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Testimony of J. Robinson West, Chairman, PFC Energy on U.S. Energy Security: West Africa and Latin America before the U.S. Senate Committee on Foreign Relations Subcommittee on International Economic Policy, Export and Trade Promotion October 21, 2003

Good afternoon. Senator Hagel and distinguished members of this Subcommittee, it is a pleasure to come before you today to address such a timely and critical issue. My name is Robin West and I am the Chairman of PFC Energy. PFC Energy is a strategic advisory firm, based in Washington, DC. We work with most of the companies in the global petroleum industry on various aspects of their international oil and gas investments and market strategies.

KEY CONCEPTS UNDERPINNING OUR UNDERSTANDING OF ENERGY SECURITY ISSUES

There are a number of key conceptual points concerning global *energy* security issues that our firm believes are essential for getting to the heart of the matter.

The definitions of supply security of oil and natural gas are the same: sustainable, reliable supplies at reasonable prices. However, an important distinction must be made between security of crude oil supplies and security of natural gas supplies, because these two commodities represent entirely different security challenges globally, and particularly for the United States. Oil is a global commodity. Global oil markets equilibrate. Gas is not a global commodity. By the word “gas” I refer here always to natural gas, the same fuel that is burned on stoves in our homes, and not gasoline, the oil product used in automobiles.

Vast natural gas resources in various parts of the world remain stranded because natural gas cannot be transported as easily as crude oil. Global gas markets do not always equilibrate. Basically, if oil prices go up or down in Houston, they will go up or down in

Singapore and Rotterdam. This is not true for natural gas, where prices vary widely from market to market.

- There is a misplaced concern with "dependence" on foreign oil suppliers. We will always depend on imported oil. Interdependence among nations is not a bad thing. "Energy independence" for the U.S. is a meaningless concept. U.S. production of oil is falling due to the maturity of U.S. oil fields. U.S. reliance on imported oil has already surged by 1.2 million barrels per day in the last five years, and is likely to continue at a similar pace in the next ten years, bringing U.S. net imports to 13 million barrels per day, equivalent to the combined 2002 production of the entire North Sea and Saudi Arabia. Greater energy efficiency can help slow down the increase in imports, but the direction is inevitable in the medium term.

- The proper way to frame concerns about "dependence on foreign oil" is to talk about vulnerability to oil supply disruptions. In this regard, diversity of supply clearly enhances security of supply.

- But the role of diversity in providing security, though extremely important, can be exaggerated. Given the highly skewed distribution of oil reserves in various geographic regions, there is a limit to how much diversity can achieve in terms of security of supplies and there is an even more critical limit to the ability of some producers to replace others as strategic suppliers of crude oil.

- The role of a swing producer is central to an orderly operation in the international oil markets. The excess capacity that Saudi Arabia maintains at high cost allows the world markets not to panic at every incident, civil war or revolution. Without it, there would be cyclical booms and busts which would destabilize economies and countries. Saudi Arabia is the guarantor of last resort, the Central Bank of the oil market that provides liquidity and reassurance in difficult times.

- The domestic pressure on natural gas supplies and prices poses a greater threat to energy security and the U.S. economy than the rising cost of crude oil. U.S. demand for natural gas is outstripping supply. Demand will rise even further when the economy rebounds. Complacency rose with the recent unusually warm winters and slowing economy. This past winter, which was colder than the norm, should be a wake up call that gas supplies, not oil, are actually a greater threat to the nation's ability to provide a reliable supply to consumers at a reasonable price.

Given the differences between oil and gas as global commodities, U.S. government officials can do little about oil security, but they can do a great deal about U.S. gas security, which relies on government-regulated infrastructure. This Administration deserves credit for addressing some of these problems, but Congress must focus on these issues as well if it is serious about energy security.

