EIR
Executive Intelligence Review
May 24, 2013 Vol. 40 No. 21 www.larouchepub.com $10.00

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New Book Attacks Deadly Austerity, But Not Obama
Beware of War Provocations if London Strikes Back

Glass-Steagall Breakthrough: Harkin Brings Bill to Senate

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EIR (ISSN 0273-6314) *is published weekly (50 issues), by EIR News Service, Inc., P.O. Box 17390, Washington, D.C. 20041-0390. (703) 777-9451*

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Canada Post Publication Sales Agreement #40683579

Postmaster: Send all address changes to *EIR*, P.O. Box 17390, Washington, D.C. 20041-0390.

EIR

From the Managing Editor

If it's true that the first step is the hardest, then we should be well on our way to restoring the Glass-Steagall Act. Tom Harkin's introduction of S. 985 to the U.S. Senate finally breaks the paralysis of that body, giving other Senators and Congressmen no excuse not to do what they have been too timid to do up to now. Our *Feature* gives an update on the fight, plus the highly relevant history of President Franklin D. Roosevelt's "Hundred Days" legislation in 1933, of which Glass-Steagall was one component. If you haven't contacted your representatives yet to demand that they support Harkin's bill, and H.R. 129 in the House, what are you waiting for? We need a veto-proof majority for Glass-Steagall as fast as is humanly possible, while it is still feasible to reverse the downward-spiralling financial/economic collapse.

However, as *EIR* has often emphasized, Glass-Steagall is only the beginning. And the second, third, and fourth steps are likely to be just as difficult as the first has been, if not more so. Most people in Congress at least know what Glass-Steagall *means*, as a formalism; but they have no idea what a Hamiltonian *credit system* is (step 2), as contrasted to the British *monetarist system* that we have today. Lyndon LaRouche and associates have prepared hundreds of articles and videos on this subject, which our readers can use to enlighten those who remain clueless. And the third essential step is to use that "Hamiltonian" credit to launch great infrastructure projects, such as the North American Water and Power Alliance, to re-employ millions of Americans in high-tech jobs.

Our *Economics* section features some very striking statements on the murderous consequences of current monetarist policy, ranging from CEOs and economists, to public health officials, to Pope Francis.

In the last installment of our series on the Schiller Institute's Frankfurt conference on "A New Paradigm for the Survival of Civilization," we provide transcripts of speeches by three international experts on the necessity of nuclear power for the world. Of particular interest is the focus on models for *thorium reactors*, which even a greenie could learn to love.

Our news coverage highlights the British-backed drive for war against Syria and Iran (and opposition to it, notably from the Austrian government), and the "Watergate" drumbeat against President Obama.

Susan Welsh

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EIRNS/Natalie Lovegren

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GLASS-STEAGALL BREAKTHROUGH

Harkin Bill Opens Door to Restoring Economic Sanity

by Debra Hanania-Freeman

May 20—The increasingly urgent drive to restore the Glass-Steagall Act as the indispensable first step in reversing the accelerating collapse of the U.S. economy hit a dramatic new level on May 16. On the 80th anniversary of the introduction of the original Glass-Steagall bill, Sen. Tom Harkin (D-Iowa) introduced S. 985 to restore the 1933 legislation and rebuild the wall that had, for some 66 years, separated commercial banking from cancerous investment speculation and brokerage.

Although the full text of S. 985 was not available as of this writing, it reportedly matches H.R. 129—The Return to Prudent Banking Act—introduced by Reps. Marcy Kaptur (D-Ohio) and Walter Jones (R-N.C.), on the first day of the new session in January, which now has 63 sponsors (including Kaptur and Jones). The fact that Harkin's Senate bill mirrors the House bill means that, should the legislation pass in both houses, it would be spared the treacherous watering-down that important legislation often is subjected to in conference committee, and instead go directly to the President's desk *intact.*

Harkin, who has represented Iowa in the U.S. Senate since 1985, after serving 10 years in the House, was one of eight Senators to vote against the financial deregulation that formally abolished Glass-Steagall in 1999. It was that repeal, which came after years of intense pressure from Wall Street and the City of London, and unleashed the orgy of trafficking in bundled subprime mortgages, derivatives, collateralized debt obligations, credit default swaps, and ever-more exotic investment vehicles which comprised the global financial bubble that finally burst in 2008.

Although no Senators have yet signed on to restoring the protective shield of Glass-Steagall, many have talked about it. In 2010, in the midst of fractious debate surrounding the Dodd-Frank bill (which turned out to be far worse than useless), Maria Cantwell (D-Wash.) and John McCain (R-Ariz.) attempted to restore the FDR-era Glass-Steagall banking law. Although they enjoyed the support of many colleagues on both sides of the aisle, intense pressure from Wall Street and the White House resulted in their efforts being blocked. Since then, both Cantwell and McCain have repeatedly said that they would reintroduce legislation to reinstate Glass-Steagall.

Two freshmen Senators—Angus King (I-Me.) and Elizabeth Warren (D-Mass.) made reinstatement of Glass-Steagall major planks in their election campaigns. In his first major speech on the Senate floor on April 24, King stated, "I wasn't a member of this body, but had I been, I suspect I would have opposed Dodd-Frank and supported the restoration of the Glass-Steagall Act. I think that's a structural solution. . . ." Notably, both the houses of the Maine state legislature have sent memorial legislation to King demanding that he take such action.

During a Senate Banking Committee hearing in February, Joe Manchin (D-W.Va.) pressed Federal Re-

serve and financial regulatory officials. "Glass-Steagall was put in place in 1933 to prevent exactly what happened to us," Manchin said, referring to the 2008 collapse. "Why wouldn't we have those protections? If it worked so well for so many years, why do you all not believe it's something we should return to?"

And, although at least a dozen other members of the Senate have also indicated their support for Glass-Steagall's reinstatement, they have been slow to step forward. Instead, they have made endless speeches, decrying the fact that Dodd-Frank has done nothing to control banks that are "too big to fail," "too big to prosecute," "too big to regulate," "too big to manage," "too big to jail," but, apparently, judging from their own inaction, *not* too big to tolerate!

Hot Air and Press Play

Prior to Harkin's decisive May 16 action, all the Senate has produced, despite a lot of hot air and press play, has been what some have called sham legislation.

Sen. Bernie Sanders' (I-Vt.) S. 685, and the "too-big-to-fail" (TBTF) bill, S. 798, of Sherrod Brown (D-Ohio) and David Vitter (R-La.), introduced April 24, are essentially useless: Neither bill breaks up any banks or bank holding companies, nor prevents commercial banks from putting deposit funds into securities and derivatives.

There is no doubt that Wall Street will put on a show of opposing the TBTF sham, but that is just part of the game they are playing, to divert attention from the necessary immediate action that will cut off government support for their gambling games. It's the constitutional function of the banking system that must be restored, and FDR's Glass-Steagall is the only way that can be done.

It would seem baffling to some. Twenty state legislatures are currently considering resolutions demanding Glass-Steagall's reinstatement. In four states—South Dakota, Maine, Indiana, and Alabama—memorials have passed. Scores of state legislatures have contacted their Congressional delegations. The AFL-CIO, Move On, the Tea Party, and countless other constituency organizations have stated their support. Financial and economic luminaries as diverse as former Reagan OMB Director David Stockman, former Citigroup CEO Sandy Weill, FDIC Vice Chairman Thomas Hoenig, former U.S. Sen. Ted Kaufman, former Clinton Labor Secretary Robert Reich, and most notably, Lyndon LaRouche, have repeatedly insisted that a return to Glass-Steagall is urgently needed.

International Support

In a Week of Action May 6-11, LaRouchePAC activists from 25 states converged on Washington, D.C., while their counterparts in Nebraska, Nevada, Illinois, New York, Massachusetts, California, Texas, Delaware, New Jersey, and elsewhere, staged similar efforts, insisting that Glass Steagall's reinstatement is not a legislative choice, but a matter of life and death.

LaRouchePAC activists also delivered appeals from ranking figures in Italy, Germany, France, Spain, Ireland, Iceland, Denmark, Sweden, Colombia, and Mexico, many of whom noted that when FDR implemented the original legislation, he did so, not merely as a measure to curb Wall Street excesses, but rather as a reflection of the most fundamental principles of the American System of Economy, and that while they were fighting for similar regulation in their own nations, the United States was the only nation that could force the desperately needed global restructuring.

So, why are so many in Congress still hanging back? Inside Washington, the answer is obvious. They fear vicious reprisals from an Obama White House determined not to allow challenges to the failed Dodd-Frank Act, as well as the money-power of the big banks. Public records show that during the 1997-98 election cycle, Wall Street spent no less than $350 million to get Glass-Steagall repealed.

Senator Harkin expressed a very different point of view. "I'll tell you, the American people like a fighter. You don't win a war by defending yourself. You don't win a football game by defending the goal. You don't win a basketball game by defending yourself. You only win when you attack. And the way you do it, is you attack the philosophical basis of your opposition. And I think if you do that, the American people will listen. Too many in the financial industry put profits ahead of people. As a direct consequence, tens of millions of ordinary Americans have lost their jobs, their homes and their livelihoods."

LaRouche, who has often made similar statements, applauded Harkin, saying, "This is a very important new development. It will have very significant impact for very obvious reasons. All of the efforts to suppress this action have been defeated. This is a new game. The agenda has changed. Despite all of the efforts to prevent this action, Senator Harkin has taken the initiative."

LaRouche added that we could not yet claim a complete victory, but that victory was now well in sight.

Glass-Steagall Introduced in Senate On 80th Anniversary of FDR's Original

The following leaflet, issued by LaRouchePAC on May 17, under the headline, "The 80th anniversary of Glass-Steagall: The American Principle of Progress," is being circulated internationally, and is available for e-mailing and printing on the LPAC website.

Thursday, May 16, 2013, marks the 80th anniversary of the introduction of Franklin Roosevelt's Glass-Steagall Act into Congress. The purpose of the bill was stated plainly in the preamble, which reads: "To provide for the safe and more effective use of the assets of banks, to regulate interbank control, to prevent the undue diversion of funds into speculative purposes, and for other purposes." Yet, the implications of the Act, as well as the success of the legislation for 66 years, was understood by Roosevelt not merely as a measure to curb Wall Street excesses, but rather as a reflection of the principles of the American System of Economy. In the introduction to his second volume of private papers, Roosevelt stated explicitly:

> The New Deal was fundamentally intended as a modern expression of ideals set forth one hundred and fifty years ago in the Preamble of the Constitution of the United States—"a more perfect union, justice, domestic tranquility, the common defense, the general welfare and the blessings of liberty to ourselves and our posterity." But we were not to be content with merely hoping for these ideals. We were to use the instrumentalities and powers of Government actively to fight for them.

Within the first 100 days of his first administration, FDR implemented Glass-Steagall, and, with it, the backbone of his New Deal. Roosevelt's 1933 reorganization of the banks was not done for the banks per se, but was done to establish the institutional framework for providing credit to the real economy, which had suffered under 20 years of failed policies prior to his taking office. Under Glass-Steagall, the banks were made capable of supporting the New Deal policies, in particular, FDR's initial plan for Credit Banks for Industry, which evolved into the direct-lending credit facility of his administration's Reconstruction Finance Corporation.

To restate the purpose of Glass-Steagall today: It is the means to end the tyranny of speculative financial institutions, and to once again allow commercial banks, the traditional drivers of productive lending to the real economy, to lend in their communities. As "Quantitative Easing" exceeded $2.5 trillion from 2008 to 2012, overall bank lending contracted by nearly $1 trillion. Over the course of the last decade, 1,500 community banks have disappeared, with 475 out of business since the passage of the 2010 Dodd-Frank Act, as regulatory burdens on those institutions increased tenfold during that same period.

The purpose of Glass-Steagall, in the words of FDIC Vice Chairman Thomas Hoenig, is to "narrow the public safety net to the purpose for which it was intended.... Commercial banks with the protection of the safety net would again be restricted from engaging in higher risk and return activities, such as trading, creating derivatives, or other broker-dealer activities that do not need government protection to function effectively." Exempt from that safety net would be the nearly $70 trillion shadow-banking "industry," unprotected, and subject to bankruptcy laws.

What is most important, however, is that Glass-Steagall will once again provide the United States, and other nations prepared to follow suit, with "a modern expression" of the principles embedded in the American System of Economy, principles expressed most clearly under George Washington's Treasury Secretary Alexander Hamilton, President John Quincy Adams, President Abraham Lincoln, and President Franklin D. Roosevelt. The greatest periods of prosperity, expan-

sion, and growth in the U.S. economy have occurred when our financial institutions were utilized explicitly for the purposes of nation-building. In each case, the creation and regulation of the U.S. currency were, strictly, a reflection of growth in the real economy.

The present financial system, which counts speculative values, market values, and the multiplication of mere money values as wealth, can be supplanted, as under Franklin Roosevelt, by the return to the American system of human productive values. Typical of this is the proposed North American Water and Power Alliance, NAWAPA XXI, which would absorb inherently anti-inflationary new lending through a Glass-Steagall-regulated, national banking system. Lending would go toward large-scale water and power projects, high-speed transportation routes, leading to a revival of national industry.

EIRNS/Sylvia Rosas

LaRouchePAC activists campaign for Glass-Steagall, in Phoenix, Ariz.

Such improvements of the territory of North America would go toward the increase of U.S. food production—to attain long-term food and water security—as well as the creation of corridors of resource development throughout the continent. Under NAWAPA XXI, the increase of cement, steel, and aluminum production, and related manufacturing in the U.S. would lead to at least 7 million long-term productive jobs. Long-term productive employment would not only provide the means, through internal taxes and duties, to make good on U.S. debts, but would also build a new generation of productive citizens.

Glass-Steagall, combined with a lending facility, in this case a new Bank of the United States, issuing direct loans, would make all of this possible. The U.S., as under the administration of Franklin Delano Roosevelt, would have credit in the present, on the guarantee of those future physical improvements, and those increases in the per-capita productivity of each member of society. The rate of progress from one generation to the next, and the subsequent increase in the rate of improvement of each generation, underlie the American System of Economics today, as it did 80 years ago.

The popular support for Glass-Steagall is increasing week by week. Since January 2013, 18 states have introduced resolutions calling on Congress to reinstate Glass-Steagall. As of this writing, 63 members of the House of Representatives have signed on to H.R. 129, the bill to reinstate Glass-Steagall. LaRouchePAC has received appeals from institutional figures and political bodies in over a dozen nations, calling on the U.S. Congress to reinstate Glass-Steagall and to pass H.R. 129. Yet, the popular support is not what will ultimately lead to the restoration of the Roosevelt-era policy. What is required is what Lyndon LaRouche discussed on May 15:

> There is no value whatsoever in a monetary system. There may be value in the context of the system. The value of an economy lies in people, not money. It's the ability of people to increase the productive powers of labor, not measured in dollars, not measured in currency.
>
> What is defined is the ability of mankind, through the creative powers of mankind, to increase the productive powers of labor in effect, per capita and per square kilometer. It is that action which defines value. The only true economic value is *that* value, not the money value. You can use money, but you have to use money as a mere shadow of what is reality, which is the productive powers of labor.

Glass-Steagall simply means putting the banking and financial system back in accord with productive values. The dedication to increasing and improving on those productive values will put the United States back on the course of the mastery of man over nature on Earth, and ultimately, mastery of the Solar System as a whole.

FDR's '100 Days' Program: The Constitution in Action

by Nancy Spannaus

May 18—The recent breakthroughs toward restoring the Glass-Steagall principle which was signed into law by President Franklin D. Roosevelt on June 16, 1933, rightly raise the subject of the entire Hundred Days program to pull the United States back from the abyss. Glass-Steagall banking separation was only one crucial part of this program, by which FDR moved to *reverse* more than 30 years of subversion of the American System of economics, and restore the principles enshrined in the Preamble of the U.S. Constitution.

FDR's Hundred Days were the signature element of what he called the "New Deal," a program conceived during his election campaign, and put into motion immediately upon his inauguration. Many have charged that it was a haphazard collection of measures, "pragmatically" intended to address crises he faced. FDR himself argued to the contrary.

National Archives

President Roosevelt signs the Glass-Steagall Act on June 16, 1933. He is flanked here by Sen. Carter Glass (left) and Rep. Henry Steagall, the chief Congressional sponsors of the bill.

In the introduction to Vol. II of his Public Papers, published in 1938, FDR encapsulated the New Deal as follows:

"The word 'Deal' implies that the Government itself was going to use affirmative action to bring about its avowed objectives rather than stand by and hope that general economic laws alone would attain them. The word 'New' implied that a new order of things designed to benefit the great mass of our farmers, workers and business men would replaced the old order of special privilege in a Nation which was completely and thoroughly disgusted with the existing dispensation.

"The New Deal was fundamentally intended as a modern expression of ideals set forth one hundred and fifty years ago in the Preamble of the Constitution of the United States—'a more perfect union, justice, domestic tranquillity, the common defense, the general welfare and the blessings of liberty to ourselves and our posterity.'

"But we were not to be content with merely hoping for these ideals. We were to use the instrumentalities and powers of Government actively to fight for them."

And fight he did—against the powerful financial interests, in London and Wall Street, who had brought the nation and the world to their knees, and sought to impose a *global* fascism to maintain their power. They did not succeed, because FDR, aware of the American System tradition that went back to his ancestor Isaac Roosevelt, a collaborator of Alexander Hamilton, was determined to reassert that system, for the benefit of the nation and the world.

Understanding the principles he used in his fight is crucial to winning our own battle for restoring the American economic system, beginning with Glass-Steagall, in the days and weeks ahead.

Re-Establishing National Sovereignty

When FDR took office in March 1933, he inherited a financial and political system which had been dominated, since the time of his (distant) cousin President Theodore Roosevelt (1901-08), by British economics. The axioms were those of British free enterprise, and the enforcer of the free-market system, which had sacrificed the lives of millions of Americans by putting banking interests first, was the banking system, dominated by the Morgan-Mellon-du Pont interests.

EIRNS/Stuart Lewis

As part of his banking reorganization, FDR temporarily suspended all transactions in gold, granting to the Treasury the power to regulate its price.

The *primus inter pares* among the bankers was J.P. Morgan, a leading financial ally of the British banking system. The Morgan interests' control of credit gave them life-or-death control over the physical economy, and they were determined to use it to prevent implementation of policies they didn't like, and to otherwise loot the economy and the population. Farms had been shut down *en masse*, while speculative schemes had flourished. Political favorites had gotten credit, whereas many productive enterprises received none.

More importantly, these banking consortia worked in such a way as to deprive the United States of its sovereignty, through the enforcement of the British gold system. The creation of credit was limited by the amount of gold held by the banks. Therefore, if the major banking interests decided to sell off their gold to buyers overseas, this resulted in a contraction of credit in the U.S. If the gold supply were controlled from overseas, as it effectively was, through the close-knit British-American banking establishment, then, the U.S. actually lacked sovereign control over its own currency and credit.

President Roosevelt moved immediately to remedy this situation when he took office in 1933. At the same time that he declared the famous Bank Holiday, he suspended all transactions in gold, and gave authority over any such matters to the Secretary of the Treasury. This is the basis on which the Federal government got the authority to regulate the price of gold, rather than let that money-linked commodity be controlled by private interests.

On April 5, FDR went further, issuing an Executive Order against hoarding of gold. Historian Arthur Schlesinger described the significance of this move as follows:

"It meant that American monetary policy was no longer to be the quasi-automatic function of an international gold standard; that it was to become instead the instrument of conscious national purpose."

After removing gold as a weapon that could be used by institutions hostile to the purposes of the Federal government, either foreign or domestic, FDR still had to create the basis for a national credit system that would serve the interests of the nation. This was accomplished through his various pieces of banking legislation, and the banking regulation measures which aimed at preventing the banks from being used to loot the population and productive enterprises.

The first point that had to be recognized was clear: the banking system was bankrupt. By calling the Bank Holiday on March 5, Roosevelt dramatized this reality by ordering them all to be closed.

But then, he had to put the system back together again, which he did through the Emergency Banking Act. This Act, which was rushed through Congress in time to reopen the banks (or, most of them) on March 13, had various provisions for sorting the banks into three classifications: those that were sound; those that needed a capital infusion; and those which a conservator would liquidate. It also permitted utilizing Federal government instruments, like the Reconstruction Finance Corporation and the Federal Reserve System, to ensure that liquidity would be provided for those banks

that were basically sound, but needed it.

Upon passage of the Emergency Banking Act, auditors from the Federal government were sent out around the country to examine the banks' books. When March 13 arrived, the day after an estimated 60 million Americans had heard President Roosevelt address them on how they had "nothing to fear but fear itself," a large majority of the nearly 19,000 nationally chartered banks opened their doors, providing the basis for issuing payrolls, and maintaining government and other necessary social functions. Sufficient confidence had been restored, that the same citizens who had been carrying out runs on the banks, now put more money into the banking system in this period, than they took out.

FDR Library

FDR had studied Alexander Hamilton's economic writings; his ancestor Isaac Roosevelt (second from right) collaborated with Hamilton (far left) in getting the Constitution ratified in New York, and helped to establish the Bank of New York.

A Constitutional Principle

There were, of course, vociferous objections to FDR's banking measures in this period, by those arguing that there was a "principle" that "private enterprise"—not government—should run the economy. Just as today, these critics were merely spokesmen for the predator banks, and against the Constitution.

There is no question that the U.S. Constitution gives control over the currency of the United States to the Federal government, specifically Congress. Article I, Section 8 makes that clear. And when this principle was challenged in the early days of the Republic, the founding genius of the American System of economics, Alexander Hamilton, came forward to argue the case explicitly.

That argument appears succinctly in Hamilton's "Opinion on the Constitutionality of the Bank," a paper he wrote for President George Washington, in defense of his proposal for a National Bank of the United States. Secretary of State Thomas Jefferson and Attorney General Edmund Randolph had vigorously opposed the National Bank, claiming that it gave the Federal government too much power. (In fact, without the bank, power over the nation's finances would have been ceded to private, *foreign* interests.)

