



THE JAMES A. BAKER III
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THE OUTLOOK FOR FUTURE OIL SUPPLY FROM THE
MIDDLE EAST AND PRICE IMPLICATIONS

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The Outlook for Future Oil Supply from the Middle East and Price Implications

In 1996, the James A. Baker III Institute for Public Policy published a study entitled: “The Political, Economic, Social, Cultural, and Religious Trends in the Middle East and the Gulf and Their Impact on Energy Supply, Security and Pricing” (available at www.rice.edu/energy). The 1996 report warned that the threat to energy security might come from internal, rather than external factors, inside the Persian Gulf region and that the U.S. and its allies needed to look “beyond military issues to the emerging situations for economic, political, social, and cultural change inside the countries of the Persian Gulf, with special consideration given to the role of religious groups...” The study called on the U.S. to support governments of the Middle East region in promoting political reform, privatization, and broader participation in the economic system to diminish the manifestations of social injustice that facilitate the rise of extremism. It also recommended that the U.S. intensify its central role in advancing the Arab-Israeli peace process.

Today, almost a decade later, the same issues loom large. U.S. President George W. Bush has made democracy promotion a major tenet of administration policy, and the U.S. is now putting stronger diplomatic pressure on Middle Eastern governments to move ahead with reform and democratization. However, this is an important long term policy goal, and it is hard to predict what near term impact it might have for stabilizing oil flows. Unlike 1995 when the price of oil was still at moderate levels and OPEC had spare capacity of over 3 million barrels a day, the international community is now facing the most difficult energy market it has seen in two decades.

The Organization of Petroleum Exporting Countries (OPEC) and other commentators have blamed excessive oil price volatility in current markets on speculators and financial players. There is no question that there has been more speculative activity in oil, gas, and other commodities over the past few years. However, it is important to note that increases in the positions of non-commercial participants in NYMEX energy futures and options have been both as sellers and as buyers over the past five years, throwing cold water on the argument that recent price run-ups are solely the result of activities of financial players and do not reflect market fundamentals.

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In fact, the U.S. Commodity Futures Trading Commission issued a report last spring that concluded that commercial hedgers rather than speculators have the largest impact on price direction and change and are the major cause of price volatility. Commercial players such as airlines, utilities, and other consuming industrial buyers seem to show the most interest in participating in outer month futures while oil and gas producers have been less active trying to lock in future prices. The result has been bidding up the forward curve until it has eventually attracted the interest of speculative, financial players, producing a rising long price for oil.

But to focus the full attention on price trends on the players on the NYMEX futures markets is to miss the basic driver of oil prices today: the acute capacity shortages evident across markets and critical aspects of the energy supply chain.

The most important capacity shortage, both now and for the foreseeable future, comes within OPEC. OPEC is currently operating at 99% of its total crude oil productive capacity versus 90% in 2001 and 80% just prior to Iraq's invasion of Kuwait in 1990. Spare production capacity inside OPEC is limited to just a handful of countries, with the majority of capability focused in Saudi Arabia. The Kingdom probably has little more than an additional half a million barrels a day that it could bring onto markets. This oil is mostly of a heavy, low quality and cannot be utilized efficiently in Asia and Europe, if at all.

This razor thin level of spare capacity is a totally new situation. The current scarcity in capacity is more severe than past crisis in 1973, 1979, and 1990, when ample spare production capacity and larger commercial oil inventories partially countered sudden supply disruptions. Our global energy situation represents a new and unique challenge that will not be easily overcome.

Given today's extreme shortage of spare capacity in OPEC, a sudden imbalance in the international supply picture –via an accident or major disruption—will generate larger and more rapid price responses now than in the past. This situation is a problem for all importers alike no matter the degree of success of their national oil companies or the level of their equity oil holdings. In the globalized, commoditized world of oil, no single consuming country can insulate itself fully from a global oil price shock, no matter its relative degree of self-sufficiency.

