheap and ample petroleum.

From 1960 to 1980, the OPEC challenge to the pivotal role of large international oil companies was surely dramatic, but only some 15 years later the imperative of lower oil prices and consequent economic and political changes began to reintroduce to producing governments the value and utility of the technology and money of foreign private oil enterprises. In itself, this has begun to alter oil geopolitics. It remains uncertain how

this new situation might be affected if oil prices should reach a sustainable level of \$22/B or higher.

### **The Impact of U.S. Policy**

The outstanding example among oil importers of geopolitical factors affecting oil is the political failure of the United States to address the issue of its dependence on imported oil. That failure has led the United States to be continuously involved in Gulf politics and security issues involving variously Iran, the countries of the former Soviet Union, Egypt, Israel, Lebanon, Iraq, Kuwait, and Saudi Arabia. The civil war and continuing instability in Yemen will be of growing concern to Saudi Arabia, and Yemen's location at the southern entrance to the Red Sea will be of concern to international oil trade from the Gulf to the Mediterranean. Were there less need for the region's oil, the United States might never be so deeply implicated. But because the U.S. government has not more actively encouraged other sources of supply – in the western hemisphere, for example – its dependence, and that of its allies, on the Gulf seems likely to be unaltered, with consequent heavy demands on U.S. military readiness (which serve to limit the freedom of its actions elsewhere).

How likely is it that the United States will deal with the consequences of its dependence on oil imports? Not very likely at all. There is no comprehension by U.S. citizens of the risks and costs of its situation. With the real price of gasoline lower than in 1980, with no interest in higher taxes on energy consumption and no sufficient interest in energy alternatives, the President must have been advised to put his mind on other matters. Not even the war with Iraq was seen to have politically unacceptable costs. Consequently, current estimates of U.S. oil imports warn of a need for 12.8 MMB/D by 2010 (compared to 8.1 MMB/D currently).

If the United States were to move more actively to develop oil sources to replace its dependence on the Gulf, Venezuela and Canada would be the leading candidates. These countries' increasing extraction of unconventional crudes for export to the United States as well as to Europe and to the Far East (in the case of Venezuela) could make a crucial difference. The United States has for years avoided any clear special relationship with either producer largely because it saw no need to tie itself to "preferential" sources and partly, at least in Canada's case, because the United States has assumed their conventional and unconventional crudes may have no other market. On the other hand, Japan has shown interest in both Canadian and Venezuelan unconventional crudes as a potentially important further diversification of its crude supplies.

### **East Asian Supply Prospects**

Geopolitical oil issues remain important to Japan and are becoming increasingly so to China as it faces the prospect of securing growing oil imports from the same Middle East Gulf on which other nations now depend. Furthermore, competition among countries of East Asia for dwindling exports from Southeast Asia will bring geopolitical factors onto the scene as happened before World War II. The further diversification of energy sources will remain among Japan's highest priorities with geopolitics dictating sources away from the Gulf (e.g., East Siberia and the western hemisphere) and out of China's reach.

As for China, the oil potential said to underlie the South China Sea could likely be of increasing importance in a future conflict with Vietnam. (The latter has already made clear that its claim to these prospective reserves is "non-negotiable.") Or will the Tarim Basin of western China prove to be hugely prolific? It is too soon to count on this new source of urgently needed oil but its location along inner-Asian frontiers will be of special geopolitical importance to Russia and China alike.

### **The Role of Russia**

As various proposals are reviewed to link Russian-controlled oil and gas pipelines to East Asia, the web of pipelines now under consideration for moving supplies eastward suggests a renewed Russian influence across EurAsia, long a goal of the previous Soviet Union. Moreover, the question of transporting oil and gas from the southern republics of the former Soviet Union through Iran and/or Turkey is patently of long-standing security and political importance to Russia.

