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# POLICY MATTERS

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# Foreword

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**WELCOME** to the third issue of PolicyMatters. This issue is the first completed by the second generation of the PolicyMatters Editorial Board. It has been a rigorous, yet rewarding, learning process and we believe the result is excellent. We owe an enormous debt of gratitude to our 2<sup>nd</sup> year Advisors, Richard Halkett & David Deming – co-founders of the journal. Last year, their vision and indefatigable work ethic created what is now becoming an important institution of the Goldman School of Public Policy. This year, those qualities coupled with their patient guidance and a selfless approach to transferring authority were indispensable to our efforts. It is an honor to continue down the path they forged and we look forward to the continued success of this journal.

We'd like to extend sincere thanks to Ben Lum and Simone Berkowitz for their diligence on the editorial side. And we're thrilled that George F. Willcoxon has created and taken on the role of Business and Development Manager. He has impressive plans for this publication and we have total confidence in his ability to make them a reality.

In the interest of informing an already sparked debate, we have produced a special section on Social Security in light of the Bush Administration's plans for privatization. As an editorial team, we opted for neutrality on this partisan ground, providing our readers with a fact sheet about financing, fixes, and forecasting so that the gritty details can inform your own decisions. In addition, we are pleased to have two contributions that step outside the current dispute to address some larger issues. John W. Ellwood and Eugene Smolensky go beyond the rhetoric to deconstruct the impact privatization would have on political discourse and interest alignment. In addition, we are extremely delighted to have J. Bradford DeLong's expert input. He proposes a permanent fix that would be "genuinely good for the country" since it addresses what he sees as the real issues plaguing Social Security.

In our feature section, Daniel M. Kammen and S. Derek Turner turn their attention to U.S. energy policy. In "An Energy Policy for the 21<sup>st</sup> Century," Kammen argues for an energy agenda that relies not on addictive commodity hunting but on innovative resource gathering. Turner then turns our attention to one of these innovative resources in "Peak Oil and the Myth of the Hydrogen Economy" as he cautions against betting on a singular solution to our current policy problems.

We then turn our attention back to the intersection of ideology and policy with a set of articles that examine how broad vision may inflict inequitable consequence. Ian Hart finds that the Bush Administration's use of localism as a policy tool may have more to do with political designs than environmental solutions. Then, in order to inform the federal government's current plans for a guest worker program, Garance Burke takes a hard look at the ongoing fallout from the last major attempt. Lastly, Erika Weissinger reexamines Berkeley's housing laws as the *Tom v City and County of San Francisco* decision threatens to rewrite them, finding that contrary to current thinking low-income housing advocates may be in for a positive change of fortune.

Finally, we are delighted to have contributions from a new face and a familiar friend. In "Mold: Public Policy for an Uncertain Science," Jon F. Elliott, Chair of the Goldman School Alumni Association, provides us with a guide to policy creation in the abstract by examining a pressing real-world problem still in search of a solution. And David L. Kirp gets the last word, discussing the market for higher education by hypothesizing the fate of a Bill Gates University.

Producing this issue has been a long lesson in creativity and vision. We believe it reflects not only our recent labors but also our future hopes. We wish the founding members well on their future endeavors, thank the GSPP community for their continued support, and encourage everyone to read on.

Karin Martin & Trisha McMahon  
March 16<sup>th</sup>, 2005

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# Social Security: Changing the Benefit, Re-Directing the Discourse

by John W. Ellwood and Eugene Smolensky

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SINCE ITS ENACTMENT at the height of the New Deal in 1935, Social Security has been at the core of the liberal vision of the American welfare state. Because Old Age and Survivor Insurance (and Unemployment Insurance) was so central, unusual care was taken in its initial design and subsequent upkeep. At its very inception the program dealt with the inevitable risks associated with retirement planning — individual and cohort life expectancy; future economic growth and investment return; relative earning levels and inflation — by providing a defined benefit for retirees funded through taxes on workers (FICA). In practice this means that the US Social Security system involves an intergenerational transfer.

But limits have been placed on that transfer — yearly expenditures can only be made to the extent that a trust fund has the assets to cover the required spending. These assets are of two types — this year’s tax revenues from the Social Security tax, and any government securities held by the trust fund.

Almost all actuarial analyses foresee that the trust fund will eventually lack the resources to fully cover the program’s costs. When this will occur is open to some debate — but most analysts believe that by 2020 a given years’ taxes will not cover a given years’ trust fund expenditures, and by 2055 a given years’ taxes plus the redemption of the government securities held by the trust fund will not cover the programs’ expenditures.

There is general agreement, therefore, that at some time within the next fifteen to forty years projected demographic and economic changes will make the current payment levels of the Social Security program unsustainable. One estimate is that if nothing is done until the assets in the trust fund have been fully redeemed (around 2054 according to the Congressional Budget Office) the program will only be able to pay out about three-quarters of projected benefits.

If the problems were purely financial, additional revenues could be collected for the trust fund or various changes could be made to lower the program’s benefit levels without fundamentally changing the program’s structure. But the *perceived* need to do something about Social Security’s long-term viability has opened a window of opportunity

for those who want to fundamentally change the structure and purpose of the program.

President Bush has stated his willingness to “spend” the political capital from his reelection to move the system from its current defined benefit structure toward a structure centered on defined contributions. Whereas a defined benefit program insulates retirees from the swings of the stock market, the conversion of Social Security to a defined contribution program would shift investment risk from the government onto retirees. This most certainly qualifies as a fundamental change rather than an incremental fix.

Until the last decade or so scholars of the politics of public policy concentrated on explaining why a given policy came about or failed to come about, was or was not implemented, etc. In this type of analysis the policy was that which the scholar sought to explain. But in the last few years scholars

have begun to study the degree to which the structure of a given public policy by affecting politics changes the probability of modifying that policy or even creating new policies (Hacker, 2004).

It is our contention that moving from a system of defined benefits to one of defined contributions will change the politics not only of Social Security but also of the relationship between the citizen and her government in at least two significant ways. First, it will change the political discourse, or conversation, associated with the system. As such it will change the future politics of ideas. Second, it will change the alignment of interest groups defending the status quo or seeking a change in any future system. We believe that these changes will profoundly affect the future substance of American public policy.

There is a good deal of evidence, moreover, that politicians on both sides of the Social Security debate have realized from 1935 on that if the policy structure of the program were to change it would lead to a politics that will defend or undermine its future. Most famously,

In 1935, Roosevelt overrode strong opposition to the payroll tax from key New Deal advisors who argued that the tax was inherently regressive, such as Labor Secretary Frances Perkins and Brain Trust

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***Moving from defined benefits to defined contributions will change the politics not only of Social Security but also of the relationship between the citizen and her government.***

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economist Rexford Tugwell, saying, “I guess you’re right on the economics, but those taxes were never a problem of economics. They are politics all the way through. We put those payroll contributions there so as to give the contributors a legal, moral, and political right to collect their pensions and their unemployment benefits. With those taxes in there, no damn politician can ever scrap my social security program.” (Dauber, 2004)

Today advocates of private accounts also believe that a change in policy structure will lead to a new politics, which will lead to even greater change in policy substance. Thus, Roy Blunt, the House Republican Whip recently told David Broder of the Washington Post that . . .

(If the political resistance (to private accounts) could somehow be overcome, the rewards for Republicans might be substantial. “The first thing that would happen is that current retirees would discover that their benefits have been protected — and they would be relieved. Within a couple years, younger people would start getting quarterly statements showing how their individual retirement nest eggs are beginning to grow.”

“The idea that these accounts will be yours to control is our strongest selling point, ,, anything we can do to strengthen the idea of ownership, we should do. Once people have saved enough to pay for a decent annuity, we ought to free up the money [in the individual accounts] for whatever they want to do.”

Over the decades, Blunt said, the president’s plan can give a much wider swath of voters a real sense that they are “stockholders in America.” That in turn will change the political philosophy of Democrats and shift the tide in future Congresses in a conservative direction. “There are no permanent majorities in America,” Blunt said. But if Democrats’ constituents begin to think of themselves as stockholders in American business, it won’t matter as much which party is in control. Tax and

regulatory policy will begin to converge in ways friendly to business. (Broder, 2005)

**The Change in Political Discourse**

Currently, recipients and taxpayers focus on whether they will receive the legislated retirement payment. To the extent that they have a fear, it is that the “Government” will not fulfill its promise(s) by taking away a promised retirement amount. What is not part of political discussion is the appropriateness of benefit payments across income levels – that is to say redistribution. Taxpayers and recipients worry about whether they will receive their promised retirement payment, but do not worry about the fact that their retired friend receives more (or less) than they do.

As set out in Table 1, the inclusion of a defined contribution component into Social Security will significantly change the character of this political discourse. Once a defined contribution component is included, individuals with exactly the same non-retirement earnings profiles are likely to have very different retirement earnings.

Under a defined contribution plan political discussion will focus more on comparisons of retirement outcomes. Think of a party at a retirement community. Today, when retirees complain about Social Security they tell each other about how their monthly checks are too low, or how their checks are threatened by attempts to cut back on the system. But when a defined contribution component is added to the system, the retirement community discussion will switch to questions of why some are doing so much better than others.

The increase in interpersonal comparisons is likely to undermine the current widespread support for a governmental guaranteed retirement level. Support by Americans for the current defined benefit Social Security

**Table 1: The Focus of Debate for Defined Benefit versus Defined Contribution Systems**

	<b>Discussion / Debate centers on</b>	<b>Discussion / Debate does NOT center on</b>
<b>Current System: Defined Benefits</b>	Individual Outcomes / Levels	Interpersonal Redistribution
<b>Alternative System: Defined Contributions</b>	Interpersonal Redistribution	Individual Outcomes / Levels

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## *Special Feature: Social Security*

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system goes beyond simple self-interest. Lawrence Jacobs and Robert Shapiro have found much wider support for Social Security than self-interest would indicate (Jacobs and Shapiro, 1998).

One explanation for the overwhelming support for the system is that it is perceived to have worked very well in the past. Another explanation is also plausible. Since its creation the American people have seen Social Security as a system “shared security.”

Two principles: individual freedom, on the one hand, and shared security, on the other, are the dominant normative perspectives undergirding the Social Security reform debate. The first perspective places the highest priority on individual freedom of choice and control over one’s own personal affairs. The second gives priority to securing a common social protection against vicissitudes of life....

If Americans decide to maintain some modestly revised version of the existing Social Security system, they are in effect asserting a normative emphasis on social protection through mutual provision, a norm of social solidarity. There is, after all, good reason why the current Social Security program is termed “social” insurance. Risks of financial insecurity in old age are pooled in one national program where people stand together by paying in earmarked taxes and receiving back standardized benefits, (Hecl, 1998, pp. 73-74)

Blunt is probably correct - the inclusion of a defined contribution component in Social Security is likely to shift the balance away from the value of shared security, and toward the value of individual freedom. To the extent that this occurs the differences among retirement outcomes will be ascribed to individual actions and market outcomes rather than to the government. If this happens, public sector accountability for retirement incomes will be replaced by individual and market accountability.

The bottom-line is that such an outcome would significantly attenuate the politics of Social Security since compared to governments, markets diffuse accountability, and individual responsibility throws accountability back on the individual recipient.

### **Change in Interest Group Alignments**

The current defined benefit Social Security system enjoys widespread support across age groups, education levels and income levels.

How does this support translate into political activity? Traditionally, political activity rises with increases in age, education and income. But Andrea Campbell has found that the current defined benefit Social Security regime is unique in bringing about higher levels of political participation in support of the program from recipients with lower rather than higher levels of education and income (Campbell, 2003).

The groups that support the current defined benefit system to the greatest extent bring the least amount of resources to the political conflict. Nevertheless, it appears that support for the defined benefit Social Security system is an example of very active participants with low levels of resources defeating smaller numbers of opponents with greater amounts of resources.

The move to a defined contribution Social System would significantly change this alignment. It would create a supporting coalition in which those who are most active would also bring the most resources to the political conflict since those with higher levels of education and income are likely to be the winners. As such, a greater proportion of their retirement income will come from their defined contribution payments than currently comes from their defined benefit payments. The opposite should be the case for those with lower levels of education and income.

### **Conclusion**

The current defined benefit system has been extremely resistant to significant change. It has in recent years been called the “third rail” of American politics – “touch it and you die.” The logic of both the politics of ideas and the supply and demand of political of political action lead to the same prediction. We have argued the because of the new structure of the program will lead to changes in political discourse and interest group alignments a defined contribution system will be even more resistant to significant policy change than is the current defined benefit system. As such, it would go a long way to building a long-term pro-market non-shared security political majority. One should expect such a majority

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to seek to undermine all existing shared security government programs and to reject proposals that rely on shared security to deal with problems such as access to a quality health care system.

It is precisely because the stakes are so high that simple compromises such as the “artful work” of the 1983 social security compromise are unlikely to occur this time. When dollars are at stake one can always split the difference. But when principles and world views are at stake – and especially when most of the political actors know that they are at stake for the long as well as the short run – then the conflict, now ongoing for seventy years, will continue, perhaps forever.

#### References

- Broder, David S., 2005, “Social Security’s Capitol Divide,” *The Washington Post*, Sunday, February 20, 2005; Page B07.
- Campbell, Andrea, 2003, *How Policies Make Citizens: Senior Political Activism and the American Welfare State* (Princeton, NJ: Princeton University Press).
- Dauber, Michele Landis, 2004, “The Hazards and Vicissitudes of Social Security Privatization,” *The American Prospect*, September 3, 2004.
- Heclo, Hugh, 1998, “A Political Science Perspective on Social Security Reform.” In R. Douglas Arnold, Michael J. Graetz, Alicia H. Munnell, edited, *Framing the Social Security Debate: Values, Politics, and Economics* (Washington, DC: The Brookings Institution Press), pp. 65-94.
- Hacker, Jacob, 2004, “Privatizing Risk Without Privatizing the Welfare State: The Hidden Politics of Social Policy Retrenchment in the United States,” *American Political Science Review*, 98:2 (May 2004) pp. 243-60.
- Jacobs, Lawrence R. and Robert Y. Shapiro, 1998, “Myths and Misunderstandings About Opinion Toward Social Security,” in R. Douglas Arnold, Michael J. Graetz, Alicia H. Munnell, edited, *Framing the Social Security Debate: Values, Politics, and Economics* (Washington, DC: The Brookings Institution Press), pp. 355-88.

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**John W. Ellwood** *Initially trained as a political scientist, John Ellwood has spent most of his career as a policy analyst. His scholarly interests are in three areas: public sector budgeting, the management of analytic staffs in a political environment, and the effects of recent changes in corporate laws and the market for corporate control on the relationship between corporations and their communities.*

*Ellwood is part of the faculty group at GSPP that concentrates on public and nonprofit management. His experience in this area is derived not only from his past teaching in schools of public policy but also from his experience teaching business-government management at Dartmouth College’s Amos Tuck School of Business Administration and five years on the management staff of the Congressional Budget Office (CBO). Ellwood has served as a staff member of the U.S. Senate Budget Committee and was a member of the original management team of the CBO, and served as the special assistant of its first director, Alice M. Rivlin.*

*His other professional activities include membership on the Policy Council of the Association for Public Policy Analysis and Management and service on several committees of the American Political Science Association. He has served as a consultant with a variety of U.S. government and state government agencies. He was the Research Director of the Public Policy Institute of California from 1995 through 1997.*

**Eugene Smolensky**, *an economist, studies welfare policy and the impact of economic and demographic changes on the distribution of income among various social groups. He is a member of the National Academies of Public Administration and of Social Insurance, and serves as Vice President of the International Institute of Public Finance and Vice-Chair of the Board of Trustees of the Russell Sage Foundation. He is past editor of the Journal of Human Resources and has served as chair of the Department of Economics and director of the Institute for Research on Poverty at the University of Wisconsin-Madison. He served as Dean of GSPP from 1988 to 1997.*

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# A Genuinely Good Deal for Social Security

by J. Bradford DeLong

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**SUPPOSE THAT WE** lived in some parallel universe in which we were having an informed debate about what to do with our Social Security system. I know that this is total fantasy, but bear with me: there is method to my madness. Suppose that this were so: what questions would we be trying to answer?

**1. Roughly what proportion of pre-retirement income should we *guarantee* people after they retire—no matter how well their investments do, no matter how thrifty or reckless they were during their working years? In short, how *big*—measured as a share of pre-retirement income—should the Social Security system be?**

We should guarantee a basic Social Security benefit of roughly half of pre-retirement after-tax income—a replacement rate for the median worker, counting state and local as well as federal taxes, of roughly 30 percent of pre-retirement pre-tax income. Anything less runs a substantial risk of producing a lot of elderly poverty: the feckless and the unlucky will, when they are old, live much worse than is common in the surrounding society. Now as society grows richer this elderly poverty will be a relative phenomenon: people will be much poorer than their neighbors, but few of them will be absolutely poor in the sense of living in boxes or eating cat food. Nevertheless, relative elderly poverty is real elderly poverty, and it is something that a good society should protect against.