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Previously, the industrialized West counted on the countries of the Persian Gulf to make the sizable investments needed to maintain enough surplus capacity to form a cushion against disruptions elsewhere in the world. But today's persistently tight crude oil markets highlight the concentration of spare capacity in Saudi Arabia and the vulnerability of the global economy to domestic conditions there. The Persian Gulf countries (and OPEC in general) are not investing adequate amounts to meet the rise in oil demand in the United States, China and emerging economies in Asia and elsewhere.

Forecasts that OPEC will have to increase capacity by an additional 20 or 25 million barrels a day of its crude oil in the coming twenty years to meet rising demand runs against historical experience. OPEC capacity has fallen, not increased, over the past twenty five years from 38.76 million b/d in 1979 to roughly 31 million barrels a day currently.

In the late 1980s, OPEC had planned capacity expansions to a total of 32.95 million barrels a day targeted for 1995, but by early 1997, OPEC capacity had reached only 29 million barrels a day. Iran, Libya and Iraq all failed to achieve production targets due to international sanctions policy.¹ But other factors have also prevented OPEC's national oil companies from expanding capacity over the past decade. Venezuela's planned capacity expansion was derailed following a change of government and related civil unrest. Regional/ethnic conflict, civil unrest and overall economic pressures constrained Nigeria from increasing capacity as planned in the 1990s while domestic politics stood in the way of capacity expansion in Kuwait despite ambitious industry plans.

OPEC's sudden ability and drive to protect and, when possible, to increase their revenues gained momentum after the 1998 oil price collapse. With globalization proceeding, OPEC became more concerned about its own economic performance, which lagged during the 1990s relative to other nations. By the end of the last decade, OPEC rejected the notion that low oil prices were good for everyone. For key OPEC nations, where oil revenues were critical to fuel government budgets, the impact of falling oil prices was perceived as far greater than the impact of higher prices upon most oil importing countries, whose oil import bills were only a fraction of their total trade. Oil

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importing countries gained this advantage partly because of policies taken in the 1970s and 1980s to diversify to other fuels or to tax oil use to hold down demand growth for oil.

Key OPEC members began to see low oil prices as a sort of subsidy for growth for other countries. OPEC therefore decided to shift the burden of price adjustment back onto the oil importing community.

Several political factors emerged in the late 1990s that facilitated this OPEC collaboration to shift the burden of oil price adjustments back to the oil consuming world.ⁱⁱ These included: political changes at the highest levels inside several key OPEC countries; a rise in democratization, freedom of the press and populist politics debate inside OPEC countries that was accompanied by rising tide of anti-Americanism, thwarting accommodating oil pricing policies; rapidly rising populations and economic stagnation that have augmented revenue pressures; and lack of investment in infrastructure and oil fields over the years due to tight state treasuries and rising social demands.

In Venezuela, Nigeria and Indonesia, for example, attitudes against accommodating the West with moderate oil prices are fed by years of corruption in the high ranks of government and long-standing social and economic stratification in society.

In the Persian Gulf, economic hardship, anti-Americanism related to the Arab-Israeli conflict, and the resource patrimony-style propaganda of Iraq's former Baathist regime and other radical governments have propelled demands for higher oil prices from the Arab "street." Saddam Hussein described the Gulf War as a struggle over a U.S. conspiracy to deprive the Iraqi people and other Arab nationals of the right to garner "fair" value for their national patrimony –oil resources.ⁱⁱⁱ Al-Qaeda leader Osama Bin Laden has also agitated the population to seek higher rents for oil. In his letter to the American people, he summed up popular sentiment on the subject:

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“You steal our wealth and oil at paltry prices because of your international influence and military threats. This theft is indeed the biggest theft ever witnessed by mankind in the history of the world.”

In an element of his ideology that is extremely popular in the region, Bin Laden has made it clear that he believes the Gulf countries should be charging \$125/bbl for their oil, ignoring factors of price elasticity of demand and potential substitution. Bin Laden has called on his followers to attack energy installations.