THE SIGNIFICANCE OF LATIN AMERICA AND WEST AFRICA TO U.S. ENERGY SECURITY

Oil Issues

The global oil markets are a unified single entity, however, in reality they are an aggregate of several 'basins" linked together by consumers and producers reaching out to other basins to secure supplies and expand markets. There are two large "net consuming" basins: The Atlantic Basin and the Asia Pacific Basin. By "net consuming" basin we mean that they consume more than they produce and have to reach out to other basins to make up for regional short falls. The key "net producing" basin that swings to make shortfalls in the "net consuming" basins is the Persian Gulf region, with Saudi Arabia as the principal supplier in that area. Hence, its critical role as the world's swing producer.
But regional supplies matter and in terms of diversity and proximity of supplies, regional producers are extremely important. In fact, they are the first line in defense of our oil security needs. In the Atlantic Basin, where the U.S. is the largest net crude oil importer, key regional suppliers outside of the U.S. are located in North West Europe (Norway and the UK), Latin America and West Africa. In the context of this testimony, therefore, for the U.S., other than the European producers, Latin American and West African producers make up our first line of defense in oil security.

Four important factors related to these regional crude oil suppliers have a critical influence on future output:

- Investment activity as a result of investment regimes created by these producers and its impact on future oil supplies
- Attempts by crude oil producers to secure captive refining capacity in the U.S. to ensure market share for their crude oil
- The perceptions of political risk within these countries and its impact on current supplies and future investment activity
- Cooperation between regional producers and OPEC and its impact on regional supplies and prices

The U.S. does not only depend on crude oil to meet our petroleum needs. We import sizable amounts of derivative products. Here the regional markets, and in our case the Atlantic Basin, is even more critical for domestic prices of products. An examination of the dynamics of this market with special reference to Venezuela is also important in assessing our energy security.

Latin America

The important producers in Latin America are Mexico, Venezuela, Brazil, Colombia, and Ecuador. Most of these Latin American countries have long been important exporters of crude oil to the U.S. In fact, a sizable portion of the region's oil sector was developed by U.S. oil companies as early as the 1920s. U.S. company control over the sector in these countries contributed to domestic resource nationalism and colored relations with the U.S. The region has also been a trend setter in global oil politics, from the nationalizations of the Mexican sector in 1938 to Venezuela's lead in the creation of OPEC in the early 1960s.

Oil revenues and the expenditures that they financed profoundly shaped the domestic political economies of the region creating groups of have's and have-nots. The funds were – and still are – one of the key sources of political competition in these countries. Economic and political reform efforts have been enhanced or hampered by production trends at home and oil price trends globally.

The hike in oil prices in the 1970s, along with greater control over the sector that countries gained (notably, Venezuela, Ecuador and Colombia nationalized the local producing assets), greatly boosted government revenues. This was particularly true of Mexico (which had nationalized its sector much earlier) and those in the Andean region of the continent. But higher oil revenues severely distorted the domestic economies, leading to sharply higher and unsustainable spending, generating large budget deficits when prices fell in the mid-1980s and the resort to excessive external debt financing. The debt crisis that the region suffered in the 1980s – the region's "lost decade" – can partly be blamed on the hike in oil prices, mismanagement of higher revenues and ultimately a stagnation or decline in oil production from the region. As the region embraced "neo-liberalism" in the 1990s as a means out of the debt trap, many reformist politicians proposed liberalizing the oil sector to reinvigorate supplies.

A decade later, and after attempts at reforming the sector, the region in general has made little progress in expanding regional crude oil supplies in the aggregate. National oil company officials, labor unions and volatile domestic politics have slowed the entry of foreign investment and hampered the expansion of supplies. There was a brief period at the end of the 1990s when it appeared that these countries would succeed in raising supplies but local politics in general have led to recent setbacks in production. The notable exception is Brazil, where the partially privatized Petrobras used its considerable technological prowess and good indigenous management skills (unshackled from government control) to raise output in a physically challenging sector.

Looking forward, there are grounds for hope that regional supplies will grow for a number of reasons. First, lagging production and in some cases fears of sharply lower output due to under-investment, strikes by oil workers and civil unrest in some countries, have forced governments to redouble efforts to liberalize the sector. Second, with energy security reemerging as a national issue in the U.S. following the attacks on the World Trade Center and the Pentagon, and fears of over-dependence on the Middle East oil in the U.S., Latin American countries see a competitive opportunity in gaining market share in the U.S. Third, democratic politics have brought to fore politicians that want to break the political power of the old entrenched bureaucratic elite and labor leaders and want to forge new alliances with foreign companies as means to increase production. Nonetheless, there is considerable uncertainty about whether foreign oil companies will overcome their perceptions of country risk despite improving contractual terms and greater access to the physical resources.