**2. How *progressive* should the Social Security system be? Those who make less than the average should probably have a higher replacement rate—receive a higher share of pre-retirement income—than those who make more than the average. But how much more?**

The Social Security system should be somewhat more progressive than is our current system. I see no case for exempting the top 15% of wage income from the Social Security tax base. I see no case for exempting non-wage income from the Social Security tax base. On the benefits side, we already have substantial progressivity: benefits relative to scaled lifetime taxes paid—the “Primary Insurance Amount”—rise at a rate of 0.9 for roughly the first \$600 a month in your Social Security check, at a rate of 0.32 for roughly the next \$900 a month, and at a rate of 0.15

thereafter. It would be good if the system were more progressive, covered everyone, and offered a minimum benefit to those whose taxes paid in were zero. But otherwise the system seems in good shape as well as progressivity is concerned.

**3. How should this basic Social Security system be *financed*? Should it be pay-as-you-go, in that each generation of taxpayers pays for the last generation’s retirement? Or should it be a funded system, that builds up enormous assets and so owns large chunks of the economy, and uses the returns on those assets to finance large chunks of benefits?**

The answer to this question depends on the shape of future economic growth and demographic change. When the economy is growing faster than the interest rate, pay-as-you-go systems are attractive: they offer a low-cost way of moving wealth up the generations from the (richer) future to the (poorer) present, and so raising social welfare. When the economy is growing much more slowly than the interest rate, the burdens placed on workers by a pay-as-you-go system are much harder to justify, and funded systems—those that build up lots of assets to finance part or all of this generation’s benefits—become much more attractive.

Currently, the Social Security Administration’s actuaries have a set of assumptions about economic growth, interest rates, and equity returns that are inappropriate, and make pre-funded systems look artificially good and pay-as-you-go systems look artificially bad. There is definitely a strong case for pre-funding some of the cost of Social Security for the large baby-boom generation. There is not a case for pre-funding much else of the basic benefit, and there will not be a strong case for pre-funding much of the basic benefit until immigration into the United States begins to decline significantly from its current relatively high levels.

**4. What additional steps should the government take to make it easy—or perhaps mandatory—for people to save in their own *private accounts*, so that they reach retirement with more than their basic Social Security benefits to draw on?**

This question is the most interesting. Americans do not take nearly as much advantage of tax-preferred and other savings vehicles as we economists think they should. I am one of



those who believes that America's national savings rate is dangerously low. The bottom half of America's income distribution has essentially no wealth invested in the stock market, and that cannot be right. It seems to me that these are problems that the government should address.

The government should address these problems by making add-on savings out of payroll into individuals' private accounts the default—not mandatory, but the default: you have to fill out a form and check out a box in order *not* to make your contribution to your private account. The government should sweeten the pot: provide a partial match for funds directed into private accounts. The government should also provide a simple and reasonable default option for investing private accounts: half in a low-fee stock index fund, and half in a low-free bond fund. It should offer little else in the way of investment options: the danger that private account holders will be on the least informed side of trades is great, and the danger that private account holders will degrade their account through fees and transaction costs is great as well.

**5. What kind of *bureaucracy* should govern and administer this system? And how much flexibility should it have—what adjustments should it be able to make on its own without returning to Congress for revised authorizing legislation? What should the administrative structure of Social Security be?**

It seems clear that the system needs more flexibility than current law allows. Fertility waxes and wanes, economic growth speeds up and slows down, returns increase and decrease. A pay-as-you-go system thought of as a defined-benefit program will always be sliding into deficit or surging into surplus. Americans' entitlement in retirement to their share of pay-as-you-go Social Security revenues is more equity-like than debt-like. Because there is no residual claimant or debtor (besides the US government), the system should be operated more like a credit union or a mutual association, with payouts that naturally rise and fall with resources. Such a system is, I think, best operated with a Social Security Board of Trustees with a fiduciary duty to maintain the long-run actuarial balance of the system, and the power to alter benefit levels (and, within limits, contribution rates) to achieve that

long-run actuarial balance.

As for the add-on system, we already have the bureaucracies to run it. The IRS is a natural place to receive the add-on contributions: a check box on form 1040 to opt in—or, better yet, opt out—to the savings program. And an expanded Thrift Savings Plan to manage the money. If it's a good enough system for members of congress and senior administration officials, it should be good enough for all Americans.

### **A Way Forward**

The outlines of a potential deal on Social Security—a potential reform—that would be genuinely good for the country are thus clear:

1. Shift responsibility for maintaining actuarial balance off of the Congress and onto a Social Security Administration that has added discretion.

2. Uncap FICA—increase the Social Security tax base to all wage income and perhaps further—and apply the extra resources to sweeten private add-on accounts, to add a little more

progressivity to benefits for the poor, and to serve other purposes (like boosting benefits for widows).

3. Make enrollment in private accounts automatic (it's done automatically on your 1040) but voluntary (you can fill in an extra form to get the money the IRS earmarks for your account back as part of your refund).

4. Use the government's existing Thrift Savings Plan as a vehicle for managing private add-on accounts—and keep its choices restricted: churning and extra administrative costs caused by asset shuffling are not your friend.

Such a plan should satisfy everyone. It would satisfy optimists who believe SSA's projections are much too pessimistic and that no benefit cuts ever are required: if they are right, it would impose no benefit cuts. This would satisfy pessimists who worry that there is no mechanism to finance the existing level of benefits: if they are right, the SSA will have the fiduciary duty and the power to cut benefits. This would satisfy Congress: if there are benefit cuts, their fingerprints aren't anywhere nearby. This would satisfy believers in boosting national savings: the revenues from uncapping FICA and the money flowing into private accounts

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***The bottom half of  
America's income  
distribution has essentially  
no wealth invested in the  
stock market.***

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## *Special Feature: Social Security*

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from people's choosing the default option will boost national savings. This would satisfy those scared that private accounts would be churned and looted by unscrupulous brokers: the TSP is a good operation that provides powerful protections. What's not to like?

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*J. Bradford DeLong is a professor of economics at U.C. Berkeley and chair of the political economy of industrial societies major. He is co-author of the forthcoming Asset Returns and Economic Growth (Brookings Papers on Economic Activity). He is also a research associate of the National Bureau of Economic Research. From 1993 to 1995 he was a deputy assistant secretary of the U.S. Treasury.*

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# Social Security Fact Sheet: Informing the Debate

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## **HISTORY AND EVOLUTION**

Franklin Delano Roosevelt signed the Social Security Act into law on August 14, 1935. The program was perhaps the central legacy of his New Deal. Over the years, the original conception of Social Security—an insurance program that pays a defined benefit to retired workers—has remained largely unchanged. In 1950, Congress made the first cost-of-living adjustment (COLA). Subsequent increases were also individual Congressional decisions until 1975, when COLAs were automatically indexed to consumer prices. Other marginal changes were made over the years, such as the adding of a disability benefit and supplemental security income (SSI) for particularly needy individuals.

In the early 1980s, Social Security faced its first projected financial crisis. President Reagan created the Greenspan Commission to study new financing and program options, and a bill was signed into law in 1983 that incorporated many of the Commission's recommendations. These changes included the taxation of SS benefits, increasing the reserves in the trust fund, and raising the retirement age beginning in 2000.

Today one in six Americans receives a SS benefit (almost 45 million people), and about 98 percent of the workforce is covered by the program. Social Security benefits make up about five percent of the Nation's economic output.

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## **FINANCING AND THE TRUST FUND**

Social Security benefits are financed by a payroll tax and by revenue accrued from interest on the assets of the Trust Fund. Currently the system taxes 12.4% of a worker's wages up to \$87,900. Although Social Security is popularly thought of as a retirement investment for an individual worker—who pays taxes now into a fund that pays out a monthly benefit upon her retirement—it is actually a “pay as you go” intergenerational transfer. Thus, the Social Security “crisis” is largely a function of demographics—the aging and imminent retirement of the “baby boom” generation.

Presently, Social Security revenues actually exceed expenditures. By law, this surplus is collected by the government and used to purchase US Treasury Bonds. The current value of the assets of the Trust Fund is \$1.5 trillion, from which the government receives over \$80 billion annually in interest. The crisis point that is frequently mentioned for Social Security is in 2018, when (according to the “intermediate” scenario forecast by the 2004 Trustees report) benefits begin to exceed payroll taxes and the system goes into deficit. However, Social Security can continue to pay full benefits until the Trust Fund is spent down in 2042. At this point, the system will only be able to pay out roughly 80% of guaranteed benefits, and Congress would have to act to maintain benefit levels. If long-term productivity growth follows historical patterns (and thereby exceeds the Trustees' conservative projections), the financial squeeze largely disappears.

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## *Informing the Debate - continued*

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### **COMMONLY DEBATED PROGRAM CHANGES**

**Raise the Retirement Age** – In 1956, the government lowered the allowable retirement age for women from 65 to 62, and in 1961, the government lowered the age for men similarly. Early retirees did not collect full benefits, however—the earliest age for 100% benefit collection was still 65. In response to the 1983 Greenspan Commission’s recommendations, however, the retirement age will be gradually raised from 65 to 67. This change began in 2000 and was to be phased in over the next 22 years, and so it has already been incorporated into the Trustees’ estimates for Social Security’s long term solvency. A further increase in the retirement age, if soon and drastic enough, could balance the books by reducing the total amount of benefits paid to retirees. According to the American Academy of Actuaries, an immediate one-year increase in the retirement age is equivalent to a 7% benefit cut, and would eliminate about one-third of Social Security’s 75-year shortfall. That estimate does not include any additional revenues collected as a result of people working longer.

**Raise the Taxable Income Limit** – Currently, the payroll tax collected to finance Social Security only applies to the first \$87,900 of a worker’s income. Over the past 20 years, income inequality has reduced potential revenue. Most of the gains in earnings in the past 20 years has been at the top of the income distribution, a smaller share of aggregate income falls under the taxable limit. According to Peter Orszag of the Brookings Institution in his testimony before the Joint Economic Committee, the share of aggregate income above the taxable limit went from 10 to 15 percent between 1983 and 2002. Gradually lowering the share of untaxed aggregate income to even 13 percent would reduce the 75-year shortfall by about one eighth of the current deficit.

**Change Benefit Indexing** – Social Security benefit payments are wage-indexed, meaning that benefits increase over time in fixed proportion to wages, which are constantly increasing. Some reform proposals center on changing benefits to a price-indexed system, so that benefits instead increase along with consumer prices. Since wages typically rise about a percentage point per year faster than prices, a shift to price-indexing today would alone suffice to eliminate the 75-year funding shortfall. Price indexing would have a degenerative effect on benefit levels over time, however, particularly for low-wage workers who depend almost entirely on Social Security for their retirement income. A hybrid system, advocated by Robert Pozen (former member of the President’s Commission to Strengthen Social Security), is progressive price indexing. This would preserve wage-indexing for retirees with low average career earnings, but would gradually shift to price-indexing for higher-income retirees, who almost always have significant retirement income from pension plans or personal savings.

### **OTHER COUNTRIES HAVE HAD LITTLE SUCCESS PRIVATIZING**

Several countries have experimented with privatizing their old-age pension systems. Chile adopted a program in 1981 that required workers to pay a certain percentage of their earnings into a retirement account, which they could then invest in certain approved securities. The success of the Chile system is debatable, but it has had problems. The World Bank reported that approximately 50% of the contributions of the average Chilean who retired in 2000 went to management fees (As a contrast, the US Social Security system spends approximately 1% of its revenues on overhead costs). The brokerage firm CB Capitales reported that the average worker would have achieved higher returns from their contributions if they had invested them in a passbook savings account. Over 20 years later, retirees' private accounts contain far less money than predicted when privatization begun. This has led to 41 percent of those eligible to collect pensions having to continue to work.

In 1998 Sweden began to partially privatize its social security program. Though it is too early to fully judge the success of the change, the initial results are not encouraging. Benefit levels have been appreciably reduced, and administrative costs have increased 4-fold. As of 31st January 2004, 84% of all accounts had lost money.

The United Kingdom began a privatization scheme in 1984. The consensus there is that this system is largely a failure. The main problems are similar to Chile's, with fees eating up nearly 30% of the average pension, and poor investment returns leading to the need for the state to step in to fill the gap.

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### **FORECAST SCENARIOS INFLUENCE THE INSOLVENCY DATE**

The Social Security Board of Trustees annually produces short range (10 years) and long range (75 years) projections of the fiscal health of the program. The projections are based on the Trustees' opinion concerning the various demographic, economic, and program factors that affect its revenues and expenditures. These factors include fertility levels, mortality rates, immigration levels, changes in average real wages, CPI changes, and unemployment rates. The Trustees use three alternative sets of assumptions about the future to produce pessimistic, intermediate, and optimistic projections of possible outcomes.

These estimates are generated using a "deterministic" model, in which each factor variable will reach an assumed ultimate value at a specific point during the long-range period and will maintain that value throughout the remainder of the period.

To illustrate the uncertainty of these estimates, the Trustees also employ a stochastic model that "estimates a probability distribution of future outcomes of the financial status" of the trust funds. The stochastic simulations allow each of the variables mentioned above to vary throughout the long-range period. The results produced by this method are similar to those produced in the "intermediate" estimate. The Trustees report these results as an appendix in their annual report.

The CBO has produced its own projections regarding the long-term (100 years) fiscal health of Social Security. Their approach uses simulations of a representative sample of Social Security participants. The components of these simulations are based on survey data of actual workers and beneficiaries. Many of the demographic and economic assumptions that are used in the CBO's models are similar to those used by the Trustees, though there are modest differences in the assumptions regarding earnings growth, interest rate, inflation, and unemployment rate changes.

The CBO does not provide three scenarios like the Trustees. They report their forecasted outcomes associated with probability distributions for each outcome. This is similar to the stochastic methods used by the Trustees.

The "intermediate" projection of the Trustees is the projection usually quoted in the media. The intermediate projection suggests that the trust fund will be exhausted in 2043. The CBO estimates this date to be 2053.

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# An Energy Policy for the 21st Century

by Daniel M. Kammen

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## The Crisis of Neglect

IF ENERGY IS in the news, there must be a crisis. The OPEC embargo of the 1970s contributed to a major economic recession. The Three Mile Island and Chernobyl accidents highlighted the extreme risks posed by management failures at highly complex energy facilities. The California energy crisis and the still-unfolding Enron scandal hinted at how much havoc unmitigated greed can unleash on society. The Northeast and European blackouts of 2003 demonstrated how fragile and dated our electricity grid has become. Record-high crude oil prices have recently sparked a discussion and debate about our seemingly ever-expanding appetite for oil and gas. The mounting evidence of climate change largely caused by fossil fuel combustion links our energy economy to a truly global threat. Each of these events made headlines for fragility, costs and manifold impacts of our current energy policy.

The real issue, in fact, is that our energy economy lacks the diversity it needs to respond to the inevitable economic, political, and environmental shocks that history has demonstrated will frequently occur. The good news, however, is that despite a record of chronic underinvestment in vital areas of energy research and development (Margolis and Kammen, 1999), recent technological advances, new policy mechanisms to diversify energy markets, and an increasingly bullish financial sector could all be marshaled to usher in a new age of energy innovation. What is remarkable is how many innovations have taken place despite not only our low level of investment in energy, but also the lack of market opportunity afforded to new entrants into the energy sector. By contrast, a policy that reflects the evolving tools and opportunities could make our energy economy significantly more secure. We could evolve from an era of energy ‘hunter-gatherers’ to one of ‘energy farmers’; namely from a portfolio based on a precarious balance of expanding traditional supply avenues to meet a steadily growing demand, to one that emphasizes a full range of energy supply, efficiency, and demand management technologies and policies<sup>1</sup>.

I define “hunter-gatherer” as an individual, or in this case a nation, constantly on the prowl for new sources of energy, no matter how remote or risky the source, and no matter what dubious political risks one needs to take to access the commodity – here, fossil fuels. In many ways this “hunter-

gatherer” lifestyle is reminiscent of the conditions we see in an addict. By contrast, “energy farmer” describes an individual, or a society, that values natural endowments, sees the value in planning and recognises the benefits of innovation. The paradox in our economy is that our exposure to economic, geopolitical and environmental risks associated with our hunter-gatherer economy, we continue to marginalize and ignore the manifest benefits of the energy farming alternatives.

Energy is the largest industry on the planet, with sales of over three trillion dollars annually; food is a distant second at 1.7 trillion. In the U. S. alone energy is a trillion dollar industry, yet at the federal level we invest less than *one percent* of that total in research and development. By contrast, the biomedical and information technology industries reinvest well over 10% of revenues on new innovations to advance and expand those fields.

