THE HYDROGEN BLOCKADE

The oil and battery industries have spent over $73 Billion on disinformation and lobby campaigns to keep it from happening.

Kleiner Perkins, Elon Musk and a cartel of Silicon Valley VC's that control the battery market, will stop at nothing to sabotage it.

The most powerful thing in the galaxy, our Sun, is powered by it.

You can get it from any organic material, or body of water, anywhere, in any country, any place on Earth.

If the word is even mentioned once in any blog, anywhere on the internet, it triggers alerts in hundreds of hired "Meat Puppet" farms where assigned blog trolls rush to the blog to cut-and-paste their assigned disinformation text in order to create doubt and concerns about it.

Unlike the competing solutions, It leaves no toxic waste, can't cause cancer and turns into something that can saves lives after you use it.

The new Feature Film: **"MERCHANTS OF DOUBT",** reveals the names and tactics behind the disinformation campaign against it.

Secretary of Energy: Steven Chu held financial interests in the competing technologies and actively sabotaged every effort for it under his regime. 15 U.S. Senators worked with him, on delaying it, because they also held stock in the competing effort.

Almost every taxpayer cash award winner that Steven Chu's Dept. of Energy gave money to had an investment in the War in Afghanistan and the lithium, indium and other minerals from Afghanistan, which they planned to use in their "Cleantech" companies to obsolete this competing solution. Some say that was an "organized crime"-level corruption effort to claim to do a "feel-good" thing in order to get free taxpayer cash without a big ruckus.

It has hundreds of technical, national security, job, economic and infrastructure advantages over any competing solution.

People have been killed over it.

It affects hundreds of trillions of dollars of global markets.

If the West loses control of the Middle East: IT WILL BECOME THE SINGLE MOST IMPORTANT THING ON EARTH!

What is it?

HYDROGEN!

By spending billions of dollars trying to kill hydrogen, and the people around it, they are killing families, children, economies and the future of the world

HYDROGEN POLITICS: Here is how it works:

While all of the falsified points against hydrogen have been countered in numerous papers, such as: www.rmi.org/images/other/Energy/E03-05_20HydrogenMyths.pdf and at: http://www.rmi.org/sitepages/pid171.php#LibFuelCellsHydro

It is important to consider the following:

The oil and auto industry consider the battery industry to be a failed technology that can never be made or delivered in the form factor, price point, range or efficiency that they care about. So they got together and used "layered anti-evangelism" to manipulate the battery industry.

"Layered anti-evangelism" is an intelligence agency third world manipulation device that works like this:

1. Select the target: In this case it is hydrogen fuel cells, which have been demonstrated to beat batteries on every business front.

2. Select your internal agents. In this case lobbyists and "writers" that are paid by the oil and auto industry.

3. Have the agents contact and talk to the "sheep". In this case the sheep are the writers for battery industry trades and heads of battery lobby or support organizations.

4. Have the agents convince the sheep via skewed data provision. In this case selected reports were written and then shown to the sheep to convince the sheep that hydrogen fuels cells would steal their funding, put them out of business and that the only source of hydrogen was from the "evil oil companies".

So you have battery evangelists who are anti-hydrogen sheep such as Ulf Bossel of the European Fuel Cell Forum, Alec Brooks, EV World Sam Thurber and a few ex-CIA directors, like James Woolsey . All of whom get paid to nay-say it by their investment conduits.

Yet for every manipulated argument they come up with, they are shot down by hundreds of sites with facts, ie: http://www.rmi.org/sitepages/pid985.php

WHY? Because you can make hydrogen at home and the ability to do it fast, cheap and clean is coming 40 times faster than they thought.

This happened, using the same process, to:

1.) Electric light rail in America (US Vs. National City Lines, 334 US 573)

2.) The EV1 (Movie: Who killed the electric car) Etc.

The interventions of these 'doubters' fall into a number of clear categories which I'll summarise as:

1 "You can't succeed because no-one has ever succeeded at this (sports car making / battery-power / taking on the majors, etc etc) before". - May I commend to everyone Dava Sobel's wonderful (and short!) book, "Longitude", which offers a perfect map of the tendency of government and the scientific establishment collude to reject true innovation. This effect can only be overcome when a tipping-point of perceived popular utility is reached, at which point the establishment suddenly has a bout of collective amnesia about their earlier denials. (Same story many times over, historically, of course - from Gallileo onwards.)

2 "It's inefficient to carry around". Rather as it's inefficient to carry around a full tank of gas, perhaps? Or to carry around a SUV chassis which itself weighs a ton or more? (Come on, Detroit, you can find a better argument than that, surely?)

3 "This technology is not a solution and never will be." This very much reminds me of the IBM's famously short-sighted take on the prospect of home computing, back in the 70s. The language of these contributions, let alone their content, points to a thought-process rooted in volume-producers' vested interests. Consider the successes of some other new-tech challengers of vested interests: Dyson taking on Hoover with a bagless vacuum-cleaner; Bayliss bringing clockwork (i.e. battery-less) radios and laptops to the third world; thin-film solar panels (sorry, can't remember who, but you know who I mean). On this point, it was deeply depressing, at a high-level environmental science conference of the UK Government last year, for me to witness a "leading and respected" Professor of Transport rejecting electric traction out-of-hand with the words "it will never be more than just power storage on a trolley". Given that this "expert" was advising ministers of state setting future national policy on alternative transport, my immediate thought was "Who pays this man's research grant?"

So let's be vigilant for any who claim, in a smooth way, that invention can't possibly have the answers. From a position of some expertise in this field, may I remind readers that the "you-don't-understand-how-our-industry-works" argument has been the policy instrument of choice for numerous corporate fraudsters and protectionists down the ages (Enron, anyone?). New York's energetic DA, Mr Spitzer, has made a fine career out of challenging such thinking in the finance sector (with the simple rejoinder: "WHY does your industry work like that? Against customer choice?"). And then of course there's the entire consumer movement (remember Flaming Fords? remember "Unsafe at Any Speed"?). We can and should ask the same questions of the conventional auto industry.

The good news is that genuine innovation will out - as long as ordinary consumers are able to find it and buy it. One of the early lessons of the twenty first century, thank goodness, is that the old-school, browbeating style of corporate communication - terrorising one's customers into rejecting alternatives - increasingly fails as people wise up to making decisions based on their own independently-gathered information about benefits and risks. (Interestingly, a popular reaction against "selling by fear" is also now happening in the political field. Now why might that be?) As a consumer, one doesn't have to agree with the in-ya-face techniques of anti-corporate critics like Michael Moore and Morgan Spurlock to still subscribe to the view that we can buy what we want to buy. We no longer want to be told by old-tech that new-tech is inherently suspect. Isn't it old-tech that brought us dependency on oil, climate change, wars over energy sources?

So c'mon people, how about a reward system for "spot the spoiler"? I'm all for free debate on the issues, but some of these blogs smell rather like the work of paid old-tech corporatists trying to sabotage your success.

Challenge such interventions with the greatest possible vigour, and let consumers decide for themselves!

1.) Battery companies are spending millions of dollars to knock H2 because it works longer, better, faster and cheaper than batteries! Most of the people writing these screaming anti-H2 articles are battery company shills or have investments there. H2 does beat batteries on every front so they should be SCARED!

2.) The steel unions hate H2 because H2 cars don't use steel. Steel is too hard to afford any more so nobody will use it in any case.

3.) Activists hate H2 because they think it can only be made by the oil companies and they hate the oil companies. This is a falsehood created by the battery and steel guys.

4.) Oil companies hate H2 because it is so much better than oil but they only get to hate it unto 2030 when the affordable oil runs out. Then they know they must love it because H2 energy will be all that is left. The Oil industry is dismayed that H2 is coming on so fast and they are trying to slow it down even more.

5.) Other alternative energy interests hate it because it is getting all of the funding because the polita-nomics are better with H2 than ANYTHING ELSE ON EARTH.

You can make hydrogen at home with free energy. If the gasoline in your car blows up it will do a VAST AMOUNT more death and damage than H2 ever will PLUS Gasoline is the number one cause of cancer and birth defects. You are driving a MOLOTOV COCKTAIL. In 2030 oil is GONE and there is NO OTHER OPTION that can be delivered world-wide in time but H2!

WIKILEAKS recently exposed the following secret documents:

https://wikileaks.org/plusd/cables/1977STATE000430_c.html

Date:	Canonical ID:
1977 January 3, 00:00 (Monday)	1977STATE000430_c
Original Classification:	Current Classification:
UNCLASSIFIED	UNCLASSIFIED
Handling Restrictions	Character Count:
-- N/A or Blank --	8833
Executive Order:	Locator:
-- N/A or Blank --	TEXT ON MICROFILM,TEXT ONLINE
TAGS:	Concepts:
ENRG - Economic Affairs--Energy and Power | OECD - Organization for Economic Cooperation and Development | TECH - Technology and Science--Technology | UK - United Kingdom | US - United States	AGREEMENTS | HYDROGEN | PRODUCTION | PUBLIC CORRESPONDENCE | SCIENTIFIC COOPERATION | TECHNOLOGICAL EXCHANGES
Enclosure:	Type:
-- N/A or Blank --	TE
Office Origin:	Archive Status:
ORIGIN ERDA - ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION	Electronic Telegrams
Office Action:	
-- N/A OR BLANK --	
From:	Markings:
DEPARTMENT OF STATE	Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 22 May 2009
To:	
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (PARIS)	

This set of documents, and related documents, demonstrate that National governments considered the production of hydrogen from water as the “Single most valuable and history changing technology modern society has ever encountered…”

ADDRESS OF MICHAEL C. RUPPERT- FOR THE COMMONWEALTH CLUB – SAN FRANCISCO

Thank you for that gracious introduction. Let me begin by thanking Pat Lamken for inviting me to be here today and for her efforts to arrange – what is certainly for me – a historic landmark in my 26 years of work to bring to light information – vitally important, life and death, information – which has been virtually ignored by the mainstream media. This information has also remained completely unaddressed or even publicly acknowledged by those elites in both America and the world that determine and shape public policy and direct the course of human events.

I say this with the full and complete awareness that I am tonight standing partially in the midst of those elites and that those elites are listening. I have long been aware of the stature and prestige of the Commonwealth club, for its ability

to attract some of the World's most influential speakers; also for its reputation for bi-partisanship; and perhaps most importantly for its willingness to present conflicting or opposing viewpoints.

My appearance here tonight no doubt marks a departure for the club even from that inspiring record. With today's remarks I intend to establish a whole new definition of "conflicting viewpoint." I applaud the club's record and am mindful that, had it not been for the dangerous and epochal historical events taking place around us, I would never have been afforded such an opportunity as this. Because clearly, my writing and public speaking have demonstrated that where we are today is exactly where I said we would be if something fundamental was not changed about how we both view the world, and how we interact with it.

Before preparing this speech, of course, I did some research to see who had spoken here before. I was happy to see that I follow on the heels of such notables as former CIA Director James Woolsey and two members of the Kean commission on 9/11: Slade Gorton and Richard Ben-Veniste. These are not people who I would call

"kindred spirits." I also saw the name of homeland security secretary Tom Ridge and former Treasury Secretary Robert Rubin. These are also leaders of whom I have been sharply critical in the past and will be sharply critical of in the future. I also saw names like John Kerry, John Edwards, Dennis Kucinich, Joe Liberman and Madeleine Albright.

My record as a journalist and lecturer shows that I have not embraced, and have indeed been fiercely critical of, most of these opinion makers. While I am more inclined to find Kinship with Dennis Kucinich, I also state categorically that no political leader who does not address the real causes of the problems facing us will ever be considered by me as a true kindred soul – or as a political champion for the future.

Such praise and endorsement I offer only to the likes of my good friend, the Honorable Cynthia McKinney of Georgia, and to former Assistant Secretary of Housing Catherine Austin Fitts. I heartily recommend them to the club as potential speakers for future events.

I also saw the names of spiritual leaders and independent or International voices like Al Franken, Jane Goodall, Arianna Huffington, the Rabbi Michael Lerner, Norman Mailer, Ted Turner, Hans Blix and King Abudullah II.

In looking at this long list of prestigious speakers I was very aware that the life's work of Michael Ruppert did not place me in any category that fit with these people. For the most part – I have long considered them to be part of a serious problem rather than pathfinders to its solution.

That realization brought to mind what was perhaps the single most memorable line from the 1992 vice-presidential debates in which Ross Perot's running mate, retired navy Admiral James Stockdale – a medal of honour winner and Vietnam POW – asked, "who am I?" And "why am I here?"