Hamilton's argument concentrated on the question of sovereignty: that the power of the government, "as to the objects intrusted to its management, is in its nature sovereign," and that the right of erecting corporations (in this case, the Bank of the United States, but the argument is more generally applicable) "is one, inherent in and inseparable from the idea of sovereign power."

FDR had not only studied Hamilton, but located his own identity in the tradition which began with his great-great grandfather Isaac Roosevelt, who had fought alongside Hamilton to get the U.S. Constitution ratified in New York, and later collaborated with Hamilton in forming the Bank of New York.

Although FDR's banking measures never went so far as to restore the National Bank, the President found a way to exercise this sovereign power by other means. He blasted his opponents as "economic royalists," who claimed to believe in political freedom, but "have maintained that economic slavery was nobody's business." "What they really complain of is that we seek to take away their power," he said.

Promoting the General Welfare

National sovereignty, however, as FDR understood, is not just a question of power, but the use of that power for the common good—what the Preamble to the Constitution calls the "general welfare." It was on this basis, that the President justified his far-flung initiatives for creating jobs, saving the farm sector, and establishing a

safety net for those who had suffered from the "dog-eat-dog" economy which had predominated under the Tory ideas of Andrew Mellon, Calvin Coolidge, J.P. Morgan, and the like.

The most famous of FDR's measures for relieving the suffering of the poor came in what is called the second phase of the New Deal, in 1935, when he moved with Democratic supporters in Congress to push through both the Social Security Act and unemployment insurance. These measures, which immediately came under attack by the Morgan-led banking interests, eventually survived a challenge that reached the level of the Supreme Court, which ruled that they were consistent with the general welfare clause of the U.S. Constitution.

But Roosevelt, from the very beginning, understood that his government had to "drive from the temple of our ancient faith those who had profaned it"—the "moneychangers in the temple"—and provide the basis for a government which would guarantee the security and peace necessary to the "pursuit of happiness." In reviewing the work of his first term, during his Second Inaugural Address, the President put it this way:

"We of the Republic sensed the truth that democratic government has innate capacity to protect its people against disasters once considered inevitable, to solve problems once considered unsolvable. We would not admit that we could not find a way to master economic epidemics just as, after centuries of fatalistic suffering, we had found a way to master epidemics of disease. We refused to leave the problems of our common welfare to be solved by the winds of chance and the hurricanes of disaster.

"In this we Americans were discovering no wholly new truth; we were writing a new chapter in our book of self-government.

"This year marks the one hundred and fiftieth anniversary of the Constitutional Convention which made us a nation. At that Convention our forefathers found the way out of the chaos which followed the Revolutionary War; they created a strong government with powers of united action sufficient then and now to solve problems utterly beyond individual or local solution. A century and a half ago they established the Federal Government in order to promote the general welfare and secure the blessings of liberty to the American people.

"Today we invoke those same powers of government to achieve the same objectives."

While many Americans don't realize it today, the measures which FDR took in these first hundred days and later, were literally matters of saving lives. Starvation faced millions of Americans who had been thrown off their land, out of their homes, or out of their jobs. People could not afford doctors, or food, or, in many cases, roofs over their heads. The private sector, and bankrupt local governments, were either throwing up their hands, or turning their backs. It was left to the Federal government to come to the rescue.

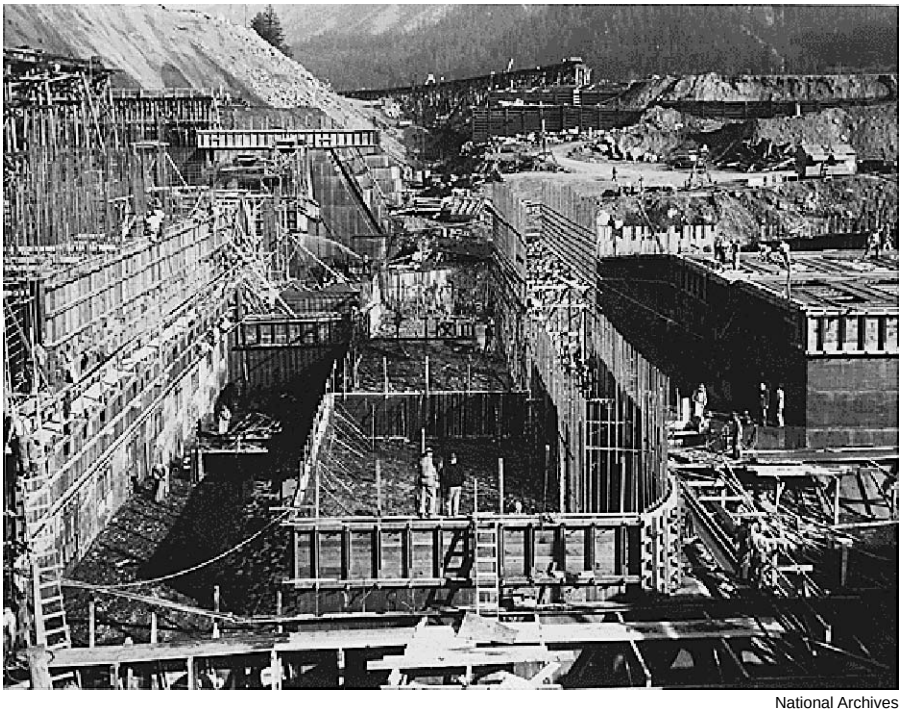
FDR's Administration did not wait long in implementing this philosophy. The first measure he took was the creation of the Civilian Conservation Corps, a government-administered program to create jobs, especially for unemployed youth. Over the course of its history, the CCC created millions of jobs, which permitted young men to support their families, and regain their health and morale, while doing something useful for the natural resources of the country.

This jobs program was followed later with the creation of public-works programs, which provided millions more with useful work, particularly in the repair and construction of infrastructure, such as waterworks, roads, and schools. Roosevelt's appointee Harry Hopkins personally embodied the spirit of these jobs programs, as non-bureaucratic responses to the need for public improvements, as well as incomes.

In addition to providing jobs, Roosevelt set up a national relief program, better known today as "welfare," by which the Federal government shared the cost of supporting those families who could not have a breadwinner. In establishing this program, FDR explicitly rejected the idea that unemployment was the "fault" of the individual, and acknowledged that it was toleration of rapacious system of cartels and economic royalists, which created the hardships. Society had a responsibility, therefore, to care for the "least of these."

Other immediate measures for saving lives involved ending evictions from homes and farms. Millions found themselves without the ability to pay their mortgages, or to get credit to refinance. FDR recognized this as a national emergency, and intervened to provide the means for refinancing for those who were in desperate need.

While his opponents screamed about "socialism," FDR could confidently scoff at them. He knew that his programs were providing the basis for putting the nation back to work, and restoring the tax base. Every Federal works program created many corresponding jobs in the private sector which had to provide the materials. Every



National Archives

FDR's Public Works Administration provided useful work to millions of unemployed Americans, especially in building infrastructure. This photo shows the Bonneville Power and Navigation Dam on the Columbia River, Oregon, under construction in October 1936.

infrastructure improvement increased the potential for a productive, skilled workforce. While helping the poor, these programs demonstrably lifted the conditions of life for the entire nation—i.e., served the general welfare.

Provide for Our Posterity

The third major principle of our Constitutional commitment is the requirement that our governance provide for the welfare of future generations. FDR immediately began to put our government behind this principle, by launching major infrastructure projects in water management, power generation and production, and transportation, all of which would improve the conditions of life for decades to come. The epitome of this aspect of his program was the Tennessee Valley Authority, a project long on the drawing boards, which FDR pushed through in May of 1933.

Major infrastructure projects, such as the Bonneville hydroelectric dam and the TVA, were conceived by Roosevelt not just as jobs programs, but as means of permanently upgrading the productivity of the economy and the productive powers of labor. Such projects introduced the era of cheap electricity, and in many cases, provided the basis for conquering disease and the devastation of periodic floods. FDR knew that they would not pay for themselves in the short term, but only over the long-term, and not just in terms of dollars and cents, but, most importantly, in terms of the standard of living of the entire nation.

Over the course of his 12 years in office, FDR launched more than 45,000 projects in the five basic categories of infrastructure: water, power, transportation, health, and education. Many of the structures his programs built—from parks, to sewage systems, to dams and hospitals—are *still* being used throughout the nation, some 80 years later.

In this era, there is perhaps no more crucial lesson for our citizens to learn than this principle of our Constitution, as laid out in the Preamble: of providing for our posterity. The commitment to improve nature and society, for the benefit of future generations, has become increasingly foreign to our national philosophy, since the 1960s counterculture and the "me" generation. There used to be a joke in the 1970s, that whereas the Japanese businessman planned for six years ahead, the U.S. businessman planned for six minutes, this being the amount of time that it could take for stocks to be traded on the relevant gambling exchanges. In today's computer age, the attention span has contracted further, to perhaps six seconds.

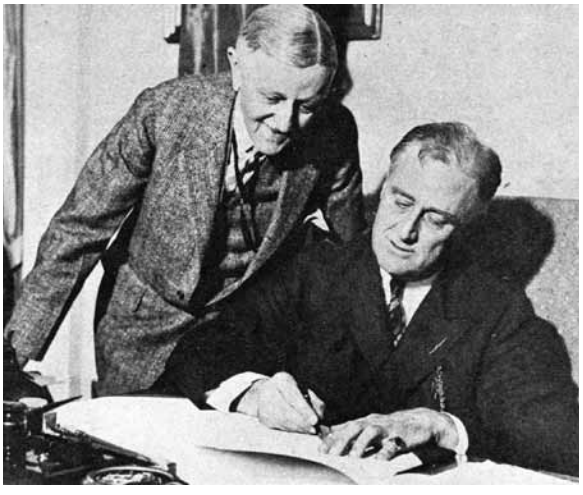
There are many who would say that we can't return to FDR's way, and who are even committed to ripping up the physical improvements built under his Presidency. They are wrong in principle, as well as in practice. They should study the history of how FDR brought us out of the Great Depression, before our sinking into a worse one (which has already begun) becomes irreversible.

In the crisis of 1929-33 Americans had a leader, Franklin Roosevelt, who reasserted the principles of the U.S. Constitution over the economic predators who had brought the nation to its knees. Today, American citizens must turn to those same principles again, if we are to survive.

Franklin Roosevelt's Hundred Days Program

FDR passed or implemented by Executive Order 15 significant pieces of legislation, in the first 100 days of his administration, beginning March 4, 1933. The most outstanding of these are described here.

March 9: The Emergency Banking Act. The first measure FDR pushed through was the reform and reorganization of the bankrupt U.S. banking system. When the President took office, there were bank holidays due to runs on deposits all around the country. Scenes like that in front of the American Union Bank were commonplace, as banks were forced to shut their doors. FDR moved to shut down *all* the banks, while coming up with a policy for an orderly reopening. The Emergency Banking Act was rushed through Congress in approximately eight hours.



The Emergency Banking Act was the first measure of the Hundred Days, pushed through on March 9, 1933. President Roosevelt is shown in this photo signing the bill, as Treasury Secretary Woodin looks on.

After five days, most of the banks reopened.

March 29: The Securities Act of 1933, a bill for regulating the sale of investment securities in interstate commerce, is introduced. In his message to Congress, Roosevelt continued his attack on the corrupt financial practices of the private banking houses and securities brokerages and the commercial banks which dealt in securities. The message, which met with virulent attacks by the banking community, said:

"Of course, the Federal Government cannot and should not take any action which might be construed as approving or guaranteeing that newly issued securities are sound in the sense that their value will be maintained so that the properties which they represent will earn profit. There is, however, an obligation upon us to insist that every issue of new securities to be sold in interstate commerce shall be accompanied by full publicity and information, and that no essentially important element attending the issue shall be concealed from the buying public. This proposal adds to the ancient rule of *caveat emptor,* the further doctrine 'let the seller also beware.' It puts the burden of telling the whole truth on the seller. It should give impetus to honest dealing in securities and thereby bring back public confidence."

National Archives

Bank runs were taking place around the country, as FDR took office. Here, depositors line up at the American Union Bank in New York City, following the 1929 Crash.

The bill gave the Federal Trade Commission power to supervise issues of new securities, required each new stock issue to be accompanied by a statement of relevant financial information, and made company directors civilly and criminally liable for misrepresentation.

March 31: Civilian Conservation Corps. The CCC was devised to deal with the areas of forestry, prevention of soil erosion, flood control, and similar projects, while employing as many as 250,000 people by the early Summer of 1933.

FDR called for the program on March 18. The Emergency Conservation Work Act was introduced on March 27, was signed by the President on March 31, and began the recruitment of young men by April 7. The first CCC Camp was opened on April 14.

Recruitment centers were set up by the Department of Labor, and, in coordination with the Departments of the Army, Agriculture, and the Interior, the enrollees were

National Archives

The Civilian Conservation Corps employed as many as 250,000 people by the early Summer of 1933. Here, workers from the CCC camp in Marsing, Idaho, work at the Gem Irrigation District Pumping Plant.

transported to camps around the country, and put to work. The criteria called for young men between the ages of 17 and 25, who were in reasonable health and unmarried, and whose families were on relief. They would be paid $30 a month, $25 of which would be sent to their families, while the youth were given room, board, clothing, and tools at the CCC camps. The enrollment period was six months, although youth could re-enroll for additional periods, up to two years in total.

April 19: Abandonment of the Gold Standard. FDR's first action on gold occurred on March 5, when he suspended all transactions in gold, and gave authority over any such matters to the Secretary of the Treasury. On April 5, he had issued an Executive Order against hoarding of gold.

But in the ensuing weeks, pressure had been building up on the dollar from the European bankers, who were allied with the bitterly anti-Roosevelt Wall Street forces here in the United States. Acting through Morgan interests in Europe and the private U.S. banks, including Brown Brothers Harriman, the Bank of England launched an all-out assault on the dollar. Since the break with gold now appeared inevitable, the bankers' plan was to do it with the maximum amount of chaos, and to organize a counter-reaction that would ultimately reverse the policy, and hand Roosevelt a defeat.

On April 11, the first waves of the attack broke against the dollar. They grew in intensity over the next three days. The New York bankers asked, through the Fed, to lift the gold embargo, and be allowed to ship $10 million to Europe—to Holland and England. The New York agents of the British upped the ante: They asked for an additional $15 million in gold shipment licenses. Roosevelt ordered part of the request granted. But the requests kept escalating in an almost geometric ratio. And tons of gold were being shipped out of the country.

On April 19, the President called a press conference, and announced that, effective that day, he would not permit the "exporting of gold, except earmarked gold for foreign governments … and balances of commercial exchange."

May 12: Emergency Farm Mortgage Act. The farm crisis, which had been ongoing for more than a decade, was a central focus of FDR's early emergency measures. The measures included the **Agricultural Adjustment Act** (May 12), which was an effort to raise prices for farm goods, the Emergency Farm Mortgage Act, and the Farm Credit Act (June 16).

Farm foreclosures had devastated the countryside, and been the cause of considerable social unrest. In some instances, those evicted, including whole families, simply took to the road, with all their possessions on their backs.

Federal Emergency Relief Act. When FDR took office, misery was evident in every city. Lengthy breadlines could be seen winding through the streets, many of them run by private charities which gave away food, until it ran out.

The Federal Emergency Relief Act established a Federal Emergency Relief Administration, which was devised to address the fact that local governments had literally run out of money to aid the unemployed and the destitute. It was intended to provide a pool of money—$500 million—that could be disbursed in relief grants to states. In addition, it gave the Federal Relief Administrator, who would be New York's Henry Hopkins, broad supervisory power over the states' use of the grants—a provision that caused a total uproar among those who were still crazy enough to think that the Federal government didn't have to take charge of bringing the country out of depression.

The FERA funds were divided into two types. Half was to be disbursed to states as matching funds, with $1 being given out for every $3 of state money spent for relief during the preceding three months. This was a rather limited form of aid since, obviously, the poorer states would have spent less money for relief, and there-

fore would be eligible for less in matching funds. The other half was available to be given out wherever the states were unable to meet the requirement of $3 for $1.

FERA spent money for all kinds of necessities—food, clothing, fuel, shelter, and medicine. Administrator Hopkins, who went on to run job-creation programs later in the Roosevelt Administrations, said: "We can only say that out of every dollar entrusted to us for lessening of distress, the maximum amount humanly possible was put into the people's hands. The money, spent honestly and with constant remembrance of its purpose, bought more of courage than it ever bought of goods."

May 18: Tennessee Valley Authority Act. Unlike the other legislation passed during FDR's first 100 days, the TVA was a gigantic infrastructure project, which would take years to complete, and which would revolutionize the physical environment, and the lives of millions of Americans throughout decades to come.

FDR Library

The Tennessee Valley Authority was a gigantic infrastructure project that transformed the lives and living conditions of hundreds of thousands of Americans in the region. Here, the Norris Dam in Tennessee, ca. 1937.

The TVA incorporated, as an integrated package, hydroelectric power generation, flood control, irrigation, scientific agriculture, the fostering of manufacturing, eradication of disease, elimination of illiteracy, and the spread of electrification, to bring about a revolutionary change to a region. The Authority put an end to the flooding, and its attendant destruction.

The TVA also brought electricity to a huge swath of the country. In 1933, the average Tennessee Valley resident used, per capita, only 60% as much electricity as the average U.S. resident. But by 1939, the Valley had leapfrogged the rest of the country: The average Tennessee Valley resident had 125% of the national average of electricity use per capita. This miraculous change altered every feature of life. The TVA also lowered the price of electricity: In 1933, the average cost of a kilowatt-hour of delivered electricity was a little over 7 cents; by 1935, it was about 2.5 cents, a savings of 65%.

The TVA also fundamentally changed agriculture. It set up 15,000 "demonstration farms," where agronomists worked with farmers to apply scientific methods that incorporated increased fertilizer use (much of it produced by the TVA itself, and sold at low prices); increased electricity use, which enabled farmers to use all manner of farm implements; the use of tiering on mountainsides to lessen water runoff, etc. Between 1933 and 1943, the per-acre yields on the 15,000 TVA "demonstration farms" tripled. Farm-

Library of Congress

The Federal Emergency Relief Administration began to provide relief to the millions who were jobless, homeless, and hungry. Here, a bread line under the Brooklyn Bridge, early 1930s.

ers were brought from throughout the region to visit and study the methods of the demonstration farms, spreading the increased farm productivity throughout the Valley.

With flood control and increased electricity, the TVA brought manufacturing to the region, where it had scarcely existed before. Utilizing the electricity, aluminum plants were constructed there during World War II, to produce for military aircraft. In 1930, the Valley had four farm workers for every factory worker, but by 1960, it had two factory workers for every farm worker. This stunning shift in the composition of the labor force in only 30 years represented a rapid industrialization and modernization; and, at the same time, each farmer was more productive.

May 18: The Glass-Steagall Act is introduced into the House of Representatives by Henry Steagall (D-Ala.), and into the Senate by Carter Glass (R-Va.). Part of the Emergency Banking Act of 1933, the Glass-Steagall provision divested investment houses of their banking functions (i.e., bank separation), and established the Federal Deposit Insurance Corporation (FDIC), whose protection was to apply only to commercial banks. Despite vociferous opposition from the banking community, the measure was passed on June 15, and signed into law the next day.

June 13: The Home Owners' Loan Act is passed, in order to refinance mortgages for distressed homeowners who had lost their homes or could not obtain financing through normal channels. It established the Home Owners' Loan Corporation, which ultimately helped one out of every five mortgaged urban homes in the country.

June 16: The National Industrial Recovery Act. The NIRA was introduced on May 17, under the theme of creating a "partnership" between private industry and government in bringing about an economic recovery. It had three Titles, which broke down as follows:

Title I declared a national emergency, under which there would be a partial suspension of anti-trust laws, in order to permit industries, in collaboration with the government, to draw up industry-wide codes setting certain standards on wages, prices, working conditions, and the like. The codes, according to FDR advisor Raymond Moley, were intended to be enforceable by the courts.

One of the most lasting and popular provisions of Title I was what came to be known as 7(a), the section which guaranteed labor's rights to collective bargaining, maximum hours, and minimum wages. It was under this provision that the leaders of U.S. labor, headed by United Mineworkers president John L. Lewis, ran a nationwide organizing campaign, under the slogan "The President Wants You To Join the Union!" The impact of this effort was such that it could not be reversed, even with the Supreme Court's 1935 decision to declare the NIRA unconstitutional.

Title II of the NIRA invoked the existence of the national emergency in order to create the Public Works Administration, whose administrator was authorized to spend a huge sum for that time—$3.3 billion—on large public works projects throughout the United States.

Title III was a funding provision for the NIRA. Tax issues being as sensitive then as they are today, and the public being inflamed by ongoing hearings exposing the tax scofflawing of J.P. Morgan and his Wall Street cohorts, the funding mechanism that passed was an increase in the income tax.

While the NRA industry code was eventually ruled unconstitutional, this measure had lasting effects in establishing a substantial public works effort, and in promoting the improvement of conditions for working people in all industries.

REVIVE GLASS-STEAGALL NOW!

"The point is, we need Glass-Steagall immediately. We need it because that's our only insurance to save the nation.... Get Glass-Steagall in, and we can work our way to solve the other things that need to be cleaned up. If we don't get Glass-Steagall in first, we're in a mess!"
—*Lyndon LaRouche, Feb. 11, 2013*

WATCH the LaRouchePAC video:
'Glass-Steagall: Signing a Revolution'

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TOP FINANCIERS ADMIT

Market Is 'Horrific Cancer' That Will Destroy Us

by Nancy Spannaus

May 20—"A record-breaking stock market is distorting a frightening reality: The U.S. is being eaten alive by a horrific cancer that will ultimately destroy the market and impoverish the vast majority of its citizens."