Our inattention to energy science and policy is at odds with its importance to the global economy and environment, and makes the U. S. needlessly vulnerable to financial, political, and environmental crises. Even worse, it’s bad business and specifically bad for American business.

Sadly, the current US administration has eschewed the many advantages of diversifying our energy economy and providing an alternative to the hunter-gatherer existence. Electricity derived from wind energy is the world’s fastest growing energy source (on a percentage basis, at over 20%/year growth for the past five years). While the U. S. gets less than 1% of electricity from wind, parts of Europe meet over 25% of demand with wind, peaking during some months at *over 50%*.<sup>2</sup> Is Europe the Saudi Arabia of wind? Hardly, Germany – with *three times* the wind electricity production of the U. S. – has less of a wind resource than the state of North Dakota alone. Globally there was over \$7 billion in wind energy investment in 2003, and *worldwide* capacity is over 31,000 MW.<sup>3</sup> On a regional scale, the European community anticipates 10–20% of total electricity from wind by 2010. Not only have wind turbines undergone a technological revolution in blade and motor design, but also in scale. Five years ago 750 kW (0.75 MW) turbines were considered large, but today 1.8–4 MW machines are standard in many of the largest new wind farms, with even larger machines (now up to 5 MW each) planned for many off-shore installations. Innovations have come at such a rate that repowering (replacing/upgrading) the machines on

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existing wind farms installed even within the last decade has become common, with the old machines sold to other, emerging, markets. Today there is a manufacturing shortage of wind turbines to meet the international demand (American Wind Power Monthly, 2005).

The story for solar electricity – photovoltaics – is similar. Globally, sales have been climbing at over 25%/year for the past decade with global production of solar cells now reaching 1,000 MW/year,<sup>4</sup> the equivalent of a large conventional power plant. Germany and Japan are now the global leaders in photovoltaic installation, with California, the third largest market globally. A wealth of new technologies are now on the horizon, from thin-films that use a fraction the materials of current cells, to plastic and even organic cells that hold the potential to dramatically reduce costs per watt.

Biomass too has the potential to play a major role in a low-carbon and diverse energy economy. Liquid biofuels for transportation applications, solid and gasified fuels for power plants, and the integration of energy and agricultural crops are now all realistic near-term possibilities. With the low cost of biomass the prospect of biofuels supplementing, and in some places offsetting fossil-fuel needs is now very real. In a recent paper, two colleagues and I lay out a set of sustainable biofuel scenarios that could significantly reduce the disease burden in Africa, provide an impetus for forest conservation, and reduce the need for imported oil and gas for a number of nations (Bailis, Ezzati, and Kammen, 2005).

In the last few years we have witnessed a dramatic increase in vehicle efficiency, with hybrid cars a particularly high-profile example. Electronic devices and buildings, too, could become significantly more energy efficient through the adoption of standards based on current ‘best practices’ to say nothing of the opportunities for new sensor and control technologies to bring down the energy requirements of technologies across our economy.

To be sure, many of these innovations – both technological and in the management of energy markets – are taking place in the U.S. We are, however, seeing a global transformation in efforts to put new energy technologies into use, and to link research and development (the traditional ‘technology push’) with market opportunity (demand pull).

The important issue is not that energy innovation is rapidly taking place around the globe, but that a dynamic partnership of public and private research and development, and efforts to expand the markets for these new technologies could be a mainstay of a U.S. energy policy that not only helps to meet our domestic energy needs, but becomes a major export industry and a vehicle for job creation as well (Kammen, Kapadia, and Fripp, 2004).

#### IMPLEMENTING AN INNOVATIVE ENERGY AGENDA

Our energy economy must be diversified to encourage competition and provide insurance against real or created supply scarcity. An excellent mechanism already exists in the Renewable Energy Portfolio Standard (RPS), where states set a minimum requirement for clean energy production within any given market. Already 17 states and the district of Colombia have adopted varying forms of this policy. Mandating market access for solar, wind, biomass and environmentally-friendly hydropower and tidal technologies not only reduces the environmental burden of energy production, but it also gives investors confidence that the energy industry is generating options and opportunities, and is therefore worthy of investment. Investment breeds innovation, and with overseas markets for renewable energy technologies booming, expanding our domestic use of renewables would transform the U.S. into a leader of a rapidly expanding market. In a recent study, my laboratory found that the job creation potential of an expanded renewable energy sector is significant, both in terms of total employment growth, and in the shift to domestically-based jobs that would result.

The important innovations taking place at the state level would be made far more efficient with federal support. The U.S. is primed for such an expansion in the use of renewable energy, with excellent and diverse renewable energy resources available across the nation. A federal commitment would likely see the biomass and wind industries growing rapidly in the east, biomass and some wind in the south, biomass and wind in the Midwest and northern states, and a mixture of wind and biomass in the west and southwest. Current and emerging solar energy technologies have

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***Energy is the largest industry on the planet, with sales of over three trillion dollars annually; food is a distant second at 1.7 trillion.***

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## Energy Policy for the 21st Century - continued

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applications across the country in the form of solar arrays, building integrated solar photovoltaic materials, and solar thermal systems. A range of different studies now indicates that, for example, a 20% Federal RPS would save the country billions relative to our current 'business as usual' path of overseas oil and gas dependence.<sup>5</sup>

Market barriers to new renewable energy technologies severely limit their ability to expand market share even when they are economically competitive on a technology-to-technology comparison. If a given energy technology has a 1% or smaller market share, its economics are dominated by a niche application, or by a specific regulatory provision. By contrast, roughly a 10% market share is one that is, for many technologies, one of economic competitiveness (Wüstenhagen, 2003). The threshold to move from niche to viability is thus likely somewhere in this range. An RPS – particularly one that encourages a range of technologies, not simply those that are least cost today – provides one mechanism to move these promising but marginalized technologies to the point where they can compete in the marketplace. Milestones, too, such as buildings that are energy self-sufficient can energize and involve other sectors of the economy.

Thus a set of challenging yet achievable goals would be of great value if they are used to raise the profile of sustainable energy strategies, galvanize action among the research and commercialization communities, and make a compelling case that the public can support. A wide range of strategies exist, such as that of the Apollo Energy Alliance, which has as its goal a significant reduction in U. S. imports of fossil fuels. This could be met by combining efforts to increase fleet vehicle efficiency, develop a large-scale, environmentally sustainable biofuel industry, and engage in regional planning to minimize the need for vehicle-miles traveled. The U. S. could make it a national priority to regain international leadership in the sales of clean energy systems. Specific goals could include developing and deploying \$1-2/watt solar cells, dramatically expanding the U. S. wind-turbine industry, and using nano-technology to increase the efficiency and durability of fuel cell membranes, as well as the targets and challenges for low-cost generation of H<sub>2</sub> fuel.

Hydrogen is an important and increasingly debated future energy carrier. On the one hand, it presents the opportunity to deploy vehicles without tailpipe emissions.

At the same time, a major role for hydrogen in the economy, barring a breakthrough, is years to even decades away. To break this impasse, it is vital to maintain the diversity of hydrogen supply options. The goal, in fact should be to expand the range of promising supply options – from fossil fuels, biomass, low-cost electrolysis, and through engineered bacteria. Recent proposals for a national hydrogen institute are unlikely to achieve this goal. Large, centralized, hydrogen efforts will likely 'pick winners', and focus research efforts in a few areas. This approach is unlikely to increase the range of supply options. Instead, hydrogen research needs to be distributed between academic groups, national laboratories, and commercial research laboratories – in some cases through collaborations, and in some cases through productive competition. There is world-class expertise and innovative potential within many university groups, within industry, and at Oak Ridge, Pacific-Northwest, Argonne, Sandia, Los Alamos, and the National Renewable Energy Laboratory. The diversity of approaches these groups represent would likely be lost if hydrogen production and use research threads currently underway at universities, private sector, and national laboratories are pulled at this early stage into a centralized program. In fact, history argues for just the opposite strategy; with so many feed-stocks, production processes, and storage means under exploration today centralization is likely to 'pick winners' – such as in the federal Freedom Car program – and hence drop or marginalize research avenues at just the point when diversity is the greatest strength of this field (Kammen and Lipman, 2003; Lipman and Kammen, *et al.*, 2004).

The energy research and development community could, in this case, learn an important lesson from the biotechnology industry, where competition and diversity have dramatically increased the rate of innovation. In fact, while federal and private spending on research and development in the life sciences have steadily increased, federal spending on energy is back to pre-1970 levels, with little change in private-sector investment (Margolis and Kammen, 1999; Kammen and Nemet, 2005)). This stagnation impacts all aspects of the US and global economy, and severely limits our ability to build a sustainable future.

Many of the long-term strategies that would benefit the U. S. and the global population and environment are direct outgrowths of the immediate and medium-term strategies. Over the next several decades we must reduce



our disruption of global biogeochemical and hydrological cycles dramatically. Current anthropogenic carbon emissions are roughly  $6 \times 10^9$  tons (6 GT), with business as usual forecasts of 12 GT by 2050. At a start, we must halt this growth in emissions and then begin a process of reduction. A simple, but useful, framework is provided in a recent paper by Pacala and Socolow (2004) who highlight a range of technologies that, if scaled up over 50 years, could each offset 1 GT of carbon emissions and contribute to true climate protection. The large-scale deployment of solar, wind, biomass technologies, aggressive efforts to expand energy efficiency programs, carbon sequestration, and nuclear power are all options. As with any long-term strategy, it is easy to delay action based on claims of scarce present day resources and envisioned greater future wealth, and this has been the standard refrain of many large energy companies today.

#### FUTURE CHALLENGES

A significant challenge to efforts to develop a clean energy sector is to make this process profitable to the utilities. In many respects the greatest hurdle that must be addressed to take advantage of the opportunities for highly efficient combined heat and power systems, local building-integrated renewables (for example, solar), and to focus greater attention on the value of efficiency is the role of utility companies. In most areas the present utilities see few attractive revenue opportunities through encouraging greater efficiency, and in particular distributed generation (DG) appears as a simple loss of revenue. The opportunities for utilities to both encourage and to profit from clean, local, power production is one area critically in need of attention.

Lurking in this equation is the operation and evolution of the grid and the rules under which power transmission and distribution are managed. Analysis of the bottlenecks in the California and west-cost grid, and a review of the causes of the northeast blackout of 2003 both point to the need for a massive investment in our transmission and distribution system. Some estimates place the cost of renovating the system at over \$100 billion. As with all investments, this presents as much

of an opportunity as a cost. In this case, we have the chance to make the grid compatible with local power management and sales, net-metering programs, new methods to increase regional reliability. It is vital that these new technological and policy options become the mainstay of our new grid system so that power purchases and sales can expand the diversity of our energy supply and management options.

DG systems have great promise for tailoring the amount of power generated to local demands. To accomplish this a significant program of research is needed on smart-grid technologies to permit monitoring and flexible re-routing of small amounts of power surplus and demand. Building integrated power production could become the norm – with many buildings self-sufficient in energy supply from clean sources – but will require a new generation of grid hardware to make this practical. At the same time, new financial tools are required to make the support of DG attractive to utilities. A step in the right direction is the new U. S. Department of Energy Combined Heat and Power research and outreach network, which combines research with outreach to businesses currently utilizing DG techniques, and those interested in moving in this direction.

As the conduit of electricity transmission and end-use management, utilities could become the entities that manage power transactions between houses, businesses, and industry that buy and sell in a real-time, distributed market. Beyond that, utilities themselves could transform the power industry by becoming an agent of regional planning: entering into performance-based contracts for both electricity efficiency, and CHP transactions; and developing local energy storage capacity (pumped hydro, spinning reserves, flywheels,

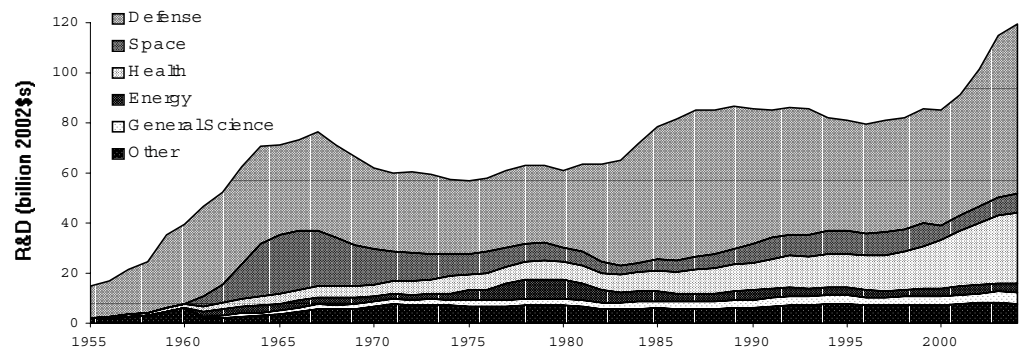


Figure 1: Trends in U. S. federal R&D, 1955 – 2004. Energy R&D (in 2004 in dollar terms) is no larger than it was in the late 1960s. Note in particular the dramatic difference in the trends in energy versus health science and technology investment. Private sector reinvestment of revenues in the health sciences is well over ten times larger than it is in the energy industry. Source: Kammen and Nemet (2005).

## Energy Policy for the 21st Century - continued

Energy Regulatory Commission, and a range of state and regional entities.

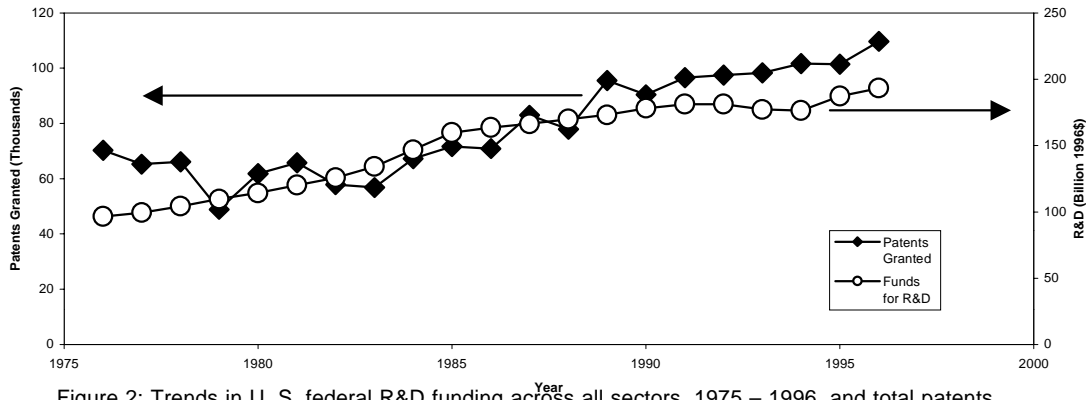


Figure 2: Trends in U. S. federal R&D funding across all sectors, 1975 – 1996, and total patents generated during the same period.  
Source: Kammen and Nemet (1999).

A significant weakness in our energy technology supply chain is the fickle and intermittent nature of renewable energy research and development support (R&D).

Many R&D programs have exhibited roller-coaster funding cycles, at times doing more harm than good to the sustained development and deployment of specific technologies (Margolis and Kammen, 1999). At the same time, the R&D portfolios we that have received federal support have been highly uncertain in their year-to-year funding levels, as well as in the goals of the individual programs. In particular, our R&D programs for solar and fuel cell systems have not been focused on short- or long-term goals that we were committed to achieve, but instead designed to spend available funds, which often had to be justified on unrealistically short timetables. Energy production and efficiency goals, and not specific programmatic or technological subsidies, need to guide the long-term direction of our R&D portfolio.

Finally, we need to implement and adhere to well-designed and enforced environmental regulations that drive innovation and create new business opportunities. Our history is replete with examples:

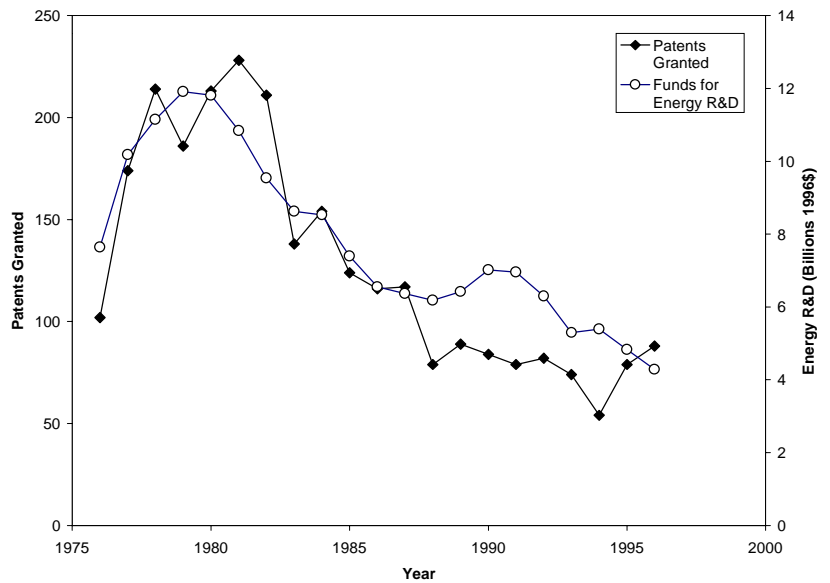


Figure 3: Trends in U. S. federal energy R&D, 1975 – 1996 and patents. The level of correlation between federal funding and patents generated, as seen in Figure 2, is comparable to that seen in this figure. The dramatic difference, of course, is the factor of three decrease in federal support for energy research since the brief peak associated with the response to the OPEC oil crises of the late 1970s.  
Source: Margolis and Kammen (1999).