A closer examination of individual country attempts to raise output produces a more complex picture, but the generalities mentioned above hold true. Local trends in the important Latin American producing countries are the following:

Mexico has enormous potential in both oil and gas, but there are very limited upstream investment opportunities for private firms. The U.S. imported 1.49 million barrels a day from Mexico in 2002 making it the second largest source after Saudi Arabia and ahead of

Canada. Moreover, Mexico's importance lies more in the potential upside that the country's resources suggest rather than current supplies only. Pemex, the national oil company, remains in full control over the oil assets of the country protected by constitutional prohibitions against privatization or other types of participation of foreign oil companies.

There is a growing contradiction between the economic development model Mexico has developed since joining NAFTA and the investment regime existing in the oil sector. This is even more true in the gas sector but that will be discussed below. Countries attempting to integrate into the world economy and spawn an efficient and competitive industrial sector often will find it necessary to privatize their resource sectors to maximize output and lower input costs. Success in building an industrial sector reduces the relative importance of the primary sectors both in terms of employment and government revenues, especially since the government can diversify its tax revenues now that other productive sectors have been created. Mexico has been very successful in attracting foreign investment into its manufacturing sector and has greatly expanded exports of manufactures to the U.S. and other countries. However, because of limited reforms in taxation and labor policy and strong nationalist concerns regarding the hydrocarbon sector, the current government of Vicente Fox has been unable to liberalize the investment framework in both the oil and gas sectors. Whether future governments in Mexico will rectify this anomaly and open up the country to foreign investment (and achieve the production successes seen in the U.S. both for the onshore gas and the deepwater oil sectors) depends on continued growth of the non-oil industry and a political power shift away from vested interests stymieing changes in the hydrocarbon sector. More oil out of Mexico will certainly enhance our "first line of defense" and enhance our energy security.

Venezuela's oil sector is at the very heart of the country's politics and the two go hand in hand. With the virtual bankruptcy of Venezuela in 1992 – a culmination of the extravagant and corrupt economic policies of President Carlos Andres Peres – the region's most important oil producer adopted neo-liberal economic policies to diversify the economy away from oil. The national oil company PDVSA, under the stewardship of Luis Gisti, accelerated its move to expand oil output (partly through inviting foreign oil companies to invest in specific types of oil producing regions) and to increase captive refining capacity overseas (namely through PDVSA's U.S. subsidiary, CITGO) in order to grab market share in the U.S. The country also signaled less cooperation with OPEC in managing the global oil price during the 1990's. Giusti's move to increase oil supplies was designed to position Venezuela as the key supplier to the U.S. But his move proved ill timed given the economic situation within his own country.

The situation came to a head in 1998, when OPEC members in the Persian Gulf refocused their sales effort on the Atlantic Basin after demand collapsed in Asia due to the Asian financial crisis. The rising barrels from the Persian Gulf met rising Venezuelan production and competition. This was one reason that oil prices collapsed in 1998 with what seemed like little prospect for OPEC to manage prices back up to acceptable levels.

Low oil prices triggered a financial collapse in Venezuela and with growing disparities in income over the last several decades and the pain of economic reform falling mainly on the Venezuelan underclass, it was no surprise that in the 1998 elections Hugo Chavez emerged a victor. After his election, Chavez's attitude towards OPEC changed

dramatically, and he promoted cooperation and higher oil prices. As a result, by 1999 Venezuela's cooperation with OPEC led to a strong recovery in oil prices which has been sustained to this day. While this stabilized the economic situation in Venezuela, the growing "class war" between the old and new government elites and some degree of economic mismanagement made the restoration of economic stability temporary.