Sound familiar? Lyndon LaRouche and *EIR* have been identifying the speculative bubble in derivatives and other flim-flam as a cancer on the real physical economy, since the 1990s. But this time, the truthful characterization of what the current monetarist system—and not just in the United States—represents, comes from Peter Schiff, the CEO of Euro Pacific Capital, who is a regular commentator on the Fox Business network. He made this statement in April.

Nor is Schiff—who openly seeks to profit from this condition, not replace it—alone. He has been weakly echoed by a group of top bankers, including former World Bank chief Robert Zoellick, former Spanish Finance Minister Elena Salgado, and president of the Peterson International Institute of Economics Adam Posen, who held three days of discussions about the global economy and financial markets during the second week of May. Mohamed El-Erian, CEO of the world's largest bond fund, PIMCO, summarized the conclusion of those discussions in the company's May 14 Secular Outlook report, which attributed the so-called economic growth to "hyperactive central banks," and projected "financial turmoil, greater social tensions and beggar-thy-neighbor national policies," over the next 3-5 years. Europe, the report said, is already in a state of "zombification."

El-Erian's co-CEO Bill Gross, PIMCO's founder and bond manager, was even more dramatic in the firm's February newsletter, when he described the markets as headed for blowout like a "credit supernova," a dying star.

What's clear from these statements is that the "insiders" know precisely how deadly the market game is that they are playing, but that *they have absolutely no intention of junking the monetarist system.* Indeed, the genocide which Schiff cites as the fate of the American population is already well underway in Southern Europe, and plans are in process for mass stealing from bank accounts (the so-called "bail-ins") as the next stage of propping up the bankrupt banks.

The *only* alternative is a new world economic order based on nations controlling their own currencies and economies, and dumping the money economy for physical economic progress.

Correct Diagnosis

Schiff's analysis of the danger of the current hyperinflation, and the starvation of the physical economy, is worth paying attention to. This is worse than 2007-08, he says. "You're going to have a collapse in the dollar, . . . a huge spike in interest rates, . . . and our whole economy, which is built on the foundation of cheap money, is going to topple when you pull the rug out from under it." Despite "phony" signs of an economic recovery, he

said, it's all paper: "Currently, Bernanke and Company is buying $1 trillion of Treasury and mortgage bonds a year. That's about $85 billion per month against a budget deficit that is about the same level.

"Eventually interest rates will rise . . . and when they do, stocks will tank and bonds dip to nothing. Massive new tax hikes will be imposed and programs and entitlements will be cut to the bone.

"The crisis is imminent," Schiff said. "I don't think Obama is going to finish his second term without the bottom dropping out. And stock market investors are oblivious to the problems.... It's not that the stock market is gaining value, . . . it's that our money is losing value. And so if you have a debased currency, . . . a devalued currency, the price of everything goes up. Stocks are no exception."

"The Fed knows that the U.S. economy is not recovering," he noted. "It simply is being kept from collapse by artificially low interest rates and quantitative easing. As that support goes, the economy will implode."

To any sane person, of course, the *financial recovery* reflected in the spike in the stock market, the renewed increase in housing prices, and the record corporate profits should signal trouble. When they are contrasted with the decline in the conditions of life for the population, as seen in joblessness, homelessness, food insecurity, and collapsing infrastructure, this financial "good news" should actually discredit the whole idea of a money-based economy. To mimic Samuel Coleridge, it's "money, money everywhere, and not a drop for the real economy."

Yet, all too many individuals in the United States, in particular, mimic the major traders by seeking the money—rather than fighting for the change in the system that alone can bring prosperity for themselves and future generations.

Look at Southern Europe

The future for the U.S., and those parts of Western Europe still nominally solvent, can be seen in the dramatic conditions in Southern Europe, where Greece, Cyprus, Portugal, and Spain are being raped by the international financial institutions, including the European Union. On the one side, the people are having their financial savings looted—as was carried out in the Cyprus "bail-in" plan, where savings and deposits above EU100,000 were simply taken, in order to shore up and keep functioning otherwise bankrupt financial institutions.

This bail-in plan, by the way, is *policy* on the OECD level, including through the Dodd-Frank financial legislation pushed through by the Obama Administration.

As in the U.S., the rescue of the banks has not resulted in any investment in the real economy, of course, but simply provides money to feed speculation. This is obvious in the collapse of the labor market and production throughout Europe. GDP dropped over 5% in Italy over the past year, and is falling at even more rapid rates in Greece and Cyprus.

The other side of the assault is coming with mandated budget cuts in the public sector, imposed by the IMF, European Central Bank, and European Commission (the Troika). Exemplary of their murderous quality is their targetting of health-care spending. We'll look at Portugal and Cyprus.

The head of the Portuguese Medical Association, Dr. José Manuel Silva, raised the alarm in early May that the repeated cuts in the budget for Portugal's National Health System are now beginning to threaten lives.

In several interviews, Dr. Silva warned that the National Health Service's financial difficulties "are beginning to reach alarming proportions, giving rise to failures in the most delicate and sensitive circumstances, which could make the difference between life and death." After visiting the Espírito Santo Hospital in the city of Évora on May 6, Silva warned that there are no doctors assigned to the hospital's emergency ambulance service 40-50% of the time, leaving the residents of that district without any qualified pre-hospital medical emergency service. "The ones who suffer are the patients," a situation which is "inhuman and intolerable." He asked if the Ministry of Health will assume responsibility for the death of any citizen who dies for these reasons.

In Cyprus, the Troika has issued orders for additional cuts, beginning with the government's cancelling long-delayed plans for setting up new regional ambulance stations. This means that the 49 newly trained paramedics who were to man the new ambulance stations earmarked for four areas, will not be hired—these stations will not be built.

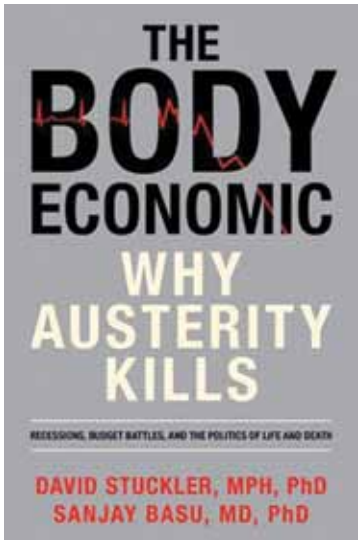
The cut follows the recent freeze in funding for oncology radiotherapy centers, condemning cancer patients to death. Chairman of the House Health Committee Costas Constantinou, a member of the ruling DISY party, said all the committee members agree that the cuts will endanger people's lives.

Book Review

New Book Attacks Deadly Austerity, But with Blind Spot: Killer Obama

by Paul Gallagher

The Body Economic: Why Austerity Kills: Recessions, Budget Battles, and the Politics of Life and Death
by David Stuckler and Sanjay Basu
New York: Perseus Books, 2013
199 pages, $26.99



In February, the International Monetary Fund, through its chief economist Olivier Blanchard and his staff, were pushed into publishing analyses of the IMF's own policy of imposing economic austerity on hyper-indebted countries, admitting that this policy was a failure. Blanchard and colleagues acknowledged that the IMF's austerity dictates, when followed, did not reduce the debt or debt-to-GDP ratios of countries like Greece, Portugal, or Ireland; instead, it increased the debt and made it unpayable.

The austerity policy, in the debt crisis in Europe, has been producing national "debt spirals" where economies contract faster, and revenues fall more, than the country supposedly "saves" through cutting public employment, wages, public health, services, etc. and raising taxes. The IMF did not *change* its fatal austerity dictates; but its managing director Christine Lagarde has been giving speeches about "the need for growth," in admission that a temporarily embarrassing contradiction in imperial monetary policy has been exposed.

Authors David Stuckler, PhD, and Sanjay Basu, PhD, played a role in exposing and pushing the IMF economists into this year's widely noted admissions of austerity's disastrous failure. Focusing on cuts in public health services and their effects in countries around the world, they presented studies at IMF-sponsored conferences in 2011 and 2012, showing that austerity budget cuts *almost invariably had a multiple greater than 1*, especially in national economies suffering debt crises/bank collapses. That means the economies contracted by a larger ratio from austerity than they "saved"—usually much more—and thus quickly fell further into unpayable debt. Crucially, their studies covered historical examples, including the U.S. in the 1930s Depression, and demonstrated the same thesis there, both affirmatively under Herbert Hoover, and negatively with Franklin Roosevelt's rejection of the London-Wall Street austerity demands.

Stuckler and Basu's studies were attacked by IMF and other monetarist economists; they show ironically in their book how their work was deliberately falsified with doctored charts by the London *Economist*. But the IMF, at least at the level of its economic staff, has now acknowledged the authors' credibility, and its own lack thereof.

In *The Body Economic: Why Austerity Kills*, Stuckler and Basu refer only briefly to the "debt spiral" failure of austerity as a fiscal policy; rather, they are concerned to show that it results in losses of human life, and life expectancy, that are large in scale, predictable, and disastrous. They expose the killer—austerity—and some of the forces and leaders who have been imposing it; but they go soft when they look at one killer—Barack Obama.

Save or Slaughter

In a word, we find the proof in Stuckler and Basu's work that the collapse of debt bubbles and deranged banking systems, even such as happened in 1929-31, and in 2007-08, in itself, does not cause populations' health to collapse and death rates to soar. Governments' decisions to impose austerity, to "save" those banks and their securities, does the killing. Relatively lower income for a period of a few years, from unemployment, loss of credit, currency devaluations, etc., does not cut life expectancy, cause suicides to spike upwards, or epidemics to break out. This the authors make clear in chapters on the 1930s United States, under the impact of Roosevelt's New Deal, and on Iceland since 2008, where every measure of public physical and mental health has *improved* since the banks and the krona collapsed, causing temporary unemployment and loss of wealth and income.

The reason, in both cases, is clear: FDR's government and the post-2008 Icelandic governments *did not throw public credit into bailing out banks or buying their bad securities*. Rather than creating new "bad banks," they let the old bad banks fail, no matter how large. And in both cases, they put the greatest focus and effort into employing the unemployed, and simultaneously *increased* investments in government services, hospital systems, unemployment benefits, and public infrastructure. FDR's creation of entirely new platforms of economic infrastructure for the U.S. economy is universally known; in Iceland's case the once-dominant fishing industry was deliberately revived—with help from McDonald's getting out of Iceland due to the price spikes for onions and tomatoes!

The authors show that from 1933 in FDR's United States, each $100 in New Deal spending reduced the pneumonia death rate by 18/10,000, and infectious-disease deaths fell broadly, especially in states like Louisiana, which accepted and supplemented New Deal spending. Suicides fell by 4/10,000 population for every $100 in New Deal spending. Infant mortality dropped broadly. Average per capita income rose 9% in 1933.

Iceland and the U.S. today have one other thing in common: They both passed laws in 1999-2000 abandoning the separation of commercial banking from investment banking/securities speculation; and both paid dearly for that mistake in the 2007-08 bank panic.

On the killer side of post-crash policy, Greece, since 2010, is the most widely cited example in Stuckler and Basu's work, of the murderousness of the austerity policies now closing their vise-grip on the sinking European economy. Leaving aside the details of its causes, successive Greek governments have been ordered by the "Troika" (IMF, European Commission, and European Central Bank) to treat the bank/debt crisis by massive layoffs of public employees, huge cuts in wages and services, and severe new taxes. The governments obeyed, despite clear warnings that they were killing people by doing so.

It is established from many studies, cited by the authors, that "people who are looking unsuccessfully for work are twice as likely to end their lives as those who have jobs." The same is true of people at or near retirement age who lose pensions, and otherwise find themselves without retirement income; and heads of households being thrown out of their homes. This tragic phenomenon of the Greek debt spiral has been reported worldwide.

Stuckler and Basu demonstrate the other consequences of Greek government enslavement by the Troika: 50,000 Greek diabetics were deprived of insulin when the government defaulted on pharmaceutical payments (on the advice of the IMF!); 60,000 people over the age of 65 have foregone necessary medical care during the "great austerity" since 2010; 35,000 hospital physicians and clinicians have been fired; infectious disease has skyrocketed, including the first malaria epidemic in Greece for 45 years; the only HIV outbreak in Europe in decades has occurred in Athens. Respiratory illnesses spiked from mass woodburning in the city, due to steep new taxes on oil and coal. The national public health budget, from 2009 to 2012, was cut by half.

Familiar Cases

The other major cases presented in the book—the drop in life expectancies in Thailand and Indonesia under IMF austerity dictates after the "Asian financial crisis" of 1997-98; and the most murderous austerity of all, "shock therapy" imposed by London-centered finance capital and allied economists in post-Communist Russia in the 1990s—have been described in detail before. There are other important examples in the proofs of killer austerity, such as South Africa under London financial diktat after the end of apartheid. These have been documented, with sharper political focus, in Naomi Klein's *The Shock Doctrine*, John Perkins' *The Confessions of an Economic Hit*

Man, and Sergei Glazyev's *Genocide*, for example.

Stuckler and Basu have been challenging economists by tying the lesson that austerity kills, directly to the post-financial crash situation, both historically and today. In doing so, they are discrediting the arguments of many economists who try to describe austerity as "part of necessary deleveraging" from debt bubbles, and thus run cover for politicians imposing cuts on behalf of trans-Atlantic banks. It is because of their rigorous historical studies, particularly of the United States in the 1930s, that they have been able to stare down the economists of the IMF and the imperial genocidalists of *The Economist*.

That makes it somewhat shocking that they will not challenge the Obama Presidency, and instead, make a failed effort to associate Obama's policies with those of FDR by broad generalizations not backed by facts. Americans from the Congressional Black Caucus, to former TARP Inspector General Neil Barofsky, to journalist Bob Woodward have shown that Obama is *not* an anti-austerity President. But Stuckler and Basu manage to come up with statements like this one: "With the American Recovery and Reconstruction Act of 2009, enacted by Congress and signed into law by President Obama, the U.S. government began to invest in social protection programs to stop foreclosures."

The (deliberate) failure of the so-called HAMP program to ameliorate mass foreclosures is notorious and thoroughly documented. The authors, after documenting cases of Americans doing without health care due to high insurance premium costs, make the vaguest of statements about how Obamacare "might have" or "may help" such people get affordable care; the fact is that Americans—particularly seniors—are getting less medical care since the passage of the Affordable Care Act, and this has been documented by a whole group of studies appearing at about the same time as this book.

Stuckler and Basu attempt to set up a dichotomy between "bad" Tory Britain under the Cameron (not the Blair!) government and "good" Obama U.S. "There are already warning signs," they write, "that the healthcare situation in Britain may come to resemble that in the U.S. before Obama," as if no one could doubt that Obama had made everything right in health care.

This glaring, all-out promotion of Obamacare, and Obama personally, robs credibility from *Why Austerity Kills*, which otherwise would be a powerful weapon against the killing policies of the IMF and imperial London finance.

Pope Francis

We Must Reject Today's 'Golden Calf,' The 'Cult of Money'

May 16—Greeting the new ambassadors to the Vatican, from Kyrgyzstan, Antigua and Barbuda, Luxembourg, and Botswana, today, Pope Francis spoke out strongly against the tyranny of those who run the global financial system, and "urged them not to forget the predominance of ethics in the economy and in social life, emphasizing the value of solidarity and the centrality of the human being."

Here is the main part of his speech:

"Ladies and Gentlemen, our human family is presently experiencing something of a turning point in its own history, if we consider the advances made in various areas. We can only praise the positive achievements which contribute to the authentic welfare of mankind, in fields such as those of health, education and communications. At the same time, we must also acknowledge that the majority of the men and women of our time continue to live daily in situations of insecurity, with dire consequences. Certain pathologies are increasing, with their psychological consequences; fear and desperation grip the hearts of many people, even in the so-called rich countries; the joy of life is diminishing; indecency and violence are on the rise; poverty is becoming more and more evident. People have to struggle to live and, frequently, to live in an undignified way. One cause of this situation, in my opinion, is in the our relationship with money, and our acceptance of its power over ourselves and our society. Consequently the financial crisis which we

are experiencing makes us forget that its ultimate origin is to be found in a profound human crisis. In the denial of the primacy of human beings! We have created new idols. The worship of the golden calf of old (cf. *Ex* 32:15-34) has found a new and heartless image in the cult of money and the dictatorship of an economy which is faceless and lacking any truly humane goal.

"The worldwide financial and economic crisis seems to highlight their distortions and above all the gravely deficient human perspective, which reduces man to one of his needs alone, namely, consumption. Worse yet, human beings themselves are nowadays considered as consumer goods which can be used and thrown away. We have started a throw-away culture.

"This tendency is seen on the level of individuals and whole societies; and it is being promoted! In circumstances like these, solidarity, which is the treasure of the poor, is often considered counterproductive, opposed to the logic of finance and the economy. While the income of a minority is increasing exponentially, that of the majority is crumbling. This imbalance results from ideologies which uphold the absolute autonomy of markets and financial speculation, and thus deny the right of control to States, which are themselves charged with providing for the common good. A new, invisible and at times virtual, tyranny is established, one which unilaterally and irremediably imposes its own laws and rules. Moreover, indebtedness and credit distance countries from their real economy and citizens from their real buying power. Added to this, as if it were needed, is widespread corruption and selfish fiscal evasion which have taken on worldwide dimensions. The will to power and of possession has become limitless.

"Concealed behind this attitude is a rejection of ethics, a rejection of God. Ethics, like solidarity, is a nuisance! It is regarded as counterproductive: as something too human, because it relativizes money and power; as a threat, because it rejects manipulation and subjection of people: because ethics leads to God, who is situated outside the categories of the market. God is thought to be unmanageable by these financiers, economists and politicians, God is unmanageable, even dangerous, because he calls man to his full realization and to independence from any kind of slavery.

"Ethics—naturally, not the ethics of ideology—makes it possible, in my view, to create a balanced social order that is more humane. In this sense, I encourage the financial experts and the political leaders of your countries to consider the words of Saint John Chrysostom: "Not to share one's goods with the poor is to rob them and to deprive them of life. It is not our goods that we possess, but theirs" (*Homily on Lazarus*, 1:6—*PG* 48, 992D).

"Dear Ambassadors, there is a need for financial reform along ethical lines that would produce in its turn an economic reform to benefit everyone. This would nevertheless require a courageous change of attitude on the part of political leaders. I urge them to face this challenge with determination and farsightedness, taking account, naturally, of their particular situations. Money has to serve, not to rule! The Pope loves everyone, rich and poor alike, but the Pope has the duty, in Christ's name, to remind the rich to help the poor, to respect them, to promote them. The Pope appeals for disinterested solidarity and for a return to person-centred ethics in the world of finance and economics.

"For her part, the Church always works for the integral development of every person. In this sense, she reiterates that the common good should not be simply an extra, simply a conceptual scheme of inferior quality tacked onto political programmes. The Church encourages those in power to be truly at the service of the common good of their peoples. She urges financial leaders to take account of ethics and solidarity. And why should they not turn to God to draw inspiration from his designs? In this way, a new political and economic mindset would arise that would help to transform the absolute dichotomy between the economic and social spheres into a healthy symbiosis.

"Finally, through you, I greet with affection the Pastors and the faithful of the Catholic communities present in your countries. I urge them to continue their courageous and joyful witness of faith and fraternal love in accordance with Christ's teaching. Let them not be afraid to offer their contribution to the development of their countries, through initiatives and attitudes inspired by the Sacred Scriptures! And as you inaugurate your mission, I extend to you, dear Ambassadors, my very best wishes, assuring you of the assistance of the Roman Curia for the fulfilment of your duties. To this end, upon you and your families, and also upon your Embassy staff, I willingly invoke abundant divine blessings.

"Thank you."

REACTION TO GLASS-STEAGALL BREAKTHROUGH

Beware of War Provocations If London Strikes Back

by Jeffrey Steinberg

May 20—Lyndon LaRouche warned yesterday that world leaders should be on alert for a major provocation coming from the British Crown, in reaction to the introduction on May 16 of a bill to reinstate full Glass-Steagall bank separation in the U.S. Senate. Sen. Tom Harkin (D-Iowa) introduced S. 985 on the 80th anniversary of the introduction of the original Glass-Steagall Act, which forced the breakup of the Depression-era "too big to fail" banks into separate commercial banks and brokerages.

With a Glass-Steagall bill already introduced into the U.S. House of Representatives in January, momentum is building for passage in both Houses of Congress. Glass-Steagall passage would represent a near-death blow to the system of London-centered universal banking that has been the hallmark of British imperial power since the 1985 "Big Bang" deregulation of the City of London by Prime Minister Margaret Thatcher. Not coincidentally, 1985 was also the year that the British and Saudi Crowns sealed the "Al-Yamamah" barter deal that created the slush fund behind all subsequent global terrorism, including the 9/11 attacks on the United States and the Sept. 11, 2012 attack on the U.S. mission in Benghazi, Libya, which led to the deaths of U.S. Ambassador Chris Stevens and three other Americans.

London's Dilemma

London is facing a double dilemma. A return to Glass-Steagall in the United States would inspire similar moves in continental Europe and in other parts of the world, effectively wiping out the system of monetarist oligarchical power. At the same time, Britain's asset President Barack Obama is facing three major scandals; LaRouche told colleagues yesterday that "Obama is going down."

The fact that three scandals directly hitting the Obama White House erupted in a one-week period shows that there is now a serious institutional break with Obama. The break was, in part, precipitated by the danger of a regional war erupting in the Middle East over the President's aligning with London and Paris for the overthrow of the Syrian regime. After two Israeli air strikes on targets in Syria, the region was put on the brink of war. The President's insistence on President Bashar al-Assad's overthrow, and his promotion of "red lines" around the use of chemical weapons, convinced significant circles in the U.S. military, the intelligence community, and diplomatic corps that Obama had become a danger to the nation.