*This work was supported by the Energy Foundation and the U. S. Environmental Protection Agency, and the University of California Class of 1935 fund.*

from the phasing out CFCs to protect the ozone layer, to reduced health costs from improved air quality; to the market leadership seen in companies taking aggressive positions in developing and marketing hybrid vehicles. These cases demonstrated ways to redefine the outdated environment-versus-economy debate. New opportunities present themselves everyday. Fossil fuels, for example, are too valuable to use as wastefully as we frequently do today. Creating a market for global pollutants such as carbon dioxide that causes global warming would likely do the same and is a business opportunity waiting for innovators. The recent study of the impacts of climate change on California highlight the economic advantages of sending priced signals to turn impending environmental risks into economically efficient opportunities for industrial innovation. While carbon markets have been and will surely continue to be debated, a natural first step is to encourage and if needed require carbon accounting in the economy.

#### Endnotes

<sup>1</sup> The energy *hunter gatherer vs. energy farmer* dichotomy was suggested to me by Peter Lehman, Co-Director of the Schatz Energy Research Center at Humboldt State University in a session we shared at the Commonwealth Club of California.

- References & Further Reading*
- Bailis, R., Ezzati, M. and Kammen, D. M. (2005) "Health and greenhouse gas impacts of biomass and petroleum energy futures in Africa", *Science*, in press.
- Duke, R. D., and Kammen, D. M. (1999) "The economics of energy market transformation initiatives," *The Energy Journal*, **20**, 15 – 64.
- Hayhoe, K. *et al.*, (2004) "Emissions pathways, climate change, and impacts on California," *Proceedings of the National Academy of Sciences*, **101**, 12422 – 12427.
- Kammen, D. M., Kapadia, K. and Fripp, M. (2004) *Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate?* Report of the Renewable and Appropriate Energy Laboratory. Available at <http://socrates.berkeley.edu/~rael>.
- Kammen, D. M. and Lipman, T. E. (2003) "Assessing the Future Hydrogen Economy", *Science*, **302**, 226.
- Kammen, D. M. and Nemet, G. (2005) "The effectiveness of energy research and development", in preparation.
- Lipman, T. Kammen, D. M., Ogden, J. and Sperling, D. *et al.* (2004). "An Integrated Hydrogen Vision for California." A white paper/guidance document prepared with support from the Steven and Michele Kirsch Foundation. Available online at: <http://socrates.berkeley.edu/~rael>.
- Margolis, R. and Kammen, D. M. (1999) "Underinvestment: The energy technology and R&D policy challenge", *Science*, **285**, 690 - 692.
- Pacala, S. and Socolow, R. "Stabilization wedges: Solving the climate problem for the next 50 years with current technologies "(2004) *Science*, **305**, 968 – 972.
- Wind Power Monthly (2005) "America up against wind turbine shortage as demand outstrips industry's willingness to meet it," March (<http://www.windpower-monthly.com/WPM:CURRENTABSTRACTS>).
- Wüstenhagen, R. (2003) "Sustainability and Competitiveness in the Renewable Energy Sector: The Case of Vestas Wind Systems" *Greener Management International*, **44**, 105 - 115.

<sup>2</sup> For example, the north German state of Schleswig-Holstein currently meets 25% of annual electricity demand with wind power, and has met over 50% of demand for selected months each year. Schleswig-Holstein has initiated plans to meet 50% of annual electricity demand with renewables, with sustainable biomass seen as a major constituent of this added generation capacity. Schleswig-Holstein is a leader, but is not alone. Southern Spain and Denmark are also meeting significant portions of base-load power generation with wind, and major wind farms are either under construction or are planned in the United Kingdom, in the Netherlands.

<sup>3</sup> For comparison, a typical large fossil fuel power plant is typically on the order of 1,000 MW (= 1 GW= 10watts).

<sup>4</sup> In 2004 photovoltaic production jumped 34% from the 2003 levels, with an increasing diversity of the types of cells and the materials used in their manufacture.

<sup>5</sup> As of 2005, seventeen states and the District of Columbia have RPS standards in place, ranging from requirements of a mere 1.1% of total electricity from renewables to New York and California that require 20% or more of electricity to be generated from renewables by 2017. While each of these 17 states are expanding the market for new energy supplies a number of problems are present, notably the lack of clear incentives for utilities to meet these targets, or penalties should they fail to do so. It is also clear that virtually all of these state markets would be significantly strengthened with either a federal RPS, or through more active involvement by the Federal Energy Regulatory Commission to privilege clean energy suppliers in terms of grid interconnection agreements and utility commitments to make renewable energy purchases a priority.

<sup>6</sup> The Renewable and Appropriate Energy Laboratory at UC Berkeley (<http://socrates.berkeley.edu/~rael>) has been designated by the federal government and the state of California as a regional hub of combined heat and power as well as distributed energy research and outreach.

This paper is dedicated to David Bradford, who has been a friend, colleague, and mentor. True to David's *modus operandi*, that ordering is very much the atypical way in which he impacted me as a junior faculty colleague of his in the Woodrow Wilson School of Public and International Affairs and in the Science, Technology, and Environmental Policy Program at Princeton University, a program we chaired in succession. David brought an exceptionally sharp and insightful mind and eye to our understanding of climate change and society, He gave exceptionally generously of himself to faculty and student colleagues, supporting and guiding a variety of projects, and finding uniquely constructive and compassionate ways to interject economic insight into the projects he advised and observed. His untimely passing is both a shock and a great loss to all who knew him, and to everyone concerned with the state of the planet and the apathy that exists towards this issue in far too many offices, programs, and minds. Thank you, David.

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# Peak Oil and The Myth of the Hydrogen Economy

by S. Derek Turner

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*"We must face the prospect of changing our basic ways of living. This change will either be made by our own initiative in a planned way, or forced on us with chaos and suffering by inexorable laws of nature."*  
- Jimmy Carter, 1976

**AMERICA, MORE THAN** any other country, is addicted to oil. Though we account for only 5% of the world's population, we consume 25% of its oil, and, in contrast to other industrialized areas of the world, two-thirds of our oil use is for transportation.<sup>1,2</sup> This addiction has had a significant impact on the shaping and implementation of US domestic and foreign policies over the past 30 years. Our way of life and expectations of the future are predicated on the belief that oil will always be there. There is however, a growing chorus of scientists and industry analysts warning that global oil production is about to peak, and that we must take drastic action to change our energy policies and consumption behavior before it is too late.

Regardless of whether or not these predictions are correct, the US needs to enact major changes in its energy policy. America's reliance on fossil fuels for over 85% of its total energy use is both unwise and unsustainable. Policymakers should encourage the pursuit of diverse alternatives to oil, and politicians shouldn't be afraid of advocating policies that reduce the overall demand for oil. It is unlikely that there is a "magic bullet" solution to these problems. If the end of the age of oil is truly upon us, we will have to accept that there will probably never again be another fuel like it, and that it may be some time before any combination of alternative energy sources are ready to replace it.

## Deja Vu?

We have heard these oil-inspired doomsday predictions before. Production of oil in the United States reached its peak in 1970.<sup>3</sup> Three years later the OPEC oil embargo brought on an artificial global production peak, quadrupling the price of crude oil and sending a shock through the American economy. Long lines at gas stations prompted US policymakers to pass measures aimed at decreasing consumption. These included the Corporate Average Fuel Economy (CAFE) standards for new passenger cars, which mandated a national speed limit of 55 miles per hour, and the imposition of year round daylight savings time (which was quickly repealed).<sup>4</sup> These measures were moderately

effective, decreasing US petroleum consumption for two straight years. But by 1976, oil prices had fallen, and consumption began to creep back up.<sup>5</sup>

The Iranian revolution in 1979 brought back the gas lines and spurred more calls for the US to end its dependence on oil. President Jimmy Carter donned a sweater and installed solar panels on the roof of the White House as symbolic gestures of his commitment to conservation. (Ronald Regan had the solar panels removed shortly after taking office).<sup>6</sup> US consumption of oil again declined from 1980 to 1984, due in part to conservation efforts, but mainly due to the 1982 economic recession. After another recession in the early 1990's, our oil consumption began to skyrocket, fueled by a robust economy and the appearance of a new American favorite, the SUV.

America's high demand for oil, along with a rapidly developing industrial China, has brought global spare production capacity to a minimum, causing immense price volatility in the petroleum markets. This and the recent downward revision of the estimated amount of major oil reserves has caused some to question when and if oil will cease to be cheap and abundant. A growing group of scientists and activists are raising concerns about an impending global crisis, known as "Peak Oil."

## Peak Oil

The concept of peak oil is relatively simple. It is the point where global oil production reaches a maximum, before it enters a permanent period of decline. To illustrate how this happens, consider the lifespan of a single oil well.. When a well is first tapped, the oil comes rushing out on its own. The energy exerted to extract this oil is very minimal, thus the energy return on energy invested, or EROEI, is very high. Production from this well continues to rise, but as time goes by, the oil must be pumped from deeper depths, decreasing the EROEI. Eventually a point is reached where the amount produced from this well on a per day basis is at a maximum. Beyond this point, less oil is produced, and the EROEI drops rapidly, until it takes more energy to extract the oil than the energy potential of the oil itself. At this stage of production, even though there is oil remaining in the well, the well is considered dead.<sup>7</sup> "Peak oil" will occur when the entire global supply reaches this state of decline.

Oil, like all fossil fuels, is a finite resource and will inevitably run out. What is debatable, however, is when the

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global supply will peak, how sharp the post-peak decline will be, and what role technology will play in reducing the rate of that decline.<sup>8</sup> The main factors that determine the timing of peak oil and the rate of decline are demand levels, amount of current reserves, and future discoveries of new reserves.

Scientists disagree about when peak oil will occur. Several petroleum geologists that belong to the Association for the Study of Peak Oil and Gas (ASPO) put the date sometime near 2008.<sup>9</sup> The US government estimates that peak oil will come in 2037,<sup>10</sup> though some analysts are critical of this estimate, pointing out that it is based on reserve levels that are up to 4 times their current reported values.<sup>11</sup>

Future demand for oil, fueled by developing nations like China, is expected to grow at 1.6% per year, from 82 million barrels per day (mbpd) today, to 121 mbpd by 2030.<sup>12</sup> With global excess production capacity currently at 1-3%,<sup>13</sup> the only possible way to meet this increase in demand is through the rapid development of new sources of production.

The prospect for new oil discoveries and increased production, however, is uncertain. Global discovery of oil peaked in the 1950's, and has been in decline ever since.<sup>14</sup> The Federal Energy Information Administration (EIA) said recently in a report on peak oil that "all or nearly all of the largest oil fields have already been discovered and are being produced."<sup>15</sup> In the 1950's, oil producers discovered approximately 50 barrels of oil for every barrel invested in drilling and pumping. Today, even with improved technology, this number is close to 5 barrels discovered for every one spent.<sup>16</sup> A recent report by an energy consultancy group noted that the commercial value of oil and gas discovered over the past 3 years by the 10 largest companies is well below the amount they have spent on exploration.<sup>17</sup>

The London based Oil Depletion Analysis Centre (ODAC) recently completed a study of new production projects in the oil industry. They predict that outputs from all of the major new recovery projects scheduled over the next six years are unlikely to boost supplies enough to meet the world's growing demand. They also estimate that half of the new supply would simply replace declines from other fields due to natural depletion.<sup>18</sup>

## **A Perilous Peak**

The economic and social consequences of peak oil could be dire. Rising prices mixed with inelastic demand could trigger inflation, causing the Fed to aggressively raise interest rates. This reaction could chill the housing market and mortgage refinancing industries, which have been important sources of the post-9/11 economic recovery.<sup>19</sup> With globalization dependent on cheap fuel for the transportation of goods, there is the potential for a worldwide economic recession.

The effect of peak oil on the environment could be disastrous. David Goodstein, a physicist at CalTech warned in a recent interview, "If the peak comes and we can't get our act together fast enough to make up for it, you will end up with people all over the world burning coal as fast as they can just for the space heating and primitive industry. And if you do that the effect on the climate is completely unpredictable."<sup>20</sup>

Peak oil is also likely to create geopolitical turmoil. The US military is currently protecting or training local forces to protect oil fields in Iraq, Saudi Arabia, Kuwait, the UAE, Qatar, Bahrain, Colombia, and the Republic of Georgia.<sup>21</sup> One can imagine the tensions created when China is faced with the prospect of its rapid growth being stopped in its tracks.

However, through all of this doomsday talk, there are still those who say that technology and market forces will prevent disaster. Alan Greenspan recently said that anxieties about oil "are not frivolous, given the stark realities evident in many areas of the world." But the Fed chief rejected the possibility of peak oil, opining that technology will be able to ensure the needed oil will be supplied as long as technology has a "more supportive environment," referring to the ongoing need for adequate investments in oil discovery and extraction technology.<sup>22</sup>

The lack of recent discoveries of significant new oil sources makes this faith in technology seem overly optimistic. There is much talk about how technological improvements will allow for increases in total amounts of recoverable oil from current fields. But a recent analysis reported in the industry publication *Oil and Gas Journal*, suggests that even with remarkable improvements in recovery, peak oil would only be delayed by a few years.<sup>23</sup> Specifically, it is estimated that the peak is delayed one day for every billion barrels added to the estimated ultimate recovery.

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Furthermore, historical data belie the expectation that increases in economic and machine efficiencies will lead to lower use of oil. The amount of oil needed to generate one dollar of GDP has been cut in half over the past 30 years,<sup>24</sup> and during this time there have also been significant improvements made in the fuel efficiency of automobiles and appliances.<sup>25</sup> Yet despite these efficiency gains, we are more dependent on oil than ever.

Some energy analysts speculate that oil sands, which are abundant in the Alberta province of Canada, could provide oil for many years to come. But the process to extract the oil from the sands is expensive, time consuming, and has major negative environmental impacts.<sup>49</sup> Even with massive improvements in technology, the Canadian oil sands are only expected to produce 2.2 million barrels per day by 2015, approximately 2% of the total forecasted global demand for oil that year.

The specter of peak oil has hardly created a sense of urgency: indeed in the US, the topic is barely on the public's radar. "We need a wake-up call. We need it desperately. We need basically a new form of energy. I don't know that there is one," said Matthew Simmons, an energy advisor to President Bush, in a recent interview.<sup>26</sup>

According to the Bush Administration itself, however, an energy savior is on the horizon - hydrogen, the simplest element in the universe. Long ago visionaries like Jules Verne predicted that hydrogen-based energy would transform our way of life. Hydrogen has captured the minds of economists and environmentalists alike, who tell of how it can be produced from sunlight and water, providing a way for the world's energy usage to grow without compounding the problem of global warming.

These visions of a "hydrogen economy," popularized by futurists like Jeremy Rifkin are buoyed by a 5-year, \$1.7 billion initiative to commercialize hydrogen-powered cars by 2020.<sup>27</sup>

Can hydrogen spare us from the effects of peak oil?



## THE MYTH OF THE HYDROGEN ECONOMY

So much attention has been focused upon hydrogen because of its promise as a clean energy source, and the potential to

produce it domestically. Millions of dollars have been invested in R&D efforts aimed at bringing down costs associated with hydrogen fuel cells in hopes of making hydrogen an attractive alternative to oil. But a critical examination of the hydrogen energy sector reveals numerous hurdles that must be overcome before it is ready for mass consumption. The hydrogen economy may not become a reality until long after the detrimental effects of peak oil and global warming are upon us.