In early 2003, a large number of employees of PDVSA struck against the Chavez government in solidarity with the opposition. That crippled oil supplies into the Atlantic Basin. It showed the importance of regional supplies and the dislocations caused by the stoppage at a particularly difficult time as the U.S. embarked on a war in the Persian Gulf. Moreover, given the fact that a large number of CITGO's and other U.S. refineries were dedicated to buying Venezuelan crude, switching to other suppliers at short notice proved particularly difficult. Luckily Saudi Arabia was able to make up some of the short fall but not without a temporary sharp increase in world oil prices. With the loss of personnel – Chavez fired 18,000 workers for striking – PDVSA's ability to produce at pre-strike levels continues to be stymied, and even though production has risen, Venezuelan output remains constrained and prospects are growing for future declines without substantial investment, probably from international companies.

The weakening of PDVSA presents a strong opportunity for several players. The government is once again attempting to attract foreign investment in oil its sector. It is hampered by foreign oil company perceptions of country risk (violence), an unfavorable hydrocarbon investment law, and anxiety that the return of the "ancien regime" to power if Chavez is removed from office may disqualify interested investors. An increase in Venezuela's production in the future is uncertain as the domestic political situation of recall referendums, coup attempts and considerable civil strife plays out. However if all the political competitors restrain their actions to within constitutional means, for international companies investing in Venezuela, the perceived risk of operating in that country may be greater than the actual risk.

Political risk also clouds the supply picture of the two other Andean suppliers: Colombia and Ecuador. In Colombia, the oil sector has become enmeshed into the ongoing civil war between guerilla groups and militias and the government. For a while in the 1990s, there was great hope that foreign oil companies would rapidly expand production in Colombia. There was a period of success with the expansion of the Cusiana field. However, the expansion of the Cupiaga field, the next big development proved to be disappointing. Moreover, initial success in expanding production led to more onerous investment terms which along with the violence in the country soured foreign company interest. In fact, guerilla attacks consumed huge resources of the foreign companies as they attempted to maintain production and protect their personnel and their facilities, in particular, the Cano Limon pipeline.

President Uribe is attempting to revive investment in the sector by offering better terms to foreign oil companies. His hope is that with growing oil revenues he will be able to dedicate more resources to fighting the narco-guerrillas and transform the investment environment for foreign oil companies. However, a more forceful stance towards the guerillas has led to more violence and scared off potential investors. As a result, Colombia is caught in a Catch-22 with investors seeking a more stable and peaceful investment environment and the government hoping it will be the savior of the political and economic system of the country.

In Ecuador, a new government hopes to accelerate new investment in oil rich areas and build a new pipeline to boost exports. The OCP pipeline will not only sharply increase export capacity but also enable Ecuador to improve the relative quality of its crude to the market and thereby increase its yield.

Brazil is one of the remarkable success stories in the world oil industry. It has been able to become self sufficient in meeting its domestic oil consumption requirements through its own rapid oil production growth and is on the verge of becoming a net oil exporter. The new oil production has been developed in the very challenging deepwater offshore. Brazil's Petrobras is recognized as a world leader in deepwater technology. Although Brazil exports some gasoline to the U.S., its resource size and its own potential needs will prevent it from being a large net addition to the Atlantic Basin's supplies.

West Africa

In contrast to Latin America, oil supply is surging in West Africa, notably Nigeria, Angola, and Equatorial Guinea. Industry capital and technology is pouring in to explore and produce in the offshore. Production will be rising at an annual average rate of 6% in the next five years, and total production will grow from 3.6 million barrels per day in 2001 to over six million barrels per day by 2007.

The investment environment and oil sector logistics in West Africa are the opposite of those in Russia, a region often described as the key for America's energy security. Terms and conditions are very competitive, which, combined with its high potential for oil, has attracted massive investment from international oil & gas companies – far more industry investment in recent years than Russia, the Caspian or the Middle East. As a result, production is swelling. Unlike the Caspian or Russia, West African oil can be easily loaded and moved anywhere by ship.

However, there are serious concerns about the political stability of the region. Unrest in Nigeria has been in the headlines recently. The problem in West Africa is that governments are weak, unstable and deeply corrupt. Billions of dollars of oil revenues are squandered or stolen. The populations resent their politicians, who live in great wealth, while they exist in poverty. The condition of the people is appalling and political systems are ineffective.