In discussing the war danger yesterday, LaRouche stated that the Chairman of the Joint Chiefs of Staff, Gen. Martin Dempsey, had prevented the outbreak of general war by his insistent opposition to a replay of the Libya regime-change operation in Syria. Dempsey has also placed a high premium on rebuilding cooperation with both Russia and China, to avoid what he has called the "Thucydides Trap"—the danger of confrontation between rising and declining powers.

Diplomatic Maneuvering

Following Secretary of State John Kerry's May 7 trip to Moscow, where he met with his Russian counterpart Sergei Lavrov and President Vladimir Putin to organize a Geneva II conference to bring the Syrian government and rebels to the table to reach a political settlement to the two-year war, steps have been taken to prepare for the conference, which is tentatively scheduled to begin on June 11. This week, American, British, and French officials will meet, and then a full meeting of the five permanent members of the UN Security Council (the United States, Russia, China, Britain, and France) will take place as part of the Geneva II preparations. A meeting of the Friends of Syria (international forces that support the opposition to Assad) will take place in Jordan, ostensibly to select a rebel delegation to attend the conference.

While the joint Russian-American initiative represented an important war-avoidance effort by two of the world's three superpowers, the British are moving to insert themselves into the process, to steer it on behalf of London's interests. Prime Minister David Cameron was in Moscow and Washington last week, conferring with Putin and Obama, while insisting that the European arms embargo against the Syrian rebels must be immediately lifted.

Israeli Prime Minister Benjamin Netanyahu made his own pilgrimages to confer with Chinese President Xi Jinping and Russian President Putin in recent weeks. While Israel has been told, in no uncertain terms, to back off from any provocation that could trigger regional war, the Israeli factor is a wild card, and London exerts tremendous influence over Netanyahu, who is the heir to the British-sponsored Jabotinskyite terrorist movement.

Israel or Turkey, on Syria's southern and northern borders, respectively, could launch cross-border attacks on any pretext at any moment. When a car bomb killed a number of people in a southern Turkish town last week, Turkish Prime Minister Recep Tayyip Erdogan and his Interior Minister immediately blamed Assad, although the Syrian government, engaged in intense combat inside the country, had no interest in provoking a cross-border attack from Turkey, a NATO member with the largest armed forces in the region, and the second-largest in NATO.

Media reports are hyping the danger pf a new Israeli attack, although senior Israeli military officials are stating loud and lcear that Israel has no interest in a war with Syria.

Targeting Iran

Trigger-happy elements in the U.S. Senate led by Robert Menendez (D-N.J.), John McCain (R-Ariz.), and Lindsey Graham (R-S.C.), are promoting new legislation targeting Iran and Syria. Bills were brought to the Congress last week, to impose harsh new sanctions, amounting to a total oil blockade, on Iran; other legislation calls for the U.S. to arm the Syrian rebels. This kind of neo-con and "humanitarian" interventionist "Congressional foreign policy" is clearly aimed at sabotaging both the Geneva II conference and the negotiations between Iran and the Permanent Five members of the UN Security Council plus Germany (P5+1), which are expected to resume soon after Iran holds national elections in June.

The targeting of Iran is particularly time-sensitive, given that Russia is insisting that Iran be invited to the Geneva II conference, along with Saudi Arabia. Unless key regional players are fully brought in on a political solution, it is guaranteed that they will sabotage the effort. This is especially true for the Saudis, who align their geopolitical ambitions with those of the British empire, and who have poured the largest amounts of money and weapons into the most radical jihadist factions of the Syrian rebels, including a growing number of foreign fighters with years of combat experience fighting the West in Afghanistan, Iraq, Yemen, Somalia, and Mali.

Regional Ramifications

A retired American military officer, just back from meeting with King Abdullah II in Jordan and other regional leaders, expressed grave concern that the Kingdom of Jordan is on the edge of economic and political collapse, as a spillover of the Syria conflict.

On the ground in Syria, the Assad government has launched a series of successful military operations aimed at retaking control over crucial transportation corridors into Lebanon and Jordan. The situation on the ground inside Syria is a stalemate, in which rebels have no capacity to take the capital city of Damascus, yet the Syrian Army and the central government in Damascus do not have the ability to retake and control all of the national territory.

This is the backdrop to LaRouche's warnings about a British move to overturn the chessboard.

Austria: Arming the Syrian Opposition Is Illegal

The Austrian government has issued an official position paper, now circulating among EU member states, in opposition to the British-French proposal for lifting the arms embargo against Syria. Dated May 13, the document is a cogent summation of the reasons why the lifting of the EU embargo would be politically and legally unacceptable. We excerpt here the portion titled "Lifting the Arms Embargo—Legal Aspects." Ellipses are in the original.

1. The supply of arms to the Syrian opposition would amount to a breach of the customary principle of non-intervention and the principle of non-use of force under Art. 2 para. 4 of the UN Charter.

The principle of non-intervention is firmly established in international law. In 2007, former UK Legal Adviser Sir Michael Wood put it in a nutshell: "Intervention on the side of those opposing the Government [...] is clearly prohibited."[1] In the 1984 *Nicaragua Case* the International Court of Justice (ICJ) rejected any alleged right for States to intervene in support of an internal opposition in another State, whose cause appeared particularly worthy for political or moral reasons: "The Court therefore finds that no such general right of intervention, in support of an opposition within another State, exists in contemporary international law (para. 209)." The ICJ also stated that acts constituting a breach of the customary principle of non-intervention would also, if they directly or indirectly involve the use of force, constitute a breach of the prohibition not to use force in international relations, as embodied in Art. 2 para. 4 of the UN Charter. The continuing relevance of the *Nicaragua Case* was confirmed by the ICJ in its 2005 judgment in the *Case Concerning Armed Activities on the Territory of the Congo*: "In the case concerning Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. USA), the Court made it clear that the principle of non-intervention prohibits a State to intervene, directly or indirectly, with or without armed force, in support of an internal opposition in another State (para. 164)."

2. The supply of arms to the Syrian opposition would violate EU Council Common Position 2008/944/CFSP on the control of arms exports by EU Member States.

All EU Member States have agreed to abide by Common Position 2008/944/CFSP defining common rules governing the control of exports of military technology and equipment when assessing applications to export items listed in the agreed EU Common Military List. An objective assessment of the Criteria in Art. 2 of Common Position 2008/944/CFSP according to the agreed guidance of their interpretation and implementation in the EU Users Guide[2] must lead to a denial of any export licence applications for the envisaged supply of arms to the Syrian opposition:

• Criterion 2(c) (human rights and humanitarian law): Member States shall deny an export licence if there is a clear risk that the equipment might be used in the commission of serious violations of international humanitarian law. The UN Commission of Inquiry reported that "war crimes, including murder, extrajudicial killings and torture, were perpetrated by anti-Government armed groups."[3]

• Criterion 3 (internal situation): Member States shall deny an export licence for military technology or equipment which would provoke or prolong armed conflicts or aggravate existing tensions or conflicts in the country of final destination. The Users Guide does not foresee that arms would be supplied to opposition groups involved in an armed conflict and places particular attention on the role of the end-user in a conflict.

• Criterion 4 (regional peace, security and stability): Member States shall deny an export licence if there is a clear risk that the intended recipient would use the military technology or equipment to be exported aggressively against another country or to assert by force

1. The Principle of Non-Intervention in Contemporary International Law, Speech by Sir Michael Wood at a Chatham House International Law discussion group meeting held on 28 February 2007, see http://www.chathamhouse.org/sites/default/files/public/Research/International%20Law/il280207.pdf.

2. User's Guide to Council Common Position 2008/944/CFSP defining common rules governing the control of exports of military technology and equipment, Doc. 9241/09, 29 April 2009.

3. Cf. http://www.ohchr.org/Documents/HRBodies/HRCouncil/PRCoISyria15082012_en.pdf.

a territorial claim. Despite the 1974 cease-fire agreement, Syria and Israel remain in a state of war, which was recently reignited by Israeli air and missile strikes. The Syrian opposition has not declared to respect the cease-fire, the disengagement agreement or the area of separation.

• Criterion 5(b) (national security of Member States): Member States shall take into account the risk of use of the military technology or equipment concerned against their forces or those of Member States and those of friendly and allied countries. The agreed Users Guide expressly states that "if an export is liable to engender a direct threat to the security of the forces of a Member State [. . .], who are present either in the country of final destination or in a neighbouring country, the a priori assessment will be unfavourable. The same approach will be used to ensure the security of international peace-keeping forces."

• Criterion 6 (behaviour of the buyer as regards its attitude to terrorism, the nature of its alliances and respect for international law): According to the Users Guide the term "alliance" should be interpreted in a wide sense and includes all agreements which are aimed at establishing a significant connection (common political aims). The Syrian opposition is operating in alliance with various extremist and terrorist groups united by a common political aim.

• Criterion 7 (risk of diversion): In assessing the impact of the military technology or equipment to be exported on the recipient country and the risk that such technology or equipment might be diverted to an undesirable end-user or for an undesirable end use, inter alia, the capability of the recipient to apply effective export controls shall be considered. No effective export or diversion control measures of the Syrian opposition are known to be in place.

3. The supply of arms to the Syrian opposition would amount to a violation of Security Council Resolution 2083 (2012) establishing an arms embargo against individuals and entities associated with Al-Qaida.

Under the arms embargo pursuant to OP 1(c) of Security Council Resolution 2083 (2012) all States shall take measures to prevent the direct or indirect supply of arms and related materiel to Al-Qaida and other individuals and entities associated with them. The so-called Al-Nusra Front, whose fighters are taking part in military operations with the Free Syrian Army (FSA), is linked with Al-Qaida in Iraq and maintains allegiance to Al-Qaida leader Al-Zawahiri. When the group was designated by the US as a terrorist organisation in December 2012, numerous Syrian opposition groups signed a petition to support Al-Nusra and the coalition's leader Al-Khatib called on the US to reconsider its decision. In view of the lack of clear separation between military operations of the FSA and the Al-Nusra Front on the ground, the supply of arms to the Syrian opposition would amount to an indirect supply of arms to Al-Nusra in violation of Resolution 2083 (2012).

4. Member States supplying arms to the Syrian opposition would incur State responsibility for aiding and assisting in the commission of internationally wrongful acts.

According to Art. 16 of the ILC [International Law Commission] Articles on State Responsibility[4] a State which aids or assists another State in the commission of an internationally wrongful act is internationally responsible if (a) that State does so with knowledge of the circumstances of the internationally wrongful act; and (b) the act would be internationally wrongful if committed by that State. The Commentary *inter alia* states "a State may incur responsibility if it [. . .] provides material aid to a State that uses the aid to commit human rights violations. In this respect, the UN GA has called on member States in a number of cases to refrain from supplying arms and other military assistance to countries found to be committing serious human rights violations" (para 9.) When applying these principles to the envisaged supply of arms to the Syrian opposition, it is to be considered that war crimes, including murder, extrajudicial killings and torture, are perpetrated by anti-Government armed groups in Syria, as reported by the UN Commission of Inquiry, as well as suicide bombings and attacks against and hostage-taking of UNDOF peacekeepers, as is known from the daily news. Should supplied arms be used by armed opposition groups in Syria in the commission of internationally wrongful acts, the States who had supplied these arms and had knowledge of these acts would incur State responsibility for their aid and assistance in the commission of such acts.

4. See http://untreaty.un.org/ilc/texts/instruments/ english/commentaries/9_6_2001.pdf.

Ireland Could Be the One To Say 'No!' to the Troika

Nessa Childers is a member of the European Parliament representing the East constituency of the Republic of Ireland. She was interviewed by EIR's Nina Ogden and Gene Douglas, editor of the LaRouche Irish Brigade website (http://laroucheirishbrigade.wordpress.com/), in the Dublin offices of the European Parliament, on April 24.

Childers, a member of the Irish Labour Party, recently resigned from her political group in the Irish Parliament to dramatize her opposition to the austerity policies being imposed on European Union countries by the "Troika." Her father, Erskine Childers, was the fourth President of Ireland.

As the interview began, Ogden told Childers that she had been following her, from the U.S., before Childers' resignation. Here is an edited transcript of the discussion.

Nessa Childers: So you have been following me, and now after this, the CIA and MI-5 will be following me, too!

Ogden: Well, that's par for the course, you know.

Childers: Yes.... I understand, and you know, I come from a kind of revolutionary background, and I think, at some level, that has influenced me politically, and I don't even understand it myself. I'm a cultural melting pot myself, I'm not completely Irish, and I think that's all in there somewhere.

So do you want to ask me questions? I'm not an economist, but I can talk about political justice.

Ogden: We know you have been against these austerity measures for a long time, and we want to know what your thinking is about that.

'Agendas Behind Curtains'

Childers: It has to do with justice, and it has to do with vested interests, as well, and with "agendas behind curtains," as Poul Rasmussen, who was the head of the party of European Socialists, said about two years ago at a meeting I was at. It struck me, what he said, because the English was slightly turned around and it is more powerful than "hidden agendas": "agendas behind curtains." And he was operating at quite a high level at that stage. He was the former Prime Minister of Denmark. There were negotiations going on, and he said he suddenly sensed this—and he's good at pattern recognition I think—and he sensed that there were "agendas behind curtains."

And you begin to see this when you are in the EP [European Parliament]. You begin to see the enormous forces ranged against you, if you are anti-austerity: financial and political. You can sense them, and you can see the patterns, as if your man is going down into some sort of safe place, and he puts on these glasses, and suddenly he sees the outlines of these alarm systems. You begin to see those agendas and to sense them, and you begin to think that something is very wrong! And that there are forces operating to keep us in these positions.

In Ireland as well, you know: This is why I exposed the Financial Services Clearinghouse and their operations in Leinster House [the Dail, the parliament of the Republic of Ireland—ed.]. I think that this isn't right! There's a moral aspect about this. It's about people not fitting into spreadsheets. They cannot; they are human beings. And my former profession comes into it as well. I was a psychotherapist for 25 years. I wasn't a politician. And I signed a code of ethics, and I began to feel that I was colluding in something that was actually indefensible,

and that I would never be able to defend it personally.

Ogden: Good.

Childers: And I did begin to feel that I wasn't prepared to bear it any longer; and what could happen to me in the future if I started to work in that field again, and what would people sitting across, behind the couch, or behind the table; what would they see me as? Perhaps being to blame for maybe a suicide! Out there, there are huge amounts of suicides, and it's the tip of the iceberg. There's huge amounts of chronic anxiety and depression from insecurity and insecure employment, and I don't want to be held responsible beyond what any of us can be. And at that stage, I thought, something had to be actually done.

And that's where things get difficult, because you know, I chose deliberately to try and destabilize the system. That's the way I was brought up, you see. It wasn't enough simply to resign, but I had to actually go into the power structure and to actually shake it, and bring it down, because that is the only thing left.

There Are Troikas Everywhere

Gene Douglas: This follows on, I think, neatly, from what you have said already: Why do you think that the Troika is so insistent on austerity, when a lot of leading economists have said that it's exactly the opposite, that it's the wrong direction to take? Why is there this insistence on austerity when it is proven to be so destructive?

Childers: Well, what a half-plan has it proven to be! The economists that are hostile to austerity in the United States, they are regarded as the East Coast versus the West Coast economists, and they themselves have been in major conflicts with their own profession, with people who do believe in fiscal discipline. I think the thing to think of there, is, in Europe the construction of the Troika is definitely influenced by some member states, by Germany, Finland, and the Netherlands.

You have to try to understand what happens in Germany. The German people think that their taxpayer money is being misused. They see themselves as the victims in all of this. There are multiple reasons. The bit that worries me the most are the hidden reasons, where they are tied up with bond markets; and there are other people who probably know quite well who those people were, and that's the bit that I think is part of it. The Cypriot situation was absolutely shocking, and mismanaged; and they now face something like a 20% contraction of their economy. And I would say that their presence in the euro is, for them, 50-50—whether they'll be in the euro or not.

Douglass: Their Parliament was told, "We're going to turn off your money unless, in three days, unless…

Childers: They said that to us, too!

Ogden: They [the Cypriots] voted reluctantly, and then the conditions were supposedly changed, but now they can't bear it.

Childers: It's like Iceland, you know, they're forcing their politicians to go and confront… You see, that situation in Cyprus was not good; it gave the Irish government a reason for saying, "Oh, look what they're about to do in Cyprus, to pull the rug." In fact, we don't really know what what they would have done. They didn't actually do it in the end, because the Cypriots showed the jugular. They gave in under threat. The threat: That is another moral aspect. There are Troikas threatening countries everywhere. What happens is, they threaten governments, and then governments threaten their own representatives. It's like an awful repetition of something.

We have the public employee, the Croke Park negotiations[1] here, and they were negotiated with a threat! And what happened there is quite interesting because I think we're at the limits of where that is effective. That can cause a scorched-Earth attitude in people where they just think, "That's it! We're at the end of it; I'm not going to be threatened with that anymore by anybody!" I can see a kind of a weak reduction of bullying really, from Troikas to governments and then governments to their own people, and their own representatives.

The Grenade in the Ballot Box

Ogden: And actually that was going to be our last question. The sense is, that what your resignation is part of, I think, is the kind of feeling that's going on throughout Ireland and throughout the other countries in Europe: that enough is enough. That nobody believes the spin any more. And for the unions to turn down the Croke Park II agreement, is really significant. I think it has a lot to do with what's going to happen in the Labour Party with you and your colleagues, as a whole.

Childers: I wouldn't bet on it. I've come to wonder what is going to really crack this edifice. You see, it's got to do with masses of people. And you never know what's

1. The Public Service Agreement 2010-2014 (Croke Park Agreement) is a series of austerity measures demanded by the government of public service trade unions—ed.

going to happen there. We seem to be quite quiescent in Ireland, you know, in many ways. It's what Rory Quinn [Minister for Education and Skills] described as "the grenade in the ballot box." People seem to wait until elections, and then they destroy political parties. I have grave concerns about that, because I think it'll be too late, and I don't know what's going to happen....

Ogden: You're bringing up, that you have to have a positive solution. You can't just say "We're against this," and then people go crazy.

Childers: We need to spend money. I think we have to do; our banks need to be recapitalized, as the next thing that has to happen. They are not functioning, absolutely not functioning. I don't think that's going to be easy. I think the other European states are going to move back from that. But I think our debts have to be written down. I don't think we can pay them. I would be concerned that that has to be done in a strategic way. Because I personally would be very concerned, not from the point of view of the philosophy of it, but I couldn't advocate a disorderly default, because I think people are there. We could end up in a most disastrous situation. There are other kinds of defaults, and many economists would say it's going to happen anyway, unless we do something, and I think those debts are still unsustainable. We've just pushed them out....

You know you wonder sometimes whether people have been captured—it's the Stockholm Syndrome[2]—by people that they have no power to stop, certainly with individuals...

Ogden: I have to tell you, that's what *you* are for!

Childers: You're dealing with group minds—that is what one of the trade union people said to me—so instead of getting angry, they are trying to please the people that have power over them. If that is the case, that's actually a benign explanation. The other explanation is, that some of them have been captured by vested interests. So I don't know. Both are entirely possible, of course, too, but I seem to be immune these days to the Stockholm Syndrome....

Glass-Steagall Is the Key

Ogden: I think leadership is moral leadership. From what you described, that means moral leadership.

Childers: But that means upsetting people now. And I don't find that easy. And to actually lead a bit of a parliamentary party, and to begin to sort of confront them, I found that I have to do that, unlike the other people that left; they had to vote, and they lost. I had to do something very deliberate. You know, no one wants to be hated by people, or to take up that position. But I did. You know, I suppose I was brought up from a very young age to think about democracy. And where, if you saw it beginning to erode, that you couldn't *not* take action, that you had a duty, an actual duty, to do something about it, which of course led to my grandfather running guns, and my grandmother.

But you know, Ireland *could* provide the leadership, as you were just saying; I was just thinking, we stood up in those days to the British Empire, a tiny country of, what would it be, two and a half million people, if not less. So, we *could* be the ones that say "No!" That's a very powerful statement, you know, if Ireland says "No," that would resonate in the memory of Irish people. At this point, I don't know what is happening to Irish people. I think that they're too exhausted to fight. I think that they have gone into a sort of a helpless state.

But that's what governments are for, to defend their people. I was brought up to believe that the first reason to be a public representative is to defend the people you represent. But instead, we're defending the Troika. And in my opinion, that's a symptom, perhaps of something which does come from the past, you know, where we learned to play games—probably quite successful to some degree—games behind the scenes. You see, I think it's gone beyond that stage. I think it will require hard political power, to stand up now to these people. That means making threats of a kind.

Douglas: I just wanted to say, while I agree with you totally on what you just said there, that we in Ireland have tended to play these games, while pushing for our own agenda, but I just have to say that I think we have been really unsuccessful. In doing that, we've never really achieved—you know, still we have a divided country, and now we're under the yoke of this Troika, which is another sort of imperial master, if you like.

So I think we have tried in various ways, but unfortunately, it really hasn't worked. But I think, again, as you were saying, that this is a real critical time at present, and I think there is possibly a breakthrough available to get beyond this type of imperialism. I think Glass-Steagall is the key to it.

2. The Stockholm syndrome, or capture-bonding, is a psychological phenomenon in which hostages develop positive feelings toward their captors.

Obama's Offenses Are Worse Than Nixon's in Watergate

by Nancy Spannaus

May 21—The significance of the concatenation of well-deserved attacks on the Obama Administration this week does not actually lie in the scandals themselves. In many respects, the Administration's lying coverup about Benghazi, violation of First Amendment rights on the pretext of national security (AP and Fox News record-seizure scandals), and political targeting of Obama's "enemies" through the IRS, are old news. What has changed is the willingness of a section of leading institutions in the United States to go after a President who is bringing the world closer and closer to disaster. The 'I' word, impeachment, is beginning to be heard.

It has been a long time coming. The Obama Administration has literally been getting away with murder for years—specifically with the illegal undeclared war in Libya, as well as the killing of American citizens with predator drones, without a hint of due process. Impeachment articles have been drafted, but left sitting on the shelf, untouched, and unheralded.