Anti-Americanism is a growing political force in the Muslim world. It is becoming a major influence in domestic politics, affecting regional leaders' ability to cooperate with the U.S. and U.S. companies in many areas, especially energy. Surveys show that anti-American attitudes, while subsiding, are still pervasive. According to a 2004 survey by the Pew Research Center for the People and the Press:

“In the predominantly Muslim countries surveyed, anger toward the United States remains pervasive, although the level of hatred has eased somewhat and support for the war on terrorism has inched up. Osama bin Laden, however, is viewed favorably by large percentages in Pakistan (65%), Jordan (55%) and Morocco (45%). Even in Turkey, where bin Laden is highly unpopular, as many as 31% say that suicide attacks against Americans and other Westerners in Iraq are justifiable. Majorities in all four Muslim nations surveyed doubt the sincerity of the war on terrorism. Instead, most say it is an effort to *control Mideast oil* and to dominate the world.”^{iv}

Some observers have made the argument that OPEC, now in the so-called driver's seat because of its current lack of spare capacity, is in a better position to prevent surplus capacity from reemerging and therefore will assert itself more forcefully in markets over time, choosing actively to restrict expansion of capacity. According to econometric studies by New York University professor Dermot Gately, “the issue is whether OPEC countries would have sufficient incentive to increase their production as rapidly as projected by DOE and IEA --not whether the demand for OPEC oil will rise so rapidly.”^v Gately concludes after studying the revenue gains of a wide variety of zero-sum scenarios that OPEC has no incentive to increase its output as rapidly

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as demand because the “faster it increases its market share above its current level (37%), the lower will be its likely payoff.” Gately notes that the obstacles to aggressive expansion by OPEC are “substantial” and concludes that a doubling of OPEC capacity is unlikely. This conclusion seems well grounded based on reasons of historical experience and also for political reasons as discussed above. But OPEC’s failure to expand its capacity is, however, not only the result of a binding strategy. A second critical factor has to do with the internal structures of the oil industry in most large producing OPEC countries. For almost all of them, reserves were discovered and developed by international oil companies (IOCs), not by the national oil companies (NOCs) that came to dominate the upstream after the 1970s. With the exception of Saudi Aramco, no national oil company in any OPEC country has a good track record in the exploration and development business. The fact is that within OPEC, it has been difficult for national oil companies to muster the capital, the technology and the human resource capabilities required to find and develop significant volumes of oil. What’s more, when it comes to capital, short-term financial requirements for managing the economy and maintaining public order have been so great as to limit the amount of capital the national oil companies have been permitted to access for development purposes.

There are a few exceptions. Given the limitations on their own NOCs, some of the smaller OPEC countries have fully embraced IOC investment, and the results of this reopening are beginning to show. Algeria is in the midst of a major drive to expand capacity. Algeria has increased its conventional crude oil output from 800,000 b/d four years ago to 1.35-mmb/d in mid-2005. Nigeria, totally dependent on IOC investment, is expecting its output to grow by 100,000 b/d per year, between now and 2007, if domestic political challenges can be overcome.^{vi} New investments in Libya also hold some promise.

Saudi Arabia, under pressure to regain some market control, has begun expanding several oil fields for the first time in more than a decade. The Qatif field has added 500,000 b/d of Arab Light capacity in 2004-2005 while work at the Khurais field will eventually contribute up to an additional 1 million b/d of capacity by 2009 in addition to some new flows from the Haradh section of the Ghawar field. Small increased flows in and around Central Arabia are also possible. But other older Saudi fields also face declines, leaving open the possibility that new

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investments will be partially offset by reductions in fields such as Ghawar and Zuluf and Safaniyah.

While Saudi Arabia has announced plans to invest \$50 billion in its energy sector to increase production capacity to 12.5 million barrels a day by 2009 and to reach 15 million b/d by 2025, it remains unclear whether the pace of that investment will be sufficient to meet global requirements.

Plans for a first tranche of \$14 billion in investments by 2009—to cover expansion in the Haradh section of the Ghawar field; expansion in the Khursaniyah field; expansion in the Shayba field and new major investment in the Khoreis field—may not be enough to raise capacity to over 12 million barrels a day as promised. Some insiders are suggesting that these investments are unlikely to result in boosting capacity much past the 11 million b/d level, given the 6-7% annual decline being experienced in existing Saudi fields.