Oil and gas from the former Soviet Union is also of singular importance to Europe, despite Russia's current difficulties in maintaining production and the attendant risk that exports could yet be curtailed. Some countries – notably the United States – once anticipated that a growing European dependence on Soviet exports could give rise to serious security risks. Yet, in less than a decade, the industrial importing nations seek ways to shore up Russian production *and* exports. And there are serious difficulties in that respect. Robert Ebel warns:

A weakened Russian oil industry cannot begin to offer any alternative to Middle East oil. Nor can it lead to economic reform in that country. Economic rejuvenation generally is not thought likely unless and until the health of the oil sector has been reasonably restored. A time of trouble would await if Russia, by virtue of continued oil production declines, would be forced to cut back on exports to hard currency markets. Not only would it be deprived of its leading

source of hard currency earnings, but more importantly the loss of a major world oil supplier, as Russia is and has been, carries particular political and economic implications for all.

### **The Problem of Stability Lies in the Gulf**

Still, the fundamental geopolitical factors inherent in Russian oil (and gas) remain unchanged: Russia is a major source of oil and gas away from the Gulf, it has often been a source of less expensive oil than OPEC, and it has for the most part been a reliable supplier.

Had the OPEC cartel been able to pursue single-mindedly the goal of either higher prices or of higher market shares, world oil importers (indeed consumers everywhere) would have had an additional and urgent geopolitical goal: to crack the cartel itself through the discovery and development of very large reserves elsewhere. As it is, the difficulty confronting key producing-exporting nations of the Gulf – now the heart of OPEC – is (1) how to accommodate their geopolitical rivalries, especially in the case of Iran, Saudi Arabia, and Iraq, whose antagonisms have deep historical roots; and (2) how each country can enlist in its defense the support of the United States or counter the influence of the United States if it backs a rival. (Today, the United States confronts both Iran and Iraq, while it is supportive of Kuwait and Saudi Arabia.) While each of these producers is in favor of higher oil income, their political and security actions continue to frustrate the linking of their otherwise common interests. They can probably not resolve their other basic division: the difference between members with large low-cost oil reserves and those with higher costs and shrinking reserves. Moreover, a key factor in the Iraq-Kuwait confrontation was the latter's continuing to produce at high volume in disregard of the impact upon the oil revenue of the former.

None of these geopolitical aspects of world oil demand can be masked, or eclipsed altogether, by "market forces," although the United States has for many years urged producers and importers to consider market forces as the most basic determinant of supply and demand. Yet the United States has often led in adopting domestic political policies aimed at shielding its producers from foreign competition – still another form in which politics affects international oil trade. Throughout this century there have been at least 20 occasions on which the nation has adopted restrictive policies and legislation which affected the terms of oil trade. While these interventions were most often labeled political acts in the interest of "national security," their true intent was to shore up the domestic oil price (often with similar effects on prices everywhere, given the scale of U.S. oil demand).

For reasons referred to earlier, it is unlikely that the United States will

address its import dependence. It will rather remain vulnerable to overseas crises. The situation is different for Russia, whose range of options is considerably wider due to its totally different energy situation. This difference is summarized succinctly by Robert Ebel:

The US, the world's most powerful nation, must import 48% of the oil it consumes. Russia, arguably the number two power in the world, despite its travails, in 1993 was able to send 52% of the oil it produced to buyers beyond its boundaries.

The geopolitical implications of Russia's oil situation loom very large and have significant historic precedence. During World War II, oil geopolitics quickly became a major force behind German moves into southern Russia, as it did in Russian determination to keep German forces out of the Caucasus. Scarcely had that war ended when Russia moved to solidify control over Azerbaijan. Russian forces on the Iranian border threatened incursions from the north toward the oil wealth of Iran and the Gulf. U.S. action was the key factor in limiting Russia's moves southward.

Until the 1980s, Russia had no need for access to Middle East oil, though it did develop tactics designed to destabilize relations between oil producers and importers, and in particular with the United States, against a background of historic interest in securing access to the Gulf and the Indian Ocean. Countering US influence in the region, the Russians turned Iraq, a leading oil exporter, into their ally in the Gulf.