Not that it's inevitable that sufficient powerful forces in the U.S. Establishment are prepared to go now for impeachment (or resignation) of Obama. Partisan political charges are still clouding some of the basic issues—such as the Administration's policy decision to ally with British-Saudi jihadi forces for regime change in Libya, which decision is irrefutably responsible for the death of U.S. Ambassador Chris Stevens and three other Americans. *But there is no question, to the honest analyst, that Barack Obama has committed offenses against the U.S. Constitution equal to, and in some cases greater than, those of Richard Nixon, who was forced to resign in order to avoid impeachment in the Watergate scandal of 1972-74.*

The Watergate Precedent

In discussing the Watergate precedent, it's appropriate to start with the still-active veteran of that era, journalist Bob Woodward, himself an institutional player. While denying any direct parallel to Watergate, Woodward accused the Administration of lying ("This is a business where you have to tell the truth, and that did not happen here.") on the Benghazi story, when he appeared on Meet the Press May 19. "Some people in the Administration have acted as if they want to be Nixonian, and that's a very big problem, I think," he said.

On MSNBC's Morning Joe May 14, Woodward was even more explicit, saying the Administration's "scrubbing" of the talking points on Benghazi was reminiscent of Watergate. "I have to go back 40 years to Watergate, when Nixon put out his edited transcripts of the conversations and he personally went through them and said, 'let's not tell this, let's not show this,'" Woodward said. "I would not dismiss Benghazi. It's a very serious issue. As people keep saying, four people were killed."

The general Democratic rejoinder has been that President Obama, unlike Nixon, was not personally involved in making the decisions that have led to the

White House/Pete Souza

"Is this a dagger which I see before me?…" Unlike Macbeth, who has yet to commit murder at the moment this line is spoken, Obama already has blood on his hands. Yes, worse than Nixon.

scandals. Like the White House, they claim that it was the CIA, not Obama, who decided to suppress the evidence of al-Qaeda's involvement in the killing of Stevens, et al. Like the White House, they say there's no evidence Obama was personally involved in the IRS's political targetting, or the intimidation of journalists.

But Obama is the President who set the policies. Just because he apparently didn't tape his conversations in the Oval Office, as Nixon did, doesn't mean that evidence of his personal responsibility for these violations of law does not exist. In the case of Benghazi, for example, the stonewalling by the Administration already rivals that of the Nixon Administration, on a matter much more serious than the burglary of a doctor's office.

And indeed, serious investigations are just beginning.

A Look Back at Watergate

A look at the Articles of Impeachment against Nixon which were adopted by the House Judiciary Committee, is both instructive and evocative. These were brought forward after more than a full year of hearings to dig out the details of the President's personal involvement in the Watergate crimes and coverup.

The Articles begin with the solemn charge that: "In his conduct of the office of President of the United States, Richard M. Nixon, in violation of his constitutional oath faithfully to execute the office of President of the United States and, to the best of his ability, preserve, protect, and defend the Constitution of the United States, and in violation of his constitutional duty to take care that the laws be faithfully executed…." Specifications follow.

Article One can be summarized as Obstruction of Justice, charging that, in the case of the Watergate burglary, "Richard M. Nixon, using the powers of his high office, engaged personally and through his close subordinates and agents, in a course of conduct or plan designed to delay, impede, and obstruct the investigation of such illegal entry; to cover up, conceal and protect those responsible; and to conceal the existence and scope of other unlawful cover activities." There follows a listing of a course of conduct by the President which included lying, stonewalling, misusing government agencies, and many other actions.

Article Two charged that Nixon had "repeatedly engaged in conduct violating the constitutional rights of citizens, impairing the due and proper administration of justice and the conduct of lawful inquiries, or contravening the laws governing agencies of the executive branch and the purposed of these agencies." The first instance of this conduct then cited read as follows:

"1. He has, acting personally and through his subordinates and agents, endeavoured to obtain from the Internal Revenue Service, in violation of the constitutional rights of citizens, confidential information contained in income tax returns for purposes not authorized by law, and to cause, in violation of the constitutional rights of citizens, income tax audits or other income tax investigations to be initiated or conducted in a discriminatory manner."

Article Three charged the President with refusing to respond to materials subpoenaed by Congress, thus "assuming to himself functions and judgments necessary

to the exercise of the sole power of impeachment vested by the Constitution in the House of Representatives."

Six Republicans joined the Democrats on the House Judiciary Committee to vote up the first two items, while three joined on the third. Convinced by senior political figures that he didn't stand a chance of acquittal on the impeachment charges in a Senate trial, Nixon agreed to resign.

Obama's Lists

Granted, President Nixon was not impeached for his greatest crimes. One of them, the illegal, bloody war in Cambodia, was actually drafted as an impeachment count, but never filed. But Nixon's arrogance of power, and use of police-state methods against his political enemies, shocked the nation—resulting in not only his resignation, but an exposure of misdeeds by the FBI, CIA, and others, and an overhaul of the rules by which they were supposed to function in the future.

Obama's greatest crimes, too, are out in the open, starting with the undeclared war against Libya. Despite action by Rep. Walter Jones (R-N.C.), who has introduced a resolution in this Congress (HCR 3), as he did in the previous one, which would make any Presidential war-fighting (except in self-defense) without the authorization of Congress an automatically impeachable offense, Congress has refused to hold Obama to account for this blatant Constitutional violation.

Equally bold has been the Administration's virtual advertisement of Obama's "kill list," which White House sources leaked to the *New York Times* in June of 2012. There, it was asserted (and has never been denied) that the President personally reviews, every Tuesday morning, a list of those to be killed by drones. Subsequently, it became clear that some on those lists have been American citizens (cf. the Awlakis, father and son, and Samir Khan), to whom the American Constitution grants the right to due process of law. All three were killed by drones, on Obama's orders.

Is it reasonable to think that a President who takes "personal responsibility" for reviewing and executing a kill list, would not deploy his Administration against a political enemies' list, including through the IRS?

The IRS Investigation Begins

Let's take the IRS case as an example.

The process of investigation into the IRS abuses reported by the Treasury Inspector General, in his May 14 report, has only just begun, but it has already raised a great deal of damning evidence on politically motivated discrimination by that body. Among the matters found in that evidence, is the creation of openly political criteria for delaying grants of tax-exempt status, and collateral charges that IRS officials lied to Congress about the investigation, and disclosed confidential tax information to the Administration's political allies, for use against its "enemies."

In the opening hearing, held by the Ways and Means Committee May 17, Inspector General Russell George reviewed the IRS abuses in some detail, showing how the agency targeted specific groups applying for tax-exempt status, delayed processing of their applications, and requested unnecessary information from them. The IRS created a "Be on the Lookout List," which included the following broad characterizations:

- If "Tea Party," "Patriots," or "9/12 Project" were referenced in the name or description of the group;
- Whether the group's issues included government spending, government debt, or taxes;
- Whether the phrase "make America a better place to live," was part of the group's politics, or if the group criticized the government, or wanted to educate people about the Constitution.

Obama officials have been at pains to say that these abuses were devised by the bureaucrats on the scene, with no evidence of White House or campaign involvement (the pattern of activity goes from 2009 to 2012, and involves hundreds of cases). Such a claim defies credulity. Bureaucrats do not take risks which they don't believe their bosses want them to take. And it was totally clear that the Tea Party and associated groups were on Obama's "enemies list." Not only did he make public statements labeling such groups as "a threat to democracy," but he was engaged in hot political combat with them during the fight over Obamacare starting in 2009.

True, Obama says he knew nothing, and is appalled. IRS officials in the IRS office in Cincinnati say they were directed from Washington to do what they did, and the Washington IRS office is documented to have been involved early on. Who has the power? Whom would you believe?

The investigation could go on for months, as with Nixon, or Congress and relevant sections of the political establishment could take the best course for the safety of the nation: Start impeachment proceedings on Obama's already blatant crimes. Get him out of there now!

HENRI SAFA

Only Nuclear Can Solve The World's Energy Demands

Prof. Dr. Henri Safa is a French nuclear physicist, author, and international expert in energy density, nuclear engineering and instrumention, and a member of the Science Board of the Nuclear Energy Division of CEA (Atomic and Alternative Energy Commission), France. His speech led the panel on "Energy Security for the 21st Century" at the Schiller Institute conference in Frankfurt, Germany, April 13-14.

EIRNS/Daniel-Enrico Grasenack-Tente

Dr. Safa: Mankind "will be using nuclear energy in the future as his main source of energy."

Good afternoon. I would like to show you this afternoon why nuclear appears really unavoidable in the long run.

First, if we take an historical perspective, you know that energy has always been important for humanity, and we started using biomass a long time ago. So, biomass was the first source we've been using for a very, very long time; and since coal was discovered in the 17th Century in England, it has really changed our world, because it led to the Industrial Revolution that we had in the 18th Century. And afterwards, of course, the discovery of oil in the 19th Century led to the tremendous growth that we had in the world in the 20th Century, and this has eased all transportation in the world.

Afterwards, of course, liquefaction of gas, in 1956, also allowed a big burst in energy, that we are seeing today in the expansion of energy use.

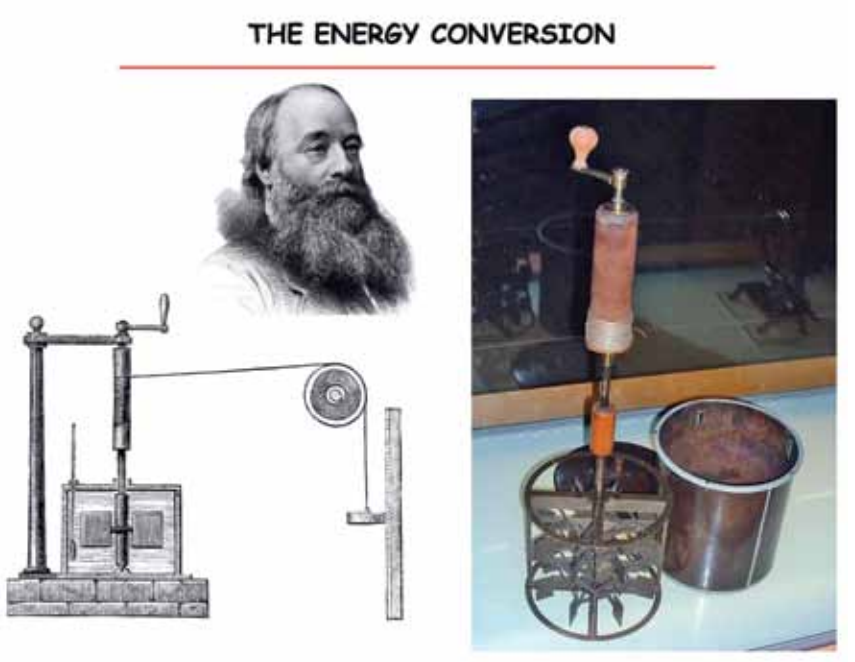
At the same time, when we started using electricity at Niagara Falls, it was an astonishing use of transportation of energy over long distances, that can be used easily through only a small wire, a small copper wire. And this also led to the use of energy over long distances.

And everybody knows that in 1942, Enrico Fermi built his first [atomic] pile in Chicago stadium, and this was very astonishing—that he could, for the very first time, extract energy from uranium. And this was expanded in the late 20th Century.

Energy Doesn't Disappear

So, just a few basic figures to have in mind about the amount of energy we are talking about: Of course, the official unit is the joule, but the more common unit is kilowatt hours; this is what you use every day. And one

FIGURE 1



kilowatt hour, just to keep things in perspective, is 40% of what we eat per day for a human body, but it's only driving 1 kilometer in a car. So, it's a fairly good amount of energy.

For example, if we want to go and get a baguette at the bakery, sometimes we are moving 1 ton of metal over several kilometers, just to get his baguette of 250 grams. One point I wanted to stress here, is efficiency of using our energy sources. And this is very important.

Another thing that has been discussed over the centuries, especially by James Joule, is that energy, in fact, doesn't appear from nothing (**Figure 1**). It is only a matter of converting energy from one form of energy to another. So, energy doesn't disappear. Energy is a conservative physical unit, and when we use energy, is that we are just moving one form of energy to another form of energy. And this is what Joule showed with his small apparatus here, where he had the small mass here, falling with gravity, and this mass is connected to a small water loop, where we have a pail rotating in the water. And he showed that energy from gravity is transformed into heat energy in the water. And he measured the temperature. And this is how he determined that we need 4.4 joules to heat one gram of water by one degree. Since then, the idea has been to convert energy from one form to another, and we have invented a lot of techniques to convert one form of energy to another.

Of course, we have thermal energy, we have chemical energy, electrical energy, mechanical energy, and radiation energy, nuclear, and hydraulics. For example, when you are using lighting, when you have a lamp, you're taking electrical energy in a resistor, you're heating the resistor, going to thermal energy, and then this thermal energy is at a sufficiently high temperature to have radiation energy. So you're moving from this part, to this part, to this part.

When you do that, the overall efficiency, going from electrical energy to radiation energy, is only 2%. So this means that you're losing 98% in this process! And this is why it's important to have efficiency in the process.

When you use nuclear energy, you're going from nuclear material to fission, doing thermal energy, going through a turbine, heating water (mechanical energy), and then going to electrical energy in an alternator. So you're moving these four forms of energy to go to electrical energy.

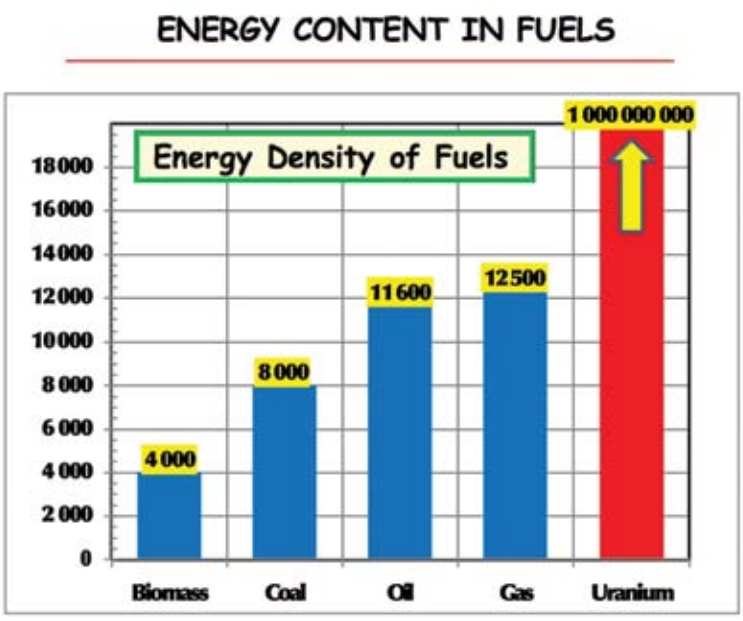
Energy Density

The other main issue here is energy density. When we discovered coal, coal was very interesting—why? Because it has twice the energy density of biomass. And this allowed trains to run on steam, because we were able to put enough coal in the train to move the engine. And when we discovered oil or gas, which is the most dense energy that we know for the moment, as chemical energy on Earth, it was used even more, and more sought after, because it is three times more dense than biomass.

And what is important here to see, is that, for uranium—because it is a nuclear-binding energy—it is 100,000 times more dense than petroleum (**Figure 2**).

From this fact, I think that it is clear that we need to use this tremendous amount of energy density. This factor of 100,000 is very important for us, because we can use very little mass from the Earth, to get the same amount of energy as burning oil—100,000—you have to bear in mind this figure of 100,000. This simple fact will tend to say that human beings will be using nuclear energy in the future as their main source of energy.

FIGURE 2



Now if we look at world energy consumption (**Figure 3**), you see that there has been a tremendous increase of use of energy on Earth, because, first, the population is increasing, but also wealth and economic growth demands more energy. What is important in this figure is that, through the discovery of the different forms of energy, we never leave behind other energy sources. There have never been substitutions of energy sources; we have always been adding more and more energy to what we know.

You see even today that biomass, which is the old use of energy by humanity, is still increasing. Coal is still increasing. Oil also. And by the way, you see that renewables here, in green, are less than 1%.

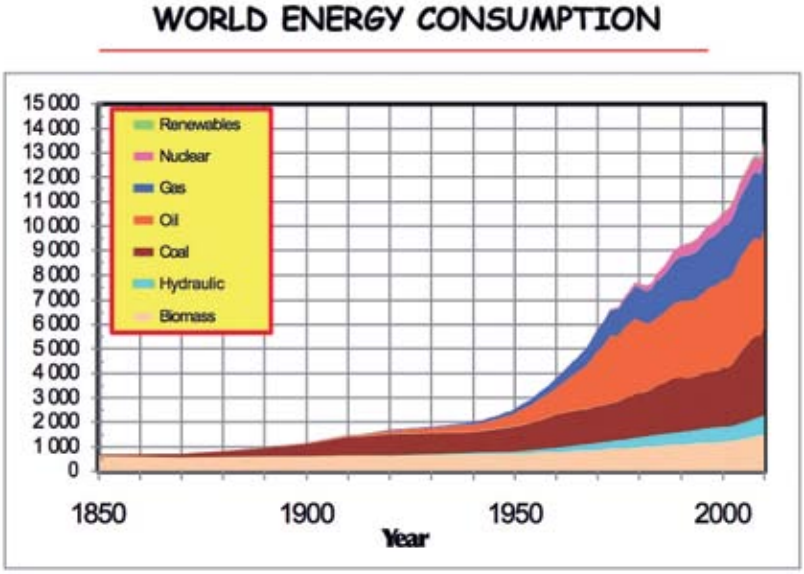
All these forms of energy are increasing, and the people are asking for more and more energy. Why? Because energy and growth are intimately linked together. We cannot get human development without energy. It is clear that if a country wants to develop, it will need enough energy per capita to develop, in order to be on the right side of the curve, which is this side of the curve—the developed countries (**Figure 4**).

Many countries in the future will have to develop to the level of the wealthiest countries, and will have to have at least 4 tons of oil equivalent per capita in order to be developed enough. This means that we can foresee right now that most of the world energy consumption will continue to develop in the future.

So, if we want more energy, where can we get this energy on Earth? As you know, we have fossil fuel energy, as we have discussed just now—coal, oil, and gas; and we have renewable energy—hydraulics, wind, solar, biomass, geothermal. Most of the renewables are coming from the Sun's radiation—except for geothermal. And we have nuclear energy, which was formed at the beginning of the formation of the Earth, 4 billion years ago, when this uranium was built up from the beginning, in the Earth's crust.

We needed a very long time to form these fossil fuels, hundreds of millions of years. These are diffuse and intermittent energy sources. So we need something that can last sufficiently long, as resources, and we need something that is not intermittent and diffuse, but which has sufficient energy density to put out enough power.

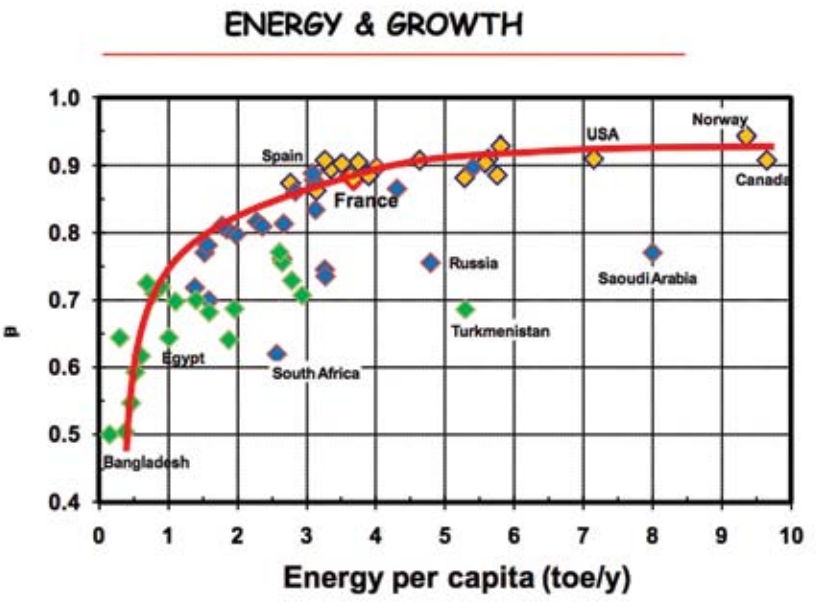
FIGURE 3



If we look at present world resources, basically, oil and gas resources; if we add additional and proven resources, they will last probably in the hundreds of years. This means that in the next century, these will be very, very expensive, because they will be rare. We will have to go deeper into the ocean to get access to these resources.

Coal is more common, and we have much more coal on Earth than we have oil or gas. So coal will be extensively used, and it is the resource used now, essentially in China; the basic resource in most countries now is coal. And if we use uranium, as we are using it today in current reactors, we only have 300 to 400 years of resources. So this means that if you want to use nuclear energy over a longer period of time, you will have to use new kinds of reactors to have enough resources to last sustainably longer than we can today.

FIGURE 4



Just a few words about uranium resources (**Figure 5**): Because of this factor of 100,000 that I talked about before—this small nuclear pellet that we put in the reactor, 7 grams—yields as much energy as 5 barrels of oil. This means that we need very, very low resources for the same amount of energy. Instead of neeing billions of tons of oil, we need thousands of tons of uranium. So this factor of 100,000 is very important, from the point of view of resources that we can access on Earth.

Energy independence, low cost, low quantity of waste produced, and low environmental impact. We can get to these if we discuss more.