Other large reserve OPEC countries such as Iran, Venezuela, and Iraq currently lack the organizational capability and financial capital to replace Saudi Arabia as an engine for oil supply growth. While Iraq is sitting on some of the largest oil reserves in the world, it is producing less than 1.9-mmb/d because of insurgency attacks on critical infrastructure, corruption, and other logistical challenges currently facing the country's oil industry.

Iraq had hoped to restore its pre-1990, pre-Gulf War capacity of 3.5-mmb/d before 2006, but this is looking increasingly unlikely given the dire political situation in the country.

Over the next several years, the newly constituted Government of Iraq will need to make a large number of critical decisions about the future of the oil industry, the role of oil revenues in funding other national reconstruction efforts, and defining the role of the national oil company entity itself in the oil industry's restructuring.

Improved national oil company management will have to serve as a basis for any program to expand production; however, such organizational planning may be thwarted by domestic politics.

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Issues related to the role of an Iraqi national oil company will have to be tackled head on. Some governments have opted to use their NOCs as a tool to achieve wider policy objectives, such as employment, community services, revenue generation, or economic diversification. In some cases, decisions regarding the utilization of the NOC's resources have been made on political rather than economic grounds. Although it may be judged to be beneficial to the nation as a whole, additional costs and non-core responsibilities that might be imposed on the emerging new Iraqi national oil company would affect its profitability and ability to build core functions of oil production capacity management and expansion.

Over the past year, the Iraqi oil industry has had severe difficulties holding the line on maintaining, much less expanding, production capacity. The industry faces fundamental challenges, including difficulties identifying funds needed to make required repairs and enhancements. Its future remains cloudy, as it faces problems coping with a deteriorating underlying condition of key fields as well as repeated attacks on surface facilities and personnel.

The situation in Iraq, Saudi Arabia, Venezuela, and other key OPEC nations means that a policy of relying on Saudi Arabia and OPEC to balance market supply with rising demand will not be an effective choice for major consuming countries like the U.S. or Japan.

At the same time as OPEC is dragging its feet, privately held international oil companies are experiencing increasing difficulty replacing reserves, given the wide number of prolific basins that are closed off to foreign investment both inside OPEC countries and other important producing countries such as Mexico and Russia. The reorganization of Russia's energy industry by the Kremlin is also slowing down progress on major export projects, like important oil and gas pipeline export programs to Asia. Russian oil production averaged 9 million barrels a day in May 2005, up only 200,000 barrels a day from a year earlier. By contrast, Russian production gained more than 700,000 barrels a day between 2003 and 2004. New oil fields in Brazil, Angola, the U.S. Gulf of Mexico deepwater, and Australia have helped offset other declines in non-OPEC production but the rate of gain in non-OPEC production is flagging this year despite incredibly high oil prices, reflecting the geological limitations and bureaucratic barriers in the many attractive areas that still remain open for foreign investment.

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This situation is forcing policy-makers in the U.S., South Korea, China, and Japan to consider new options to ensure energy security for their citizens.

But the problem is not restricted to oil field infrastructure alone. World refining capacity is also close to full utilization, with key regions such as the U.S., EU and China currently operating at above 90% utilization, compared to 75% to 85% in 1990. World demand for refined products averaged around 81 million barrels a day in the fourth quarter of 2004 against world refining capacity of 84 million barrels a day (in which 4 million barrels a day of Russian capacity has no commercial outlet), highlighting the importance of product inventory buildups to balance supply and demand. Pipeline constraints in key regions such as North America and Russia also impact flow of oil and gas to key demand centers. This operation of the energy system at levels so close to capacity limitations means that unexpected outages can quickly lead to price spikes and even regional physical shortages.

Popular wisdom in the mid-1990s held that market forces could accommodate any disruption in oil supplies, no matter its size or duration. But it is a huge leap of faith to assume that since markets functioned in 1990, they will be able to cope with a future crisis in today's changing political backdrop.

The tenuous situation of international oil markets sits atop the growing risk of political instability in many major oil producing regions.