I am not prone to over-analyzing such opportunities. I have always said that, if given the chance, I would walk into the Lion's den or the devil's bedroom to make my case and that is what I intend to do today. This is as close as I have come thus far to either. For here, I can see tonight parts of the elite whose consciousness and attitudes must be changed if humanity is to even partially meet the challenges that are "in our faces."

For any of you who might be either lions or devils I hope that you have had a good meal recently and also that you have checked your pitchforks at the door. I also implore that your ears be open and your minds accessible.

For those of you who realize that a global crisis is casting Its shadow across the entire planet, and who wish better to understand its dynamics, I am here to offer some of my experience and learning as a "mapmaker" who has no allegiance to partisan politics or any desire except to tell you the truth, no matter how disquieting it may be, or how divergent it may be from whatever cherished beliefs you may Hold; from whatever cosmological principles you may believe in; or from whatever economic or other personal interests you may have. A spiritual teacher once told me that my problem was not that I thought highly of myself; not that I thought lowly of myself; but that I thought constantly of

myself. In that vein, Let us all tonight try to think of issues larger than ourselves, our personal interests, our wants, or our fears.

Viewed from almost any perspective; be it geopolitics, economics, climate, spreading warfare that threatens to unleash a global orgy of blood letting, rising energy prices, documented energy shortages, fresh water shortages, biological warfare, the repression of civil liberties at home and abroad, or any of a dozen other issues; planet earth and all of its inhabitants are in great danger. This is not a time to think of national security. It is a time to think of planetary security – indeed, of planetary survival.

And I must recognize also that I would never have been afforded this incredible opportunity to speak to you today, had it not been for the consistent support and generosity; the research and activism; the courage and disenfranchisement, and above all the loyalty of all those people who have helped my newsletter, “From he

Wilderness”, grow in just six years from 68 to more than 15,000 monthly readers worldwide. Today our web site at www.fromthewilderness.com averages more than 12,000 visitors a day. These include members of congress, business and economic

Leaders, professors at more than 30 universities, respected Journalists, and political leaders in many countries. If anything had an impact on my thinking as I prepared these remarks it was my awareness that these loyal supporters are the people on whose behalf I presume to speak. It is their voice and their commitment which has given rise to my voice. I could not and would not be here were it not for them.

But I also, if I may be that bold, presume to speak for all mankind, regardless of religion, ethnicity, nationality, gender, sexual preference, bank account or any other artificial distinction.

This is no time to be shy. This is not a time when men and women of good conscience can afford to be politically correct or be guided by anything except a willingness to discard every “cherished” belief or opinion which stands in the way of an accurate and fearless appraisal of the world around us.

As I have said so many times in the last three years while delivering more than 40 lectures on the truth and lies of 9/11 and peak oil, in eight countries: the events in the five years following the attacks of September 11th will determine the course of human history for the next 500 years or more.

I can only assume that the record of my lectures and writings, wherein I have come to be known as a man who backs up everything he says and presents it to his audiences for verification, had something to do with how the board of governors reached its decision to extend this invitation. For many years now not a single fact, citation or piece of evidence, presented in my lectures, or in my best-selling video, “the truth and lies of 9/11” has been proved inaccurate.

I am known as a man who does not expect people to take his word on faith but who asks and even expects people to challenge his research, evaluate it, and reach their own conclusions.

Operating under the assumption that the past credibility of my research has produced a record which got me in the door at the commonwealth club, I am today, in the interest of time and for maximum impact, going to dispense with my customary slide presentation. I fully expect that anyone who challenges or disagrees with my assertions will go out and do some checking for him or her self.

Almost everything I present to you today will be fully documented – by means of approximately 1,000 endnotes – in my soon to be released book, “crossing the Rubicon: the decline of the American empire at the end of the age of oil.”

The book, published by new society publishers, should be available for sale from the FTW web site within 2-3 weeks and It will go on sale nationally, through all major outlets, by mid-October.

September 11th

Both here in the united states and around the world I am not alone in believing that the attacks of September 11th were facilitated, orchestrated and executed by the United States Government. However, there is a great deal of misunderstanding and conclusion jumping about these assessments that is not supported by the evidence. I was trained as a police officer and detective, and for many years now I have been an effective investigative journalist because I have adhered to strict evidentiary and investigative standards.

The 9/11 attacks were the result of deliberate planning and orchestrated efforts by identifiable leaders within the US Government, and the energy and financial sectors, to see a Pearl Harbour-like attack which would provide the American Empire with a pretext for war, invasion and the sequential confiscation of oil and natural gas reserves, or the key transportation routes through which they pass. 9-11 was a premeditated murder and in my book, and here tonight, I will name some of the suspects who committed the crime. In my book I will show you overwhelming evidence of their guilt which I would be proud and confident to place either before a district attorney or a jury.

Historically, the assertion that the United States Government would orchestrate an attack upon American interests has ample precedent. Former National Security Adviser Zbigniew Brzezinski described the need for such an event in several places in his 1997 book "the grand chessboard." It was I who first brought this book to worldattention in late 2001. The project for a new American Century made reference to the need for such an attack in its 2000 report "rebuilding America's Defences." declassified top Secret documents disclosed by author James Bamford in his

book, "body of secrets" tell us that in 1962 the joint chiefs had approved a plan called "Operation Northwoods" which was a covert operation that would shoot down American aircraft and stage attacks on American military facilities with the intent of blaming those attacks on Fidel Castro and prompting the subsequent us invasion and occupation of Cuba.

The declassified Northwoods documents can be seen and downloaded from the FTW web site. But once viewed, they cannot be ignored.

Therefore it cannot be said that such a thing has never been conceived of or carried out by American political leaders. From the sinking of the battleship Maine, to the Gulf of Tonkin, and indeed, even to Pearl Harbour itself, history today provides us with abundant documentation of US government complicity in varying degrees in similar attacks. The book "day of deceit" and other records from the national archives

have shown us that the Roosevelt administration had broken the Japanese codes well before December 7th, and that a conscious decision was made to allow the attack on Pearl Harbour to take place. This was intended to provide the necessary impetus for us entry into the second world war at a time when great Britain was buckling under the military Blitzkrieg, aerial bombing and u-boat warfare of the Third Reich.

Crossing the Rubicon is a detective story that gets to the innermost core of the 9/11 attacks. It places 9/11 at the centre of a desperate new America, created by specific, named individuals in preparation for peak oil: an economic crisis like nothing the world has ever seen.

Simply defined, peak oil is that moment in time when global oil – and natural gas – production begins an irreversible and permanent decline which will not yield or give way regardless of how much money and effort is spent trying to change it.

With demand still accelerating rapidly in both the us and the Industrialised and developing world, the arrival of peak oil literally describes a point of overshoot in which economic and ecological stasis – let alone growth – becomes

unsustainable. Over the course of the last three years,"from the wilderness" has pioneered the investigation and documentation of this crisis. With the invaluable research and writing of FTW's energy editor Dale Allen Pfeiffer, a geologist, and through my own travels and research in the US, France and Germany, we have drawn upon the expertise of those with decades of experience in the oil industry (many of whom have left it), independent scientists and academics having no connection to the energy industry, business and financial leaders, international bodies such as the international energy agency, and actual world events to draw attention to what is the single most serious threat facing mankind in its entire history.

It is my belief, as I speak to you tonight that planet earth is – plus or minus one year – at the all time peak of hydrocarbon energy production. Simply put, we have used half of all the oil god placed on this planet, and every drop, every barrel extracted from the ground from now on will become progressively more expensive, of lesser quality, and much harder to obtain. We have picked the low hanging fruit. As all experts agree, peak is something we will only know of a certainty as we view it in our rear view mirrors.

The attacks of September 11th, 2001 were the pretext for the American, and to a lesser extent, the British and Israeli empires to begin seizing, by force, those energy supplies needed to sustain their power, hegemony (whether regional or global) and their teetering economies. The attacks of 9/11 were accomplished through an amazing orchestration of logistics and personnel. Former National Security Aide and Counter-terror Adviser Richard Clarke has postulated that such a conspiracy could never be kept a secret. Too many people would have been involved, he said.

On this point I disagree with Clarke completely and point to the fact that the Manhattan project, which developed the atom bomb and the stealth fighter project were both successfully kept secret. The numbers of people involved in both of those projects far exceeded the numbers of people within the United States government required to execute 9/11.

However, I must express a deep debt of gratitude to Clarke. For in his book "against all enemies" he left a compelling trail of bread crumbs, contradictions to the sworn testimony of our highest leaders, and hard evidence which provided me with much of the information needed to say that not only can I name some of the us government officials who perpetrated those attacks, I can also identify the prime suspect – or mr. Big – who played the command role in executing them. Mr. Clarke is not a stupid man and I can only conclude that he left those crumbs for others to find.

All of this of course stands in stark contrast to the report of the so-called independent commission which investigated those attacks. Before I start naming names, let me first take a look at why absolutely nothing presented by the Kean commission can, or should, be accepted without challenge. The Kean commission a recent story in the Minneapolis star tribune reported on how one US Senator, Mark Dayton of Minnesota, found some egregious inconsistencies in the final report of the Kean commission. The story said that during a recent hearing evaluating the Kean report:

"Dayton told leaders of the sept. 11 commission that, based on the commission's report, a Norad chronology made public a week after the attacks was grossly misleading. The chronology said the FAA notified the military's emergency air command of three of the hijackings while those jetliners were still airborne. Dayton cited commission findings that The FAA failed to inform Norad about three of the planes until after they had crashed. "and, he said, a squadron of Norad fighter planes that was scrambled was sent east over the Atlantic Ocean and was 150 miles from Washington, DC., when the third plane struck the Pentagon – 'farther than they were before they took off.' "Dayton said Norad officials 'lied to the American people, they lied to congress and they lied to your 9/11 commission to create a false impression of competence, communication and protection of the American people.' he told Kean and Hamilton that if the commission's report is correct, President Bush 'should fire whoever at FAA, at Norad ... Betrayed their public trust by not telling us the truth.'"

What Senator Dayton did not fully focus on was that, just a few short weeks before releasing its final report, the Kean Commission unilaterally changed the times of certain key events, negating and overruling testimony and evidence

presented under oath, without having received a single new piece of evidence – either formally or informally – that contradicted or changed the evidence already received.

I'm sure that there are some attorneys in the room tonight. I wonder how many of you would acquiesce to the judge in a criminal trial submitting and ruling on evidence that neither the defence nor prosecution had presented during trial, but which the judge had somehow produced, without explanation, from his or her chambers. How would you react if the judge then ruled on the basis of that evidence, making no attempt to reconcile the evidence presented by either side?

What would you say to the jury?

While Senator Dayton was astute enough to note some glaring inconsistencies and contradictions in a highly manipulated and frequently altered evidentiary record, he missed, or chose to ignore other elephants sitting comfortably in the living room of one of the most shameless pieces of dishonest public accounting in American history.

These include the fact that the commission inexplicably introduced, at the last minute, a completely new timeline of events surrounding the responses of the FAA, Norad and the pentagon on 9/11 in direct contradiction to previously sworn testimony and exhibits from these commands. In most cases this evidence was presented by the same men who actually made key decisions that day.

Why?

In its mere constitution, the Kean commission's members would never have been allowed to even approach the bar of judicial impartiality in an American courtroom to decide such an important case. They – every one of them, including your two recent speakers – would and should have been immediately disqualified from providing, as was mandated by law, "a full accounting" of the events of September 11th.

In describing to you some of these conflicts of interest, I would like to express my thanks to independent journalist Jim Rarey who did a magnificent job of cataloguing the histories of the wolves and the foxes who managed the hen house of September 11th's historical record.

The following is only a partial description of some of the more obvious conflicts within the Kean commission.

Thomas Kean (chairman)

Thomas Kean is a director (and shareholder) of Amerada Hess Corporation, which is involved in the Hess-delta joint venture with delta oil of Saudi Arabia, owned by the [Khalid] Bin Mahfouz and Al-Amoudi clans. This company was involved in the initial planning for a trans-afghan oil pipeline just prior to September 11th. Khalid Bin Mahfouz, once a senior executive with the legendary organized crime bank BCCI, is Saudi Arabia's largest banker and his clients include both the Saudi royal family and the Saudi Binladin group of companies.

Coincidentally, the former governor of new jersey is also a member of the council on foreign relations, together with another prominent member of the board of directors of Amerada Hess, former Secretary of the Treasury Nicholas Brady.