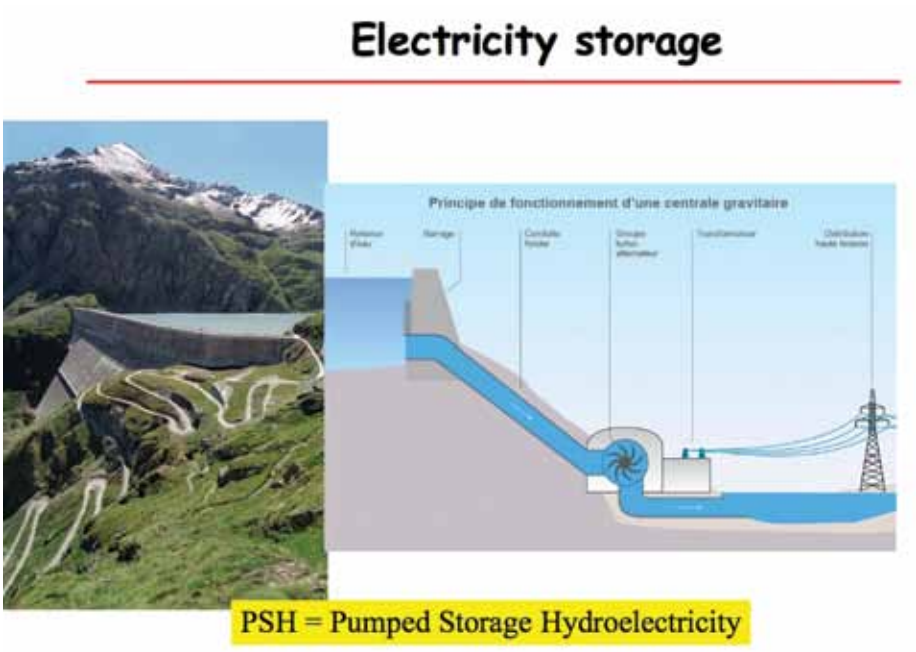
Prospects for the Future

What are the prospects now for the future—for the short term, and for the long term? For the short term, we have to enter a new era, where we have to modify the energy use that we are doing today. And some energy rules can really be game-changers for the energy consumption on Earth.

The first of them is energy storage—very important. Today, we do not know how to store electricity, so we have to produce electricity as we consume it, and this makes for very stringent operational constraints for electricity.

FIGURE 5

FIGURE 6



the longer-term sustainable energy for the future.

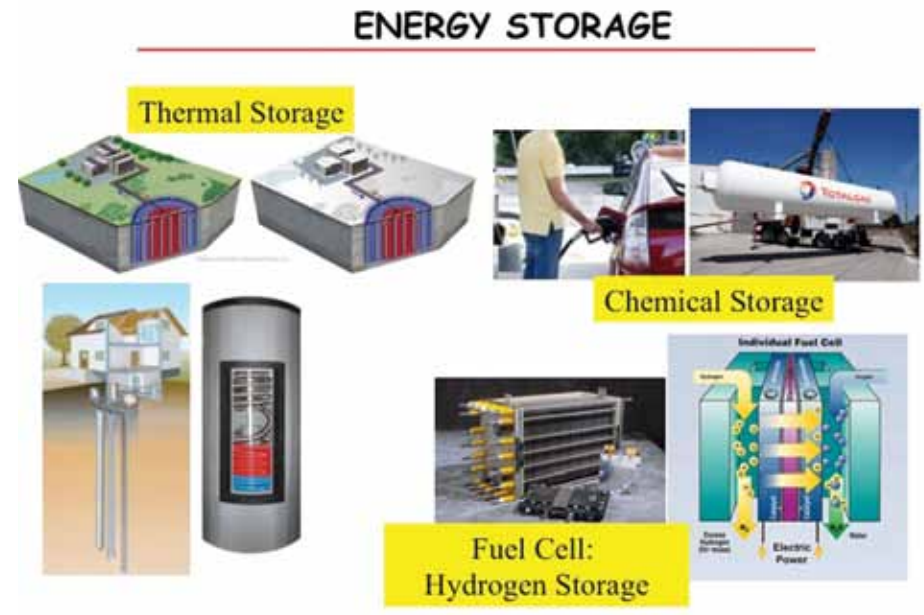
For electricity storage, the only large-scale storage—I'm talking about terrawatt-hour storage, not the small battery of your computer, which is 112 Watts. The only usable large-scale storage is pumped storage hydroelectricity (**Figure 6**). When you have electricity in excess, you can pump the water in the storage to the upper part of the dam, and then, when you want to use it, you just release it by mechanical weight. And this can be done only in countries where you have mountains, of course. It's very difficult to do elsewhere.

Other kinds of electricity storage are the compressed air storage beneath the ground; inertial wheels—where you just spin the wheels at high velocity, and then try to recover; of course, batteries; and superconducting magnetic energy storage. All these are studied in the labs. But none of these are applicable at high energy and high power.

The second game-changer I will talk about is recovery of waste heat from our electricity plants, and there is plenty of heat to recover there.

The third is electric transportation; and the fourth is

FIGURE 7



Other kinds of energy storage: thermal storage. Here you see a house, or a complex, where you can store energy in Summer and recover it in Winter (**Figure 7**). You have chemical storage—the best example is the storage in your car. And you have the fuel cell storage of hydrogen. But when you put the figures in of all these kinds of storage, what we need to do is to have enough power in this storage—this is a pumped storage hydraulic hydroelectricity. You want to be in the upper part here, in the 100 megawatts regime, and you want this storage to be not very expensive.

You see that most storage available is low power and high cost, so there is plenty of work to do to make these kinds of storage go into this other range.

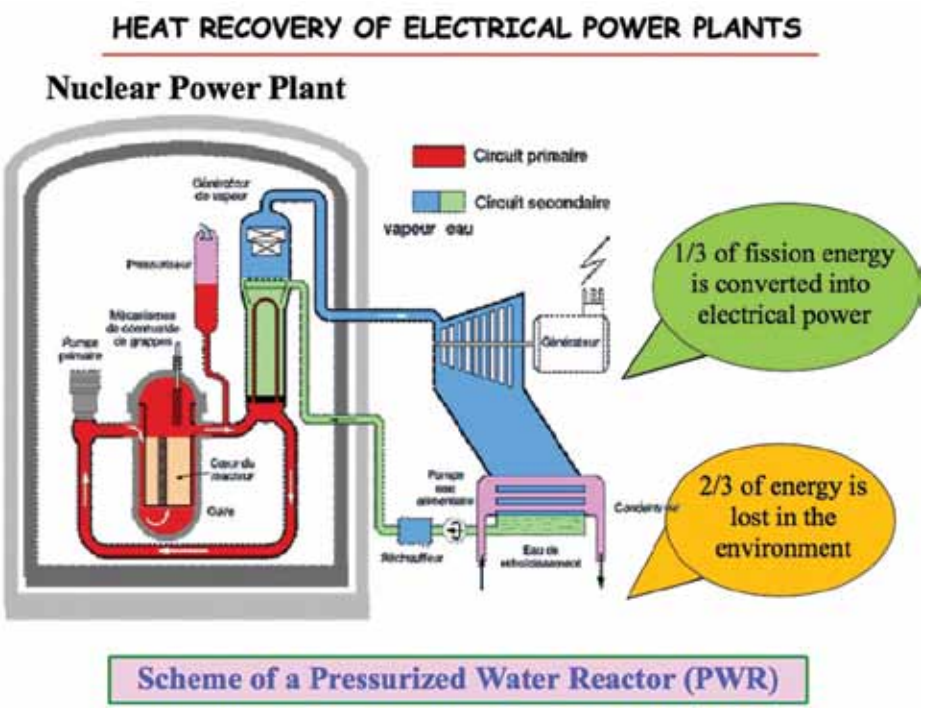
So this is the challenge for the next 30 years.

Recovery of Heat

The second challenge is the recovery of the heat of electrical power plants. Why is that?

Today, when you do this transformation—I told you that all we are doing is converting energy from one form to another—when producing electricity at an electric power plant. Here is, for example, a nuclear power plant (**Figure 8**)—while you're heating the primary water in the core of the reactor, and transforming it into electrical power, only one-third of the energy released from fission is transformed into electricity. And two-thirds is just lost in the environment, heating the birds, or heating the fish. And this is not very good.

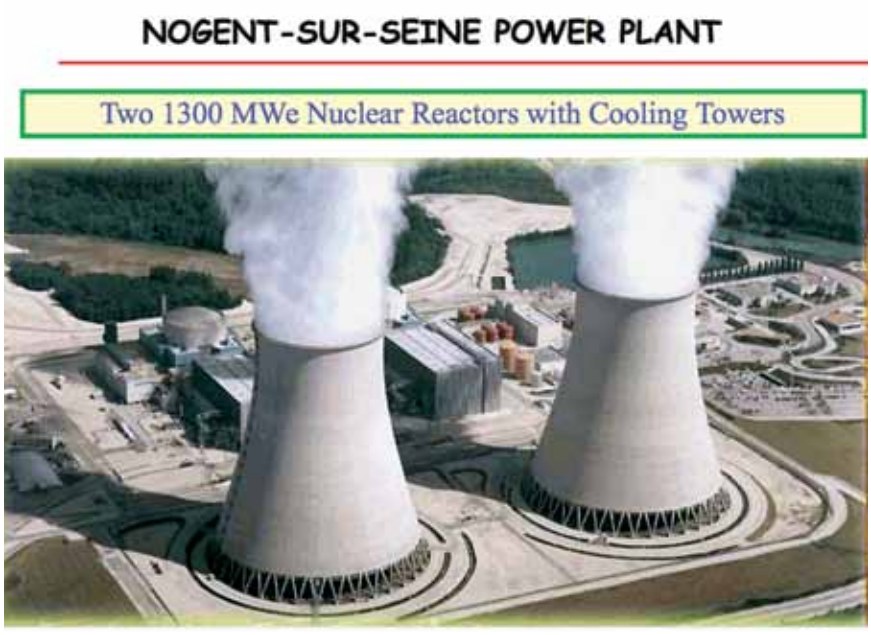
FIGURE 8



So, this is one example of our reactor in Nogent-sur-Seine (**Figure 9**), where you see that all this heat is going into the atmosphere. So, what can we do? We can make a change in the system in the secondary loop of the reactor, to recover this heat, and we can use this heat to go and heat the cities.

The problem is that the nuclear plant is ordinarily far from the cities, so the problem is how to transport heat long distances, hundreds of kilometers, from the nuclear power plant to the cities. And this can be done today with very low losses. We can have a 150-kilometer transport line with less than 2% of heat loss, and we have programs where we can try, let's say, to recover the heat from the Nogent-sur-Seine nuclear power plant, and to try to feed it into Paris—120 kilometers away. Paris already has a heat distribution

FIGURE 9



network which is the largest in France, and it has been there for almost a century. It started with trains in Gare de Lyon where we tried to heat the steam in Gare de Lyon, and it's still there. It's still working and, for the moment, this heat is used with coal power plants in Sant Ouen or with gas power plants. And if we can take nuclear heat, this can save a lot of energy, and a lot of money.

Transportation and Sustainability

The third challenge is the electrical transportation. Why electric transportation? What are the advantages?

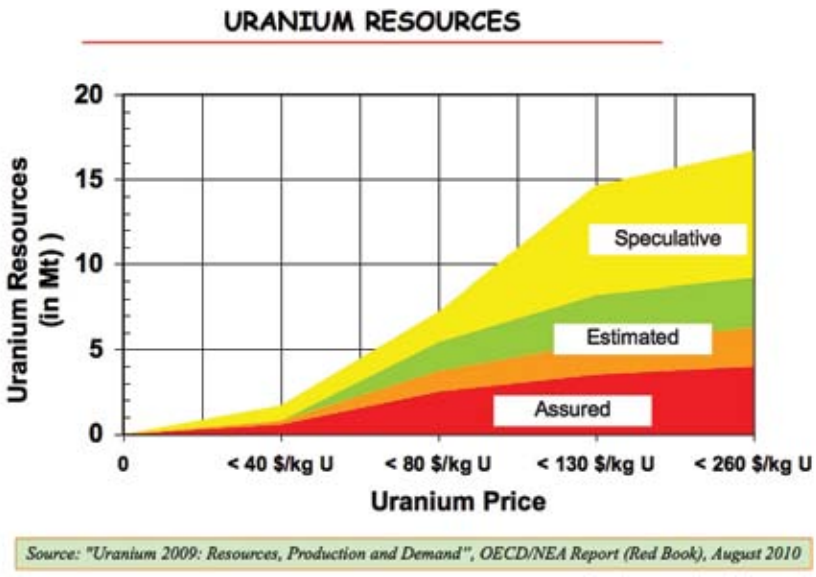
If you take an internal combustion engine, you have 33% efficiency in the engine, and you have only 20% converted into motion of the car. So this means that you are losing 600 watts per hour, per kilometer. If you take an electric car, you're only losing 200 watts of power per kilometer, because the electric engine has an efficiency of 90%. So this means that you require three times less energy for the same motion, and also, you have no CO_2 emission at all.

The fourth challenge is the long-term sustainability of nuclear power, and sustainability is driving the design of new reactor systems, where we are using uranium resources much more efficiently than what we are using today: 50 times more efficient.

How do we do that? These are the uranium resources that we have today for these prices (**Figure 10**). And what will happen if we are using present nuclear reactors, is, we're just consuming our uranium. And you see that in 50 years from now, we will hit our maximum resources that we have at the given price. So, we need to do something in order to move to new reactors, what we call fast reactors. If we introduce them early, we can have enough energy from these fast reactors to last a very long, long time. When I say a long time, I mean tens of thousands of years, so it's a much longer time scale than what we have today for our reactors.

The resource needs for fast reactors are only 8 tons of depleted uranium, as compared to 200 tons of natural uranium that you need for our present reactors. This means that the gain we can get from there is a long-term gain of sustainability for the nuclear reactor. And this, by itself, justifies developing these new nuclear reactors for the long term.

FIGURE 10



Source: "Uranium 2009: Resources, Production and Demand", OECD/NEA Report (Red Book), August 2010

There is an International Generation IV Forum that was started in 2000, where we have selected six types of fast reactors for the future. One type is a sodium fast reactor; the others, a lead fast reactor, the gas fast reactor, the high-temperature reactor, the supercritical water reactors, and the molten salt reactors. And I think you will hear, after me, about one of these, which is the molten salt reactor.

Today, in France, essentially in the CEA, we're working on two kinds of reactors: the sodium fast reactor, because we have a lot of experience with it—we have 30 years of experience in working with sodium fast reactors—and the gas fast reactor, which is more challenging, because it's a helium-based fast reactor that we have never built up until now.

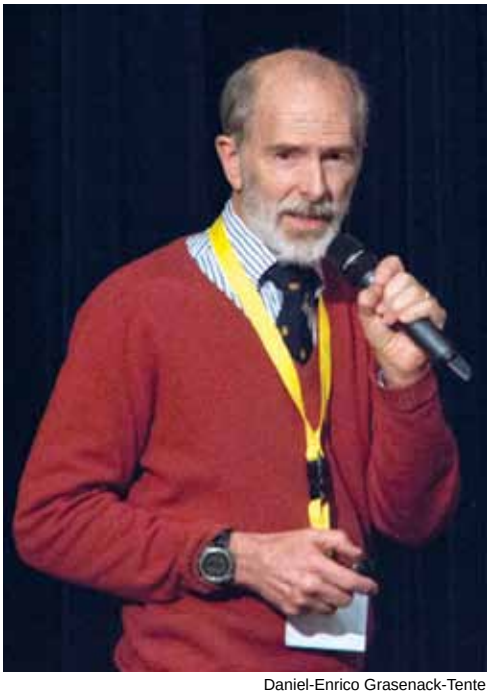
So these two are prototypes of the sodium fast reactor which will be built in the next 10 years in France.

In conclusion, energy density is the key issue for using a future source of energy on Earth. We need energy, of course, because we need to have economic growth. They are intimately linked. The game-changers that we see in the next 30 years are, storage of electricity, heat recovery from power plants, and transportation of electricity. And for the longer term, I would say, nuclear reactors are unavoidable.

Eduardo D. Greaves

Thorium as Nuclear Fuel In the Molten Salt Reactor

Prof. Eduardo D. Greaves, PhD, is a nuclear physicist working at the Institut de Physique Nucléire, France; IAEA expert; founder of the Venezuelan Nuclear Society and the Nuclear Physics Department of the Simón Bolívar University, Caracas, Venezuela. We use here a selection of his slides; the video is at http://newparadigm.schillerinstitute.com/.



Daniel-Enrico Grasenack-Tente

Dr. Greaves told the conference: "The thorium molten salt reactor is capable of providing the clean, safe, and cheap energy necessary for the future of society."

First I would like to acknowledge some of my collaborators, in particular Sylvia Delpech, during my sabbatical leave this year in France.[1] I would like to dedicate this talk to the memory of Kazua Furukawa, who was a champion for the thorium molten salt reactor, and who died just over a year ago.

What am I going to talk about? The problems with nuclear energy technology; the current technology; the thorium molten salt reactor; and some of the various proposals and advantages of the molten salt reactor. And then, something of the perspectives worldwide for thorium molten salt reactors.

The first problem is the non-acceptance by society, after 60 years of development.

The first reason is the danger of nuclear weapons proliferation. We currently use uranium-235 or plutonium-239 to produce energy. The rest of the fuel—uranium-238—is a fertile material. With the neutrons, it produces plutonium. And of course, plutonium is very good because it produces energy; but it is also used for weapons. A 1,000 MW power plant produces 230 kg of plutonium per year. So can you imagine, worldwide, 1,000 nuclear reactors producing each 230 kg of plutonium? It becomes a proliferation nightmare. It's a problem, and it worries people.

Another problem is that the present reactors have the nuclear fuel elements inside the reactor core, which is like a compressed container, under very high pressure. And any problem with it is really a big problem. We saw what happened in Fukushima. Fortunately, none of them exploded or melted completely; it was just a little melting, and it produced enough hydrogen to have the explosions we all saw. So this is a serious accident risk.

With our current technology, we only use about 1% of the energy contained in the fuel. The fuel is used; it is damaged by the use, by the radiation; the damaged fuel elements have to be exchanged; and it produces nuclear waste. These elements have to be constructed with extreme care, which is expensive. And they turn into nuclear waste in 2-3 years, and this nuclear waste, if it is not reprocessed, is a problem: highly radioactive material, with thousands of years of half-life.

Why Use Thorium?

Now we go to the thorium molten salt reactor, which I call the true green energy system.

What do we want for the world? I think diversity,

1. Others named on the slide are Ritsuo Yoshioka, Alfred Lecocq, Laszlo Sajo-Bohus, and Haydn Barros.

and nuclear definitely can help to balance, as we saw from the previous talk. A clean technology, free of CO_2; a solution to nuclear waste. We want a safe technology, so that we can see the future with optimism, not with worry. We want to use our own resources: We in the Third World countries want to control our future, and not be subject to policies like the U.S. global nuclear energy partnership, which puts us in the category of users, with no control over our systems. And we want to use our own resources, so that we ourselves develop, not relying on the development of other countries. And we want to use non-proliferative-weapons technology.

The molten salt reactor is an idea that occurred to Eugene Wigner, and was developed by Alvin Weinberg. (Weinberg, by the way, also developed our current technology.) The fuel is not solid, but liquid. There are no fuel rods. The fuel contains mostly thorium—very little uranium. It circulates inside the reactor, and it goes out of the reactor to transport the heat to another cycle, which then transports the heat to the power-producing part.

Why use thorium? Thorium can be used either with plutonium-239, uranium-235, or the uranium-233 which is produced by the thorium which is inside the reactor. This thorium is now substituting for the uranium we had before. And it is fertile; it produces uranium-233, with which you can produce more energy; but it produces almost no plutonium—very little plutonium is produced in these reactors. Thorium is four times more abundant in the Earth's crust than uranium, so our resources are enough for 1,000 years of use. It produces much less nuclear waste—a fraction of the long-lived actinides. Fission produces nuclear waste, but also actinides, which are long-lived. Thorium produces very little; it is a very concentrated kind of fuel.

Why liquid fuel? The molten fluoride has a triple function. It is the fuel element, to consume and to produce energy; it is the heat-transfer medium; and it is also the fuel-processing medium. So in the same cycle, you produce the fuel, you transport the heat, and you reprocess the fuel.

What is this molten salt? It is a mixture of fluorides: lithium fluorides and beryllium fluorides. These are salts, like table salt. They are solid at room temperature, but at a high temperature they become a liquid, and it is clear, like water. It has very high specific heat and very low viscosity, which is ideal for heat-exchange media. It does not suffer any radioactive damage during use. With gamma radiation or with alpha radiation or the neutrons produced, it is not damaged at all; so it remains inside the reactor without being damaged, contrary to what happens with solid fuel elements. It is a good solvent for materials for fission, for elements of fertile material, and it has a nuclear property, which is that it has a very low neutron cross-section.

So, what does this liquid contain? It contains the fuel, which can be uranium tetrafluoride (either as what is used now, uranium-235, or what will be used in the future in these reactors, uranium-233, which is made in the reactor from the thorium). Or it can use plutonium. So the scheme which has been proposed is to burn all the plutonium which is in nuclear weapons now as fuel in these reactors, and to convert the thorium which is inside to uranium-233, and therefore produce more fuel.