Despite the growing political instability in the region, foreign oil companies have flocked to the region partly because of the location of the assets. The growth in oil production in the region has occurred "offshore". Investors consider this safer because they are not located near or among local communities, and as a result, these companies seem confident that they will avoid the problems encountered in onshore areas such the Niger Delta area of Nigeria. In the Niger Delta, local communities are using a variety of methods to extract oil rents directly from the foreign operating companies to compensate for the lack of services provided by governments. Although companies have attempted to improve local community relations through a variety of means including development and aid projects in association with non-governmental organizations, the problems they face with local political violence continues almost unabated. The companies remain confident, however, that they will not encounter this from the offshore sector. To some extent this confidence

may be misplaced as political activists learn new means of pressuring the companies and reach their facilities offshore.

This is true at least in Nigeria, where some offshore facilities have already been a target, meaning the potential for production disruption exists for both onshore and offshore operations. Nigeria is set to see its production capacity to increase by 700,000 b/d by 2007, with much of the ramp up coming from deepwater blocks miles offshore. This will mitigate some political risk for companies and fear of production disruptions for global oil markets. The new production will target the U.S. market as well as Europe and Asia.

In Angola and Equatorial Guinea, the threat of production disruptions is less pronounced. Both countries' production is largely offshore, and its governments are stable – even with a civil war in Angola. But these governments face increasing pressure for revenue distribution beyond the elite structures. Production and oil revenues are increasing fast in the next five years, and their populations want to see the benefits. This in itself is not too terrible a challenge, but Angola and Equatorial Guinea both face possible succession issues in the next few years – and its political leadership could be less stable than it has been over the past decades.

With the cease fire in 2002, the ruling MPLA government in Angola no longer has the civil war with UNITA rebels as its raison d'etre. Although the government maintains strong control right now, the country is preparing for the first post-peace elections in 2005. The country's production will double to 1.8 mb/d by 2007 from 0.9 million b/d now, largely due to a handful of deepwater projects coming onstream.

Likewise, in Equatorial Guinea, President Obiang has maintained strong control since 1979 by preventing power centers from emerging. But at some point Obiang will have to cede power, making way for individuals and groups to jockey for power. Equatorial Guinea will see its oil production rise to 340,000 b/d from less than 200,000 b/d now. This increase in oil production, combined with its LNG plans, deepens the country's dependency on the hydrocarbon sector for revenues.

Overall, West Africa will add diversity to oil markets in the next five years, with most of the increase coming from the offshore areas, where the political instability of the regime will not matter much. However, oil companies operating in these countries will be pressured to increase the transparency of their dealings with local governments.

The long term stability of supply may be effected by our ability to combat corruption, which is fundamental to governance. Should the appalling levels of mismanagement and theft continue there is a possibility of civil unrest, if not actual dissolution, particularly in Nigeria.

NATURAL GAS SUPPLIES FROM LATIN AMERICA AND WEST AFRICA

Latin America and West Africa could prove critical as the "first line of defense" in the area of natural gas. As noted above, the looming crisis in terms of energy supplies in this country is more related to faltering domestic gas supplies being outstripped by demand rather than availability or price of crude oil. Increasing imports of natural gas is critical and depends on the development of foreign resources and the ability to get the resources to the U.S. market. Canada is critical in this regard. PFC Energy believes that although Canada is an important supplier of gas to the U.S., further supplies are not assured

because of issues related to the development of Canadian tar sands and unconventional oil and the construction of major pipelines into the U.S.

Latin American suppliers, particularly from three countries – Mexico, Venezuela and Trinidad & Tobago – will play a very important role in supplying gas to the U.S. Mexico has a dual role to play. For one, it has to reform and open its gas sector to foreign investment. The fact that it has not is another sign of the deep contradiction between its economic planning and energy policy. To reiterate: a country that needs cheap and efficient supplies cannot run an energy policy that retards development of its oil and gas sector and actually leads to the importation of expensive gas from its North American neighbor. When this is rectified, Mexican industry will benefit from cheap and efficient supplies of this essential industrial input, and the energy industry can capture rents north of the border far in excess of what it currently earns. The second role Mexico can play is to be the transshipment point for liquefied natural gas (LNG) supplies from other Latin American countries or even other regions to the U.S. Because U.S. environmental and local policies obstruct the construction of LNG import facilities within the U.S., Mexico could provide the location of these regas terminals and then the gas could be shipped by pipeline to the U.S.