Changes in the top leadership in both countries in the late 1980s enabled the United States and the then-Soviet Union to reach a private understanding that neither of the superpowers would challenge the other's vital interests in the Middle East. For a time at least, access to Gulf oil was not at risk. While Russia has continued to observe that understanding, political change within the Kremlin could alter its policies toward the Gulf and the United States. Moreover, oil importing nations are currently watching Russian moves toward former Soviet republics whose geographical location and expectations of oil and gas reserves are clearly of interest to the Kremlin, and several of these new republics will have contacts in the Gulf.

Realistically there is for the near term little prospect that Russia will have the military capabilities to threaten an industrial oil importer's access to Middle East oil. However, Russian forces could again impress upon the Caucasus and Central Asia its historic imperative to be in control of these borderlands. Russian tactics in the Middle East may again be troubling to the United States and other key importers. In April of this year, for example, Russia concluded a "defensive" arms deal with Syria citing the arms deliveries of the United States to Israel. The geopolitics of the Gulf are like a shadowy presence in world affairs, never absent.

## Regional Trouble Spots

There appears to be a growing consensus that future wars are likely to be regional in scope. However, regional wars can implicate oil supplies in the same way as larger wars. The case of Iraq's attack on Kuwait is an example. In the event of another regional war in the Gulf, it cannot be assumed the United States would always deploy its forces on a similar scale as it did to push Iraqi forces back. And if the United States did not do so, there may be no other military power which could, particularly with Russia believed to be presently incapable of moving to the defense of a regional state under attack.

Similarly, in the case of a divided Yemen, Saudi Arabia may consider an intervention to remove the risk that troubles on any Saudi border could escalate, leading to vulnerabilities for the Kingdom. Since it has appeared likely that new-found oil revenues for Yemen would pay for weapons with which to confront the Kingdom, geopolitical concerns could move Riyadh to attack. In a similar situation, border warfare in Central Asia has to be anticipated if prolific reserves are found in the Tarim Basin. Similarly, geopolitical factors – a mix of history, imperialism, and a desire for additional oil revenue on the part of Britain and Argentina – could lead again to a repeat emergency in the Falkland Islands if oil in large quantities is actually found in the vicinity. These examples are of varying risk to oil interests but cannot be ruled out.

## The Evolving Picture of Oil Geopolitics

In many places access to oil can be greatly complicated by the domestic and international political acts of governments. The ability of smaller oil enterprises to affect these actions is normally not very great. Yet the work of companies can be seriously compromised or delayed by government actions. Large oil companies, with “deep pockets,” have a greater capability to sit out some of these situations. But oil companies usually have exploration possibilities elsewhere and may act on them to the eventual detriment of countries that play the geopolitical “game.”

If one should want to see the evolving picture of oil geopolitics one cannot do better than look at the implication easily drawn from the IEA report referred to in Table I.2. From this table, we are told that in the decade between 2000 and 2010, oil supplies from the Middle East Gulf and Venezuela are forecast to *rise* from 31 MMB/D to 43.4 MMB/D; while OECD production *declines* from 15.2 MMB/D to 14.2 MMB/D, and while demand in the rest of the world increases from 22.1 MMB/D to 32.8 MMB/D. This forecast puts the geopolitics of oil in the clearest light: the

Table I.2 *IEA oil demand and supply forecast 2000*

ln MMB/D	Demand•	Chg. vs. '91	Supply	Chg. vs. '91
OECD	42.8	+4.5	15.2	-1.0
Ex-USSR/East Europe	7.7	-1.9	8.3	-2.4
Mideast & Venezuela	4.4	+1.0	31.0	+12.4
Rest of World	22.1	+6.6	21.1	+1.0
Total•	77.3	+10.2	77.3	+10.0

*Note:* Total demand includes stockbuilds of 300,000 B/D. Total supply includes processing gains of 1.7 MMB/D in 2000 and 1.9 MMB/D in 2010

Middle East Gulf is even more certain to be the cockpit of oil rivalry which will not be resolved through free market practices. If it is manageable at all, it will be through durable agreements reached at long last by key OPEC and non-OPEC suppliers.