It is also worth mentioning that Thomas Kean also sits as Co-chairman of the Homeland Security project (hsp) under the auspices of the Century Foundation. In this capacity, Kean has played a key role in the draft recommendations of the Century Foundation, which partially laid the groundwork of the department of homeland security legislation. Journalist Wayne Madsen has shown with ample documentation that George W. Bush also had business relations

with Khalid Bin Mahfouz, when he was in the Texas oil business. Both George W. Bush and Khalid Bin-Mahfouz were also implicated in the BCCI scandal closely tied to the Iran-contra and savings and loan scandals.

Other links between Bush and Mahfouz can be found through investments in the Carlyle group, an American investment firm managed by a board on which former president George H.W. Bush himself once sat. The younger Bush personally held shares in one of Carlyle's owned companies, Caterair between 1990-94.

Lee Hamilton (Vice Chair)

In 1987, house speaker Jim Wright (who later resigned in disgrace) appointed Hamilton to chair a committee investigating the Iran/Contra affair.

When a question was raised about CIA/Contra drug smuggling, the response was release by Hamilton of a cursory review that concluded there was no truth to the charges. The CIA released a report in October of 1998 (volume II of the CIA inspector general's report on IranContra drug trafficking), that received almost no publicity yet admitted the drug connection and direct CIA involvement in the trans shipment of thousands of kilos of cocaine.

Hamilton played a key role in the so-called October surprise of 1980-81 in which it was charged that the Reagan-Bush campaign team was reported to have secretly negotiated with Iran's revolutionary government to delay release of the American hostages held at the us embassy in Tehran. The deal was that the hostages would be released after the presidential election so that Jimmy Carter could not benefit from their emancipation during the campaign. In this progenitor of the Iran-Contra scandal military weapons were promised to the Iranian government in exchange for its cooperation. The evidence was serious enough to warrant congressional hearings which were ultimately chaired by then congressman Hamilton.

As most of us who are old enough recall, the hostages were not released until the very day of Ronald Reagan's first inauguration in January of 1981. This was one of history's great coincidences.

For more than four decades, veteran Washington journalist Sarah McLendon was the grand dame of the white house press corps. Until her January 2003 death (at 92) she was a revered and active journalist known for her feisty confrontations with presidents and the powerful dating to the Truman administration. In her later years she had a great habit of appearing to be asleep in her wheelchair until the moment when she would wake up and pounce on her prey with incisive questions that revealed she hadn't missed a word of what had been said. Once, on national television and in the middle of a live white house press conference, she even dared to question president Bill Clinton about the abundantly documented record of CIA and Arkansas state government involvement in drug smuggling operations at Arkansas' Mena regional intermountain airport during the 1980s.

In 1994 and 1995, while living in Washington, I was a regular attendee at Mclendon's weekly study group at the national press club and later at her residence on Connecticut avenue. After she passed, the national press club renamed one of its conference rooms as "the Mclendon room." In 1992 Mclendon offered her observations on Hamilton's behavior as the chief "fact-finder" and chair of the October surprise and Iran-contra committees.

"I declined to withdraw the report I made that congressman Hyde elicited and obtained a promise from Chairman Lee Hamilton, d., ind. Of the house task force on October surprise, that the group would clear president George Bush of going to Paris to cinch a deal of weapons for Iran in exchange for retaining American hostages to be delivered to President Ronald Reagan and not to outgoing President Jimmy Carter. Hyde says he made no such a deal and I must remember that Hamilton is a Democrat. That makes no difference. Hamilton held a Press conference to clear bush before the Investigation into the deal between the Reagan-Bush candidates for presidential office and the Iranians had even started. Hamilton then admitted he had not interrogated witnesses or talked with his special attorney hired to investigate the matter." Iran-contra, in all its horrific corruption, was effectively "managed" by lee

Hamilton in the house and John Kerry (among others) in the senate throughout the late 1980s to conceal the greatest crimes of the era; crimes committed by a litany

of well-known government operatives. At the time, Hamilton was the chairman of the house permanent select committee on intelligence.

While many activists regard 2004 democratic presidential candidate Kerry as something of a hero for bringing many details of Iran-contra drug activities to light (and into the public record), others, more deeply versed in the evidentiary record, suspect that he also did a masterful job of keeping some of the most damaging Iran-contra secrets — especially records of CIA proprietary company operations — hidden. I am among the latter group.

Many figures who came under criminal and investigative scrutiny in Iran-contra, like John Poindexter, Elliot Abrams, Richard Armitage, Dick Cheney, Otto Reich, Colin Powell and John Negroponte, returned (with little or no congressional opposition) to serve in the current bush administration after the 2000 (so-called) election.

Veteran AP journalist Bob Parry, who broke the first major story linking drug smuggling to contra support activities, only to later lose his job, offered some additional observations on Lee Hamilton in his independent web newsletter consortium news. "one of the key congressional republicans fighting this rear-guard action was rep. Dick Cheney of Wyoming, who became the ranking house republican

On the Iran-contra investigation. Cheney already enjoyed a favorable reputation in Washington as a steady conservative hand. "Cheney smartly exploited his relationship with rep. Lee Hamilton, D-ind., who was chairman of the Irancontra Panel. Hamilton cared deeply about his reputation for bipartisanship and the republicans quickly exploited this fact." Not only did Hamilton fail to find any wrongdoing by top officials in either investigation, he was even "satisfied" with the performance of marine lieutenant colonel Oliver North In the Iran-contra hearings. As one commentator connected to the national security archives observed:

"North appears before the house select committee on intelligence to answer questions about his role in a contra resupply operation. He lies convincingly: he has "not in any way, at any time violate[d] the principles or legal requirements of the Boland Amendment," which bans federal support for the Nicaraguan counterrevolutionaries. Committee Chairman Lee Hamilton, D-ind., pronounces himself satisfied with North's "good faith." when North's Superior, John Poindexter, is told of his successful deception of congress, Poindexter e-mails Ollie: 'well done.'"

Philip Zelikow (executive director)

Perhaps no more glaring conflict of interest attracted opposition from victim families and 9/11 activists than that of the commission's executive director Philip Zelikow. Concerns were raised when it was disclosed that only two commission members and Zelikow might be allowed to see certain classified presidential records, including the much ballyhooed and publicly debated presidential daily briefing (pdb) of August 6, 2001.

Personally, I viewed the August 6th PDB as a red herring and a hubristic pretext over which the commission could make a show of "battling" the White House for information. The PDB, Titled, "Bin Laden determined to strike in US" was eventually released in a one and a half page version that was presented to the world as "complete."

Nothing could have been further from the truth. The respected German paper Die Zeit published a story in October of 2002, well before the PDB became an issue, stating that the PDB was actually eleven and one half pages long. Since I had documented so many other clear, direct and credible and apparently more detailed warnings of the 9/11 attacks, the Aug 6 pdb was a non-issue for me. In "Crossing the Rubicon" I will document more than a dozen specific warnings which foretold hijacked airliners being crashed into the World Trade Centre during the week of September 9th. Other warnings, such as massive insider trading on financial markets from Hong Kong to Tokyo, to Chicago, to

New York, to London and Berlin told those who were watching that the airlines involved would be united and American.

The insider trading, acknowledged and documented by the likes of CBS news, Bloomberg, and respected financial commentators was given the complete brush off by the Kean Commission in its final report. All it said was that Osama Bin Laden and Al Qaeda did not make the trades. In my book I will give you an idea of who did.

The controversy arising from the public debate over Zelikow forced even the New York Times to comment on some of his more obvious conflicts of interest.

"advocates for the families said they were alarmed by the commission's disclosure on Thursday that only one of the 10 commissioners would have access to a wide range of the briefings, and that the only person from the commission with similar access Would be its staff director, Philip Zelikow, who has close ties to Condoleezza Rice and other senior officials in the Bush administration. "the commission has previously rejected a request from victims' families to limit Mr. Zelikow's responsibilities sharply in light of potential conflict of interests involving the White House. "the families' advocates said the decision to have Mr. Zelikow be one of only two commission officials with wide access to the highly classified documents — the other is Jamie s. Gorelick, a democratic commission member who was deputy attorney general in the Clinton administration — raised new questions about the investigation's impartiality…

"Mr. Zelikow, who wrote a book with Ms. Rice in 1995, was on the Bush administration's transition team for the national security council and has acknowledged having contacts earlier this year with Karl Rove, President Bush's chief political adviser, about Mr. Zelikow's scholarly work at the university of Virginia.

What's more, Zelikow had been serving as a member of President Bush's foreign intelligence advisory board (pfiab) since 2001 and he also made a September 2002 public statement saying that US military action against Iraq would be based upon a desire to protect Israeli interests rather than any real threat from Iraq.

Perhaps the worst conflict of interest was the fact that Zelikow had advised the incoming Bush administration on Terror-related intelligence matters and had several discussions about bin laden and Al Qaeda in 2000-2001 with Richard Clarke. By rights, he should have been a witness testifying under oath before the commission instead of its executive director. When many of the victim families learned of this they were justifiably outraged at an arrangement that would have never been permitted in a court of law. In spite of all the controversy, and calls from many for his Resignation, Zelikow remains securely in place at the Kean commission to this day.

Jamie Gorelick

Freelance journalist Jim Rarey writes: "considered one of the fifty most powerful women in the country, CFR member Jamie Gorelick is currently Vice-chair of the giant mortgage lender and insurer Fannie Mae. From march 1994 until she joined Fannie Mae in may 1997 she was deputy attorney general, the number two spot in Janet Reno's department of Justice.

"In May 1995, the intelligence community law enforcement policy board was established to meet quarterly and discuss mutual concerns of the attorney general and director of central intelligence. The board was co-chaired by Gorelick and DCI George Tenet. Other members included all of the law enforcement agencies, the assistant secretary of state for intelligence and research and the Defence Department general counsel. "this is the same time frame (spring of 1995) in which the Philippine government apprised the FBI, CIA and state department of "project Bojinka" an Islamic terrorist plot which included hijacking commercial airliners and flying them into the pentagon, World Trade Center Towers and, several other buildings. "the BCCI scandal involved a number of powerful

individuals. Clark Clifford and Robert Altman were the top two officers in first American, the new name given financial general bankshares when it was taken over by BCCI (known as the bank of crooks and criminals international in the corridors of Washington) with the help of the Jackson Stephens/Lippo Worthen bank and the rose law firm. "First American is said to have been using the Notorious Promis software.

I will have a great deal to say about this legendary "spyware" in "crossing the rubicon." Back to Jim Rarey: "when BCCI and First American were exposed, the Legal defence team for Clark Clifford and Robert Altman attracted a bevy of well-known names including Robert Fiske (later the first "independent counsel" investigating whitewater and Vince Foster's "suicide"), Robert Bennett (later attorney for Bill Clinton), and Jamie Gorelick…"In 1998, while at Fannie Mae, Gorelick served on Clinton's central intelligence national security advisory panel as well as the president's review of intelligence."

At one point in the Kean commission hearings, a brief stir was caused when republican partisans charged that Gorelick bore some personal blame for the attacks by virtue of having created an "intelligence wall" between the FBI and the CIA.

There was no wall. A 2001 rand corporation study, which I quote in my book, offered great praise for the working relationships between the FBI and the CIA. It documents a number of instances where successful cooperation and information sharing between the bureau and the CIA actually prevented a number of Al Qaeda and other terrorist attacks against US interests.

There is also no wall between the Kean commission and the government it has been charged with investigating. Gorelick also has oil connections. Mrs Gorelick site on the Board of the world's premier oil drilling firm, Schlumberger.

Gorelick was one of four commission members allowed to review presidential intelligence records and make notes before reporting to the commission. It appears that the white house had very little to worry about. Let's take a look at your recent guests who came here promoting the final 9/11 report. Jim Rarey tells us:

Richard Ben Veniste

Ben-Veniste is a high-visibility Washington Attorney and democratic power broker. He was Democrat counsel to the senate whitewater investigation where he blocked inquiries about Webster Hubbell's hiring by the Lippo group and others administered by Truman Arnold. According to investigative journalist Daniel Hopsicker, Ben-Veniste then turned around and defended Arnold (the man he was supposed to be investigating) before Ken Starr's whitewater grand jury, for which he was roundly criticized. Hopsicker also reveals that Arnold had furnished a $2 million Airplane to his friend Wally Hilliard for $1. Hilliard, Hopsicker says, owned the flight school in Venice, Florida where (according to official accounts) four of the Islamic terrorist pilots were trained that flew the suicide missions on 9/11.