Political and economic reform in the Middle East faces formidable challenges. A huge gap exists between the agenda of the "radical Islamists" and the existing "liberalized autocracies" – one that cannot be easily bridged. Many countries in the Middle East have gravitated into liberalized autocracy for concrete reasons having to do with both historical experience and current societal, cultural and political realities. The region as a whole faces severe social and economic problems, as governments have had difficulty putting policies in place that could provide adequate resources and services for growing and restive younger populations.

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Saudi Arabia faces particularly grave challenges. The Saudi security budget was estimated to total more than \$8 billion in 2004, and the kingdom has stepped up its attacks on internal domestic terrorist cells, making real headway in eliminating domestic branches of Al-Qaeda. Between 2002 and 2004, Saudi Arabia spent a \$1.2 billion to increase security at all of its energy facilities. It is estimated that between 25,000 and 30,000 troops currently protect the kingdom's oil infrastructure.

Saudi Arabia, however, faces daunting economic and social challenges. In 1982, the kingdom's oil revenues of over \$80 billion represented roughly \$30,000 per capita. By 2003, this same revenue only constituted \$9,300 per capita as the Saudi population has risen dramatically over the same period to over 22 million, from 7 million in the early 1980s. By 2025, analysts are predicting that the Saudi population could top 40 million, leaving the kingdom hard pressed to create the necessary jobs and income to support its citizens. The oil sector employs only 2% of the total Saudi labor force at present.

The kinds of economic challenges facing Saudi Arabia are common throughout the Middle East and North Africa. The World Bank predicts that the region will need over 100 million new jobs within the next twenty years if it is to absorb a growing youthful population.

Iraq will face similar issues even if it successfully repairs its oil industry. Iraqi oil revenues averaged about \$18.2 billion in 2004 against estimates that the country will need to invest over \$100 billion in war reconstruction over the coming decades. The U.S. will need to prevail in stabilizing Iraq, and this is going to take considerable donor aid. It is critical that Iraq emerge as a unified state with an elected representative government that provides both economic and physical security so its people can live in peace. But we are still far from that goal.

Beyond the ongoing economic and political challenges facing the Persian Gulf, the region also must address the issue of proliferation of weapons of mass destruction. The outcome of recent elections in Iran is raising serious questions in many minds concerning the prospects for a negotiated settlement on the nuclear issue. In considering how to deal with Iran on its nuclear

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policy, it cannot be forgotten that Tehran has geographical leverage over the flows of oil via the Strait of Hormuz, and Iran's pursuit of nuclear capability must be seen against this light.

Maintaining the free flow of oil through the Strait of Hormuz is of vital strategic importance to the world economy and to the United States and its Asian allies. There have been several challenges to the freedom of navigation in the Strait of Hormuz and adjacent territories over the last several decades. The most prolonged threat to navigation in the Persian Gulf in recent years arose during the eight year war between Iraq and Iran. The U.S. responded to the challenge of attacks on Persian Gulf shipping by deploying a fleet of frigates, destroyers and minesweepers in the region. More recently in April 2004, U.S. Navy vessels repelled attacks by terrorist suicide bombers on both of Iraq's offshore oil shipping terminals. Shippers from the Persian Gulf region are again asking the US military to provide naval escorts.

In addition to the many political challenges that jeopardize secure energy flow from the Middle East, other oil producing regions have experienced turmoil to a degree that could interrupt oil exports. Unrest in Venezuela, Nigeria, Bolivia, and the Caspian Basin, to name a few places of concern, is yet another risk to oil markets that must be overcome.

Energy is not just a critical national concern to the United States but also a global one. Some Asian countries, most notably China, have responded to Asia's emerging energy security challenges by seeking out bilateral energy relationships with large oil exporting countries. By doing so, Asian powers ignore the instructive, historical experiences of the West and Japan in managing oil crises and energy security. Hard lessons have been learnt in the West about the ineffectiveness of strategic bilateral relationships with key oil exporting countries to safeguard energy supply.