To achieve that, one has to assume a far more successful effort than we have known to date at a producers' system of quotas or a managed parceling out of market shares. Furthermore, such would require cooperation between producer and consumer governments which Hermann Eilts tells us in his accompanying article ("Petroleum and the New World Order") is improbable. Otherwise, we must assume a consistent, long-term, and successful effort on the part of OECD, South, and East Asian nations to reduce sharply their rate of growth of oil consumption which appears unlikely.

The significance of this transcends all other considerations. OECD states, Russia and its borderland republics, East Asia, and India will all be implicated, and undoubtedly will still be dependent on some nation – perhaps, but not assuredly, the United States – to be the "policeman of the Gulf."

## THE US ENERGY SCENE

MELVIN A. CONANT<sup>6</sup>

There was a time, not so long ago, when the making of energy policy in Washington was a simple process. If a problem arose, small delegations came to town for discreet conversations with LBJ, Sam Rayburn and Bob Kerr, which usually took care of it. Under this regime, depletion allowances flourished, pro-rationing thrived, and oil imports were restricted.

The old order was beginning to change even before its guardians were

departing the Washington scene. But energy policy has never been the same since the decline of domestic production, the rise of the OPEC cartel and, finally, the Arab embargo. No longer are energy decisions dictated by a handful of men operating on Capitol Hill or from the White House. To the outside observer, the energy policy process today appears to be a wild free-for-all, a gigantic floating crap game with increasingly high stakes.

Behind these policy struggles lies an enormous diversity of interests and fundamental differences in economic, political, and philosophical outlooks. These include basic disagreements about the success of the free enterprise system, the merits of Federal intervention in the marketplace, and the virtues of undisciplined economic growth. On closer analysis, there is also a large measure of geography and politics at the root of every policy debate. In essence, notwithstanding a common nationality, a common language and a common government, we see within the U.S.A. a replay of the geopolitical conflicts of interests which take place between producers and importers within the community of nations.

### **No Unity on Energy**

The conflicts in energy interests stem from the different situations of the fifty states. Some states are rich in energy sources, others are not. Some have oil but no coal, others coal but no oil. Some have high sulphur coal, some low sulphur coal. Some rely heavily on hydro-power, others on nuclear power. Some are import dependent, others not. Some have unique natural resources which stimulate environmental concerns, others do not.

These are some of the factors which are having a major influence on national energy policy. These differences are clearly reflected in Presidential energy messages offering tax exemptions for gasohol for the farm belt, coal cleaning projects for Appalachia, solar projects for the Sunbelt, and tax credits on wood stoves for frugal New Englanders.

### **Politics of Energy**

The nation's diverse energy needs show up increasingly in Congressional debates. For example, Congressmen from Eastern coal producing states were greatly concerned that tough environmental regulation would put their coal at a competitive disadvantage with lower-sulphur Western coal. This concern finally led to the statutory requirement that all coal-burning power plants install costly scrubbers, no matter what the sulphur content of the coal involved.

A refinement of this approach was developed by Ohio's Senator Metzenbaum in a further effort to protect Ohio's high-sulphur coal. He

inserted an innocuous amendment in the Clean Air Act authorizing EPA intervention to avoid economic disruption which might be caused by using coal which was not “locally or regionally available.” This may now be interpreted to force Ohio utilities to use Ohio coal, instead of buying low-sulphur coal from neighboring or Western states, to comply with the Clean Air Act.

These concerns are not always focused on fostering the use of state or regional resources. In the Northwest, for example, the obvious desire is to protect low-cost hydro-power from exports to other states. In California, environmental interests have dominated energy development, as recent energy facility siting decisions make clear.

### **United New England**

New England is best organized to deal with energy. Lacking any resources, highly dependent on costly imports, New Englanders became aware of energy problems even before the embargo. Their Congressional delegation has organized into an effective bipartisan coalition pushing hard for programs like small-scale hydro-power and regional strategic oil reserves.

The New England delegation has been instrumental in fighting representatives of producing states on critical issues of oil and natural gas pricing policy. It was not surprising that New Englanders, resource poor and import dependent, would fight for the benefits of low-cost, price-controlled domestic oil and gas.