Another of Ben-Veniste's clients was Barry Seal, the drug running CIA asset of Iran/contra and Mena, Arkansas notoriety. In fact, Hopsicker relates Benveniste told the Wall Street Journal, "I did my part by launching him (seal) into the arms of Vice President Bush who embraced him as an undercover operative."

Slade Gorton

Slade Gorton is a former senator from the state of Washington. After he lost his Reelection bid in 2000, he joined the Seattle law firm of Preston, Gates & Ellis, which specializes in environmental issues. If jury selection rules were being used, Gorton would probably be dismissed from consideration for the commission for cause [a technical term for conflict of interest]. Two days after the 9/11 attacks he told a public-television audience there was nothing government intelligence officials could have done to thwart the attack, according to the Seattle times. The times quotes Gorton as saying, "I doubt we can expect to get too much inside information no matter what we do." Gorton

served two years on the senate intelligence committee. He says that experience and his personal friendship with Trent Lott were responsible for his appointment by Lott.

Every commission member has deep conflicts of interest with respect to 9/11 and its investigation of the government agencies charged with protecting the American people that day. I will discuss all of them in my book. One, apparently, who did not, is former Georgia senator Max Cleland, who at one point called the commission a sham. Cleland resigned from the commission before its investigation was complete.

What happened on 9/11?

While these attacks were arguably one of the most serious homicides ever committed, the investigation and "prosecution" of that case by means other than Dick Cheney's "war that will not end in our lifetimes" has never even approached the legal and logical standards governing all such investigations. No real case has ever been made that would pass first muster of even a junior assistant district attorney.

Without such a court process, we are forced to employ analogies and metaphors. But there remains to us the most successful, fundamental strategy for the prosecution of criminal behavior: demonstrating that a suspect (or suspects) did, or did not, possess the means, motive, and opportunity to commit the crime.

To date, the case that 9/11 was perpetrated solely by Osama Bin laden and Al Qaeda has never been proved, even to the most rudimentary standards. In fact, some 35 months after the attacks there has not been a single successful 9/11 prosecution anywhere in the world. The only conviction that had been secured, a German prosecution against Mounir El Motassadeq, charged with aiding the so called Hamburg cell of Mohammed Atta, was overturned in 2004 because the US government refused to produce key witnesses such as Khalid Shaikh Muhammad or Ramzi (Bin Al-Shibh and other evidence relevant to the charges. Every defendant in a Western criminal case has the right to examine the evidence used against him and to cross-examine witnesses. To the general public as well as to the 9/11 research community, the mysterious and inexplicable failure of the Nation's air defences that day remains the most glaring and gaping hole in the Kean commission's account and in the government's version of events. Scrambling fighter aircraft was a routine occurrence for years before 9/11. The associated press has told us that fighter aircraft were scrambled and flying beside errant commercial and private air traffic within minutes of the slightest deviation some times in the calendar year preceding June 1 2001. This is one of many areas where the Kean commission not only failed to look but actually altered evidence in the preparation of its final report. (ED: See Missing 28 Pages of report for criminal level conflicts revelation re: certain commissioners)

For me, the pivotal evidence absolutely demonstrating direct government complicity in, and management of, the attacks was found in a number of undisputed, yet virtually unaddressed wargames that I will show were being conducted, coordinated and/or controlled by vice president Dick Cheney or his immediate staff on the morning of September 11th. The names of those wargames are known to include: Vigilant Guardian, Vigilant Warrior, Northern Guardian, Northern Vigilance, and Tripod II. All have been reported on by major press organizations relying on undisputed quotes from participating military personnel.

They have also been confirmed by Norad press releases. All, except for northern vigilance and tripod II had to do with hijacked airliners inside the continental united states, specifically within the northeast air defence sector where all four 9/11 hijackings occurred. According to a clear record some of these exercises involved commercial airline hijackings. In some cases false blips were deliberately inserted onto FAA and military radar screens and they were present during (at least) the first attacks. This effectively paralyzed fighter response because, with only eight fighters available in the region, there were as many as 22 possible hijackings taking place.

Other exercises, specifically northern vigilance had pulled significant fighter resources away from the Northeast US. – just before 9/11 – into northern Canada and Alaska. In addition, a close reading of key news stories published in the

spring of 2004 revealed for the first time that some of these drills were “live-fly” exercises where actual aircraft, likely flown by remote control – were simulating the behavior of Hijacked airliners in real life. All of this as the real attacks began. The fact that these exercises had never been systematically and thoroughly explored in the mainstream

press, or publicly by congress, or at least publicly in any detail by the so-called independent 9/11 commission made me think that they might be the holy grail of 9/11. That’s exactly what they turned out to be. Only one wargame exercise, Vigilant Guardian, was mentioned in a footnote to the Kean commission report and then it was deliberately mislabeled as an exercise intended to intercept Russian bombers instead of a hijack exercise in the Northeast sector. Even then, a deliberate lie was told to the American people as Norad commander Ralph Eberhart testified to the commission that the exercise actually expedited us air force response during the attacks.

When Michael Kane, a brilliant young New York activist and budding investigative reporter approached general Eberhart on an FTW assignment at the conclusion of the Commission’s last public hearing and asked for information on the other exercises, Eberhart’s only response was, “no comment.”

And an additional non-military biowarfare exercise called Tripod II, being “set up” in Manhattan on September 11th was under the direct coordination of FEMA and – by White House directive – the immediate control of the Vice President. The set up for that exercise conveniently placed a fully staffed FEMA, New York city and department of justice command post on Manhattan’s pier 29 in time for it to be conveniently used as the command post after the twin towers had collapsed.

There are many, many areas where the official account and the findings of the Kean commission are contradicted by hard evidence, official records, mainstream news investigations and even sworn testimony. Both the Los Angeles times and the New York Times have noted some of the Lesser, but no less glaring, inconsistencies. In my book I will provide you with many more.

In my book I will make several key points:

1. I will name Richard Cheney as the prime suspect in the mass murders of 9/11 and will establish that, not only was he a planner in the attacks, but also that on the day of the attacks he was running a completely separate command, control and communications system which was superseding any orders being issued by the NMCC, or the White House situation room. To accomplish that end he relied on a redundant and superior communications system maintained by the us secret service in or near the presidential emergency operations center – the bunker to which he and National Security Advisor Condoleezza Rice were reportedly “rushed” after flight 175 struck the WTC’s south tower. I will demonstrate that the secret service possessed radar screens which gave them, and the vice president, whose side the never left, with real-time information as good as or better than that available to the pentagon;

2. I will demonstrate that in what are called national special security events the us secret service is the supreme us agency for operational control with complete authority over the military and all civilian agencies.

3. I will establish conclusively that in may of 2001, by presidential order, Richard Cheney was put in direct command and control of all wargame and field exercise training and scheduling through several agencies, especially FEMA. This also extended to all of the conflicting and overlapping Norad drills on that day.

4. I will also demonstrate that the Tripod II exercise being set up on Sept. 10th in manhattan was directly connected to Cheney's role in number 3 above.

5. I will also prove conclusively that a number of public officials, at the national and New York City levels, including then Mayor Rudolph Giuliani, were aware that flight 175 was en route to lower manhattan for 20 minutes and did nothing – absolutely nothing – to order the evacuation of or warn the occupants of the world trade center. One

military officer was forced to leave his post in the middle of the attacks and place a private call to his brother - who worked at the WTC - warning him to get out. That was apparently an act of desperation because no other part of the system was taking action.

6. I will also show that the Israeli and British governments acted as partners with the highest levels of the American government to help in the preparation and, very possibly, the actual execution of the attacks."

Israel

I must now digress to say a few words about Israel. Israel is a country. Judaism is a religion. It is no more proper to say that the actions of the Israeli government are above criticism than it is to say that criticism of the American government is a criticism of all Americans.

There are many direct connections between Israeli Intelligence activities and the events of 9/11 including a report from the drug enforcement administration, showing

That more than 100 Israeli covert operatives were functioning inside the united states just before and during the attacks. Some of these operatives were placed in extremely close proximity to four of the 9/11 hijackers in South Florida and San Diego. Israeli companies such as Amdocs, Comverse and Odigo had direct connections to the Events of 9/11. A “former” Israeli anti-terror operative was on board American flight 11. To say that Israel played a criminal role in the attacks is not the same thing as saying that Israel perpetrated the attacks. A key question asked by any homicide investigator Is cui bono? Who benefits. And on this account we can find only three countries, the US, Britain and Israel that have never wavered in their support of everything that has happened since 9/11.

Tonight, even as I speak, an Israeli spy scandal is spreading through the highest levels of the pentagon and revelations from breaking news stories strongly suggest that the information being provided to the Israeli government carried with it the sanction of some of the same people I have charged in “Crossing the Rubicon” with perpetrating the attacks of September 11th. Tonight I predict that the current scandal will overlap and connect with the recent arrest by South African authorities of Sir Mark Thatcher, son of former British Prime Minister Margaret Thatcher, for his role in sponsoring an aborted coup in the West African Nation of Equatorial Guinea. The motive: British commercial acquisition of oil rights in a region that – as I have been writing for two years now – is destined to become the next regional zone of confrontation.

West African nations from Sub-Saharan Africa, to Nigeria, to Sierra Leone, to Sao Tome and Principe, to Chad, to Cameroon to Angola are all feverish oil-rush boom towns where nations, money, military might, covert operations and intrigue are converging with lightning speed to control oil reserves. Although much smaller than the reserves of the Middle east, these African reserves are critical swing and lesser suppliers of oil in a world where – as we too well know – the removal of just a million barrels a day from global supply can wreak economic havoc. Africa’s priceless energy takes only about two weeks to reach an American gas tank as opposed to the six week journey required for oil from the middle east.

Last spring, just after the us occupation of Iraq, it was disclosed that the Israeli government had entered negotiations with us representatives to explore the possibility of rebuilding a demolished pipeline from northern Iraq to the Israeli port of Haifa. To level a charge of anti-semitism at me or anyone else who dares to criticize Israeli government actions is to argue that Israel and all of Judaism is a monolithic structure, sharing only one viewpoint. It is to say that being a Jew means being a Likudnik. It is to overlook the enormous dissent within Israel of groups like women in black, not in our names, and the almost 700 commissioned and noncommissioned officers from the Israeli defence forces who have refused to serve in the occupied territories. It is to ignore the fact that the nephew of Benjamin Netanyahu has refused compulsory military service and risks jail for that decision.

I look in the back of the room and I see my dear friend, agent and publicist Ken Levine. Last spring I was privileged to participate in a seder at the home of his incredible 92 year old mother. I stop and give thanks for Jamey Hecht, ph.d., a poet, english Literature professor, great friend and American Jew who edited "crossing the Rubicon."

In the same breath I also think of and thank my dear friend Dr. Faiz khan, a Muslim Imam and emergency room physician who left his post at Jewish hospital in Brooklyn and rushed to the World Trade Center to render aid on September 11th.

He was one of the first doctors on the scene and he was one of the last to leave. There is no room for stereotypical thinking in a time of crisis. As Faiz Khan said to me once, a paradigm is what you think about something before you think about it. It is these traps which we must all avoid.

I will say one more thing before leaving the subject of 9/11 tonight. I like many Americans and many people around the world have serious lingering questions about the collapse of the twin towers, what it was that actually struck the pentagon and what – in the name of god – it was that caused the collapse of WTC 7, a building that had not even been struck during the attacks.

Unfortunately, the physical evidence was quickly destroyed and scientific analysis is not available to us to answer these important questions. In order to make the strongest legal case possible I have avoided discussions of physical evidence – open to acrimonious debate and scientific challenge and chosen to do what any good police officer must do; keep my eye on the suspects.

It does not take a scientist to prove that George Bush, Dick Cheney, Donald Rumsfeld, Condi Rice, General Ralph Eberhart, General Richard Myers, FBI director

Robert Mueller, John Ashcroft and George Tenet lied to the American people.

There is a record that proves this and that is the record I will present to you in "Crossing the Rubicon." But on the subject of WTC 7 I will, in my book, explain why that particular building had to be destroyed. And although I cannot prove to you how the twin towers were collapsed, I will show you who performed the requisite studies that would have been essential to pull off that feat.

Peak oil

I turn now to the motive for the murders. Peak oil is no secret. Its chief opponent is something called Denial – which Is not a river in Egypt.