Not only is China's level of equity oil ownership relatively small compared to its growing import needs, but also ownership of reserves does not alter the impacts of a global change in oil prices. By hoarding oil for one's own use, equity owners would miss the chance to sell at the higher price, which would effectively cost them the same as if they bought oil on the open market. Moreover, many host oil producing countries might be tempted during a major market

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failure to take a larger share of rents from foreign investors, leaving less (or perhaps no) economic advantage to owning oil abroad. Equity oil itself can also be disrupted, leaving equity oil owners to scramble into spot markets in the same manner as those who didn't invest to have equity oil. Bilateral sales agreements are even less effective—as history has shown—because suppliers are likely to sell their oil to the highest bidder during a period of market crisis or a supply emergency

In the almost three decades since the 1973 Arab oil embargo, countries such as the US, France, and the UK have realized the limitations of bilateral supply arrangements, even where such bilateral relations extended to extensive arms shipments and other forms of military cooperation. By contrast, the impact of the IEA emergency stocks program has been quite successful, not only in calming markets, such as seen in the early days of the US military campaign to remove Iraq from Kuwait in 1991, but also in serving as a deterrent to oil producer groups to exercise monopoly power in times of market crises, or to impose politically-driven oil supply restrictions.

OECD experience has shown that multinational initiatives that group consumer nations together have produced the best results, especially where stockpiling and crisis management are concerned. This is the direction that U.S. and Japanese oil diplomacy must take: to foster multinational consumer cooperation initiatives globally, especially in Asia. Enhanced energy regional export networks, joint research and technology transfer in usage efficiency, and joint emergency preparedness could be among the end results of cooperation on energy policy among large consuming nations in the West and Asia. Our focus needs to be on building bridges for global cooperation to deal with energy issues collaboratively and to avoid potentially dangerous bilateral rivalry for supply, which could lead to conflict and market failure.

The U.S. and other industrial countries can do a great deal more to enhance the institutional mechanisms that favor markets over political intervention by oil producers. America can play an important leadership role by looking seriously at ways to harmonize the rules of global oil trade and investment with the rules governing trade in manufactures and services. Liberalization and open access for investment in all international energy resources would mean their timely development rather than today's worrisome delays.

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Cooperative international research and development must also be a major vehicle in promoting effective energy policy and laying the groundwork for technology breakthroughs in automotive technologies as well as clean, distributed energy sources that can benefit rural populations in the developing world. Such research should be aimed at revolutionizing advances in solar-derived fuel, wind, clean coal, hydrogen, fuel cells and batteries and a new electrical energy grid that can tie all these power sources together. Such a research effort, led by the industrialized world, would yield benefits for all peoples both in reducing energy poverty and promoting global environmental protection.

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ⁱ Iran had aimed to reach 4 million b/d, Libya 1.6 million b/d and Iraq 4.5 million barrels a day, but were constrained at 3.8 million b/d, 1.4 million b/d and 1.2 million b/d respectively. See Political, Economic, Social, Cultural, and Religious Trends in the Middle East and the Gulf and Their Impact on Energy Supply, Security and Pricing, op cit

ⁱⁱ From Geopolitics of Energy, op cit

ⁱⁱⁱ For discussion of the Gulf Arab pricing policies to keep pricing artificially low, see F. Gregory Gause, "Iraq's Decision to Go to War" Middle East Journal, Winter 2002 (Volume 56, No. 1) and Lawrence Freedman and Efraim Karsh, The Gulf Conflict 1990-1991 Princeton University Press, Princeton, 1993) as well as The Washington Post, January 15 1991 which described Iraq's dissatisfaction with the Gulf Arab policy of keeping oil prices low. Also, William Quandt, Saudi Arabia in the 1980s: Foreign Policy, Security and Oil, The Brookings Institution, Washington DC, 1981

^{iv} Report is available at <http://people-press.org/>

^v Gately, Dermot, "Opec's incentive for faster output growth" The Energy Journal, Vol. 25, No. 2, 2004

^{vi} Deutsche Bank Global Energy Wire, November 24, 2003, "Driving Force: The Growing IOC Role in OPEC"