Much of this battle has centered on the entitlements program which was designed to equalize costs between those refiners who had access to more low-cost U.S. oil and those who were more dependent on high-cost imports. During the Ford Administration, the New England delegation succeeded in securing 30 percent entitlements treatment for importers of residual fuel oil on which the region is heavily dependent. This meant that New England importers of “resid” were in effect paid a subsidy by the rest of the country. In 1977 the delegation sought to increase this subsidy to 100 percent and a major confrontation took place. After the Senate Energy Committee voted 17–1 against increases in entitlements for “resid,” the New Englanders were forced to back down and compromise.

### **No National Unity on Energy**

All of this maneuvering may be grist for the pundits, but it has done little to encourage the development of sound energy policies. An inordinate amount of time and talent – both Congressional and Executive – has been devoted to catering to regional energy interests. Attention has been diverted from broader policy questions while debate has focused on

the merits of entitlements and other tangential issues. In addition, the statutory product of energy confrontation and compromise has greatly complicated the regulatory process – the Natural Gas Policy Act of 1978 being only the latest example.

Obviously, these political conflicts over energy have also adversely affected the process of achieving consensus on energy issues. In the absence of strong Presidential leadership, these conflicts have flourished at the expense of broad agreement on what should be done to meet national energy needs. Perhaps this helps to explain why domestic energy production has remained essentially static since the Arab embargo while U.S. dependence on costly imports continues to increase.

## TWENTY YEARS AND COUNTING

Twenty years after Mel Conant wrote his path-breaking article, “The geopolitics of oil” and over 38 years after his short note on the “US energy scene,” the historic and geopolitical forces outlined by these discussions are still relevant. As noted by Conant, in the mid-1990s the Middle East was the predominant source of oil for the United States. While the Middle Eastern producing nations had the potential to lose ground to Canada and Venezuela – even Africa – that was considered to be unlikely given the political environment at the time.

In his own words:

China is now assumed to be among those countries certain to become dependent on the Gulf and the time is rapidly approaching when India will be on the list as well. Herein lies the continuing relevance of geopolitics. There is no reasonable expectation that huge discoveries, greater expenditures on alternative fuels, or much greater efforts at conservation or environmental controls will profoundly alter this prospect within the next decade and a half.

Many of these predictions have been proven true, and moving forward geopolitical concerns remain. To cite only a few examples: estimates of US oil imports warned of a need for 12.8 MMB/D by 2010. This was a surprisingly accurate prediction, well over 15 years later US gross oil imports were estimated at approximately 11.8 MMB/d in 2010 a difference of only 1 MMB/d.<sup>7</sup>

Since that time, the share of OPEC imports to the United States has declined gradually, with the US moving to develop its own oil reserves. At the time of writing, gross imports are approximately 10.06 MMB/d, with net imports accounting for approximately 25 percent of US crude oil consumption (see Table I.3).<sup>8</sup>

*Table I.3 US petroleum imports 2016*

Top sources and amounts of US petroleum imports (percent share of total), respective exports, and net imports, 2016 million barrels per day			
Import sources	Gross imports	Exports	Net imports
Total, all countries	10.06	5.19	4.87
OPEC countries	3.45 (34%)	0.22	3.23
Persian Gulf countries	1.76 (18%)	0.02	1.74
Top five countries <sup>a</sup>			
Canada	3.80 (38%)	0.87	2.93
Saudi Arabia	1.11 (11%)	0.00	1.10
Venezuela	0.80 (8%)	0.08	0.72
Mexico	0.67 (7%)	0.88	-0.21
Colombia	0.48 (5%)	0.15	0.34