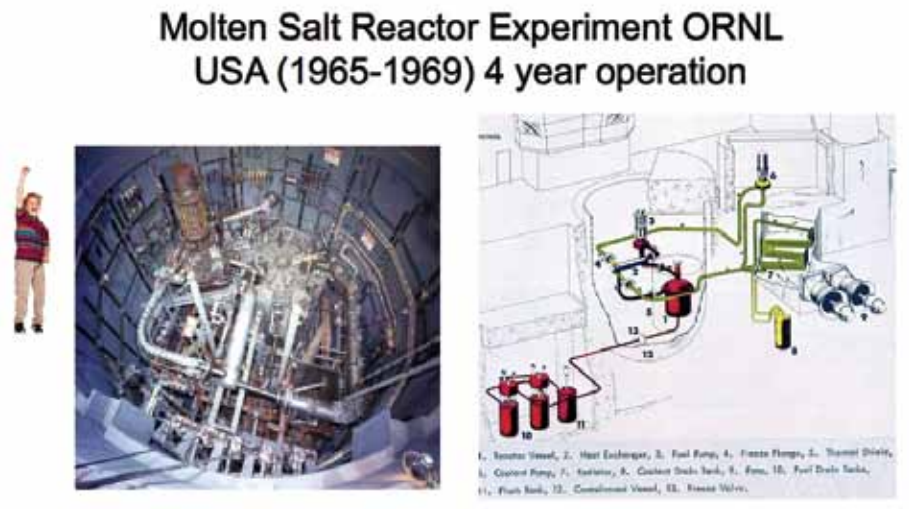
A Brief History

The idea first came about in 1954. The Americans had, due to the Cold War, the need to transport nuclear weapons from the U.S. to Russia, very far away. So they asked Oak Ridge National Laboratory (ORNL) if they could make a reactor that could fly. The aircraft reactor experiment was done; it was the first molten salt reactor. It worked perfectly for 200 hours, and it was light enough to be put into an aircraft. This gave them the idea to make a molten salt reactor for power production. That was the 1965-69 molten salt reactor experiment, which had a four-year operation. After that they created a proposal for a molten salt breeder reactor (1971). This was taken up by Japanese groups and developed into the FUJI reactor. Further proposals are the Mosart in Russia (2007), the molten salt fast reactor in France (2008), and several proposals which I will mention very briefly at the end.

Figure 1 is a photo of the molten salt reactor experiment at ORNL. It was a small thing (you can see this little boy on the side), and it did not produce electricity. All the power was just blown into the air. The diagram on the right side shows the reactor in the middle. The reactor was stopped every weekend, they drained the liquid to those tanks at the bottom, and on Monday they put it back up and continued the experiment. Very, very different from current reactors, which can't be stopped.

There are several kinds of proposals for molten salt reactors. The first classification is either two-fluid reactors or single-fluid reactors (**Figure 2**). The two-fluid

FIGURE 1



reactors have a core where the fission reaction takes place, and the neutrons go out into a blanket which is wrapped around it, which is there to produce more fuel. It is a complicated core design, but it has a very excellent breeding capacity. It can produce more fuel than it burns.

The single-fluid reactor is very much simpler, and has a low breeding factor, which means it burns more or less the same, or more, than what it is producing.

And there is another classification, the fast reactors and the thermal reactors. **Figure 3** shows two of the proposals for fast reactors—the Mosart, as described by Victor Ignatiev in Russia in 2007, at the Kurchatov Institute; and the EVOL European molten salt fast reactor. The latter is a proposal that is being studied currently, and very recently, at the end of last year, a meeting of EVOL showed this advanced core design [lower right] temperature distribution, which is much better from the flow point of view.

FIGURE 2
Classification of Proposed MSR

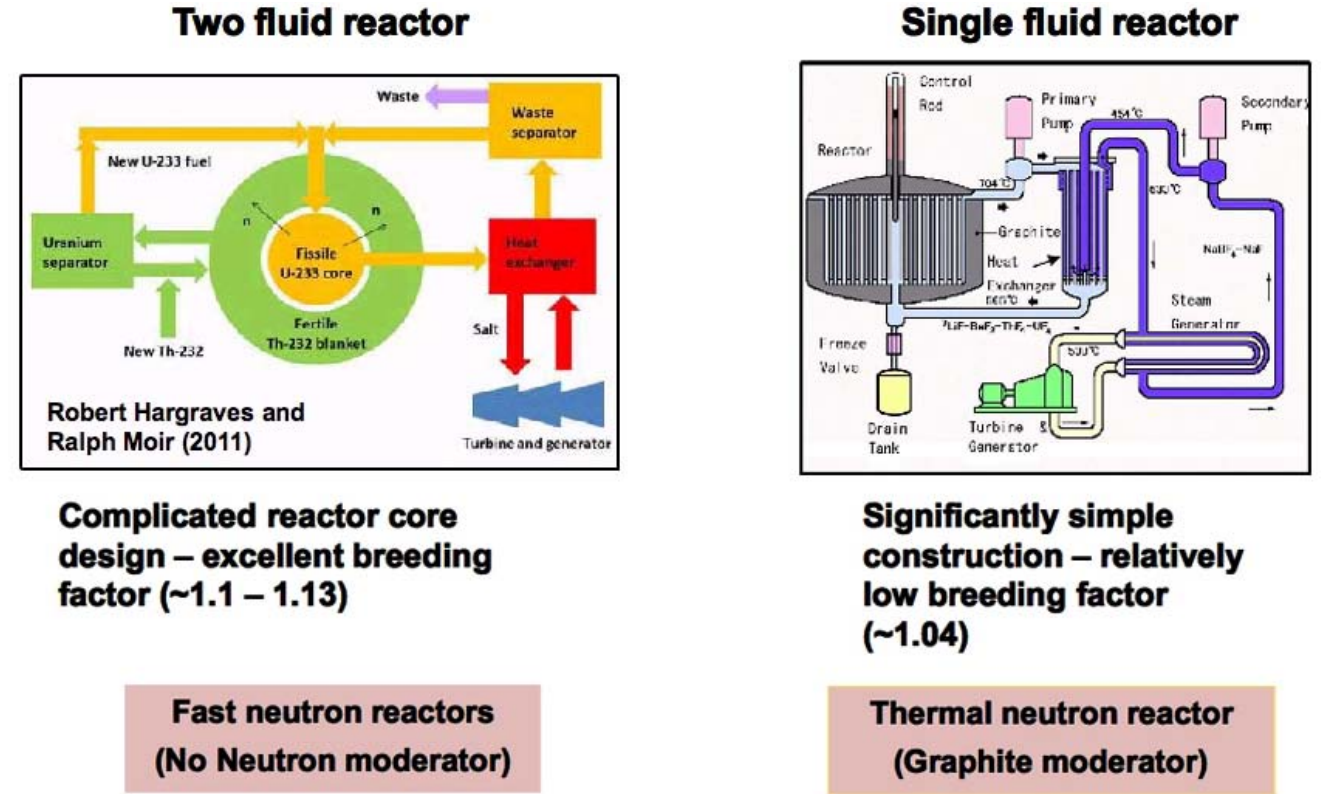
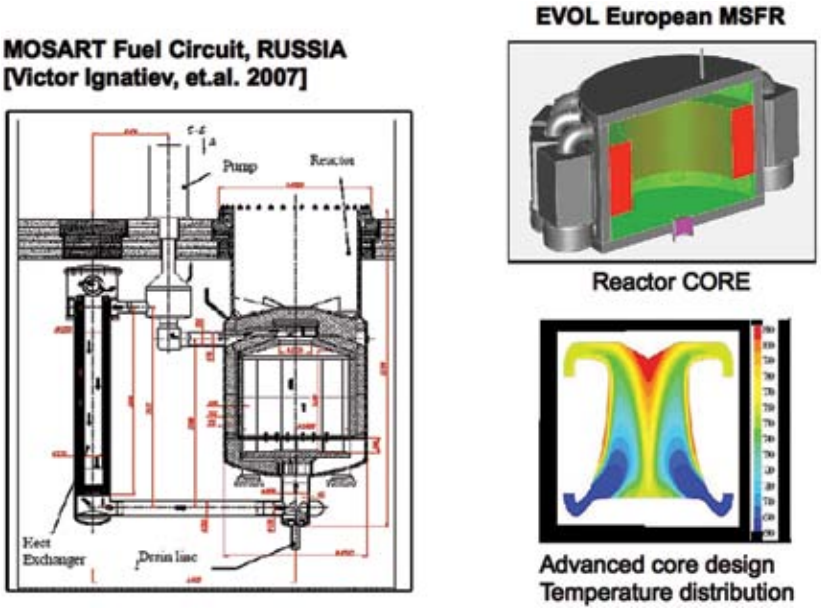


FIGURE 3
Fast MS Reactors



Some of the advantages of the fast reactors are that the core is extremely simple. It's just an empty tank! There's nothing that can go wrong there. It is extremely stable, because the fluid, if it becomes hotter, it expands; and when it expands, it reduces the reactivity, and therefore starts to cool. So it is naturally stable. Some of the experiments—mathematical, of course—that have been run, show that the reactor starts to heat up and then cools, oscillates, and comes to a steady state. This is what would happen if you suddenly stopped all the devices inside the reactor (like the case in Fukushima: suddenly, no electricity). It is very stable. It is a breeder reactor, which produces more fuel in operation.

But, the disadvantage is that it has a very long doubling time. This is the amount of time that a reactor needs to produce as much fuel as it has consumed. For the EVOL project, as described in 2008, the doubling time is about 40 years, which is very much longer than the doubling time of the demand for energy. So something else has to be done in order to produce more fuel.

Another disadvantage is that it requires a very complicated chemical-processing system. I shall not go into details of this.

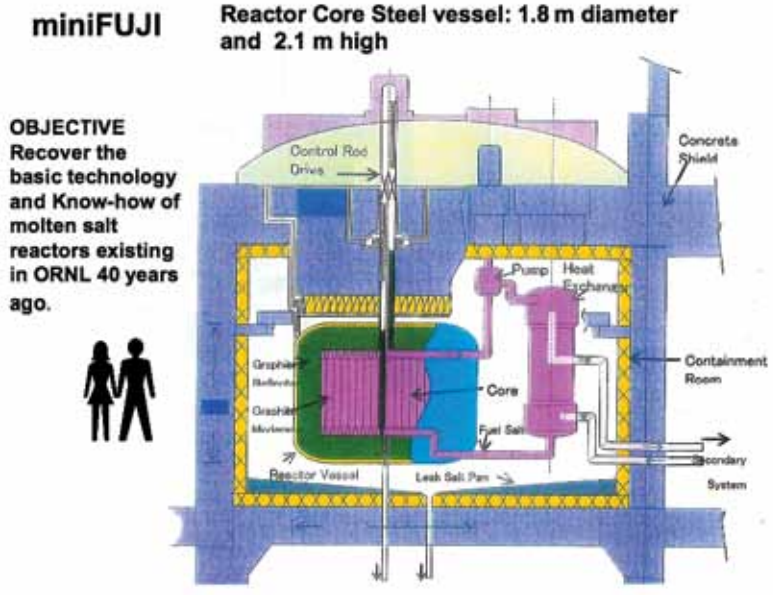
The FUJI Reactor

Now I am going to talk about the thermal reactor, mostly the design of Kazuo Furukawa, who designed the MiniFUJI, then the concept of the FUJI reactor, and then the concept of the accelerator molten salt breeder.

What is the MiniFUJI reactor? It's a very small reactor (**Figure 4**). Why? The objective is to recover the know-how that was obtained at Oak Ridge, 40 years ago. It is one thing to have information: Libraries are full of information. But knowledge requires that you *do things* with this knowledge. And this is why it was necessary to make this little reactor, so that we actually *know* what we're doing, and find out all the difficulties.

In this reactor, the contents of the reactor core are mostly pure graphite, with holes through it. Six percent of the volume is the liquid that is flowing through it. And there is a control by graphite rods. They work the other way around [from current reactors]: You increase the reactivity by introducing more graphite inside the core. **Figure 5** is a full view of the FUJI molten salt reactor. On the left side, you have the reactor's core, with three containment systems. There are

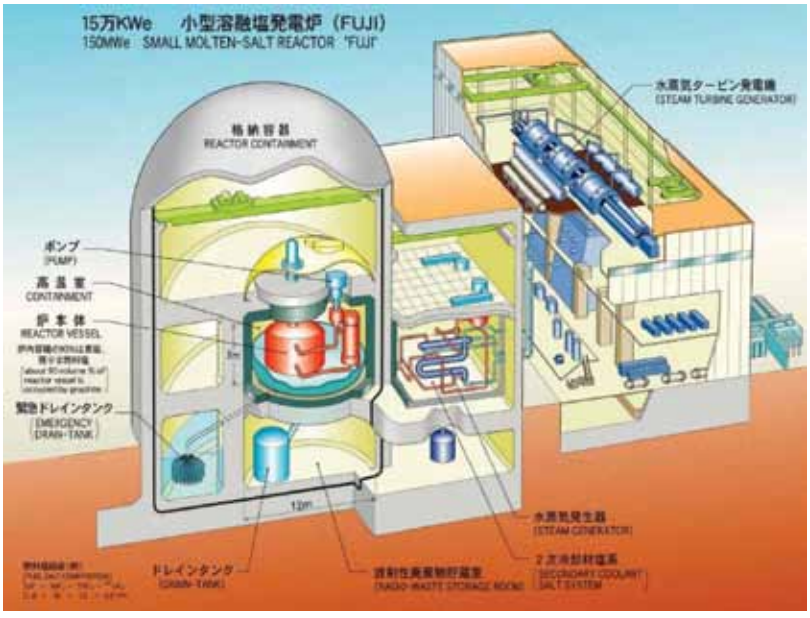
FIGURE 4



two places at the bottom where, if you drain the fuel, it goes down there and becomes completely harmless, because the fuel only produces fission when it is inside with graphite. If the fuel flows out, it is harmless. When it cools, it becomes like a stone. On the right side, are the parts of the reactor that are to transport energy and heat, and thus to produce electricity.

Figure 6 shows the nucleus of the FUJI reactor. It is a small reactor, only 160 MWe. The idea is that it is so safe that it can be built right next to cities, and have very little expenditure for the transport of electricity. The diagram shows the first and second containment areas. If anything would happen, you would drain into one of the containers below.

FIGURE 5
Full View of FUJI Molten-Salt Reactor



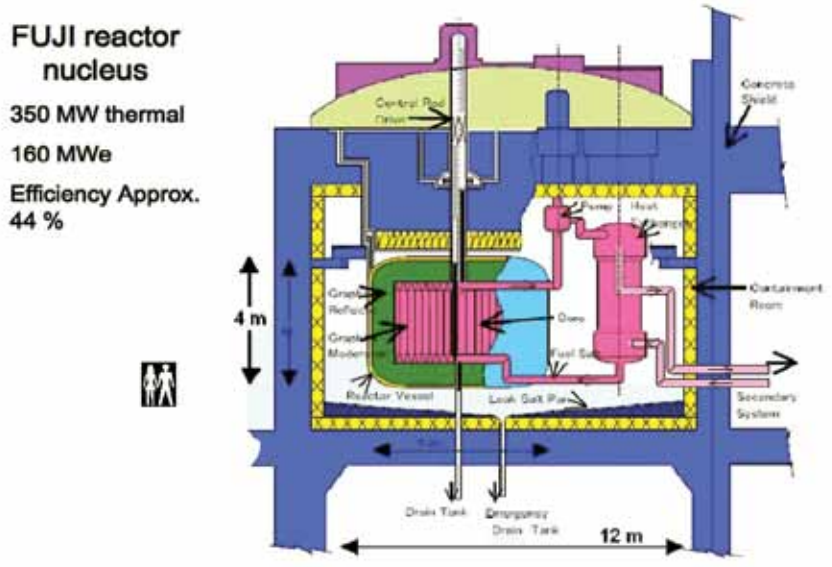
Advantages

What are the advantages of the molten salt reactor? It is practically impossible to have a severe accident, because it is under *very low pressure*, only about twice the pressure of a car tire, inside a steel container. And the molten salt is chemically inert; it does not react with water or air or anything. The boiling point is about twice the operating temperature [1,400°C compared to 7°C]. Any excursion to a higher temperature is safely below the boiling point.

There are many other advantages, but I don't have the time to discuss them all. I will just point out two of them.

One is that there is radioactive gas removal. You inject helium and it removes the radioactive gasses that are produced by fission. This was found, in the experiment by Oak Ridge, to remove some other radioactive materials as well. So if there were any problem, there would not be any gasses escaping from the reactor, because they are not there!

FIGURE 6



And there is another advantage, that there is no xenon poisoning. This is a phenomenon that was instrumental in what happened at Chernobyl. Xenon poisoning, in a normal reactor, means you have to have excess reactivity in order to overcome the poisoning by xenon. In this reactor, you are removing the xenon, so you don't have to have excess reactivity. This means the reactor can go up and down in power, which is something that is not done in normal reactors; they operate better always at the same power.

So this is a reactor that could provide energy for

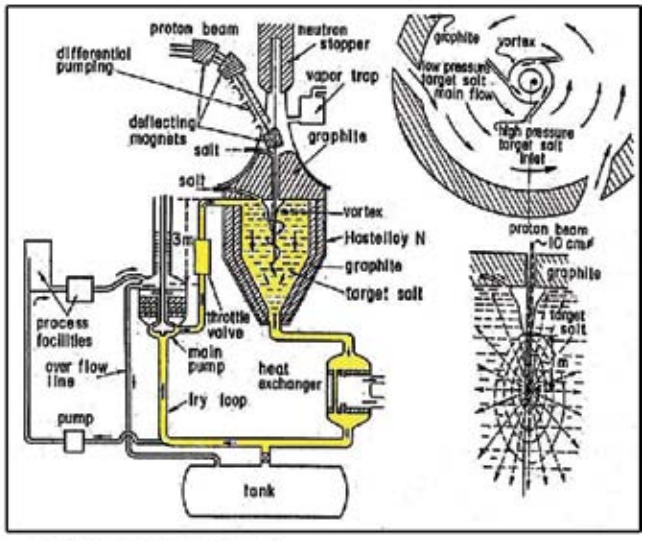
peak need; whereas during the night, when there is less need, you reduce the power.

Another point is the freeze valve. The freeze valve is below the reactor, and it is actively cooled by blowing air into an area where the salt is frozen. So if the electricity cuts off, the blowing stops; then the freeze valve would melt and allow all the fuel to fall down into the drain tank. The drain tank is designed for passive cooling, so that the fuel becomes solid in there. This would mean that if this reactor had been at Fukushima, nothing would have happened. After everything is repaired, you re-melt the fuel and pump it back into the reactor.

So there is the safety factor. The fuel is only critical when it is in the graphite, and the fuel becomes a solid, trapping the radioactive material. There is less nuclear waste. The fuel in the reactor can stay in the reactor permanently for 30 years, and thorium is a fertile material that produces very little in the way of actinides. The molten salt is an ideal medium for reprocessing and recovering uranium and plutonium from nuclear waste.

FIGURE 7
Fluid for Breeding U233 and Chemical Processing of Waste

Accelerator molten-salt breeder (AMSB) To "burn" actinides and produce more uranium 233 fuel



K. Furukawa, et al. Proposal & (Carlo Rubbia Patent)

Figure 7 is a proposal by Furukawa, which is to reprocess the fuel from current reactors by turning these fuels into fluorides, dissolving these fluorides into the molten salt, and pushing them into this device. At the top, there is an accelerator (not shown), a very high-energy accelerator that throws some protons into the fuel. It uses a nuclear process called spalation, which means that when a particle falls against a heavy ion, a heavy element, it loses a lot of neutrons: 40 neutrons per reaction. It is a very neutron-rich reaction. The reactor itself is not a neutron-rich device, but an energy-rich device. In this concept, you don't need a fast reactor to produce more fuel. The fuel would be produced in a device like this, where a neutron-rich reaction can produce a lot of fuel, by irradiating thorium and producing uranium-233, and also by burning the actinides from the reactors that are currently operating.

Now, on non-proliferation and terrorism: There is no production of plutonium. Weapons-grade uranium is burned up in the thorium reaction, and uranium-233 is produced. Uranium-233 was used for one atomic bomb, in 1955, and after that it was never used again, because it is very hard to produce a bomb with it. The reason is that it is very radioactive—not the U_{233}, but another uranium which is used with it. It is very difficult to produce

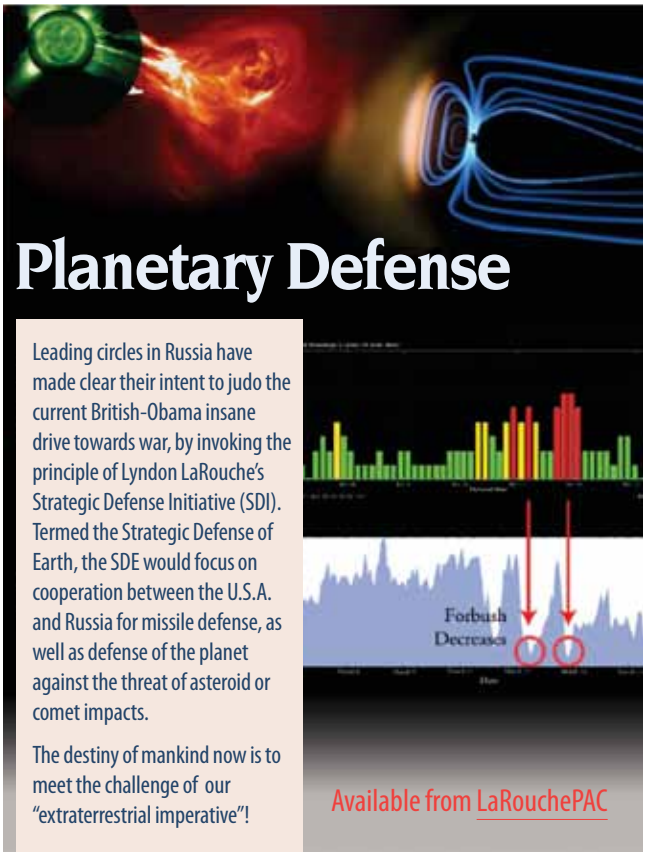
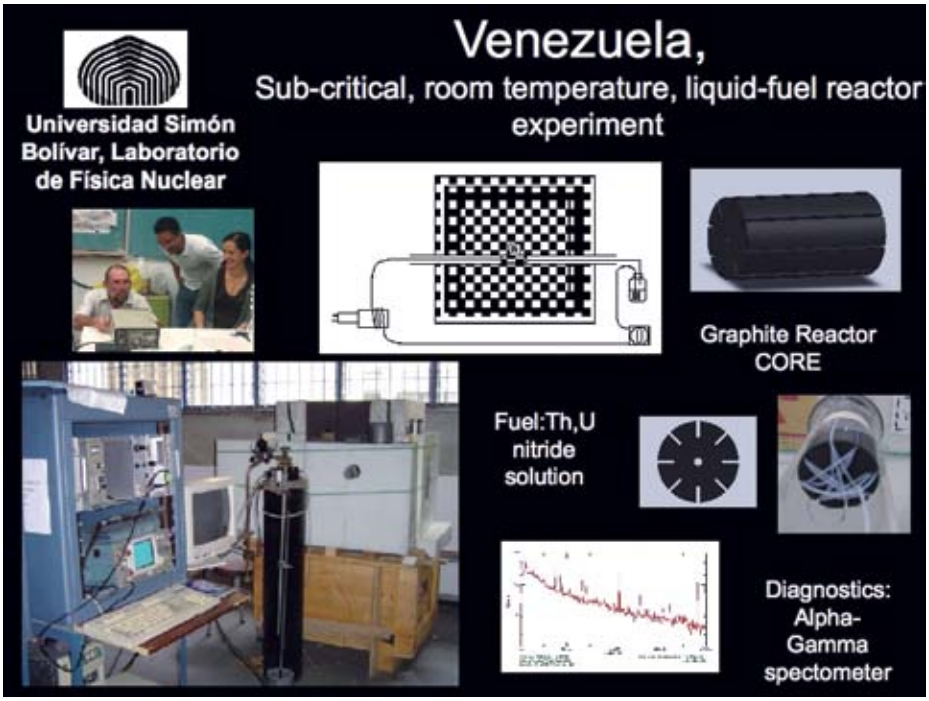


FIGURE 8



U_{233} without U_{232}, which has high radioactivity. Therefore, it is very difficult to work with; you couldn't stand next to the bomb, because it would kill you. Or you would have to shield it with so much lead that it would be very difficult for the airplane to take off.