Dick Cheney knew about it. I will show you that in my book. His national energy policy development group – you know, The one that refused to release its records sparking a constitutional crisis and a supreme court ruling, knew about it. I will show you that in my book too. Oil and natural gas are indispensable to our way of life.

The world consumes ten calories of hydrocarbon energy for every calorie of food that is eaten. All commercial fertilizers are made from natural gas. All pesticides are made from petroleum. All irrigation, plowing, harvesting and transport is accomplished by either oil powered machinery or oil or natural gas generated electricity.

There are between 600 and 700 million internal combustion powered vehicles on the planet and the demand for them is exploding exponentially, especially in china where GM's sales rose 300% in one year alone. According to the national geographic this last June there are seven gallons of oil in every tire. Want to suddenly build 600 million new vehicles that run on something else, hydrogen perhaps? How much oil will be required to do that? To mine and melt

the ore? To transport it to factories that don't exist, using electricity that isn't there? To make the paints, solvents and all of the plastic needed? All plastic is made from oil. Hydrogen is a cruel joke that creates false hope. A recent study from EV magazine reported that the average life expectancy of a very expensive fuel cell engine was just 200 hours. Commercial hydrogen is now made from natural gas.

We're nearly out of that too. China's economic growth has seen it replace japan as the world's second largest importer of oil and china is now coming into direct economic and political competition with the us for what oil remains.

I have attended two international conferences on the subject of peak oil and its implications for Civilization; one in Paris in 2003 and one in Berlin this year. For almost the entire year between the Paris and Berlin conferences the icons of the mainstream press – the ones known and employed to mold public and business perception – have been acknowledging peak oil's reality, sometimes reluctantly,

Sometimes less than directly, but also sometimes very boldly. CNN, the BBC, the New York Times, the economist; Dozens of media giants had begun to respond, like a giant ship turning slowly in the water. The ship has clearly changed course, but was it enough? Was it in time? I have saved close to 200 of these stories.

Looking at just a few of them makes the point well enough.

- "The end of cheap oil" – National Geographic (cover Story) – June 2004.

- "What to use when the oil runs out" – BBC – April 22, 2004

- "Adios cheap oil" – Interpress news agency – April 27, 2004

- "G7: oil price threatens world economy" – Moscow Times – 4/26/04

- "World oil crisis looms" – Jane's -- 4/21/04

- "US procuring the world's oil" – Foreign policy in focus – January 2004

- "Are we running out of oil? Scientist warns of looming crisis" – abc news.com – 2/11/04

- "Blood, money, and oil" – US news – 8/18/03

- "Soaring global demand for oil strains production capacity" – Wall Street Journal – 3/22/04

- "Check that oil" – Washington Post – 11/14/03

- "China's demand for foreign oil rises at breakneck pace" – Knight Ridder –1/26/04

- 'World oil and gas running out' – CNN – 10/02/03

- "Debate rages on oil output by Saudis in future" – the New York Times – 2/25/04

- "Fossil-fuel dependency: do oil reserves foretell bleak future?" – San Francisco Chronicle – 4/02/04

- "The end of the oil age: ways to break the tyranny of oil are coming into view. Governments need to promote them" – The Economist – 10/23/03

The subject of peak oil is one which requires a little study to get your brain around. It does not, however, require much science except for basic arithmetic.

Discoveries of large oil deposits have been in steep decline since 1962. Demand, on the other hand, has been soaring. To quote my energy editor Dale Allen Pfeiffer, a geologist: It appears that the year 2007 will be important. A new study published in petroleum review suggests that production might not be able to keep up with demand by 2007. The study is a survey of mega projects (those with reserves of over 500 Million barrels) and the potential to produce over 100,000 barrels per day of oil). Mega projects are important not only because they provide the bulk of world oil production, but also because they have a better net energy profile than smaller projects, and they provide a more substantial profit than smaller projects.

Bear in mind that the planet consumes a billion barrels of oil (or two mega fields) every eleven and one half days. The discovery rate for mega projects has dwindled to almost nothing. This can be seen in the data for the last few years. In 2000, there were 16 discoveries of over 500 mb; in 2001 there were only 8 new discoveries, and in 2002 there were only 3 such discoveries. From first discovery to first production generally takes about 6 years. If the new project can make use of existing infrastructure, then the start up time might be cut to 4 years.

In 2003 seven new mega projects were brought on stream. 2004 expects to see another 11 projects start producing. 2005 will be the peak year for bringing new projects on stream, with 18 new projects expected to be brought on stream in that year. In 2006, the pace drops back to 11 new projects. But in 2007 there are only 3 new projects scheduled to begin production, followed by 3 more in 2008.

There are no new projects on track for 2009 or 2010. And any new mega project sanctioned now could not possibly come on stream any sooner than 2008.

The study points out that currently about a third of the world's oil production comes from declining fields, with a likely overall decline rate of about 4%. As a result, global production capacity is contracting by over 1 million barrels per day every year. New production is the only thing offsetting this decline.

Of course recent events have clearly demonstrated the fragility of a global production system that is operating at full tilt. Sabotage an Iraqi pipeline one day the price goes up. Announce that Vladimir Putin is easing up on Russian oil giant Yukos and the price drops. Announce that Putin is moving to sell of its assets and confiscate its cash, the price soars. Worry that Hugo Chavez of Venezuela might be ousted in a violent coup and the price jumps. Watch Chavez – who is despised by the bush administration – win his seventh election in as many years and the price drops.

By the way, that is seven more elections than George bush has won. In spite of repeated assurances from the Saudi government that they can and are increasing production the evidence is growing that they cannot. FTW was the first to report, a year before the New York Times did, that Saudi Arabia may have actually peaked. New studies are reporting that Saudi wells in the mother of all oil fields Ghawar are showing 55 % Water cut. That means that 55% of what is pumped out every day is the same seawater that was pumped in to push the oil up. Experience has shown that when the water cut gets to between 70 and 80% the field collapses. The rush to produce more oil is hastening the destruction of fields that could last longer otherwise. Events then seem to confirm these worries about Saudi Arabia. Saudi reassurances are now being chuckled at by major financial commentators, and Saudi pledges to increase production are having less and less effect on the markets.

Ghawar, the super giant of all fields was discovered more than 60 years ago. It had estimated reserves of almost 100 Billion barrels of oil. Professor Michael Klare has told us that, in order to keep pace with accelerating oil demand, the world will have to discover three new Ghawars in the next 10 to 15 years just to meet demand. There was only one Ghawar. There hasn't been another one since.

So when we look at the paltry and rapidly diminishing rate of discovery for the so-called mega fields, the prospects become just a bit more chilling. In the year 2003, for the first time since the 1920s according to a leading petroleum consulting firm, not a single so-called mega field – 500 Million barrels or more – was discovered.

By 2007, production capacity will have declined by 3-4mn b/d.

Yet this decline will be offset by 8mn b/d of new capacity drawn from the many new projects expected to come on stream over the next few years. This leaves a surplus of 4mn B/d in spare capacity. Yet global demand is growing by over 1 Mbpd each year. So 3 years of demand growth will reduce our spare capacity to 1mn b/d by the start of 2007. As very little new capacity is set to come on stream in 2007, that remaining 1 Mbpd spare capacity will likely disappear before 2008.

In the short term oil prices are governed by market forces rather than geology which will tell us, as opposed to investment and economics, how much oil we can ultimately extract. The irony is that when three new mega fields come online all at once the prices may actually drop. That will not change the outcome. Speculation at present is not a big a factor as it could be. I wholeheartedly agree with Investment banker Matthew Simmons that a margin requirement of 50% should be placed on all oil futures trading worldwide.

The upshot of all this is that the oil supply appears sustainable, barring major wars or destruction on infrastructure until 2007. With so much new production coming on stream, there may even be periods of price weakness. However, it is likely that we will begin suffering oil shortages after 2007, especially if anything happens to disrupt a portion of the production. If new projects are not found, and online by 2008, then by the end of that year we are certain to see severe shortages without any cause other than rising demand.

But there is another factor to this oil calculus. So many complaints are being voiced that a major part of the problem with current oil prices has to do with a lack of refineries. People point out that there are 18 different grades of gasoline in this country matching various state laws. Why, they demand, are no more refineries being built.

The answer is simple and it is a direct and irrefutable confirmation of peak oil. The return on investment – as Matthew Simmons says – is uncertain. According to Simmons It takes 5-7 years and about $150 million to bring a complex refinery online. The cost of the refinery is paid for by the sale of the oil.

The refineries are not being built and massive expensive exploration projects are not being undertaken because the Oil companies understand that there is very little oil left to find.

Finding 10 new north sea fields… somewhere by 2015, global oil demand is expected to increase by over two-thirds, that is 60 Mbpd beyond current global consumption of between 75 and 80 Mbpd. To meet that demand we will have to find the equivalent of 10 new north sea oil fields within a decade. In the meantime Britain's North Sea, Just like Alaska's north slope did a decade ago, is running dry. Rigs are shutting down and employees are being laid off. Yet we are hard pressed now to discover even another Mega-sized field.

To quote former British environmental minister Michael Meacher, we are facing, "the sharpest and perhaps the most Violent dislocation (of society) in recent history." I should add the Meacher, along with former German cabinet Minister and former Parliamentary Secretary Andreas Von Buelow has stated publicly and in writing that the attacks of September 11th were perpetrated by the US government.

There are many out there who just refuse to believe that oil and natural gas are running out. Some insist that oil is created automatically and infinitely by the earth's core, disputing all known science showing otherwise. There are those who insist that alternative energies can be snapped into place immediately to allow for infinite economic and population growth.

Aside from looking at the events since 9/11 and seeing that they match a world of diminishing energy let's take a look at some recent developments around the world and see what they tell us.

Britain's largest electricity provider has announced that prices will soar as much as 40% next year. Wholesale energy prices have doubled in the last year as Bloomberg has announced that the decline in north sea production is creating a trade gap which is now threatening to cause widespread unemployment.

In March Reuters reported that Argentina, facing its worst energy crisis in15 years, is becoming unstable to the point of threatening the security of the entire region. It has cut its natural gas exports to Chile by 15%, which is threatening Chilean power generation. Argentina is now moving into the world oil market in search of oil for power generation and transportation as its own domestic supplies have dwindled.

The BBC reported recently that high oil prices are threatening many Asian economies. Just two weeks ago the Australian government ordered an emergency fuel review in anticipation of future crises. In June it conducted a test to see how the government and country would respond to a "disruption" in oil supplies.

On August 25th it was reported the brazil was opening negotiations with Ecuador to replace diminishing oil supplies. China, in the midst of rapidly diminishing harvests, a growing economy and expanding population is fearing a major food crisis. This, even as Hong Kong, Hangzhou, and shanghai are facing mandatory blackouts which are disrupting manufacturing, trade and retail activity. Chinese oil imports have increased by 15% in just the first quarter of 2004 alone. Germany has moved to institute home energy passports, and undertaken serious and well planned efforts to reduce energy consumption. Chancellor Schroeder, in the wake of recent revelations that shell – which downwardly revised its reserve estimates four times in one year – called upon the G8 nations to move to mandate total and verifiable transparency in all oil reserve figures. India, whose oil imports jumped 23% in one month, has moved to create a strategic petroleum reserve. Indonesia, a member of OPEC has announced that its oil production will drop significantly by 2008.

Japan, ignoring stiff opposition from Washington, has signed a major oil contract with Iran, at the same time that it is feuding with China, Vietnam and the Philippines over relatively small oil and gas deposits in the Spratly islands of the south china sea. In anticipation of pending military conflict in the region china has decided to build a pipeline through Burma to the Indian ocean so that tankers supplying China's growing thirst will not have to travel through a region that is becoming increasingly dangerous.

Three bills have been introduced in the Japanese parliament that would suspend its non-violent constitution and permit a full scale rearmament.

Russia, having recently admitted that its oil reserves were finite and that production might start to decline sharply within the next five years has announced that it will build a pipeline from its Siberian fields to the pacific ports of Vladivostok and Sakhalin thus agreeing to sell its oil to Japan, Korea and the Philippines. Russia's other choice was to have the pipeline terminate in central china.

This week in petroleum, an industry journal has reported that non OECD countries have begun to hoard petroleum and are buying all they can even at what some analysts call "inflated" prices.

In Thailand, mandatory evening curfews have been imposed two nights a week requiring all businesses to shut down in order to conserve energy.