*Note:* <sup>a</sup>Based on gross imports by country of origin

*Source:* FAQ – US Energy Information Administration (EIA)<sup>9</sup>

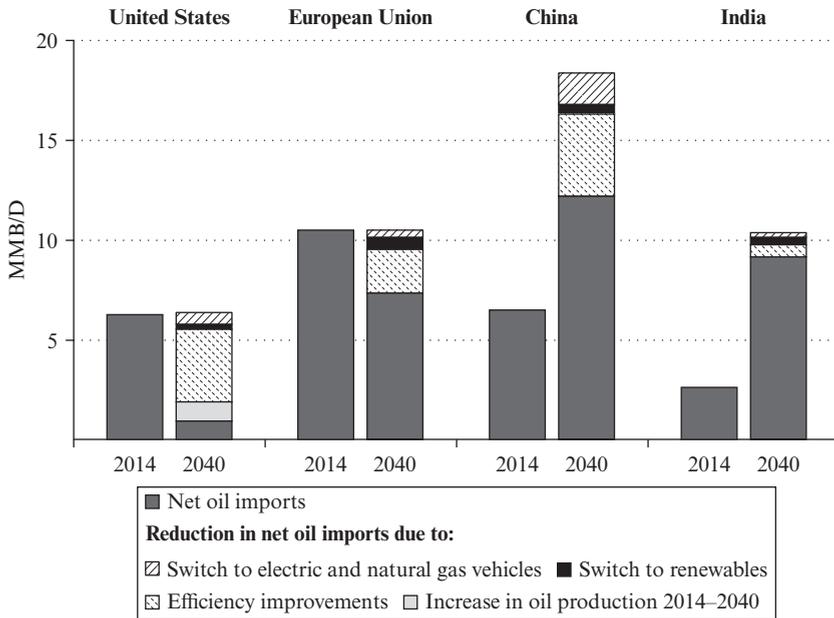
In 2016, Canada was the largest source of US petroleum imports at 38 percent, followed by Saudi Arabia at 11 percent, Venezuela at 8 percent, Mexico at 7 percent and Colombia at 5 percent.<sup>10</sup>

Saudi Arabia is listed among the top three suppliers of crude oil to China, India, the United States and Japan. Last but by no means least, the United States has made some progress in the diversification of its oil imports but maintains its special relationship with Saudi Arabia for the longer term.

According to IEA analysts, the Middle East share in global oil production in 2016 reached its highest level in 40 years.<sup>11</sup>

At the same time, despite significant gains in renewable energy supply the demand for oil continues to grow, albeit at a slower pace, with increased demand for oil to fuel petrochemicals, aviation, freight and maritime industries outpacing declines in oil consumption for power generation, buildings and passenger cars. Approvals for new conventional crude oil projects have fallen to the lowest level since the 1950s. In the United States, tight oil is not expected to cover an impending “major shortfall in the ‘baseload’” of oil supply. In fact, the boom-and-bust cycle for crude oil supply continues to be a fact of life, although the situation has been complicated by the switch to renewable energy supplies and efficiency improvements in the electricity industry, and by major technological changes and speculation in the futures and financial markets (see Figure I.1).

Once again the basic facts about the geopolitics of oil are illustrated by



Source: IEA (International Energy Agency) (2016b) “World energy outlook 2016”

Figure I.1 Net oil imports

Table I.4. While the number of producing companies with over 50 years of sustainable production has declined with the passage of time, global proved oil reserves have risen from 1,126.2 thousand million barrels in 1995, to 1,697.6 thousand million barrels in 2015 (see Figure I.2). OPEC countries continue to hold the largest share of global proved oil reserves at over 70 percent, 47.3 percent are located in the Middle East.

As pointed out by Mel Conant in “The geopolitics of oil”:

The significance of this transcends all other considerations. OECD states, Russia and its borderland republics, East Asia, and India will all be implicated, and undoubtedly will still be dependent on some nation – perhaps, but not assuredly, the United States – to be the “policeman of the Gulf.”

The following chapters provide an update to the historical perspective questions and scenarios envisioned by Mel Conant more than 20 years ago.