### Production and Transportation

The biggest challenge to a hydrogen based energy economy is the mass production of hydrogen gas. Though hydrogen is the most abundant element in the universe, there are few free hydrogen molecules on earth. The majority of hydrogen is currently produced from natural gas, itself a precious fossil fuel that is subject to volatile price fluctuations. The production process is very energy intensive, taking the equivalent of 6 gallons of gasoline to produce enough hydrogen to replace the energy in one gallon of gasoline.<sup>28</sup>

Hydrogen can also be generated through the electrolysis of water, but this too is an expensive process. If the energy for the electrolysis is not obtained from fossil fuels, it must come from other sources such as solar or wind power. Generating hydrogen with solar power is currently 10 times more expensive than doing so with coal.<sup>29</sup> "The energy in hydrogen will always be more expensive than the sources used to make it," said Donald Huberts, CEO of Shell Hydrogen at a hearing before Congress.<sup>30</sup>

Hydrogen also has major difficulties to overcome with regards to the volume required for hydrogen fuel tanks on automobiles. Hydrogen is a light gas, which means it must be compressed or liquefied prior to use as a vehicle fuel. Currently, the storage tanks on most of the prototype hydrogen vehicles are 4 times the size of a conventional gas tank.<sup>31</sup> This bulky size means more total vehicle weight, and less fuel efficiency.

Hydrogen transportation issues pose an even greater challenge. If the hydrogen is produced in plants and then shipped compressed by truck to fueling stations,

approximately 21 tanker trucks would be needed to haul the equivalent amount of energy carried by one gasoline filled tanker truck.<sup>32</sup>

Any of these issues could block the transition to a hydrogen economy. Solving them all at once, especially in time to stave off the coming peak oil crunch, seems highly unlikely. When asked to speculate as to when to expect to see large-scale use of hydrogen as a fuel, MIT physicist and former Undersecretary of Energy Ernest Moniz said, "Let's just say decades, and I don't mean one or two."<sup>33</sup>

### **Fuel Cells**

To extract the energy contained in hydrogen, it must be combusted directly with air, or combined with oxygen in a fuel cell. Burning hydrogen in an internal combustion engine is cleaner than burning fossil fuels, but offers no efficiency advantage over today's gasoline-electric hybrid technology. Hydrogen fuel cells do, however, hold the promise of greater efficiency and zero environmental impact. Because of these properties, millions of dollars have been spent on R&D devoted to making fuel cells a commercially viable technology.

Despite these efforts, vehicle-based fuel cells are still plagued by problems. The average life expectancy of a fuel cell is approximately 3-5 years, and a single fuel cell requires significant amounts of platinum, itself a precious and expensive metal.<sup>34</sup> While there have been recent improvements in reducing the amount of platinum needed for a typical fuel cell, and a Department of Energy study estimates that there is enough platinum available to meet future demand, the cost of fuel cells remains incredibly expensive. (A recent GM prototype hydrogen powered mini-van cost \$1 million).<sup>35,36,37</sup>

Even more sobering is the overall "well-to-wheel" efficiency of hydrogen production and subsequent use in fuel cell vehicles. For gasoline-powered vehicles, this efficiency level is approximately 14%. But the current well-to-wheel efficiency for fuel cell vehicles is low, ranging from 10-22%.<sup>38,39</sup> This is because the greater efficiency of fuel cells is only realized if the heat produced in the energy extraction process is put to productive use. A significant portion of the energy generated from a fuel cell exists in the form of heat. A stationary fuel cell system, such as one used to power buildings, can make use of this heat. A fuel cell powered vehicle, however, just throws it all away.

Though the hydrogen car prototypes (like the GM mini-van and the Hydrogen Hummer championed by Governor Arnold Schwarzenegger) are impressive, these expensive displays ignore the underlying problems facing the infant hydrogen fuel industry. The priority for politicians and policymakers should be to continue to increase funding for research into petroleum alternatives, including hydrogen, but this funding should be aimed primarily at basic research programs. It is wasteful and unproductive in the long-term to devote resources to large-scale demonstrations of technology that is clearly not ready for mass consumption.

Indeed, the argument could be made that using the energy needed to develop the infrastructure for the hydrogen economy could actually accelerate the onset of peak oil and natural gas. Taxpayer dollars would be better spent promoting energy efficiency and increased use of gasoline-electric hybrid vehicles. Conservation efforts will pay off in the long run by slowing the rate of the post-peak oil decline.

### **Energy Diversification and Government Policy**

The key to our energy future will not lie in one single area, but in a diverse array of energy technologies. This is true not only for hydrogen, but also for nuclear, coal, solar, wind, biodiesel, geothermal, and non-conventional petroleum energy sources. These technologies will all play a role in the future energy economy, but none of them alone can replace oil, and most need decades of investment in research and development before they are ready for mass consumption.

Energy diversification is the key to mitigating the consequences of peak oil. The biggest obstacle to diversification, however, is the wasteful government practice of subsidizing traditional energy sources. If policymakers are looking for solutions that increase energy independence, the first thing they must do is take their hands off the wheel and allow the market to work. Energy subsidies can significantly influence the timing of peak oil through their effect on energy use and their ability to influence the types of fuels that are used by consumers. A subsidy that reduces the price of a given energy source to end-users raises the demand for that source and the overall demand for energy. This can result in short-term social benefits, but will inevitably entail economic and long-term sustainability costs.<sup>40</sup>

Currently, approximately 95% of US energy subsidies support traditional sources of energy, such as oil, natural gas, coal, and nuclear energy.<sup>41</sup> Removing these subsidies

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## Peak Oil - continued

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may have long-term benefits, by forcing consumers to pay the true costs of the energy that they use, decreasing consumption and increasing demand for renewable alternatives.

The goal of energy diversification can be achieved through a combination of careful government intervention and the unleashing of market forces that encourage innovation and competition. Removing subsidies that disguise the true costs of fossil fuels and enacting subsidies that promote the research, development, and use of alternative energy technologies should be a top priority of policymakers.

President Bush and Governor Schwarzenegger's hydrogen initiatives show politicians are thinking about energy issues, but their hopes for a quick fix are misguided. They should encourage policies that stress energy conservation and reduction of carbon emissions in the short-term, and fund research efforts aimed at creating a diverse energy economy in the long-term. The potentially devastating effects of peak oil can only be mitigated by economic and energy policies that encourage and reward energy diversification strategies.

### Endnotes

<sup>1</sup> Benner, Katie. "Oil: Is the end at hand?" *CNN Money* 3 Nov. 2004. [http://money.cnn.com/2004/11/02/markets/peak\\_oil/](http://money.cnn.com/2004/11/02/markets/peak_oil/)

<sup>2</sup> Trench, Cheryl J. *Oil Market Basics*. Department of Energy, Office of Oil and Gas, Energy Information Administration. [http://www.eia.doe.gov/pub/oil\\_gas/petroleum/analysis\\_publications/oil\\_market\\_basics/Demand\\_text.htm](http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/oil_market_basics/Demand_text.htm)

<sup>3</sup> *Annual Energy Review*. Department of Energy, Office of Oil and Gas, Energy Information Administration. <http://www.eia.doe.gov/emeu/aer/txt/ptb0501.html>

<sup>4</sup> Ibid.

<sup>5</sup> For an excellent discussion on oil production and peak oil see Heinberg, Richard *The Party's Over* (2003), New Society Publishers

<sup>6</sup> Bob Williams; *Oil & Gas Journal*; July 14<sup>th</sup> 2003, p. 18

<sup>7</sup> Campbell, Colin J. *Oil and Gas 2004 Scenario*. 15 Mar. 2004. Association for the Study of Peak Oil and Gas. <http://www.peakoil.net/uhdsg/Default.htm>

<sup>8</sup> Benner, Katie. "Oil: Is the end at hand?" *CNN Money* 3 Nov. 2004. [http://money.cnn.com/2004/11/02/markets/peak\\_oil/](http://money.cnn.com/2004/11/02/markets/peak_oil/)

<sup>9</sup> Sadad I. al-Husseini; *Oil & Gas Journal*; August 2<sup>nd</sup> 2004, p.14

<sup>10</sup> Kemp, Peter, David Knapp, and Matthew Piotrowski. "IEA Urges Governments Worldwide to Rethink Energy Policy." *International Oil Daily* 27. Oct. 2004. <http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectID=11034>

<sup>11</sup> Curbow, Steven W. "Observations on Oil." *Independent Thought*. 2004. [http://www.independence.com/resource/independent\\_thought/IIITNS%204Q%202004%20final.pdf](http://www.independence.com/resource/independent_thought/IIITNS%204Q%202004%20final.pdf)

<sup>12</sup> Benner, Katie. "Oil: Is the end at hand?" *CNN Money* 3 Nov. 2004. [http://money.cnn.com/2004/11/02/markets/peak\\_oil/](http://money.cnn.com/2004/11/02/markets/peak_oil/)

<sup>13</sup> Gever, John. *Beyond Oil*. University Press Colorado. 1991: p.14

<sup>14</sup> Boxell, James. "Top Oil Groups Fail to Recoup Exploration Costs." *The New York Times*. 10 Oct. 2004. [http://www.nytimes.com/financialtimes/business/FT20041010\\_7135\\_200375.html](http://www.nytimes.com/financialtimes/business/FT20041010_7135_200375.html)

<sup>15</sup> Skrebrowski, Chris. *New Oil Projects Cannot Meet World Needs This Decade*. Oil Depletion Analysis Center. 16 Nov 2004. <http://www.odac-info.org/bulletin/documents/MegaProjRelease16-11-04.pdf>

<sup>16</sup> Aversa, Jeannine. "Economy grows at a 4.1 percent rate in final quarter of 2003, slightly better than first estimated." *San Diego Daily Transcript*. 3 Mar. 2004. <http://www.sddt.com/reports/2004/03/moneytalks/tj.cfm>

<sup>17</sup> Braiker, Brian. "Crude Awakening." *Newsweek*. 17 Feb. 2004. <http://www.msnbc.msn.com/id/4287300/>

<sup>18</sup> Klare, Michael T. "Growing Militarization of Our Oil Dependence." *The Boston Globe*. 12 Oct. 2004. [http://www.boston.com/news/globe/editorial\\_opinion/oped/articles/2004/10/12/growing\\_militarization\\_of\\_our\\_oil\\_dependence/](http://www.boston.com/news/globe/editorial_opinion/oped/articles/2004/10/12/growing_militarization_of_our_oil_dependence/)

<sup>19</sup> See endnote 1 and Greenspan, Alan. Address. National Italian American Foundation. Washington, DC. 15 Oct. 2004. <http://www.federalreserve.gov/boarddocs/speeches/2004/200410152/default.htm>

<sup>20</sup> Richard C. Duncan; *Oil & Gas Journal*; July 19<sup>th</sup> 2004, p.18

<sup>21</sup> "National Energy Policy." White House, National Energy Policy Development Group. May 2001. <http://www.whitehouse.gov/energy/National-Energy-Policy.pdf>

<sup>22</sup> Department of Energy, Energy Information Administration. *Annual Energy Outlook 2005*. Feb. 2005. <http://www.eia.doe.gov/oiaf/aeo/demand.html>

<sup>23</sup> *State of Fossil Fuels*. 19 Nov. 2004. The University of Maine: Environmental Sustainability Project. [http://www.umaine.edu/sustainability/Program\\_Content/fossil%20fuels.htm](http://www.umaine.edu/sustainability/Program_Content/fossil%20fuels.htm)

<sup>24</sup> Service, Robert F. "The Hydrogen Backlash." *Science Magazine*. 13 Aug. 2004: 958-961. <http://www.sciencemag.org/cgi/content/full/305/5686/958>

<sup>25</sup> Braiker, Brian. "Crude Awakening." *Newsweek*. 17 Feb. 2004. <http://www.msnbc.msn.com/id/4287300/>

<sup>26</sup> Service, Robert F. "The Hydrogen Backlash." *Science Magazine*. 13 Aug. 2004: 958-961. <http://www.sciencemag.org/cgi/content/full/305/5686/958>

<sup>27</sup> Ibid.

<sup>28</sup> Ibid. Also see Turner, John A. "Sustainable Hydrogen Production." *Science Magazine*. 13 Aug. 2004: 972-974. <http://www.sciencemag.org/cgi/content/full/sci:305/5686/972>

<sup>29</sup> Douthwaite, Richard, ed. *Before the Wells Run Dry*. <http://www.feasta.org/documents/wells/contents.html?two=panel2.html>

<sup>30</sup> Service, Robert F. "The Hydrogen Backlash." *Science Magazine*. 13 Aug. 2004: 958-961. <http://www.sciencemag.org/cgi/content/full/305/5686/958>

<sup>31</sup> Moore, Bill. "Mister Practical: The Honda EV Plus." *EV World*. <http://www.evworld.com/view.cfm?section=article&archive=1&storyid=93>

<sup>32</sup> "Platinum Supplies Sufficient to Meet Fuel Cell Demand." *Platinum Today*. 28 Jan. 2004. [http://www.platinum.matthey.com/media\\_room/1075294803.html](http://www.platinum.matthey.com/media_room/1075294803.html)

<sup>33</sup> "Towards A Hydrogen Economy", Energy Info Source, June 2004

<sup>34</sup> Wald, Matthew L. "Questions about a Hydrogen Economy." *Scientific American*. May 2004.

<http://www.sciam.com/article.cfm?articleID=000600B1-1A4E-1085-94F483414B7F0000>

<sup>35</sup> United Nations. International Energy Agency. *Reforming Energy Subsidies*. 2002. <http://www.iea.org/dbtw-wpd/textbase/papers/2002/reforming.pdf>

<sup>36</sup> *Facts About United States Energy Consumption*. Coalition for Environmentally Responsible Conventions Energy Committee. <http://www.cerc04.org/kit/cercEnergyCmt615.PDF>



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# A Response to "Peak Oil . . ."

by Jon Malen

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**ESTIMATES OF THE** proven oil supply vary substantially, and have been historically unreliable. In 1970 the non-OPEC reserves were estimated at 200 billion barrels. Since then they have produced 460 billion barrels and now estimate 209 billion barrels remaining. OPEC's proven reserves were estimated at 412 billion, of which they've produced 307 billion, and now estimate 819 billion are left.<sup>1</sup> Why are the estimates so far off? S.D. Turner suggests that oil wells are considered dead when "it takes more energy to extract the oil than the energy potential of the oil itself." Instead, the decision is economic—the well is dead when the cost of extracting the next barrel of oil equals that that it can be sold for in the marketplace. The proven reserves are those quantities in known reservoirs that can be profitably extracted under existing economic and operating conditions, not the total quantity in the ground.<sup>2</sup> Hence, peak oil depends jointly on the quantity that remains in the ground, and the price people are willing to pay for the next gallon of oil. There is not an endless supply of oil on the earth, but we can continue to delay peak oil by our willingness to pay an increased price. Even with this uncertainty, it is surprising that Sadad al-Husseini claims that the US Energy Information Agency (EIA) predictions of oil reserves are "4 times their current reported values," when BP estimates of the proven US reserve are 40 percent higher, and USGS estimates of the probable US reserve are nearly 900 percent higher than the EIA prediction.<sup>3,4,5</sup>

The transportation sector relies almost entirely on oil, and in the interest of conservation, policy makers should transition oil out of more flexible markets, such as electricity generation. Proven near term alternatives for electricity generation include natural gas, coal, and nuclear fission, which currently supply 25, 25, and 7 percent of global energy respectively,<sup>6</sup> and world reserves of these resources can support further demand. MIT professors speculate that there is enough uranium to fuel the existing 366 nuclear plants plus 1000 additional plants for the next 50 years, free of carbon dioxide emissions.<sup>7</sup> Advanced breeder reactors could extend the lifetime of nuclear energy to many hundreds of years.<sup>8</sup> US conservation can also be enhanced by improving the fuel efficiency of automobiles using stricter CAFE standards afforded by electric hybrids and natural gas vehicles.

Fossil fuels are a source and a storage medium for energy, while renewables like solar, wind, and hydro require an economic means for storing energy. Without the capacity

for storage there is often a mismatch between when and where renewables are available, and when and where the energy is required. The "hydrogen economy" simply refers to a solution to this problem using hydrogen as a medium for energy storage. Hydrogen offers a very high energy to weight ratio, can be produced from widespread sources, and is cleanly and efficiently converted to electricity by fuel cells (FC). Turner points out that the production of hydrogen from fossil fuels is inefficient, but neglects the serial gains in generating electricity with a fuel cell (FC) rather than an internal combustion engine (ICE). Natural gas ICEs in vehicles are at best 20-25 percent efficient (i.e., the ratio between electrical output and stored energy within the natural gas). On the flip side, converting natural gas to hydrogen is 60-70 percent efficient, and extracting the energy from the hydrogen with a fuel cell is 40-50 percent efficient, leading to a net efficiency of 24-35 percent.<sup>9</sup> Hence, the efficiency in generating usable electricity is comparable. The long-term holy grail of the "hydrogen economy" is using renewables or the heat of nuclear fission to produce hydrogen, which can ultimately deliver the energy wherever and whenever we'd like it.

Environmentalists concerned more with carbon dioxide emissions than oil reserves may be using the uncertainty of peak oil as a tool to reduce environmental risk. Oil crisis or not, the result of these added concerns has been investment in energy research, which is a byproduct that everyone can live with.

## Endnotes

<sup>1</sup> Adelman, M. A. The Real Oil Problem. *Regulation*, Spring 2004, 16-21.