On August 24th Britain's oil depletion analysis center confirmed, citing data from petroleum review that daily oil depletion is now exceeding one million barrels per day. In other words, every year, the world is producing 1.14 million barrels per day less than it did the year before. By analyzing data from the 18 largest oil producing nations petroleum review calculated that production from these countries peaked in 1997 at 24.7 million barrels per day and that by 2003 it had fallen to 22.1 million barrels per day. On august 21 the Houston chronicle posed a great question. If oil prices are soaring and there's insatiable demand, why isn't there a boom in hiring and corporate expansion? The Chronicle, paying due heed to the financial markets, offered the dubious explanation that the oil companies just didn't want to overdo things and look greedy. In fact, all over the world oil companies are downsizing, selling off assets, laying off employees and merging. Just last week it was announced that French giant total was considering a tender offer to purchase Royal Dutch Shell.

And here in the United States, rising oil prices have forced major airlines like united to consider raiding corporate pension funds in order to offset rising oil costs as an alternative to bankruptcy.

In the meantime, in the West African country of Liberia, there are reports of 10 year-old mercenaries being recruited to fight in guerilla conflicts in neighbouring countries and there is no shortage of recruits. I wonder if senator chuck Hagel of Nebraska will see any of them. He just left on an Energy "safari" to scout west African prospects, just about a year after NATO announced it was shifting its focus to West Africa and the US delivered six obsolete warships to The Nigerian Navy.

This, ladies and gentlemen, is just the beginning. And neither Presidential candidate has even remotely addressed the real issues or dared to tell the American people the worst. The one overriding concern I have seen expressed everywhere is "oh, no. We can't do that. It will crash the markets."

Is that the sum total of human expression and achievement? The markets?

To close this presentation tonight I would like to offer you quotes from two distinguished gentlemen whose names might carry a bit more weight in this room than Michael Ruppert.

The first is from Sir Charles Galton Darwin who in 1952, just one year after I was born, wrote:

“the fifth revolution will come when we have spent the stores of coal and oil that have been accumulating in the earth during hundreds of millions of years. . . . It is to be hoped that before then other sources of energy will have been developed . . . But without considering the detail [here] it is obvious that there will be a very great difference in ways of life. . . . Whether a convenient substitute for the present fuels is found or not, there can be no doubt that there will have to be a great change in ways of life. This change may justly be called a revolution, but it differs from all the preceding ones in that there is no likelihood of its leading to increases of population, but even perhaps to the reverse.”

I have insisted for many years now that any fundamental change in the current human paradigm, a change that will really make a difference, is impossible until we, collectively and as a species, change the way money works.

In “Crossing the Rubicon” I will explain just how and why the world’s current economic system is hastening and worsening a calamity of unimagined proportions. This all began for me some 27 years ago when, as a young policeman, I discovered that the CIA was deeply involved in the drug trade. The purpose of that involvement led me to discover, and prove using us senate hearing records and documents from the CIA itself that an essential ingredient – perhaps the essential ingredient – in us economic supremacy was the maintenance of a flow of as much as $600 billion a year in drug profits through US financial markets and institutions.

What we are witnessing now is a collision: a collision of a financial system relying on fractional reserve banking, debt-financed growth, and a fiat currency system with a planet and energy resources that are finite, limited, and running out. Infinite growth is battling with finite energy. One is not possible without the other and I have absolutely no doubt as to which side will win.

In November 2002 James Kenneth Galbraith wrote an article

Titled “the unbearable costs of empire”

None of these problems will be cured so long as war remains our dominant political theme. But serious though they are, they pale in comparison with the larger problem of the international trade-and financial order under conditions of permanent war.

It is a straightforward fact that if global oil production starts to decline but US consumption does not, everyone else will be required to cut purchases and uses of oil. But how can oil prices be held stable for Americans yet be made to rise for everyone else? Only by a policy of continuing depreciation in everyone else's currency. Such a policy of dollar hegemony amid worldwide financial instability, of crushing debt burdens and deflation throughout the developing world, is perverse. It

will make our trading partners' exports cheap, render their imports dear and keep their real wages low. It will price American goods out of world markets and lead to unsustainable dependence on foreign capital. It will be a policy, in short, of beggar-all-of-our-neighbours while we live alone, in increasing idleness and inside the dollar bubble. This is the policy that Bush and Cheney are actually imposing on the rest of the world. But they cannot make it last. It will make lives miserable elsewhere, generating ever more resistance, terrorism and military engagement. Meanwhile, we will not experience even gradual exposure to the changing energy balance; we will therefore never make the investments required to adjust, even eventually, to a world of scarce and expensive oil. In the end, therefore, that world will arrive much more abruptly than it otherwise would, shaking the fragile edifice of our oil economy to its foundations. And we will someday face a double explosion: of Anger against our arrogance and of actual shortage and collapsing living standards, when the confidence of investors in the dollar finally gives way.

Compared with this future, a new commitment to collective security, to a new world financial structure, to a rational energy and transportation policy, and to spending to meet our actual domestic needs would be a bargain. At the end

of the constitutional convention, Benjamin Franklin was asked what type of government the framers had given our new country. He famously replied, "a republic, if you can keep it."

In 49 BC Julius Caesar, fresh from a battlefield victory in central Italy ordered his legions to cross a small creek called the Rubicon. Under the laws of the roman republic, the army was not allowed to enter the capital city.

As Julius Caesar crossed the Rubicon, the Roman Republic died and the Roman Empire was born. Our task, if we and much of human civilization are to survive, is not to keep our republic, but to take it back.

Thank you,

Over the Last 24 Months Hoped For Caspian Oil Bonanza Has Vanished
With Each New Well Drilled -- Global Implications Are Frightening

by Dale Allen Pfeiffer, *FTW* Contributing Editor for Energy

[Ed. Note: The unfolding drama since 9-11-01 has been closely paralleled by another, perhaps more threatening one. Evolving more quietly, unmentioned and ignored by the major media, is a coming hydrocarbon energy crisis of civilization-threatening significance. Peak oil production is a reality, and it is happening now. What was once heralded as an oil bonanza in Central Asia -- and given life by ludicrous economic and political assertions insisting that demand always creates supply -- has proven itself to be an enormous bust. As Caspian reserve estimates have been continually revised lower -- from 200 billion barrels, to 100 billion barrels, to around 20 billion barrels -- the world has witnessed a dramatic shift in U.S. foreign policy toward belligerent and unilateral doctrines aimed at Iraq and Saudi Arabia. In the meantime, both politicians and economists perpetuate a dangerous fallacy which says that if you lock scientists up in a bank vault and give them enough money and enough demand, they can produce a hot dog with mustard and relish.

And conversion to hydrogen energy, as promoted by the Department of Energy, is an impractical myth; a palliative meant to calm fears rather than solve problems. Not until technolgies are made available which manufacture hydrogen at the point of use will hydrogen technolgies present even a viable partial solution for the critical challenges posed by peak oil.

*As **FTW** has said for more than a year, the "war which will not end in our lifetimes" is proving itself to be a sequential war to control the last remaining oil reserves on the planet, especially those which have not yet peaked. - MCR]*

Dec. 5, 2002, 16:00 PST (FTW) -- What ever happened to all the talk of a new oil utopia in the Caspian Sea and Central Asia? Word was that Caspian-Central Asian oil reserves would dwarf the Middle East.

Yet, in the year since the Afghan War began, it seems that all the rumors of Caspian riches have died out and the center of oil interest has returned once again to Saudi Arabia and Iraq. In his exclusive ***FTW*** interview (http://www.fromthewilderness.com/free/ww3/102302_campbell.html), noted petroleum geologist Colin Campbell

states that exploration in the Caspian region has been very disappointing, with the discoveries being much smaller than predicted and much of the oil discovered being of poor quality.

But the Energy Information Agency (EIA) predicted that the Caspian region would contain in excess of 200 billion barrels of oil. So what is being said elsewhere about the results of Caspian oil exploration?

At a recent event hosted by the Associated Press and the Harriman Institute, Steven Mann, the director of the State Department's Caspian Basin Energy Policy Office stated that the Caspian Sea contains only 50 billion barrels of proven reserves, a far cry from the EIA's projections. "Caspian Oil represents 4 percent of the world's reserves. It will never dominate the world's markets..."1

Likewise, a study published in PetroStrategies last July stated that the Caspian Sea contains only 39.4 billion barrels of proven oil reserves. The study, conducted by consultants from Wood MacKenzie, criticized IEA figures for the region as being severely inflated and unrealistic.2

The study states that oil production from the Caspian region should peak at 3.8 million barrels per day (bpd) by 2015, but be considerably less if the region remains politically unstable. Future discoveries might result in a production plateau extending beyond 2020.3

Only four fields are expected to make up 57 percent of production by 2010. Of these four fields, three are located in Kazakhstan: Tengiz, Karachaganak and Kashagan. The fourth field is the Azeri-Chirac-Guneshli complex in Azerbaijan.

Total Azerbaijan reserves are estimated at 6.6 billion barrels. However, drilling activity in the area has been disappointing, indicating that oil reserves are likely dispersed in small pockets.4

The Tengiz field is estimated to contain between 6 and 9 billion barrels of recoverable reserves. In 1993, Chevron paid $20 billion to Kazakhstan for the right to develop this field, resulting in the TengizChevrOil joint venture. Chevron expects production at Tengiz to peak at 750,000 bpd by 2010. Azeri-Chirac-Guneshli proven reserves are estimated at between 3 and 5 billion barrels.

They are being developed by the Azerbaijan International Operating Company, and are expected to peak at 800,000 bpd by the end of the decade.5 With reserves estimated at 10 billion barrels, the Kashagan field accounts for 25 percent of the regional total.6 This area is being developed by the Agip Kazakhstan North Caspian Operating Company (Agip KCO, formerly OKIOC), lead by the Italian oil major Agip.

Though Agip has been disappointed by exploration, in June of 2002 they stated there might be as much as 38 billion in probable reserves yet to be found in the Kashagan region.7

This author has been unable to locate data on the proven Karachaganak reserves, but the literature would seem to indicate that they are probably a little smaller than the Tengiz reserves.

Even the EIA has revised its report on the Caspian region, stating that although it is not another Middle East, it is... "comparable to the North Sea in its hydrocarbon potential."8

Additional discoveries have been reported in recent months, most notably by ExxonMobil9 and Nelson Resources.10 However, none of these discoveries are of sufficient size to alter the picture presented here.

In contrast, ExxonMobil does seem to be growing more cautious about the region. ExxonMobil announced in June that it was closing one of its Caspian offshore projects, the Oguz oil field, due to the poor results of exploratory drilling.11

Abandon Ship

As this article went to press, there are several new reports about oil investments in the Caspian region. ChevronTexaco is withdrawing from the Tengizchevroil venture. Corporate representitives and Kazakh government officials have offered contradicting explanations for the failure of this enterprise.

The nominal reasons for the move involve financial disagreements between ChevronTexaco and the Kazakh government. Disputes seem to center around distribution and reinvestment of profits and taxation.

Obviously, there are some hard feelings between Chevron and the Kazakh government. But the contradictory explanations offered by both sides may indicate that -- beneath all the disputes -- the venture simply isn't profitable enough.12

The Tengiz field has proven very expensive to pump and deliver to market. Aside from the engineering problems of extraction and transport, Tengiz oil has a high sulfur content (as much as 16 percent). Disposal of the waste sulfur has proven to be a major headache.13

Furthermore, following on the announcement that Chevron was shelving any further development of Tengiz, Kerr McGee has announced its intention to sell off all of its interest in various Caspian region projects, including mineral rights in the Kazakh sector of the Caspian Sea shelf and its interest in the Caspian Pipeline Consortium (1.56 percent). The company explained that it is seeking to rid itself of inactive profiles and leave projects where it only holds a minority investment.14

Finally, Agip KCO is also reported to be considering a delay in developing the Kashagan oil field.15 BP-Statoil has already withdrawn from the project, leaving Italian Agip to soldier on in the lead role. The Kashagan oil deposits also have a high sulfur content, and the geology of the deposits indicates that the oil may very well be contained in many small deposits as opposed to one large platform.16

When all of this is added to ExxonMobil's withdrawal from Azerbaijan and Russian Lukoil's recent announcement that it intends to sell its interest in the Azeri-Chirac-Guneshli complex, one has to wonder why all the major oil companies are leaving the Caspian region.

What About the Pipelines?