*Table I.4 Sustainability of current oil production calculated as reserves-to-production ratios 2016*

The Next 10 Years	The Next 50 Years	The Next 100 Years	Longer
United States	Kazakhstan	Canada	Venezuela
Mexico	Iraq	Iran	Syria
Argentina	Kuwait	Yemen	Libya
Brazil	Saudi Arabia		
Ecuador	United Arab Emirates		
Peru	Chad		
Trinidad and Tobago	South Sudan		
Azerbaijan			
Italy			
Norway			
Romania			
Russian Federation			
Uzbekistan			
Oman			
Qatar			
Algeria			
Angola			
Republic of Congo			
Egypt			
Equatorial Guinea			
Gabon			
Nigeria			
Tunisia			
Australia			
Brunei			
China			
India			
Indonesia			
Malaysia			
Thailand			
Vietnam			

*Notes:* Total proved reserves of oil – Generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions. The data series for total proved oil does not necessarily meet the definitions, guidelines and practices used for determining proved reserves at company level, for instance as published by the US Securities and Exchange Commission, nor does it necessarily represent BP's view of proved reserves by country. Reserves-to-production (R/P) ratio – if the reserves remaining at the end of any year are divided by the production in that year, the result is the length of time that those remaining reserves would last if production were to continue at that rate. Source of data – The estimates in this table have been compiled using a combination of primary official sources, third-party data from the OPEC Secretariat, World Oil, *Oil & Gas*

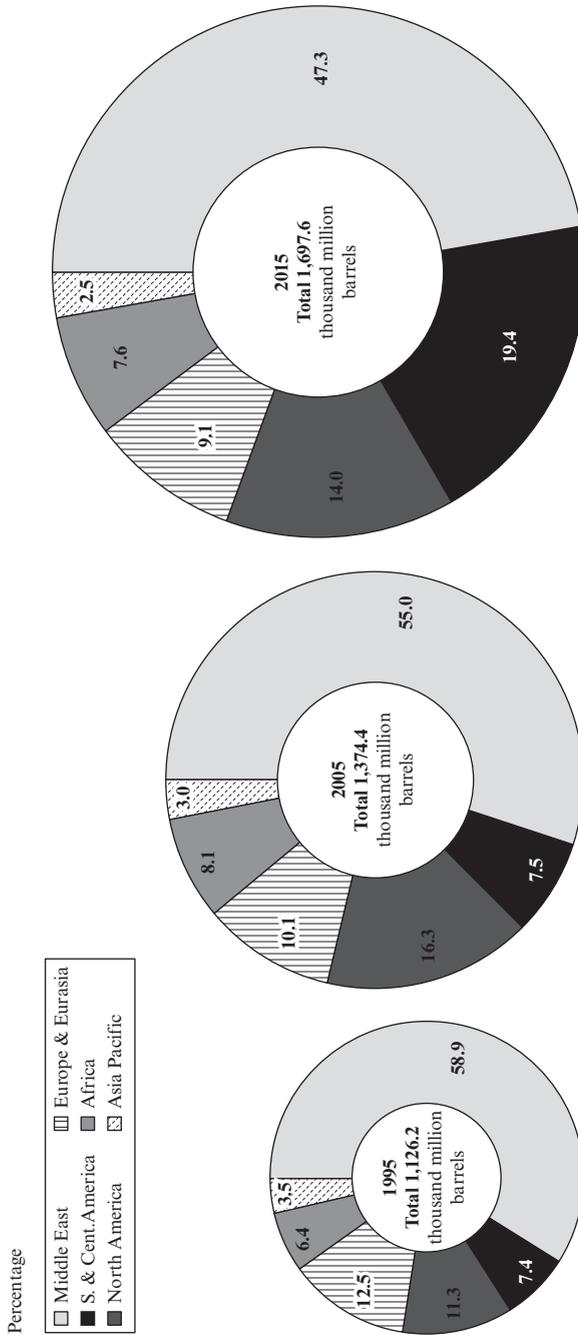
Table I.4 (continued)

*Journal* and independent estimates of Russian reserves based on official data and Chinese reserves based on information in the public domain. Canadian oil sands “under active development” are an official estimate. Venezuelan Orinoco Belt reserves are based on the OPEC Secretariat and government announcements. Reserves include gas condensate and natural gas liquids (NGLs) as well as crude oil. Shares of total and R/P ratios are calculated using thousand million barrels figures.