<sup>2</sup> BP Statistical Review of World Energy, June 2004

<sup>3</sup> *ibid.*

<sup>4</sup> U.S. Geological Survey World Petroleum Assessment 2000

<sup>5</sup> Energy Information Administration U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2003 Annual Report

<sup>6</sup> Salameh, M.G. Can renewable and unconventional energy sources bridge the global energy gap in the 21<sup>st</sup> century? *Applied Energy*, 75 (2003) 33-42.

<sup>7</sup> *Future of Nuclear Power: An Interdisciplinary MIT Study* (2003), available at <http://web.mit.edu/nuclearpower>.

<sup>8</sup> E. Teller, *Memoirs: A Twentieth-Century Journey in Science and Politics*, Perseus, Cambridge, MA (2001), p.565.

<sup>9</sup> Rand, D.A.J, and Dell, R.M. The hydrogen economy: a threat or an opportunity for lead-acid batteries? *Journal of Power Sources*, Article In Press 2004.

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# Guest Worker Programs: A Look Back before Moving Forward

by Garance Burke

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**ELECTED OFFICIALS WHO** are interested in creating special immigration programs for guest workers should consider the lessons of U.S. history. In his State of the Union address, President George W. Bush announced plans to reform immigration by creating a program that “permits temporary guest workers to fill jobs Americans will not take.” The complex issues highlighted by President Bush’s proposal – the rights of non-citizen workers, the inefficiencies of the agricultural industry, and the uneasy relationship between the U.S. and Mexico – have no easy solution. In fact, policymakers have been trying to create a viable guest worker program since World War II.

In 1942, the U.S. government began recruiting millions of rural Mexican men for an experiment called the Bracero Program, a temporary labor agreement that supplied farms and railyards with seasonal workers while young Americans were off fighting World War II. Before machines picked almonds, several million *braceros* – literally, “working arms” – helped build California’s Central Valley into an agricultural powerhouse and staffed other major government works projects.

Under a chief provision of the Bracero Program, the U.S. and Mexican governments withheld 10 percent of the *braceros*’ wages to finance their retirement. Wells Fargo, as the designated financial intermediary, wired the money to a state-run bank in Mexico. Archival records from the country’s Interior Ministry suggest those checks could have lined the pockets of corrupt officials, or simply disappeared due to mismanagement.

Lawyers estimate the men collectively are owed \$500 million in wages and interest – money a class-action lawsuit introduced on their behalf aimed to recover in U.S. courts. Two years ago, Federal District Court Judge Charles Breyer struck down the case on the grounds that its statute of limitations had passed. But Breyer’s ruling upheld the claim that millions of dollars in retirement funds had vanished – and that both governments knew about it.

Sixty years later, as momentum builds to start up a new guest worker program, the former *braceros* have become a political force on both sides of the border, and their movement is now 200,000 grandfathers strong. Pressured by protests, the Mexican government acknowledged receipt of the *braceros*’ pension payments and proposed to dole out \$10,000 checks to registered surviving *braceros* or their families. In part due to the growth in high-value, labor-intensive crops

such as almonds, pistachios, and specialty fruits, California’s agricultural industry now generates nearly \$28 billion in annual revenue. In California, the number of farm workers has grown nearly threefold in the past forty years to an estimated 1.1 million, according to a 2004 report in the journal *California Agriculture*.

Now, as Congress considers overhauling current immigration programs to allow today’s guest workers to earn their way toward citizenship, the *braceros*’ legacy is all the more important. The major sticking point is finding a political compromise that would simultaneously “fix” the country’s lax immigration oversight and provide workers with a set of basic rights and protections.

Harvesting fruits and vegetables is a job that is ranked among the three most dangerous in the country. Workers typically suffer from heat exhaustion, dehydration, pesticide exposure and on-the-job injuries from operating heavy machinery. Attempts to find a formula that would strike a fair balance between agricultural employers’ needs for a reliable labor supply and Mexican workers’ needs for a legally enforceable contract, safe working conditions, and a wage that would improve their families’ well-being has created a Congressional logjam.

Jesús Espinosa knows this story first hand. For 40 years Espinosa traveled alone through the Central Valley as a farm worker, stopping to pick cherries in Stockton, working weeks in the beet fields in the Northern Sacramento Valley. But one morning last summer, the 64-year-old filled his car with other former *braceros* to attend a political summit in Fresno in California’s central valley. That day, the three men left their homes early to drive down I-5, hoping to secure the pensions they are rightfully owed.

“There’s not an inch of land I don’t know in these fields,” said Espinosa, pointing at rows of corn and cotton near Los Banos, on the southern tip of Merced County. “But our money disappeared, and with it so did our dignity.”

Unless their class-action suit is successful in coming court proceedings, many of the 20,000 *braceros* growing old in California have only the wages they earn from picking fruit as their pension.

Rodolfo Ferreira, for one, is still doing the job he first had as a guest worker in 1953, scaling ladders to pick peaches, now making \$14 per box. He needs that money to pad the \$200 a month he gets in Social Security earnings for work he did here when his status as a guest worker ended, in 1964.

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“I’ll do this until my body gives out,” said Ferreira, 72, who lives in a trailer outside Marysville.

Espinosa, too, says after 40 years of picking, he can just afford to pay \$100 rent to share an apartment in Corning, a small farm town north of Sacramento.

Like many *braceros*, Espinosa crisscrossed the United States meeting growers’ seasonal demand for labor. A native of the state of Jalisco, Mexico, he first made the trek to the United States in 1957, where he was assigned to pick lettuce in Salinas, an agricultural city alongside the Monterey Bay. A series of small Central Valley hamlets followed. In 1958, he harvested pears in Fairfield, and the same year, renewed his contract with the U.S. government to pick almonds in Winters. 1959 was Yuba City. 1960, Fresno.

While Espinosa’s reading and writing are limited in Spanish and English, he knows the earth in the Central Valley as if it were his own. Where most drivers see turnoffs and rest stops, Espinosa sees where farmers have decided to harvest potatoes by hand, where field hands have let weeds crawl up corn plants, where trees heavy with peaches need to be picked.

He and the other two former *braceros* traveling to Fresno saw not sprouting suburbs and geometric rows of something green, but cotton and sugar beets, bringing back memories of sweat and friendships and makeshift work camps.

As Espinosa approached Tracy, on the San Joaquin River Delta, passenger Javier De Dios, 68, exclaimed: “Look, the beets are growing high.”

“What I remember is picking tomatoes in Dixon,” said Espinosa, squinting into the sun so the furrows around his eyes looked like rivers. “We used to get 8 cents for every case we picked.”

“We would get up at 5 a.m. when they rang the bell,” De Dios said. “It went on for months.”

De Dios completed four contracts with the U.S. government as a *bracero*. But by the mid-1960s, the advent of new farm machinery, such as front-loader tractors and the tomato harvester, mechanized him out of a job.

He spent several decades in Michoacán, working illegally in the United States whenever he needed money to support his 13 children. In 1999, he moved back to Sacramento, this time as a legal resident. And at age 62, he

joined his sons, who were building new subdivisions.

Two years ago, De Dios got a hernia lifting a piece of sheer wall on a construction site, putting an end to his mobility and therefore his employment. Now, living on \$167 a month in disability payments from the construction company, De Dios is still waiting for the retirement security he was promised.

The cause of De Dios and others like him has been taken up by Alianza Braceroproa, one of two major community-based organizations that has made the former guest workers’ plight a binational agenda item. Outside the Mexican supermarket in Fresno, hundreds of elderly men filed off buses from Coachella and Tijuana to rally for their cause.

Though the movement has split and lost momentum several times, the group has gradually developed a political strategy that seems to have worked in Mexico - sending 4,000 gray-haired men to storm the broccoli fields of President Vicente Fox last March got his, and everyone else’s attention. Fox granted the *braceros* immediate health benefits, and the Mexican Congress formed a special commission to dispense the \$10,000 checks, which gained a two-thirds majority approval as part of the budget vote in mid-November 2004.

While political will for a solution may be building in Mexico City, President Fox seems in no hurry to resolve the issue. Last December, the Mexican Congress approved a \$27 million package to repay the former guest workers, but Fox vetoed the fund’s inclusion in the 2005 budget, even as he hammered out negotiations for a new guest worker program in Washington.

This brings the issue back to square one. How can the U.S. undertake another guest worker program with little guarantee that the workers would be treated any better? Conditions in the fields are so dreadful that last year Oxfam America, an international economic development organization, pointed out the obvious: “Documented or not, farmworkers are human beings.”

In 1964, the *bracero* program was abolished when its failures could “no longer be reconciled with civil-rights era sensibilities about how people should be treated in a democratic society,” wrote former INS Commissioner Doris Meissner in a recent analysis of new guest worker proposals.

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The dissolution of the program did not affect the demand for farm labor. As Mexico underwent a string of economic crises, migrant families - some the children of *braceros* - continued to make their way north, settling in familiar towns where the older generation had once picked fruit.

President Bush's current proposal would grant temporary legal status to some of the undocumented migrants integral to fieldwork across the United States, and in doing so, would create a new class of qualified guest workers. It would not provide the sweeping amnesty many immigrant groups were hoping for, however. Bush said creating a program in which foreign workers can enter the country legally would take pressure off Border Patrol agents, whose priorities have shifted since their duties were included in the newly formed Department of Homeland Security.

While the program would give current undocumented workers a way to earn temporary work permits, it lacks any new measures to enforce sanctions on employers who continue to hire Mexican workers without papers. The proposal includes no oversight mechanism to ensure labor conditions are respected over time, nor does it give migrants any incentive to come out of the shadows. Indeed, of the 850,000 farm workers estimated to be working in California today, only 971 are doing so under a legal guest worker program, according to the Department of Labor.

For a template of a relatively well-managed guest worker program, however, we need only look across our border in the opposite direction. In Canada, the Seasonal Agricultural Workers Program employed nearly 11,000 Mexicans last year, who tended everything from tomatoes to tobacco. The Canadian model's structured recruiting, screening and contracting procedures, which connect workers with employers and spell out housing, transportation and pay conditions, have allowed it to expand and prosper. Agricultural producers in Canada can meet their labor needs with reliable workers during peak labor demand periods, while workers can earn wages much higher than those in their home countries. That said, some of the most intractable problems with guest worker programs - poor health guarantees, a regressive tax structure, faulty labor protections - remain. Furthermore, managing a program on the Canadian scale is one thing, but grappling with the 600,000 workers

who could qualify for a U.S. program seems an even more daunting task.

In the last year, growers and farm worker activists have crafted a compromise guest worker bill, called AgJobs, which would allow Mexican workers who are already in the United States to qualify for permanent resident status if they did at least 360 days of farm work over six years. The bill would allow guest worker contracts to be legally enforced and require employers to pay the "prevailing" local wage or the minimum wage, whichever is higher. Of the reform proposals on the table AgJobs looks particularly viable. "There are no alternatives that can become law," said María Echaveste, former Clinton deputy chief of staff said last year while testifying before the House of Representatives last year. "They have been considered and rejected during eight years of conflict."

Though the effort met an impasse in Congress last session, Senators Larry Craig (R-ID) and Ted Kennedy (D-MA) reintroduced the bill in early February 2005. Particularly as both Democrats and Republicans vie to capture a larger piece of the Latino vote, an efficient new formula for immigration policy could have major political ramifications.

Yet even as Congress deliberates over the new proposals, the history of the Bracero program demonstrates that unless guest worker programs include realistic and enforceable oversight mechanisms, unfair terminations and civil rights violations will continue to go underreported. As written, the AgJobs bill promises better interagency collaboration, but it still lacks safeguards for workers' rights. Until the U.S. and Mexican governments can apply the lessons of the past toward finding an actionable solution, there is little to ensure that the latest guest worker proposals will be more efficient or equitable than their predecessors.

Finally, if former *braceros* are being denied millions of dollars in pension funds they are justly owed, what does that imply for the future of the next guest worker program? History would instruct that if Fox and Bush are willing to press forward without first settling the *braceros'* unresolved claims, labor advocates will be suspicious of laws that do little to build public trust in the government's competence to manage guest worker programs.

Even as Espinosa and De Dios focus on a resolution of their own claims, they are not opposed to the idea of a

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## *Guest Worker Programs - continued*

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new Bracero program, so long as it ensures just treatment for the pickers already here.

On the ride back home from Fresno, the veteran *braceros* passed a sign outside Lathrop proclaiming that “Farm Water Feeds America.” Espinosa napped in the orange sunlight that illuminated the back seat. De Dios turned nostalgic for horses he once rode in Michoacán, and bemoaned how when he sits in his North Sacramento home, he wishes he still felt useful.

“I’m not afraid of work,” he said. “We were born from work, and we’ll die working.”

*For more information on Doris Meissner’s analysis, see <http://www.migrationinformation.org/USfocus/display.cfm?ID=205>.*

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# Condominium Conversion Laws and the Berkeley Housing Market

by Erika Weissinger

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**THE \$660,000 MEDIAN** home price in California means that doctors and lawyers, not just teachers and firefighters, are being priced out of the market. Condominium conversion and Tenancies in Common (TICs) are viewed by many as a creative way of increasing options for moderate-income individuals wishing to purchase an entry-level home. For others, these forms of ownership are a threat to low-income renters since they diminish the supply of affordable housing by removing rental units from the market. In an effort to protect low-income renters, local jurisdictions limit the number of properties that can be converted to TICs or condominiums, much to the frustration of prospective homebuyers.

In coming months, these tensions are likely to heat up in light of a California appellate court's recent ruling in *Tom v. City and County of San Francisco* which held that certain condominium and TIC restrictions are unconstitutional. The *Tom* ruling found that TIC restrictions violate the rights of private property owners by depriving them of their constitutional privacy interest in choosing the type of property they wish to own as their personal residence and in selecting the owners and occupants of such property. This decision could result in sweeping changes in TIC and condominium conversion policy throughout the state of California, and in Berkeley in particular.

## Background on TICs and Condominiums:

### The Appeal and the Drawbacks

Due to the rising costs of homeownership over the past decade, many homebuyers have pooled their funds to acquire multi-unit buildings as TICs. They then make agreements among themselves to give each owner an exclusive right of occupancy in a particular dwelling unit within the overall property. The multiple owners generally hold a common loan, and the property has only one title.

TICs can become cumbersome when one of the owners wishes to exit the TIC, since the other tenants may not be able to take on the additional share of the loan. It can also be difficult to find a buyer to take over a share of a TIC—financing can be complicated, and the legal structure can be daunting. Therefore, most TIC owners have the goal of converting their units to condominiums. Unlike TICs, condominiums enable each owner to have their own title and their own loan.

In the U.S., nearly four million existing condominiums will be sold this year, a thirty percent increase from three

years ago (RealFacts.com). Supply- and demand-side pressures have created a movement to convert single-family homes, duplexes, and apartment buildings into condominiums. Many first-time homebuyers seek an affordable way of entering the market. Baby-boomers seek lower-maintenance retirement residences. Low interest rates and the rapid appreciation of real estate further increase demand. On the supply side, owners can sell properties at a higher profit as condominiums than as intact buildings. In many markets, the demand for entry-level houses far exceeds the supply, so condominiums can yield a high return for sellers. In communities with rent control or flat rents, owners are often better off selling their properties than continuing to operate them as rental units.

## The Controversies Surrounding Condominium Conversion

Policies that limit TIC creation and condominium conversion pit low- and moderate-income groups against each other. Low-income housing advocates want to keep the supply of rental units up and the cost of rent down. They contend that low-income tenants are directly displaced through evictions preceding condominium conversion and indirectly displaced by the rise in rents caused by the reduction in supply of rental units. Yet since condominiums are the only affordable housing option for many moderate-income people who wish to become homeowners, many would like to see an increase in the condominium supply. Landlords express frustration about restrictive condominium conversion and TIC laws since they limit property owners' autonomy over when and how they can sell their buildings. Under the *Tom* decision, these restrictions may be more than just frustrating—they may also be unconstitutional.

The controversies surrounding condominium conversion are well encapsulated by James Kelekian, the Executive Director of Berkeley's Rent Stabilization Board: "In my professional capacity, I oppose condominium conversion since it diminishes the supply of housing for low-income renters. But on a personal level, my partner is a teacher, and we bought our home 13 years ago. If we hadn't bought then, there's no way we could afford to enter the market today."

In a city where the cost of buying a house is as high as it is in Berkeley, it is hard to imagine homeownership as an option for low- and moderate-income renters. Yet some argue that if more units were made available, the cost of housing could go down such that the cost of mortgage

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In a city where the cost of buying a house is as high as it is in Berkeley, it is hard to imagine homeownership as an option for low- and moderate-income renters. Yet some argue that if more units were made available, the cost of housing could go down such that the cost of mortgage would be lower than the cost of rent. Under this line of reasoning, condominium conversion could actually benefit low-income tenants by making homeownership a more viable possibility.