Thus the molten salt reactor uses a very safe kind of fuel. There is no need for fuel-fabrication plants; no fuel elements that have to be exchanged or re-arranged regularly; low construction costs and low operating costs; economy in both the short and long run.

Zero nuclear weapons! Energy independence for us, and the use of our own thorium devices! (We have thorium in Venezuela and in Brazil.)

2013 Developments

A few brief comments:

In Europe, there are a quite a few countries working on it [France, Germany, Italy, United Kingdom, Czech Republic, Russia, Hungary], quite a few groups [EVOL, SNEPTP, ThEO, the Weinberg Foundation]. And there are 16 institutions participating in the EVOL development, with about 60 persons.

In Japan, there is a new proposal by Takashi Kamei; and there is the Thorium Molten Salt Forum, which includes 13 countries and several universities; and there is the FUJI reactor, which was designed there.

India is another emerging country coming into the molten salt camp. They have, for a long time, had a three-stage project, which, in the third stage, uses thorium. It was created by [Homi J.] Bhabha, the creator of the Bhabha nuclear center. Now they are thinking that the third stage might perhaps be a molten salt breeder reactor (MSBR).

The U.S. has two companies working on it. One is Flibe Energy: Kirk Sorensen is the man pushing it. And there is Transatomic Power, which is a spinoff from MIT, where some students work. And there is a Thorium Energy Alliance organization, which is very active in the U.S.

In Venezuela, we have a small facility where we are actually doing experiments, not with molten salt, not with high temperatures (**Figure 8**), but a room temperature experiment with liquid fuel. The spectra shown here were obtained about a week ago from the device that is operating there.

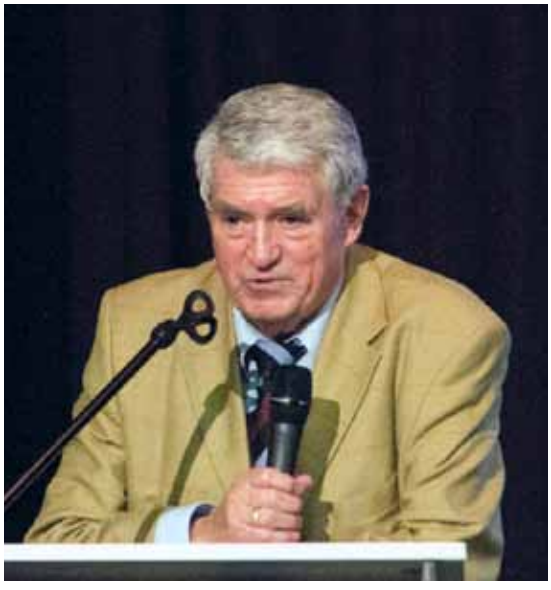
And the most advanced project is in China. China is definitely moving toward the molten salt reactor, in addition to other projects—pebble-bed reactors, fast reactors. They announced plans for spending $300 million in 2011 for molten salt reactor development, and now, very recently, in Shanghai, the Institute for Applied Physics is working with the support of the Chinese Academy of Sciences, and there is a budget this year of $100 million.

In conclusion, nuclear power is the only technology capable of supplying the world's huge demand for energy. Present day solid-fuel-reactor technology has problems, which have made in unacceptable to society, although they are producing very good service. There is a worldwide movement in support of the thorium molten salt reactor. The development of different forms of molten salt reactors is recommended, as competition will lead to the best technology.

The thorium molten salt reactor is a new technology capable of providing the clean, safe, and cheap energy which is necessary for future development of society.

Breeding of Fissile Uranium 233 Using Thorium 232 with Pebble Fuel Elements

Dr. Eng. Cleve was head of the engineering department of BrownBoveri/Krupp Reaktorbau GmbH, where he was responsible for the engineering, design, building, testing, and operation of the AVR high-temperature reactor. Later he worked in management for companies that built large power plants. He retired in 1992, and is now the last living member of the BBC/Drupp team. We use here a selection of his slides; the video is at http://newparadigm.schillerinstitute.com



EIRNS/Daniel-Enrico Grasenack-Tente

Dr. Cleve told the conference: "We are in the position to build safe THTR nuclear power plants of all sizes that the market demands."

On Sept. 29, 2010, I gave a talk at an *EIR* event in Frankfurt, with the theme "Technology and Future Possible Applications of Nuclear High Temperature Reactors." It concludes with the statement: "The use of thorium-232 allows the 'breeding' of fissile uranium-233 as a new fuel. Therefore the reserves of U-235, in combination with thorium-232, will suffice indefinitely."

Thorium can be found in small amounts in the Earth's crust. It accumulates, among other places, as a non-usable waste product of the quarrying of rare earths. Pure thorium is a silver crystal, but it is often oxidized and becomes grayish-black. It is considered a radioactive element. Its melting point is 1,842°C. Irradiating thorium Th_{232} with neutrons—thermal neutrons are better suited than fast neutrons—breeds Th_{233}, which decays through protactinium Pa_{233} into uranium-233. Thus it can be used as fertile material in thermal reactors such as the THTR [Thorium High-Temperature Reactor] and the AVR [Experimental Reactor Consortium], as well as the Chinese HTR-10.

The German development of this technology was already tested in the AVR-145MW_{th} reactor in the years prior to the 1989 politically mandated shutdown of this reactor. The AVR was at that time the world's only reactor that was available for this purpose.

Now, more than 20 years later, this technology is accorded great significance worldwide, particularly in China but also in Japan, the U.S.A., Russia, Canada, the Netherlands, Great Britain, France, India, South Africa, and Norway. Please allow me to read a few translated excerpts from a report by Ambrose Evans-Pritchard posted on the Lars Schall website from Jan. 12, 2013:[1]

- "The Chinese are running away with thorium energy, sharpening a global race for the prize of clean, cheap, and safe nuclear power. In Europe, meanwhile, when it comes to thorium, we're threatened with the lights going out."
- [Quoting Prof. Robert Cywinksi from Huddersfield University, who anchors the U.K.'s thorium research network, ThorEA:] "People are beginning to realize that uranium isn't sustainable. We're going to have to breed new nuclear fuel."
- "The aim is to break free of the archaic pressurized-

1. A. Evans-Pritchard: "Chinesen bahnen Weg fur Thorium-Nutzung," Lars Schall, January 2013. The article had appeared in the *Daily Telegraph* on Jan. 6, and all quotes are taken from that English text, except for the reference to Europe, which did not appear there—translator's note.

water reactors fueled by uranium—originally designed for US submarines in the 1950s—opting instead for a new generation of thorium reactors that produce far less toxic waste and cannot blow their top like Fukushima."

- [Referring to Jiang Mianheng, son of former Chinese President Jiang Zemin, who is heading a project on thorium reactors:] "He says that China has enough thorium to power its electricity needs for '20,000 years.'"
- "The beauty of thorium is that you cannot have a Fukushima disaster."
- "Thorium has its flaws.... It is 'fertile' but not fissile, and has to be converted into uranium 233."
- "It can even burn up existing stockpiles of plutonium and hazardous waste."

These are just a few quotes from the 2013 article by Evans-Pritchard.

These were the basic ideas of Prof. Dr. Rudolf Schulten about the development of the THTR-300 back in 1966. He was 50 years ahead of the rest of the world in his thoughts about power engineering, and these thoughts were and still are a milestone in the development of nuclear power. His forward-looking ideas can really only be compared with those of Wernher von Braun about space travel.

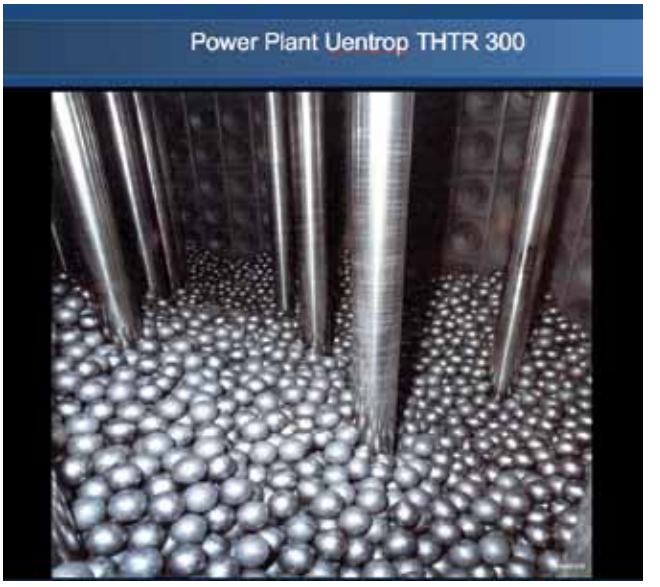
So the time has come to put his legacy into action.

The German THTR 300 MWe thorium high-temperature reactor was designed and built starting in 1966, and put into operation in 1986 at the Schmehausen VEW power plant. It was shut down in 1989 by order of the government of the state of North Rhine-Westphalia. Germany thus had more than a 20-year head start in developing this technology, which the world now views as outstanding.

China is building upon it. An experimental HTR-10 MW_{th} is in operation, and a 2 × 250 MW_{th} HTR double-block reactor (for a total of 500MW_{th}, both to be fitted with pebble fuel elements and with a steam turbine of 210 MWe) is under construction and will go into operation in about 2015.

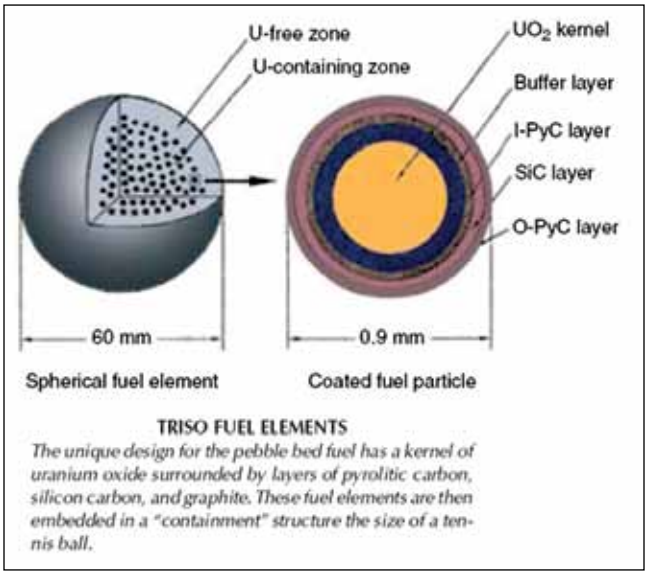
I described in my earlier lecture the pebble fuel elements with "coated particles" [**Figure 1**], which were developed through extensive international collaboration. A spherical fuel element with a diameter of 60 mm has a 5-mm-thick graphite shell. Inside it there are ca. 15,000-35,000 Triso-coated particles [**Figure 2**], each with three silicon carbide shells that are gas-tight up to 1,600°C, having a diameter of 0.9 mm, pressed into the interior of the graphite sphere. The individual particles

FIGURE 1



NHT&ET/Urban Cleve

FIGURE 2
TRISO Fuel Elements

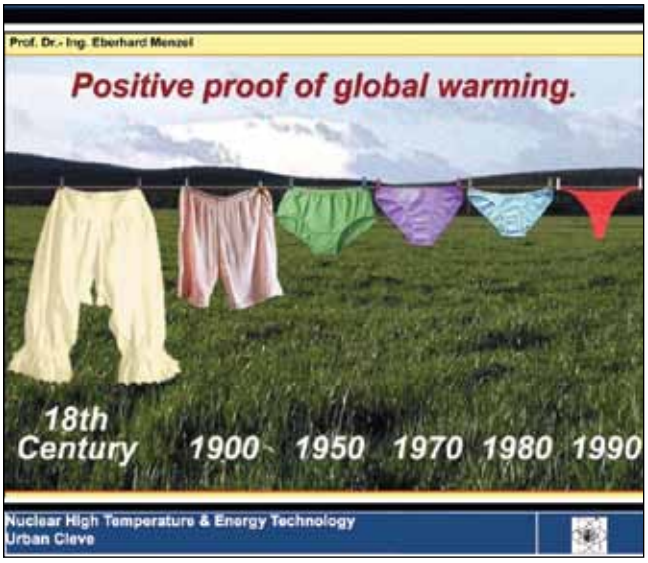


NHT&ET/Urban Cleve

contain the fuel of various compositions. Each particle thus has its own three-fold containment against the escape of fission products.

This is the reason for the extremely low radioactive load of the entire volume of the primary gas helium in the THTR-300, with 1 × 107 Bq at 47,000 m^3 of helium gas volume = 4.7 × 1011 Bq = 13 Ci. Within a 2,000 m radius of the THTR-300, a total

FIGURE 3



emission of the primary gas would have led to soil contamination of approximately 37,302 Bq/m^2, if all the fallout occurred in this close range. This result can be compared to the global fallout from the Chernobyl disaster, which measured 50,000 Bq/m^2 in far-off Schmehausen alone.

This high safety standard is further enhanced by the barriers of the pre-stressed concrete vessel and the containment, whereby new constructions are able to collect the entire helium content of the primary circuit. This means that the "zero-emission concept" has been achieved.

The inherent safety, based on the principles of nuclear physics, was tested and proven in two Maximum Credible Accident tests of the AVR in 1967 and 1976, and an identical test of the Chinese HTR-10. These extreme tests could never have been conducted in a different reactor design; it would have been catastrophic. The reactor accidents at Chernobyl and Fukushima would not have occurred if an HTR had been operating there. Meltdowns are not possible in the HTR/THTR nuclear power plants.

Among the fuel compositions tested in the AVR and used in the THTR-300 with U_{235}-Th_{232} and the U_{233} bred from that, were (U, Th) C_2, (U, Th) O_2, UO_2, ThO_2. Also tested in South Africa were combinations with U_{235}-U_{238}, Th_{232}, Pu-238, 239, 240, 241, 242; all test results are available. All the tests showed that a common combustion of these substances is possible. By means of the burnup measurement of each individual fuel assembly, the burnup of plutonium can also be determined. This makes it possible to meet the requirements of the Non-Proliferation Treaty (NPT).

The pebble fuel element is therefore the most universal, safest, and operationally simplest fuel used by any known nuclear power plants. Fuel cooling installations are not necessary. The spent fuel elements do not require refrigeration, neither in the nuclear power plant itself nor even in storage containers. In the absence of cooling, explosions in the spent fuel holding basins, such as in Fukushima, are excluded.

This also eliminates all the political problems of the search for a permanent waste repository.

With both the negative and positive experiences we have had from the operation of the AVR and THTR-300, we can say that this is, to a large extent, a proven technology.

We are thus in the position to build safe THTR nuclear power plants of all sizes that the market demands.

Translated from German by Susan Welsh

References

Cleve, U., "Technik und zukunftige Einsatzmöglickeiten nuklearer Hochtemperaturreaktoren," *Fusion*, 1/2011.

Cleve, U., "A Technology Ready for Today," *21st Century Science & Technology*, Winter 2010-11.

Cleve, U., "The Technology of High-Temperature Reactors and combined Production of Electrical Power and of Nuclear Process Heat," University of Cracow; NUTECH-2011.

Cleve, U., K. Knizia, K. Kugeler: "The Technology of High-Temperature-Reactors," ICAPP-Congress Nice May 2011.

Cleve, U., "Die inhärente Sicherheit der HTR-Kernkraftwerke mit Kugeln als Brennelemente": KTG-Tagung "Nutzen der Kerntechnik," Berlin 2013.

Cleve, U., "Konstruktionsprinzipien zur nuklearen und betrieblichen Sicherheit von HTR-KKW" (unpublished).

Dong, Yujie: "Status of Development Scheme of HTR-PM in the People's Republic of China," Vienna, July 2011.

Mulder, E., D. Servontein, W. van der Merve, E. Teuchert: "Thorium and uranium fuel cycle symbiosis in a Pebble Bed High Temperature Reactor," HTR Conference, Prague (2010).

Nabielek, N., K. Verfondern, M.J. Kania: "HTR Fuel Testing in AVR and MTRs," HTR Conference, Prague (2010).

VDI-Bericht Nr. 729/1989.

Yuanhui, Xu, "A Radical Kind of Reactor," *The New York Times*, March 24, 2012.

Editorial

A Deadly Blow Against the Empire

In discussion with associates since the news broke of Sen. Tom Harkin's introduction of Glass-Steagall in the Senate, Lyndon LaRouche has stressed two crucial points. First, the method of ruthless, focused campaigning which permitted the LaRouche movement to achieve this breakthrough must be continued, to ensure Glass-Steagall is passed. Any regression to a softer approach aimed at appeasing popular opinion would be disastrous, and lead to failure.

Second, the passage of Glass-Steagall goes hand-in-hand with dumping the British puppet Barack Obama as President, because both actions together represent the necessary decisive strategic blow against the power of the British Empire that is killing the world.

The latter point is crucial.

It is a serious error to see Glass-Steagall as a mere banking or financial reform. Glass-Steagall represents a *principle* of physical economy intrinsic to the American System, which is why it is the necessary first step toward restoring a credit system for the rebuilding of a progressing world economy. But at the same time, Glass-Steagall is a necessary act of *destroying the power of money* over the productive powers of the country, by cutting off support for the financial gambling interests who make up the current incarnation of the British Empire, the international financial system.

Institute Glass-Steagall, and Wall Street, the cat's paw of the Empire in the U.S., loses its stranglehold over the nation. Its power is crushed.

It is for this reason that we can expect to find a virulent, if not violent, opposition arising now to stop the motion toward Glass-Steagall. Instructive is what happened back in May of 2010.

It was at that time that Senators Maria Cantwell (D-Wash.) and John McCain (R-Ariz.) were fighting for a bill to reinstate Glass-Steagall. Although they were forced to turn it into an amendment to the Dodd-Frank monstrosity, momentum was great, and they were sure that, if guaranteed a vote—as Obama had promised—the Glass-Steagall amendment would pass. It would have effectively sabotaged Dodd-Frank, to good effect.

Obama, the British puppet, reneged, and it never came to a vote.

Part of the story behind that decision by Obama was revealed in a May 8 webcast, when a questioner relayed her discussion with officials of the British Finance Ministry that Spring. When the subject of Glass-Steagall came up, the questioner said, one of the British officials said that any move in the U.S. to re-adopt a Glass-Steagall framework would be viewed as a "hostile act by Great Britain and by the nations of Europe."

Moreover, he said that someone from the British Foreign Office would be contacting his counterpart in the U.S. State Department to make this position clear. Obama, that British puppet, did get the message. And he's still acting on it today.

On the eve of Senator Harkin's move, LaRouchePAC was informed that Obama and his agents, especially Senate Majority Leader Harry Reid, were again on an active campaign to prevent Glass-Steagall from going through. There was only one moral, intelligent response: Save the nation by ramming it through.

Glass-Steagall is no "banking law." It's intrinsically linked with creating a new economy which will solve our food crisis with NAWAPA, and create millions of jobs rebuilding our industrial base. And it will crush the British Empire.

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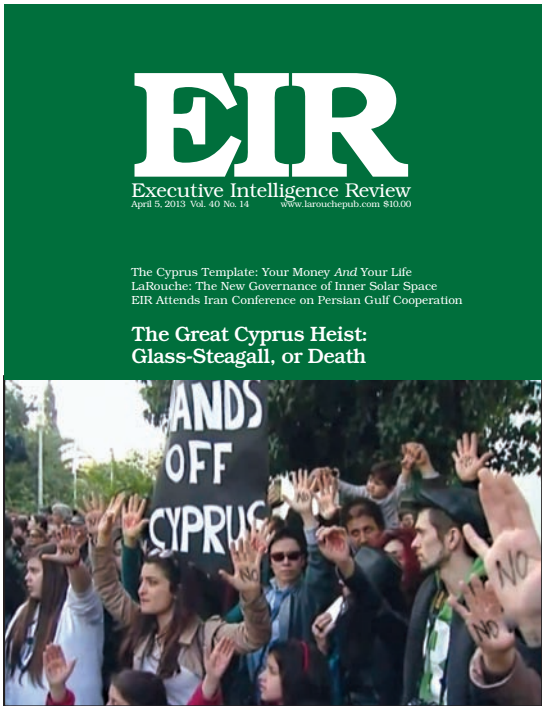

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