Source: BP Global (2016a) “Statistical review of world energy, energy economics”

## NOTES

1. Jennifer Irene Considine is a Senior Research Fellow at the University of Dundee, Scotland, and a Research Fellow at the King Abdullah Petroleum Studies and Research Center, Riyadh, Saudi Arabia. During her career as an energy economist, Dr Considine held positions at the Canadian Energy Research Institute, TransCanada Pipelines, Westcoast Energy, Coastal Corporation and ANR Pipeline Company. Dr Considine holds a PhD in resource economics from the University of Aberdeen, Scotland, and a MA in International Finance from the University of Chicago. In her career as an energy economist, Mary Lashley Barcella held positions at the American Petroleum Institute, American Gas Association, Conant and Associates and IHS CERA. She was privileged to work for many years with Melvin Conant, serving on the editorial board of *Geopolitics of Energy*. Most recently, she spent ten years as Director, North American Natural Gas at IHS CERA, publishing seminal studies on the economics and environmental effects of the unconventional oil and gas revolutions in the United States. Dr Barcella holds degrees in mathematics and economics from Vanderbilt University and the University of Maryland.
2. M.A. Conant (1994) “The geopolitics of oil,” *Geopolitics of Energy*, 16 (7), July 1, Washington DC: Canadian Energy Research Institute.
3. Melvin A. Conant worked for Standard Oil (Exxon Corporation) from 1961 to 1973 as a regional political advisor for the firm’s interests in East Africa, Asia, the Far East and Australia. He later served as senior government relations counselor for Europe, the Middle East and Asia. He was a US oil advisor at Law of the Sea Conferences in 1972, 1973 and 1977, and subsequently helped found the Council on Ocean Law. In 1973, Mel Conant was invited to help create the International Energy Affairs branch of the Federal Energy Administration. He was nominated by President Ford to be Assistant Administrator of the International Energy Affairs branch of the FEA. From 1976 until his death on December 11, 2003 he served as President and Director of Conant and Associates, Ltd. In that role he advised government and industry on the political aspects of international energy issues and was editor and publisher of the monthly international report *Geopolitics of Energy*. He also served as executive staff member of the Council on Foreign Relations and was Professor of International Security Affairs at the National War College. He was a member of the Institute for Strategic Studies, the Royal United Services Institution for Defense Studies in London, the Council on Foreign Relations and the Harvard University Visiting Committee for Astronomy and Astrophysics. He was Chairman of the Advisory Committee of the School of Advanced International Studies International Energy Program at The Johns Hopkins University. He was an Honorary Trustee of the Woods Hole Oceanographic Institute.
4. Mr Ebel – a leading oil analyst of the former Soviet Union and Russia – was a frequent contributor to *Geopolitics of Energy*. Paragraph extracted from his manuscript entitled *Energy Choices in the Soviet Successor States* published in the summer of 1994 by the Center for Strategic and International Studies, Washington, DC, subsequently published. R.E. Ebel (2004) “Russia – King of the oil hill?” CSIS, July 21.



Source: IEA (International Energy Agency) (2016b) "World energy outlook 2016"

Figure I.2 Distribution of proved reserves in 1995, 2005 and 2015

5. US Energy Information Administration (1994) "Annual energy outlook 1994," DOE/EIA 0383(94).
6. M.A. Conant (1979) "The US energy scene," *Geopolitics of Energy*, **1** (3), 1–3, May, published monthly for the clients of Conant and Associates Ltd, Washington DC.
7. N. Nerurkar (2011) "US oil imports: Context and considerations." Congressional Research Service, Library of Congress.
8. EIA (US Energy Information Administration) (2016a) "How much oil consumed by the United States comes from foreign countries? – FAQ."
9. EIA (US Energy Information Administration) (2016b) "How much petroleum does the United States import and export? – FAQ."
10. EIA (US Energy Information Administration) (2016c) "Oil imports and exports – Energy explained, your guide to understanding energy."
11. IEA (International Energy Agency) (2016b) "World energy outlook 2016."

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