Venezuela is in the early stages of becoming an important exporter of gas to the U.S. After delaying LNG export projects for virtually a decade, the government's acute financial needs have pushed it into negotiating deals with foreign companies. The gas will come from two areas: North Paria and the Deltana Platform. The gas will be liquefied onshore or sent to Trinidad for liquefaction. Regas facilities will have to be found in Mexico, the Caribbean or the U.S.

The real success story in terms of regional gas has been Trinidad and Tobago. A U.S. company, Amoco developed the assets. Amoco, which merged with BP in 1999, built on a trend of falling costs in the LNG industry to achieve new benchmarks in competitively priced LNG. This gas from Trinidad's Atlantic LNG competes in the U.S. market and has been arriving in growing volumes at the existing U.S. import terminals. These LNG imports can play a key role in meeting peak demand in the Northeast. The expansion of Trinidad's LNG facility has fueled overall growth in Atlantic basin LNG trade and benefits the U.S. by contributing to a more robust LNG marketplace.

There is additional potential LNG supply from Peru and Bolivia, but these are not near-term solutions. Plans for supply of LNG from Peru and Bolivia face significant hurdles to market and are considered high risk endeavors at this time. While possible volumes for export exceed 25 tcf, internal and cross border political problems continue to stymie investment decisions and have caused several iterations in shareholder structures in both the Camisea (Peru) and Pacific LNG (Bolivia) projects. It is unlikely that these issues will be resolved to the satisfaction of international buyers who will be looking for reliable supply into the market place in the near term, which will mean that other more proven projects in the Pacific Basin will supply the U.S. and could force the west coast Latin American projects out to the latter half of the decade.

West Africa will take on additional importance to the U.S. owing to the projections of growing demand for LNG into the U.S. market. Nigeria holds more than 124 tcf of proven gas reserves. LNG projects in Nigeria and those proposed for Angola are further driven by the push to end the gas-flaring that accompanies oil production in these countries. The

U.S. has been receiving Nigerian LNG since 2000 and could become the market for proposed additional LNG from Nigeria, Angola and Equatorial Guinea.

Even with strike issues that have impacted the oil sector out of West Africa, the natural gas export sector has been left unscathed because most of the projects affiliated with export also support the domestic market and the existing LNG facilities are not located near the most troubled areas. This does not mean that these projects are immune to rampant corruption or civil unrest, just that these facilities have so far been less vulnerable to disruptions than oil.

CONCLUSION

A key point to be made in conclusion is that the Atlantic Basin contains large sources of oil and gas. However, fractured and unstable political systems increase perceptions of country risk among foreign investors leading to slower development of these supplies. Moreover, local impediments – lack of funds, national oil company or bureaucratic blockages – stymie the efficient development of supplies.

The U.S. must do the following:

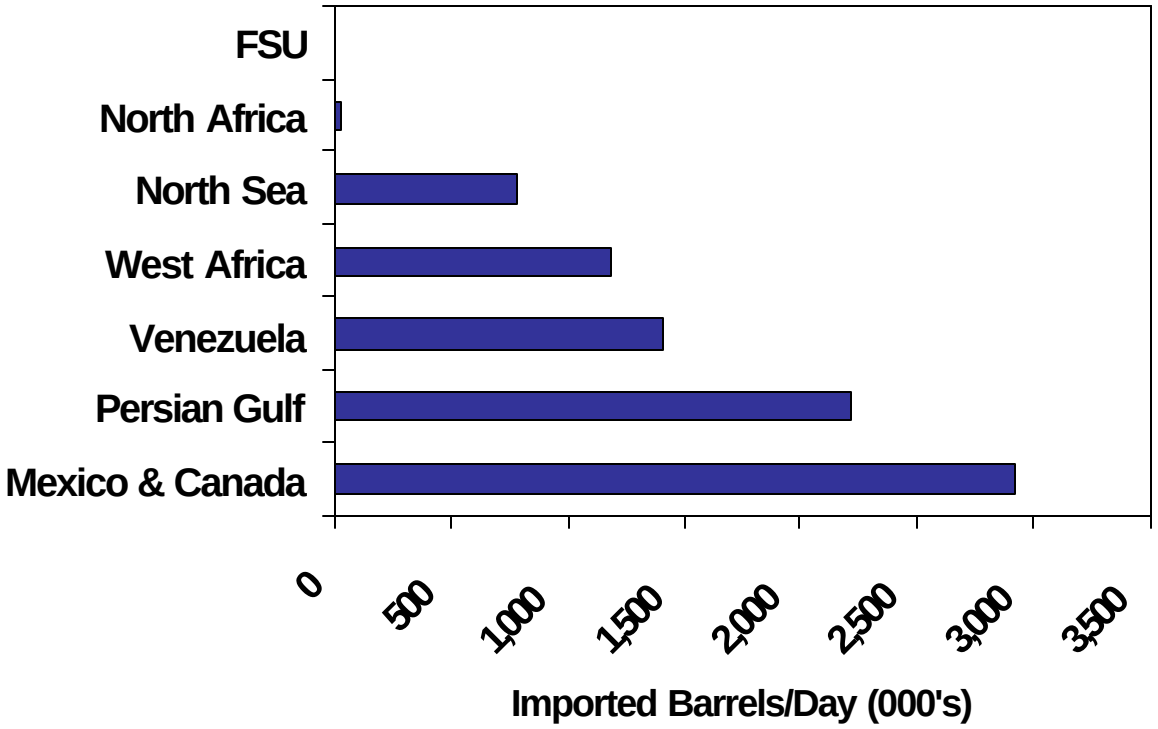
With natural gas, the U.S. will not have affordable gas for all its needs, from home heating to industrial production, unless new sources are able to reach the market. The most economic solution for the U.S. will be found when both LNG and pipeline imports have access to our market.

Today, permitting of both LNG infrastructure and gas pipelines remains a significant obstacle to expanding gas supply. The federal permit process for onshore LNG infrastructure should be driven by deadlines (both for FERC and the applicant) so that the review is completed in a timely, resource-efficient manner. Federal authorities need the political mandate and resources to coordinate better with authorities issuing state and local permits. In addition, politicians and public policymakers should help to make the case that importing LNG is safe. The LNG industry has an impeccable safety record, but if misconceptions about this issue persist, securing reliable natural gas for the U.S. will be all the more difficult.

Political leadership has the opportunity and the need to re-examine the process and laws by which environmental choices are traded off against energy choices to make indirect decisions about the future.

In conclusion, there are limited policy options for energy security and oil. Fighting corruption will lead to greater stability in producing countries. It is on natural gas however, that Congress and the Administration, as well as the state and local governments, must focus their attention. Foreign gas supplies are ample but U.S. infrastructure is very constrained. The permitting process is often disorganized and unfocused. This is a situation which Congress can and should rectify.

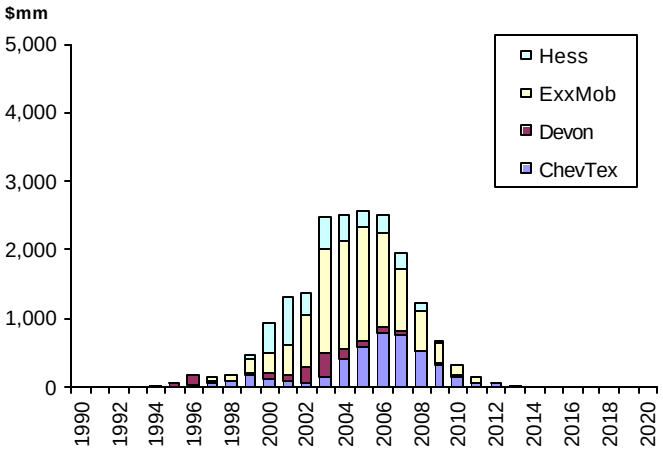
Summary of 2002 U.S. Oil Imports



West Africa – Modeled Foreign Investment Required to Develop New Deepwater Reserves

The shallow water reserve base of West Africa is mature and on a regional basis peaking in productive capacity – capacity growth will be driven by new deepwater reserves and $billions of investment from European and American Oil Companies

American Companies



European Companies