There has been very little talk lately about the trans-Afghanistan pipeline. This project seems to be floundering due to continuing instability in Afghanistan, and diminishing interest in the region's oil prospects. It has also been reported that the Caspian Pipeline from the Tengiz fields to the Russian port of Novorossiisk has been hit by a number of high costs, including port charges, taxes, and tariffs.17

The one pipeline which has remained in the news is the Baku-Ceyhan pipeline. Estimated to cost about $2.9 billion, this 1,090-mile pipeline network will link an existing pipeline from Azerbaijan to the Turkish Mediterranean Port of Ceyhan. To reach its destination, this pipeline will have to cross high mountain ranges and traverse territory occupied by disaffected Kurds, who may prove hostile to the project.

Critics have questioned whether there are sufficient oil reserves in the Caspian Sea to support the pipeline. It is also possible that heavy tariffs will render the oil transported along this pipeline uneconomical. ExxonMobil, ChevronTexaco and Russia's Lukoil have all declined offers to join the Baku-Tbilisi-Ceyhan (BTC) construction consortium.18

The project did receive a boost when BP announced that the Azeri fields held more oil than previously believed and would be sufficient to fill the link. Following this announcement, ConocoPhillip's and French TotalFinaElf both bought into the project.19 However, even with the increased reserves in the Azari, the BTC pipeline would have to rely on exports from Kazakhstan in order to be viable over the long-term.

Kazakhstan has vacillated in its support for the pipeline. Kazakh President Nursultan Nazarbayev has stated that he believes the best way to transfer Kazakh oil and gas to market is via Turkmenistan and Iran.20 President Nazarbayev has at various times indicated that Kazakhstan would pledge oil to the BTC pipeline, but has backpedaled afterwards.

During a speech at the James A. Baker III Institute for Public Policy at Rice University in Houston in late-December 2001, the Kazakh president stated that the efficiency of the BTC pipeline was not proven and that oil companies would choose the export route for Kashagan oil. This speech reflects the opinions of the Agip KCO consortium, which believes that the Iran route is the most cost-efficient way to transport Kashagan oil to market.21

The Kazakh President finds himself in a very difficult position due to U.S. opposition to a pipeline route through Iran. Kazakh statements in favor of the BTC pipeline would properly be viewed as attempts to placate the U.S.

Critics believe that political factors are blinding the U.S. to financial risks in the pipeline deal. Not only would the pipeline deny Iran a lucrative role as energy exporter, it would also reduce dependence of Central Asian states on Russian pipelines. Furthermore, the pipeline would bolster regional economies in Azerbaijan, Georgia and Turkey. The pipeline would help alleviate Turkey's current financial depression.

A U.S. government source has stated, "The BTC has been politically motivated, more than any other oil project in the world."22

In light of recent reports of industry majors pulling out of the region mentioned above, it is possible that Kazakhstan will push for the Iranian route. Presently, Agip is the only major left in the country, and they certainly prefer the Iranian route.

Troubles with the Tengiz and Kashagan consortiums could leave the BTC pipeline without enough oil to even make the project worth completing. If plans are announced to transport Kazakh oil through Iran, it will be very interesting to see how the U.S. responds. There are already influential voices urging Bush to go on to Iran as soon as he is finished with Iraq.

Whether or not the project will prove viable, construction of the BTC pipeline began on Sept. 8.[23] On hand for the start of construction was U.S. Secretary of Energy Spencer Abraham, who touted the project as "one of the most important energy undertakings."[24]

One has to wonder whether part of the reason for U.S. interest in the pipeline is an effort to destabilize OPEC. The Lebanese Daily Star recently ran an editorial by Middle East Analyst Patrick Seale which stated that Arab oil is currently worried about the triple threat of U.S. imperialism, Russian and Caspian imports, and hydrogen fuel cells.[25] It is to be wondered if Arab oil knows that the only portion of this triple threat which really has teeth to it is U.S. imperialism.

Spencer Abraham's Hydrogen Dream

The media was all aglow recently with Spencer Abraham's announcement that the U.S. now has a roadmap for making the transition to a hydrogen economy. Secretary of Energy Abraham announced the plan at the Global Forum on Personal Transportation held in Dearborn, Mich. In his presentation, he touted the line that hydrogen produced from renewable resources can provide unlimited energy with no impact on the environment. Secretary Abraham noted that the transition to hydrogen would be a long-term process, which will require the participation of both industry and government.

As a first step, in January 2002 Secretary Abraham, along with officials from the automotive industry and Congress, unveiled a FreedomCAR partnership to develop hydrogen fuel cell vehicles.[26]

The National Hydrogen Energy Roadmap is available on the internet in pdf form (http://www.eren.doe.gov/hydrogen/pdfs/national_h2_roadmap.pdf). This roadmap glows with positive energy. In all areas of production, delivery, storage, conversion and applications, the document beams about what we can achieve if we put our minds to it, but inevitably winds up by saying that we have a long way to go in order to make it a reality.

The document does mention the various challenges to each area of fuel cell development, but makes little of the obstacles and instead comes off sounding like a pep talk. Buried in the text, they admit "The transition to a hydrogen economy... could take several decades to achieve."[27]

The document speaks of wind, solar and geothermal production, biomass, nuclear-thermo-chemical water splitting, photoelectrochemical electrolysis, and bioengineering. But they admit that all of these processes will require a great deal more research.

The intention is to bootstrap the move by first developing small "reformers" that will run on natural gas, propane, methanol or diesel. But the authors admit that even this technology requires further refinement for improved reliability, longer catalyst life, and integration with storage systems and fuel cells.

The document also includes a short list of people who are in charge of various areas of development and transition. The list includes: Frank Balog of Ford Motor Company, Gene Nemanich of ChevronTexaco Technology Ventures, Mike Davis of Avista Labs Energy, Art Katsaros of Air Products and Chemicals Incorporated, Alan Niedzwiecki of Quantum Technologies, Joan Ogden of Princeton University Systems, and Jeff Serfass of The National Hydrogen Association.[28] This team will ensure that the new technology remains firmly in the hands of the top corporations.

The document is at least 80 percent public relations. While admitting that in all areas there are serious problems to be overcome before we will be able to make a transition to hydrogen fuel cells, nowhere does this document take a serious look at the obstacles. Instead, this paper paints a pretty picture of our hydrogen future and leaves the details to future research and investment. So let us look at a few of the difficulties of developing a hydrogen fuel cell economy.

First off, because hydrogen is the simplest element, it will leak from any container, no mater how strong and no matter how well insulated. For this reason, hydrogen in storage tanks will always evaporate, at a rate of at least 1.7 percent per day.29 Hydrogen is very reactive. When hydrogen gas comes into contact with metal surfaces it decomposes into hydrogen atoms, which are so very small that they can penetrate metal. This causes structural changes that make the metal brittle.30

Perhaps the largest problem for hydrogen fuel cell transportation is the size of the fuel tanks. In gaseous form, a volume of 238,000 litres of hydrogen gas is necessary to replace the energy capacity of 20 gallons of gasoline.31

So far, demonstrations of hydrogen-powered cars have depended upon compressed hydrogen. Because of its low density, compressed hydrogen will not give a car as useful a range as gasoline.32 Moreover, a compressed hydrogen fuel tank would be at risk of developing pressure leaks either through accidents or through normal wear, and such leaks could result in explosions.

If the hydrogen is liquefied, this will give it a density of 0.07 grams per cubic centimeter. At this density, it will require four times the volume of gasoline for a given amount of energy. Thus, a 15-gallon gas tank would equate to a 60-gallon tank of liquefied hydrogen. Beyond this, there are the difficulties of storing liquid hydrogen. Liquid hydrogen is cold enough to freeze air. In test vehicles, accidents have occurred from pressure build-ups resulting from plugged valves.33

Beyond this, there are the energy costs of liquefying the hydrogen and refrigerating it so that it remains in a liquid state. No studies have been done on the energy costs here, but they are sure to further decrease the Energy Return on Energy Invested (EROEI) of hydrogen fuel.

A third option is the use of powdered metals to store the hydrogen in the form of metal hydrides. In this case, the storage volume would be little more than the volume of the metals themselves.34 Moreover, stored in this form, hydrogen would be far less reactive. However, as you can imagine, the weight of the metals will make the storage tank very heavy.

Now we come to the production of hydrogen. Hydrogen does not freely occur in nature in useful quantities, therefore hydrogen must be split from molecules, either molecules of methane derived from fossil fuels or from water.

Currently, most hydrogen is produced by the treatment of methane with steam, following the formula: CH4 (g) + H2O + e > 3H2(g) + CO(g). The CO(g) in this equation is carbon monoxide gas, which is a byproduct of the reaction.35

Not entered into this formula is the energy required to produce the steam, which usually comes from the burning of fossil fuels.

For this reason, we do not escape the production of carbon dioxide and other greenhouse gases. We simply transfer the generation of this pollution to the hydrogen production plants. This procedure of hydrogen production also results in a severe energy loss. First we have the production of the feedstock methanol from natural gas or coal at a 32 percent to 44 percent net energy loss. Then the steam treatment process to procure the hydrogen will result in a further 35 percent energy loss.36

It has often been pointed out that we have an inexhaustible supply of water from which to derive hydrogen. However, this reaction, $2H_2O + e = 2H_2(g) + O_2(g)$, requires a substantial energy investment per unit of water (286kJ per mole).37 This energy investment is required by elementary principles of chemistry and can never be reduced.

Several processes are being explored to derive hydrogen from water, most notably electrolysis of water and thermal decomposition of water. But the basic chemistry mentioned above requires major energy investments from all of these processes, rendering them unprofitable in terms of EROEI.

Much thought has been given to harnessing sunlight through photovoltaic cells and using the resulting energy to split water in order to derive hydrogen. The energy required to produce 1 billion kWh (kilowatt hours) of hydrogen is 1.3 billion kWh of electricity.38 Even with recent advances in photovoltaic technology, the solar cell arrays would be enormous, and would have to be placed in areas with adequate sunlight.

Likewise, the amount of water required to generate this hydrogen would be equivalent to 5 percent of the flow of the Mississippi River.39 As an example of a solar-to-hydrogen set up, were Europe to consider such a transition, their best hope would lie in erecting massive solar collectors in the Saharan desert of nearby Africa. Using present technology, only 5 percent of the energy collected at the Sahara solar plants would be delivered to Europe. Such a solar plant would probably cost 50 times as much as a coal fired plant, and would deliver an equal amount of energy.40 On top of this, the production of photovoltaic cells has a very poor EROEI.

The basic problem of hydrogen fuel cells is that the second law of thermodynamics dictates that we will always have to expend more energy deriving the hydrogen than we will receive from the usage of that hydrogen. The common misconception is that hydrogen fuel cells are an alternative energy source when they are not.

In reality, hydrogen fuel cells are a storage battery for energy derived from other sources. In a fuel cell, hydrogen and oxygen are fed to the anode and cathode, respectively, of each cell. Electrons stripped from the hydrogen produce direct current electricity which can be used in a DC electric motor or converted to alternating current.41

Because of the second law of thermodynamics, hydrogen fuel cells will always have a bad EROEI. If fossil fuels are used to generate the hydrogen, either through the Methane-Steam method or through Electrolysis of Water, there will be no advantage over using the fossil fuels directly. The use of hydrogen as an intermediate form of energy storage is justified only when there is some reason for not using the primary source directly.42 For this reason, a hydrogen-based economy must depend on large-scale development of nuclear power or solar electricity.

Therefore, the development of a hydrogen economy will require major investments in fuel cell technology research and nuclear or solar power plant construction. On top of this, there is the cost of converting all of our existing technology and machinery to hydrogen fuel cells. And all of this will have to be accomplished under the economic and energy conditions of post-peak fossil fuel production.

Based on all of this, I submit that Secretary of Energy Spencer Abraham does indeed have ulterior motives for his Hydrogen Energy Roadmap. First, I suggest that this distant goal will help to pacify the public once they begin to suffer from the effects of fossil fuel withdrawal. Secondly, this project will allow the elite to transfer more money from the general public to the pockets of the rich. Third, in the words of Karl Davies, this proposal will deflect a stock market collapse once news of declining oil production becomes generally recognized.

Tied to this, it will brace stock prices of the auto corporations and oil majors to help them survive well into the era of oil depletion. And finally, the idea that we are working on a transition from fossil fuels to a hydrogen-based economy will help to destabilize OPEC, hopefully making it easier to deal with that organization and the Arab oil states.