### **Berkeley as a Case Study**

Although many communities have legislation that protects low-income renters from the exigencies of the rental market, Berkeley's rent control law has historically been among the most restrictive. Berkeley's affordable housing policies were "intended to protect Berkeley's character as an intellectual and artistic community, enabling people who spent their lives in low-paying research, writing, and other artistic pursuits to continue to pursue their dreams in Berkeley," (Barton, p. 91). Berkeley's progressive policies can be attributed in part to the political will resulting from a high population of renters relative to home owners. In 2000, 57 percent of the city's households were tenants.

Rent control benefited tenants by keeping rents low, but it also had unintended consequences, many of which resulted in a reduction in the supply of affordable housing. Due to rent ceilings imposed by Berkeley's rent control laws, many owners found that selling their properties was more profitable than continuing to own and operate their units as rentals. From 1980 to 1990, a period of strong rent control in Berkeley, the U.S. Census reported that the number of units rented in Berkeley declined from 27,821 to 24,512, a loss of 3,309 units. Berkeley's restrictions on TICs and condominium conversion were created in this same time

period since policymakers wanted to stop the bleeding and preserve as many rental units as possible.

### **Berkeley's Condominium Conversion Laws**

Between 1980 and 1992, there was a ban on all condominium conversion in Berkeley. During that period, homebuyers found a way around the ban by purchasing property as TICs. About 1,200 local rental units were converted to TICs during the ban, representing a significant fraction of the total loss of rental units in the 1980s.

In 1992, the City of Berkeley lifted the ban on condominium conversion for TICs formed prior to August 20, 1992. TICs formed after that date are permitted to convert to condominiums if certain criteria are met. However, the policy bans formation of TICs on properties with four or more units, and the costs of conversion are prohibitive for many TICs and homeowners. Therefore, for many, the conversion ban is still effectively in place. All told, condominium conversion is a complicated, expensive, and time-consuming process.

Section 21.28.020 of Berkeley's policy on converting existing rental housing and existing lawful TICs to condominiums describes the intent of the legislation as follows: "To maintain an adequate supply of affordable housing to low-income residents; To avoid displacement of and undue hardship to residents of the City who may be required to move from the community due to a shortage of low-income housing." The policy goes on to state that the City Council finds that there is a reasonable relationship between the conversion of existing residential units into condominiums and the diminution in the supply of affordable housing to low income families.

However, some argue that certain restrictions infringe upon the rights of owners and prospective owners and serve no higher purpose in terms of protecting low-income renters. According to John Gutierrez, a prominent Berkeley attorney who specializes in TIC and condominium conversion, most of his clients are seeking to convert properties that have been out of the rental market for an extended time period and will continue to be out of the rental market whether or not they are

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***Policies that limit TIC creation and condominium conversion pit low- and moderate-income groups against each other.***

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converted to condominiums. From Gutierrez's standpoint, there are circumstances under which condominium conversion would not diminish the supply of affordable housing for low-income tenants, yet Berkeley's current policy on the matter does not make sufficient allowances for this possibility. In the words of Gutierrez, "I think Berkeley's policies are ham-fisted and overbroad—not unlike the Reagan-era policy of 'just say no' to premarital sex."

### **Implications of Liberalizing TIC and Condominium Conversion Laws**

Under the *Tom* decision, Berkeley's restriction on creating TICs in buildings with four or more units may be unconstitutional. Depending on how Berkeley policymakers interpret the *Tom* case, this change could have major implications for Berkeley owners, tenants, and prospective homebuyers. Some tenants might be presented with the opportunity to buy their units from landlords eager to sell, as was the case in the 1980s. Renters whose incomes are too low to purchase their units would be exposed to the risk of eviction. Entry-level homebuyers could stand to benefit since they could enter into TIC agreements with other buyers to purchase formerly unattainable multi-million dollar apartment buildings. On the other hand, many buyers who enter into TICs experience regret once the complications of joint ownership set in. This could lengthen the list of TICs begging Berkeley's Housing Authority to allow them to convert to condominiums.

Liberalizing condominium and TIC conversion laws could induce some owners who are holding their properties vacant to enter the market. Since condominiums and TICs can fetch a higher price than intact multi-unit buildings, more owners might find it worthwhile to sell. This would increase the available housing stock overall, and could benefit low-income renters since moderate-income renters would transition into homeownership, thus freeing up their units. However, the same forces that induce property owners

who are holding their units vacant to sell could also induce landlords to evict their tenants and sell.

An important question is, if TIC owners were granted permission to convert their properties to condominiums, would this alter their behavior in terms of selling their units? The complexities associated with exiting TICs may cause some TIC owners to prolong their stay in the TIC longer than they otherwise would. Liberalizing the condominium conversion policies might enable individuals in this situation to exit. Also, since properties generally appreciate considerably once they are converted to condominiums, TIC owners might be more motivated to sell. Since condominiums are proportionally a more common form of rental than TICs, in the long run, the turnover may result in a transition of the property back onto the rental market, ultimately benefiting renters.

### **Future Directions for Berkeley's Condominium Conversion Legislation**

Concerns that Berkeley's TIC and condominium conversion policies are too restrictive are being increasingly recognized among Berkeley policymakers. According to Steve Barton, Berkeley's Housing Director, the *Tom* decision has precipitated the need to revamp Berkeley's TIC and condominium conversion policy on constitutionality grounds. Even without the *Tom* decision, Berkeley city councilmembers including Laurie Capitelli and Gordon Wozniak have pointed out that since median rents are down and home prices are up, maybe it's about time to allow more units to convert.

For advocates like John Gutierrez, the anticipated changes are a step in the right direction. According to Gutierrez, "The decision in the *Tom* case and its legal precedents stand for the principle that under the federal and state constitutions, people have the unfettered right to choose the type of property and form of ownership and occupancy their personal residences, a penumbra of the right to privacy. Berkeley's approach to restricting this right is just wrong."



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## Condominium Conversion - continued

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Mike Rawson, founder of the California Affordable Housing Law Project, cautions that cities should not be too hasty in responding to the *Tom* decision. According to Rawson, "Local governments tend to jump to conclusions without thinking things through. Many protections for low-income tenants are still constitutional, including requiring landlords to provide relocation assistance for low-income tenants who are evicted under the Ellis Act and requiring owners who convert properties to condominiums to replace units with affordable housing elsewhere in the city."

While many affordable housing advocates are fearful that the *Tom* decision will have negative implications for low-income tenants, the decision could also be a harbinger of positive change for all interest groups involved. One proposal under discussion in Berkeley is to decrease the conversion fees to less onerous levels and use the funds collected to finance the construction of new affordable units. Another proposal is to allow a number of conversions to take place that is commensurate with the number of new affordable units that have been constructed on an annual basis. These proposed solutions may be win-wins for affordable housing advocates as well as prospective homeowners since they serve to increase the entry-level housing product while simultaneously protecting low-income renters.

### References

Gellen, Martin and Hanson, Marilee. 1983. "Tenant Displacement Experience in Condominium Conversion," Berkeley: Institute of Urban and Regional Development, U.C. Berkeley, Working Paper no. 409.

Harvard Law Review, June 1988. "Reassessing Rent Control: Its Economic Impact in a Gentrifying Housing Market," 101 Harvard Law Review 1835.

Keating, Dennis. 2003. "Comment on Chester Hartman and David Robinson's 'Evictions: The Hidden Housing Problem.'" Housing Policy Debate Volume 14, Issue 4. Fannie Mae Foundation

Keating, D., Teitz, M., and Skaburskis, A., 1998. *Rent Control: Regulation and the Rental Housing Market*. New Jersey. Center for Urban Policy Research.

McCloud, John. 1992. "The Revolution will be Subdivided: Economic Reality Makes Berkeley Lift its 11-Year Ban on Condominium Conversions," *California Lawyer*. Vol. 12, no. 11.

Wyly, Elvin K., Hammel, Daniel J. 1999. "Islands of Decay in Seas of Renewal: Housing Policy and the Resurgence of Gentrification," Housing Policy Debate, Volume 10, Issue 4. Fannie Mae Foundation.

### Interviews

Barton, Stephen. Personal Interview. 11/19/2004

Gutierrez, John. Personal Interview. 11/14/2004

### Websites

<http://www.realfacts.com/862004.html> August 6, 2004 Condo Conversions

[http://www.nreionline.com/mag/real\\_estate\\_condo\\_craze\\_leads/](http://www.nreionline.com/mag/real_estate_condo_craze_leads/) "Condo Craze Leads to Strategic Shift," Mark Obrinsky Nov 1, 2004.a

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# The Politics of Environmental Localism

by Ian Hart

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*“A new dogma is emerging as a challenge to us.”*<sup>1</sup> - Mike McClosky, Sierra Club Chairman

*“Our approach relies on the experience and judgment and hard work of local people.”*<sup>2</sup> – President George W. Bush on the administration’s Healthy Forests Initiative

**QUINCY IS A** small mill town in Plumas County, California nestled among the Lassen, Plumas, and Tahoe National Forests. In the 1960s and 70s, the town attracted urbanites fleeing the cities for Quincy’s quiet forests and Main Street lifestyle. When the spotted owl controversy drifted south from Washington State in the late 1980s, it splintered this California Sierra town into environmental factions. Long-time community members backed local logging groups while the urban refugees sided with the national interests of the Sierra Club, the Wilderness Society, and the Natural Resources Defense Council. Escalating acrimony between the two camps led to physical confrontations, destroyed equipment and even gun shots.<sup>3</sup>

In Quincy and across the country, federal land management policy was being stalemated by bitter disputes between the forestry industry and environmental preservationists, both of whom did not hesitate to file lawsuit after lawsuit in pursuit of victory. The involvement of courts in federal land-use policy delayed implementation, increased costs, and hampered the creation of creative solutions to any of the forestry service’s numerous problems. A new approach was sorely needed.

The election of Bill Clinton in 1992 spurred the creation of an approach that sought to encourage local compromise over national animosity. By locking out national interests, placing stock in local expertise, and encouraging place-based land management, the Clinton administration believed that “localism” could streamline the policy process.

## Localism and Current Priority

The Bush administration has embraced localism wholeheartedly in its approach to national land management, envisioning a time when federal land decisions aren’t made in Washington DC, but in the communities in and around federal lands that place the most value in, and dependence on, the local natural resources. In its five point environmental philosophy, the current administration dedicates itself to

localism, declaring that “opportunities for environmental improvements are not limited to Federal Government actions - states, tribes, local communities, and individuals must be included.”<sup>4</sup> The takeaway message is twofold. First: the federal government cannot solve all of the country’s environmental problems. Second, and more subtly: states, tribes, local communities, and individuals can solve environmental problems for the federal government.

Localism has been a key factor in two of the administration’s most high-profile environmental policies. Derivations of “local” pepper Bush’s Healthy Forests Initiative and his Roadless Areas Rule. The former pushes many land management decisions downward to the local level; the latter gives state governors veto power over federal land decisions. One attorney, who happens to represent large chemical companies, observed of the second Bush administration, “what you’re going to see is an administration focused on setting broad goals and then letting states and companies and individuals work to achieve those, within an economic framework.”<sup>5</sup>

But the Bush administration has not been entirely consistent in its willingness to allow consensus to rule. In May of 2003, the Bureau of Land Management overruled a compromise plan for the California’s Algodones Dunes. During the Clinton administration, the BLM, environmental groups, and off-road vehicles (ORV) groups reached a compromise that left some portions of the dunes open to ORVs, while protecting habitat for various endangered species. The Bush administration’s rule change nullified the compromise, and reopened areas to ORV use, including the introduction of new vendor areas and the reduction of rider responsibilities.<sup>6</sup> The willingness to endorse some compromises and not others, and to weight some non-local stakeholders over others suggests politics may be overrunning stated policy priorities.

More importantly, localism has not been proven as an effective policy tool for small-scale - let alone system-wide - land management. Too few plans have actually been implemented for too short a time over too little land to evaluate whether localism will positively impact the environment, logging, fire prevention, or other forestry issues. In addition, lawsuits have effectively delayed implementation of many plans since amateur drafters are prone to producing policies that are in violation of existing federal law and/or

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fail to adequately consider scientific realities. And at heart, federal devolution of responsibility for national lands to localized interests may simply be illegal. The fact that the Bush administration is placing so much faith in an unproven strategy suggests that politics may be the only environmental policy priority.

### **The Politics of Localism**

Although Washington will continue to set guidelines, provide financial incentives, and retain ultimate authority, the federal government under the Bush Administration is unquestionably attempting to push land-use battles down onto local and state governments. Localism is a federal government step-aside, deployed to let someone else sort out the political battles over land use.

And why not? Reduced conflict brings less negative attention to Washington and the land management agencies. Promoting local, consensus-based involvement and self-determination plays well in the media, particularly in communities (and Congressional districts) with an abundance of federal land. Furthermore, elected officials and federal agencies can claim credit when locally-produced policies look “good” and excuse themselves from responsibility when they do not . . . at least in the short term.

At the same time, locally-derived plans will always be subject to the whims of federal politics. Changes in Forest Service objectives may change with each administration, or even more frequently. For example, under the auspice of using sales to pay for new fire protection, the Bush administration is now looking to pay for fire protection by harvesting a stand of old growth trees - trees that had been designated off-limits according to Quincy’s local management plan, passed by Congress in 1998.

Federal politics may also reenter the equation if national environmental or logging interests perceive the other side is “winning.” If either group believes it can achieve a decisive victory, it will be unlikely to seek a compromise, undermining the essence of localism. In turn, a looming victory will convince the losing side that policy-making in the local context is undesirable, and they will seek to reinstate decision-making at the national level. Thus, self-interest will undermine the regime of local management in localities where interests are not equally balanced.

Finally, if the federal government is unwilling to oversee balanced outcomes, localism can be gamed by special interests.

This is why University of Oregon School of Law professor Michael Axline believes that increased local dominance will result in more logging.

While profit-seekers advocate in all available forums, they naturally concentrate on forums they believe provide the greatest likelihood of success. If the recent flurry of consensus group efforts is any indication, the “best” forum for profit-seekers who desire access to federal resources is currently the local level.<sup>7</sup>

Axline believes that profit-seekers are pursuing localism because the traditional avenues have become “less hospitable.”<sup>8</sup> By contrast, local communities are inclined to advocate greater harvesting because local economic dependence distorts any big picture view. Or more simply, businesses see localities as easier to exploit.<sup>9</sup> Mike McClosky, Chairman of the Sierra Club, suggests that industry “is ready to train its experts in mastering the process.” National logging interests will attempt to game what is supposed to be a trusting and collaborative process.

### **Projected Outcomes and Parting Thoughts**

One of the key difficulties of making localism federal policy is the impossibility of creating a localism blueprint. Garrett Hardin, in his classic essay “The Tragedy of the Commons,” doubted such a possibility. In the mid-to-late 20<sup>th</sup> century, when management of the forest became more than a question of science—concepts of preservation and recreation were introduced to the forest service. At that point, managing the forest became what Hardin calls a “no technical solution problem.” He explains that solving such a problem requires not only a change in technique, but a change in values. Techniques can be mass-marketed, but values cannot. The willingness of local volunteers to sacrifice hours of free time to develop a management plan, in an often conflict-ridden environment, can also not be replicated. At best, this effort to establish a localism blueprint with federal legislation will fail, introducing neither new logging guarantees nor environmental safeguards. At worse, it will lead to increased ecological degradation and feelings of animosity and helplessness in the localities in question.

Localism, particularly as it has been applied in the past few years, may lead to other problems and frustrations as well. It will unquestionably lead to new layers of red tape in the process of land management. Depending on how courts rule, it will likely lead to increases in logging, particularly in

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## Localism - continued

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communities where environmentalists are few, weak, or otherwise outmaneuvered.

Meanwhile, there is another trend developing. While loggers and preservationists duke it out, the Bush administration is systematically diminishing the court as an option for either side. Using executive privilege, the administration is making its own rules. For example, in 2003, the Bush administration established a categorical exemption from NEPA to log parcels as large as 1000 acres as part of fire prevention efforts. Categorical exemptions used to be limited to 10 acres<sup>10</sup>. The administration has been successful in this and similar policy implementations, by acting quietly, or by continually playing up the threat of fire to smother public outcry.

Finally, the tendency to limit the definition of a stakeholder, or to give some stakeholders more weight than others, is troubling and promises to set another bad precedent. The nation's taxpayers not only subsidize the national forests, they often subsidize the industries that keep logging towns afloat. Localism effectively excludes most voters east of the Rockies, and those voters in metropolitan areas west of the Rockies. This exclusion runs contrary to the letter and spirit of NEPA. But that is the form of localism being sold to the public, under the guise of healthy forests and roadless areas.