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"America must stop polluting itself by fueling vehicles with gasoline. I urge President Bush to form a new special commission to plan the conversion to hydrogen. Hydrogen does not poison the air, and it is in everlasting supply. ...The newly-announced energy program doesn't deal adequately with the awful damage to our air and health that utilizing gasoline, a fossil fuel, is doing. President Bush's special commission should consist of the most credible visionaries in business, the environmental movement, politics and the scientific community, to design an energy policy that is truly sustainable and healthy. Nothing is more important for our children."

-- Dennis Weaver

Weaver, as president and co-founder with Gerry [Weaver] of the Institute of Ecolonomics, for ten years has been encouraging businesses to profit while cleaning up the environment. His non-profit group has members throughout the U.S., publishes a newsletter, and has been honored for its achievements. Ecolonomics is now taught at three colleges.

In November The Institute will conduct a hydrogen-fueled vehicles expedition, The Drive for Life, with Dennis as one of the drivers, from Los Angeles to Denver. It will call attention to the World Congress To Initiate The Hydrogen Economy, co-sponsored by The Institute, to be held in Denver in November. more

PRNewswire **May 23, 2001**

USC Study Shows Air Pollution Slows Lung Function Growth As Children Grow Up

by Jon Weiner University of Southern California October 19, 2000

Common air pollutants slow children's lung development over time, according to results from the University of Southern California-led Children's Health Study. The 10-year-long study is considered one of the nation's most comprehensive studies to date of the long-term effects of smog on children. The study was initiated with support from the California Air Resources Board. Additional funding has been provided by the National Institute of Environmental Health Sciences, the Environmental Protection Agency and the Hastings Foundation.

"This is the best evidence yet of a chronic effect of air pollution in children," says John Peters, M.D., D.Sc., USC professor of preventive medicine and one of the study authors.

"Long -term exposure to air pollution has long-term effects on children's lungs, and the effects are more pronounced in areas of higher air pollution."

Researchers with the Children's Health Study have monitored levels of major pollutants in a dozen Southern California communities since 1993, while carefully following the respiratory health of more than 3,000 students. The report released in the October issue of the American Journal of Respiratory and Critical Care Medicine, covers smog's health effects on children over the first four years of the study.

For more information about the Children's Health Study, visit the researchers' website at: www.usc.edu/medicine/scehsc

W. James Gauderman, Rob McConnell, Frank Gilliland, Stephanie London, Duncan Thomas, Edward Avol, Hita Vora, Kiros Berhane, Edward B. Rappaport, Fred Lurmann, Helene G. Margolis and John Peters, **Association Between Air Pollution and Lung Function Growth in Southern California Children**. American Journal of Respiratory and Critical Care Medicine, Vol 162, No. 4, October 2000, pp. 1-8.

Acknowledgement: This research was supported by the **California Air Resources Board** (under the auspices of the Long-Term Exposure Health Effects Research Program), the National Institute of Environmental Health Sciences (which funds the Southern California Environmental Health Sciences Center), the Environmental Protection Agency, and the Hastings Foundation.

Hawaiian Hydrogen Bill
Passes in Unanimous Floor Vote

Hawaiian House and Senate Approve
$200,000 Hydrogen Kick-Start Appropriation

Championed by Energy and Environmental Chair Representative Mina Morita, the bill represents the first step toward a Hydrogen Hawaii.

S.B. 1435 Hydrogen Private-Public Partnership

From the bill: "The [Department of Business, Economic Development and Tourism], with the assistance of the partnership, shall: (1) Sponsor a stakeholder workshop with interested parties to review and critique the Hawaii hydrogen plan; (2) Evaluate and adopt policy options to promote industry investment in hydrogen infrastructure; (3) Initiate pilot projects to install multi-megawatt electrolyzers to produce hydrogen from indigenous resources on the Kona coast of the island of Hawaii; (4) Conduct a comprehensive evaluation and market study for the production of hydrogen on the island of Hawaii and the importation and production of hydrogen for Oahu; (5) Conduct engineering assessments of biomass or wind energy pathways for hydrogen for all islands; (6) Initiate pilot projects that include distribution of hydrogen produced on the island of Hawaii to the other islands; (7) Initiate discussion of tax incentives for investors; and (8) Conduct assessments of potential cost benefits to consumers and recommend ways to educate consumers about the benefits of hydrogen fuel."

"Incredibly rich in untapped natural energy resources, yet heavily dependent on imported petroleum, Hawaii could become a global leader in sustainability. But will it dare?"
from the jacket of the new VIMS video ***HYDROGEN HAWAII***, distributed in March to each member of the Hawaiian Legislature

San Francisco Chronicle: Hawaii in the Vanguard

Hydrogen's first large-scale commercial use is expected to be not in California but rather in such locations as Iceland and Hawaii, where renewables are much higher on the political radar.

Hawaii state Rep. Hermina Morita, a Democrat who chairs a legislative energy committee, is leading the push to reduce her state's need for imported oil, partly by encouraging alternatives and hydrogen fuel cells.

She described it as a "market-based approach" that includes demonstration projects and economic incentives for utility investment. Eventually, she added, California could be part of the picture.

Rather than importing energy, she said, "ultimately what we want in Hawaii is to be capable of producing more hydrogen than we need, so we can send the excess to California."

Hydrogen Powers Energy Hopes
Experts Say It May be the Fuel of the Future
by Carl Hall, Science Writer San Francisco Chronicle **April 2, 2001**

"It was Senator Matsunaga's vision
that renewable energy could provide
a sustained source of non-polluting energy
and that such forms of alternative energy
might ultimately be employed in the production
of liquid hydrogen as a transportation fuel
and energy storage medium
available as an energy export."

from Section 2119 -- The Matsunaga Hydrogen Act

China, Italy United
Over Energy Project
by Zhao Shaoqin - China Daily

June 10, 2000
Carlo Rubbia

The two countries will sign a strategic memorandum of co-operation on developing hydrogen energy, the China-Italy Workshop on Hydrogen said yesterday in Beijing.

The workshop was sponsored by the Ministry of Science & Technology and the Italian Embassy to China, and organized by the China Energy Research Society. About 80 experts from both countries discussed technical problems related to hydrogen production, storage and utilization.

Carlo Rubbia, chairman of the Italian National Board for New Technology, Energy and Environment, said in his keynote speech that the development of hydrogen energy heralds a new road towards zero-emission of pollution in the industrialization era. Rubbia won the Nobel Prize in physics. Vice-Premier Li Lanqing met with Rubbia yesterday in Beijing, exchanging ideas on research and development of renewable energy. Rubbia called the possibility of producing clean energy from coal by removing carbon as "very promising and valuable." Rubbia said such research efforts will greatly benefit China, a country that suffers from acid rain because of its heavy dependence on coal.

Ma Songde, vice-minister of Science and Technology, said China is actively developing different methods of producing clean energy, including hydrogen, to help co-ordinate its economic growth and environmental protection.

"The internal combustion engine
will go the way of the horse.
It will be a curiosity to my grandchildren."

Geoffery Ballard
Founder of Ballard Power Systems
Time Magazine

Denis Hayes
Creator of "Earth Day"

"It is time to move beyond those technologies that were developed in the 19th century -- diesel engines and gasoline-powered internal combustion engines and steam engines and turbines and hydropower reservoirs -- to new energy sources powered by the sun, the wind, biological sources, hydrogen, geothermal. We have in hand the technology to begin that process swiftly."
Environmentalists Launch Earth Day 2000 Campaign
United States Information Agency 4/22/1999

Hayes wants to rally public pressure on Congress for government policies and incentives that could make America a global leader in the new technologies.
Earth Day Pioneer Pitches Theme for Future
Cleveland Plain Dealer 4/23/1999

"HETIC"

White Mountain Research Station's proposal for a Hydrogen Energy Technologies Integration Center

University of Hawaii Chemistry Professor Named National Success Story

Craig Jensen

University of Hawaii at Manoa Professor of Chemistry Craig M. Jensen has been named the 1999 Research Success Story by the Hydrogen Technical Advisory Panel and the U.S. Department of Energy for his work developing effective new catalysts for hydrogen-based energy production.

Jensen described his work at the Hydrogen Technical Advisory Panel annual meeting April 67 in Washington, D.C. Jensen's work in the Department of Chemistry, which is part of the Hawai'i Natural Energy Institute's (HNEI) Hydrogen Program, focuses primarily on finding efficient, cheaper methods of storing hydrogen as an onboard energy carrier. One of the storage methods being explored is the use of metallic hydride compounds in which a high weight percentage of hydrogen is chemically bonded to metal centers. However, the hydrogen in these compounds is strongly bonded, and large amounts of energy must be used to pull hydrogen off the metal.

"We recently found that the P-C-P pincer complex, $IrH_2\{C_6H_3\text{-}2,6\text{-}(CH_2PBu^t_2)_2\}$ (1) catalyzes the thermochemical dehydrogenation of cycloalkanes to cycloalkenes without the use of a hydrogen acceptor.

"These reactions occur at rates which are 2 orders of magnitude greater than those of previously reported catalytic systems."

Research conducted by Jensen has led to the development of a new catalyst, or a substance that accelerates the release of hydrogen from the metals, thus dramatically reducing the temperature required for rapid desorption of hydrogen. This discovery could greatly reduce the weight and cost of fuel cell systems, making hydrogen-powered vehicles more practical and economically feasible. -- University of Hawaii

Congressional Hydrogen Energy Advocates Request Authorized Level of DOE Funding

Tammy Baldwin
(D-WI-2nd)

Virgil Goode, Jr.
(D-VA-5th)

Howard McKeon
(R-CA-25th)

Brad Sherman
(D-CA-24th)

April 29, 1999

The Honorable Ron Packard
Appropriations Committee
Chairman, Subcommittee on Energy and Water Development
United States House of Representatives

2362 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman,

We write to urge your support for an increase in the Department of Energy's hydrogen research program for FY2000. As you know, Congressman Bob Walker of Pennsylvania led the effort in the 104th congress to see the Hydrogen Future Act of 1996 passed and signed into law. Although the Hydrogen Future Act of 1996 authorized $35 million for the hydrogen research program in FY2000, the Department of Energy's FY2000 budget request for this program is only $28 million.

Hydrogen as a fuel is on the cutting-edge of renewable energy sources. Used by NASA to power the Space Shuttle, hydrogen can eventually be used to meet most power needs, cleanly and economically. It can power airplanes and cars and provide heat for homes and businesses. Rather than relying on imported fuels, we can use hydrogen produced in this country to grow our economy without harming our environment. Expanding the use of hydrogen and other renewable energy sources will increase U.S. competitiveness, reduce U.S. dependence on foreign oil, and enhance our national security

Hydrogen is the most abundant of all the elements on earth. There is an inexhaustible supply of hydrogen that can more than meet all energy needs. And it can be used with no pollution. When hydrogen burns it generates only energy and water and therefore is a clean fuel. By using a device known as a fuel cell, hydrogen combines with oxygen to produce electricity.

The Department of Energy's hydrogen research program encourages the development of technologies to reduce the cost and adverse environmental impacts of energy use. This program will facilitate the introduction of hydrogen into our national energy strategy. The value of a non-polluting fuel source in our urban non-attainment areas cannot be overlooked. In the context of the overall FY2000 Department of Energy budget, our request for an increase of $7 million for the hydrogen research program is modest in comparison to what foreign governments and companies spend to develop hydrogen technologies in world markets.

Should you require any additional information, please do not hesitate to contact us. Again, thank you for your consideration of this request.

Sincerely,

Howard 'Buck' McKeon **Brad Sherman**

Virgil Goode, Jr. **Tammy Baldwin**

Department of Energy Secretary
Bill Richardson Endorses U.S. Renewable Energy Policy
On Earth Day - April 22, 1999

"The United States shares many of the goals of Earth Day 2000, especially the goal of developing technologies that can help protect our environment. The Earth Day 2000 theme, 'New Energy for a New Era,' accurately reflects the many challenges and opportunities we face as we head intothe new millennium.

"All of us play a role in making Earth Day's ideals a reality. The way we heat and cool our homes and workplaces, power our industries, and fuel our vehicles produces 85 percent of thegreenhouse gases the U.S. pumps into the environment. These gases, in turn, contribute to climate change.

"Over time, we need to make a transition to clean, renewable energy sources and more energy-efficient goods and services. We need to make responsible energy choices. We need to tell the world about the many alternatives available today, right now, to revolutionize our energy future. "Native Americans have a saying: 'The real owners of the land are not yet born. That is a truth at the heart of Earth Day."

Environmentalists Launch Earth Day 2000 Campaign
United States Information Agency 4/22/1999