Clearly different approaches to national forest management need to be tried – a century of scientific forestry techniques offers numerous failures by the Forest Service to consider the unknowables or the externalities of a given forestry technique. Localism offers an interesting and novel approach to developing small-scale experiments in forestry. It could be done correctly, but the fashion in which it is currently being rolled out is suspect, as are the motivations behind some of its greatest proponents.

### Endnotes

<sup>1</sup> Lisa Jones. "Howdy Neighbor: As a last resort, Westerners start talking to each other."

High Country News. 13 May 1996.

<sup>2</sup> George W. Bush "President's Remarks on Healthy Forests." The White House. 21 Aug 2003. <<http://www.whitehouse.gov/news/releases/2003/08/20030821-4.html>> (17 Dec. 2004).

<sup>3</sup> Kiester.

<sup>4</sup> "Protecting Our Nation's Environment." The White House. <<http://www.whitehouse.gov/infocus/environment>> (16 Dec. 2004).

<sup>5</sup> Felicity Barringer and Michael Janofsky. "G.O.P. Plans to Give Environment Rules a Free-Market Tilt."

New York Times. 8 Nov. 2004 <<http://nytimes.com/2004/11/08/politics/08enviro.html>> (8 Nov. 2004).

<sup>6</sup> "BLM Plan Opens CA's Algodones Dunes to ORVs." Skid Marks. 6 June 2003 <[http://www.wildlandscpr.org/newsletters/Skid\\_Marks/skidmarks68.htm](http://www.wildlandscpr.org/newsletters/Skid_Marks/skidmarks68.htm)> (4 Apr 2004).

<sup>7</sup> Michael Axline. "Federal Lands and Invisible Hands." Ecology Law Quarterly. 25, 1999, 611.

<sup>8</sup> *Id.* 617.

<sup>9</sup> *Id.* 619.

<sup>10</sup> Among its many features, the National Environmental Policy Act (NEPA) increased the public's ability to comment on proposed Forest Service projects, and it forced the Forest Service to prepare environmental impact reports for "major actions significantly affecting the quality of the human environment."

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*Ian Hart is a master of public policy student at the University of California Berkeley. Cutting his environmental teeth in the east, localism was not an issue because of the lack of federal land. He first learned about the approach to land management as a Graduate Student Instructor in Berkeley's College of Natural Resources. After he graduates in May, Ian will be pursuing a career in environmental communications.*

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# Mold: Public Policy for an Uncertain Science

by Jon F. Elliott, JD, MPP

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**UNHEALTHFUL MOLD INFESTATIONS** in homes and workplaces pose one of the important “new” environmental health and safety (EH&S) problems facing public health professionals. Political pressure is building to solve the problem, gathering steam from lurid press reports of “Black Mold” forcing tenants and workers out of “sick buildings” and subsequent litigation by building owners against builders.

Unfortunately for analysts and decision makers, mold is not a simple problem that lends itself to a simple solution. Biologists recognize many thousands of types of mold, only some of which appear harmful to humans. There are no cheap broad-spectrum tests to tell you whether that persistent patch in the corner of your shower is harmful enough to warrant more than periodic flooding with bleach, let alone whether it’s the cause of your persistent sore throat.

Mold has been around forever, so how did this “new” problem arise? Since the energy crisis of the 1970s, architects have been designing new buildings with less porous envelopes and fewer windows to cut down on heat loss—and many have air circulation systems that cannot compensate for reduced natural air flows. In these tighter buildings, mold-produced hazards have become common enough to draw scrutiny from EH&S specialists and the lawmakers, regulators and activists who help set their agendas. As reports of sick buildings proliferated in recent years, this scrutiny has grown to concern and even panic. Home and building owners are litigating to recover property damages from contractors and insurance companies, even when the owners claim no health effects. The Supreme Court indicated in late February 2005 that it would use a toxic mold case to clarify when plaintiffs can sue in federal or state court—a sign that toxic molds have made it mainstream.<sup>1</sup>

In these situations—a prime example of decision making under scientific uncertainty—policymakers often make prescriptions with vast consequences based on science that even scientists may not yet understand and nonscientists may not appreciate.

## Uncertain Science, Uncertain Hazards

Molds generally grow best in moist conditions (near pipe leaks or in air-handling system condensation, for example) where nutrients are readily available (as where housekeeping is lax). But spores can survive and even germinate in a variety of situations—including those most people would consider dry and clean.

Although many molds are benign, they can cause chronic and even acute health problems, most often through toxin-induced inflammation, allergies and infection.<sup>2</sup> Eye, ear and throat inflammation are common and can escalate to flu-like symptoms and even more severe conditions. The elderly and those with respiratory ailments or weak immune systems are especially susceptible to mold. Of course, since people regularly get colds and influenza anyway, it can be difficult to demonstrate that mold has caused—let alone exacerbated—someone’s ailments.

To further obscure attempts to pinpoint mold hazards, there are tens of thousands of types of molds. Different molds have different properties that affect the likelihood they will cause harm, and different people have varying sensitivities to these hazards. Because of these complexities, EH&S experts find it difficult to develop meaningful exposure limits, or even, in many cases, field-practical methods to identify specific “toxic molds.”

## Policymaking Under Uncertainty: Fall-Back Positions

Quick solutions tend to be sweeping, relatively unsophisticated—and dangerously compelling to politicians. Possible policy responses to “new” EH&S problems tend to fall into a few predictable categories.

### *One-Size-Fits-All: Band-Aids*

Alternatively, policymakers may adopt severe standards in the face of public uproar, even when the situation warrants more nuanced policy. This one-size-fits-all solution, which addresses all problems as if they were the most severe, risks spending too much on less-critical cases. For example, worries about lung damage from asbestos led to requirements under the Asbestos Hazard Emergency Response Act of 1986 that, despite the targeting to “emergencies” implied by its title, actually led to expensive and possibly unnecessary asbestos removal from thousands of schools and workplaces.<sup>1</sup>

### *One-Size-Fits-All: Code Red*

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#### **MOLD REGULATIONS TO DATE: ONE-SIZE-FITS-ALL**

A variety of federal, state and local governments have adopted requirements directed toward the indoor health hazards of mold infestations. To date, all the working examples are based on One-Size-Fits-All. These strategies generally undershoot the problem by applying existing legal obligations to include simplistic mold remediation.

The most basic response to mold has been to reaffirm traditional attention to housekeeping and hygiene—following the pragmatic theory that cleaner and drier are usually better:<sup>1</sup>

1. stop water infiltration into the affected area (from broken pipes, leaking roof, etc.)
2. clean up (disinfect) and dry the affected area
3. remove and replace water-damaged materials as necessary.

Many building and housing codes and landlord-tenant laws throughout the country already support this approach through generally-applicable requirements to maintain and repair waterproofing, weatherproofing and plumbing.<sup>2</sup>

Similarly, OSHA and state OSH agencies including Cal/OSHA, have made general pronouncements that the employer’s “General Duty Clause,” which requires employers to provide safe and healthful workplaces, encompasses protection against *known* mold hazards.<sup>3</sup> However, to my knowledge the only mold-specific requirement among all the nationwide OSH agencies is a single provision adopted by Cal/OSHA effective September 4, 2002. This California requirement provides a simple, broad directive: “When exterior water intrusion, leakage from interior water sources, or other uncontrolled accumulation of water occurs, the intrusion, leakage or accumulation shall be corrected because of the potential for these conditions to cause the growth of mold.”<sup>4</sup>

Readers will note that this preventive/hygiene requirement applies in all situations involving water, and does not require that any mold actually be present. Similar requirements can cover remediation when mold outbreaks occur.<sup>5</sup>

and possibly unnecessary asbestos removal from thousands of schools and workplaces.<sup>1</sup>

#### *Default: Wait for Better Information*

The third generic response seeks to avoid the undershooting and overshooting risks inherent in the first two solutions...by simply delaying regulatory responses until more scientific research clarifies the problem. Policymakers may assume that a wait-and-see approach will eventually produce more sophisticated and better tailored policy responses. Of course, these delays ensure that whatever problems are present continue for the time being.

This default approach is the one underway in most jurisdictions, which have taken no direct legislative or regulatory action on the mold problem.

#### **Filling the Policy Void with Lawyers: Sue first and ask questions later**

The danger of not acting through the regulatory regime is that most potentially expensive problems quickly produce litigation. *After* people find mold or get sick in buildings where mold is present, they sue landlords and builders and try to prove that mold caused the problem. In the absence of clear regulatory standards, which could be used to define duties and expectations, plaintiffs are left to fit their situations into traditional theories of litigation. Most mold cases involve at least one of the following: a) toxic torts; b) defective construction or breach of contract; or, c) insurance claims.<sup>2</sup>

#### *Toxic Torts: Demonstrating Injury*

Much private litigation involves claims that defendants suffered a “toxic tort” at the hands of the defendant. Plaintiffs claim that the defendant owed a duty not to interfere with the plaintiffs’ safe and healthful enjoyment of their home, office or workplace;<sup>3</sup> that the defendant breached that duty by letting mold grow; and that the defendant thereby caused the plaintiff demonstrable injuries ranging from interference with tenancy to forced relocation to health effects.

This “duty” is usually the general requirement that homes and work spaces be “habitable.” A few jurisdictions have adopted specific legal duties related to mold. For

example, effective January 1, 2002, every transfer of residential property in California must disclose whether the seller knows of any mold that “may be an environmental hazard.”<sup>4</sup> California also has adopted a comparable requirement for mold disclosures in transfers of commercial or industrial buildings, but deferred its effectiveness until the state develops exposure, identification and remediation standards (see box).<sup>5</sup>

*Construction Claims: Specific Obligations*

Other lawsuits include claims for defective construction, or breach of contract in the construction or maintenance of buildings. Here plaintiffs point not to defendants’ failure to fulfill a vague and generalized “duty” but rather to more-clearly defined standards: architects failing to design buildings with appropriate ventilation or engineers and builders selecting materials inappropriate to the project. Claims may also invoke specific terms in their construction contracts, sales contracts or leases (for example, compliance with building code prohibitions against direct contact of wood with soil).

*Insurance Claims: Another Layer of Grief*

Finally, litigation may follow rejected insurance claims. Contractors and building owners typically carry insurance, so allegations of faulty construction or maintenance can morph at some point into insurance cases.

As with other insurance litigation, the complexity of these cases can also be compounded by allegations that the insurance company failed to investigate and pay the claim properly. For example, a noteworthy Texas case, *Allison v. Fire Insurance Exchange*, involved an insurance company that had already paid out mold-related claims exceeding the original price of a substantial home, and resulted in a jury verdict for over \$4 million in damages plus \$28 million in punitive damages for fraud. Although an appellate court later vacated the punitives (but not the direct damages), the *Allison* case epitomizes the huge exposures that have led many insurance companies to exclude mold damages from property insurance policies.<sup>6</sup>

Besides being necessarily post-hoc, patchy and slow, regulating through litigation often has the effect of misguiding the mold policy debate toward insurance agreements, common law doctrines or contractual obligations, rather than where it should be: squarely on the science of identifying and remediating toxic molds.

**CALIFORNIA’S TOXIC MOLD PROTECTION ACT OF 2001: REPLACING ONE-SIZE FITS ALL**

In 2001, the California Legislature enacted the nation’s first law intended to replace One Size Fits All with tailored approaches built on sound science. The Toxic Mold Protection Act of 2001 (SB 732, Ortiz) requires CDHS to convene a task force, to help it undertake all of the following:

- determine whether it is feasible to adopt permissible exposure limits (PELs) for indoor molds
- if feasible, adopt PELs that “avoid adverse effects on health, with an adequate margin of safety, and avoid any significant risk to public health,” *and* which also balance public health protection with technological and economic feasibility.
- adopt “practical standards to assess the health threat posed by the presence of mold.”
- adopt “mold identification guidelines for the recognition of mold, water damage, or microbial volatile organic compounds in indoor environments.”
- develop remediation guidelines for molds in indoor environments.

Unfortunately, SB 732 provides no funding to CHDS for these activities. In response, CDHS has collected the names of some 200 volunteers for the task force, and begun to solicit contributions to fund what the agency estimates will be a \$1 million budget for the assigned tasks.

*Beyond Bleach and Lawyers*

Today’s one-size-fits-all approaches are better than none, but they are not tailored solutions that balance the costs and benefits of solutions that go beyond simple improvements to building hygiene. And they also ensure that sick buildings (with sick occupants) will continue to appear in growing numbers, followed by expensive litigation. More sophisticated approaches that tailor responses to the hazards of particular situations would improve environmental health and safety. It also seems likely that the required research would prove cost effective compared to continuing to address the problems with bleach and lawyers. California’s SB 732 legislation (see sidebar) promises a comprehensive risk-based approach, but lack of funding for the targeted research has stymied progress.

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## Mold - continued

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### Endnotes

<sup>1</sup> Lincoln Property Co. v. Roche, 373 F.3d 610 (4th Cir. 2004), cert granted February 28, 2005 (No. 04-712).

<sup>2</sup> Fungal cell walls contain (1-3)-beta-D-glucan, which is reported to have inflammatory, immuno-suppressive, and mitogenic (i.e., produces mitosis or cell transformation) properties. Many fungi can also produce mycotoxins and volatile organic compounds (VOCs) that can be hazardous to respiratory systems and other bodily organs and systems.

<sup>3</sup> 29 C.F.R. § 1910.1200.

<sup>4</sup> During the intervening decades, OSHA has also adopted a variety of more tailored standards, which require much more intensive informational, procedural, and even engineering responses to less-common but more-hazardous situations. Examples include the Process Safety Management Standard (29 C.F.R. § 1910.119), which applies only to workplaces with more than 10 thousand pounds of flammable liquids or gases, or quantities of 132 listed "highly hazardous chemicals" higher than threshold amounts set by OSHA.

<sup>5</sup> 15 U.S.C. §§ 2641 – 2656; 40 C.F.R. §§ 763.80 – 763.123. Many poorly-managed abatements actually *increased* exposures by disturbing intact asbestos containing materials and failing to prevent releases into the indoor air of the buildings.

<sup>6</sup> For a very extensive treatise on mold litigation see Barry Zalma, *Mold: A Comprehensive Claims Guide* (Specialty Technical Publishers, 2003). That book focuses on insurance claims and litigation, but includes broader discussions of mold hazards and cases.

<sup>7</sup> The extent and nature of a breach necessary to cause liability can vary. For example, defendants might be *strictly liable* (i.e., any breach results in liability) or liability may be restricted to situations of negligence or gross negligence. Questions of "contributory negligence by plaintiffs may also arise (e.g., might the tenant's slipshod operations have contributed to water releases in an affected space).

<sup>8</sup> Cal. Civil Code § 1102.6.

<sup>9</sup> Cal. Health & Safety Code §§ 26140 – 26153. Although these standards are not yet in place, in the present legal environment they still provide incentives for building owners and landlords to disclose mold problems voluntarily rather than risk a subsequent lawsuit.

<sup>10</sup> The appellate case appears as *Allison v. Fire Insurance Exchange*, 98 SW.3d 227 (Tex. App. Dist. 3, 2002).

### Endnotes for "Mold Regulations" box

<sup>1</sup> For Example, this sequence appears in the *New York City Guidelines on Assessment and Remediation of Fungi in Indoor Environments*, which recommends remediation within 24 to 48 hours. New York City Department of Health, Bureau of Environmental and Occupational Disease Epidemiology, "Guidelines on Assessment and Remediation of Fungi in Indoor Environments" (January 2002). These Guidelines are available from a number of Internet sites, including OSHA's mold page.

<sup>2</sup> See, e.g. Cal. Civil Code § 1941.1, under which failure to do so renders a dwelling "untenantable."

<sup>3</sup> See, generally, 29 CFR § 1903.1; Cal. Labor Code §§ 6400 – 6401.

<sup>4</sup> 8 CCR § 3362(g). Sub-section (g) joins and amplifies general housekeeping and sanitation provisions in section 3362(a)-(f). Compare 29 CFR § 1910.141 which provides general sanitation requirements but has no mold-specific provision..

<sup>5</sup> In addition, actual outbreaks of molds might also qualify as a "nuisance," which is a longstanding Common Law concept. One general definition of nuisance is "A condition or situations (such as a loud noise or foul odor) that interferes with the use or enjoyment of property." *Black's Law Dictionary, Seventh Edition* (West Group 1999). If an agency considers a mold outbreak bad enough to qualify as a nuisance, it can apply its general authority to require abatement.

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# Can Bill Gates University (circa 2025) Beat Out Harvard?

by David L. Kirp

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**IN 1885**, LELAND Stanford Jr., railroad tycoon and California politician, was considering whether to create a new university. Stanford had given some thought to starting a technical school instead—he wanted his new institution to be avowedly practical—and, together with his wife, Jane, he sought advice from Harvard’s president, Abbott Lawrence Lowell. Not surprisingly, Lowell favored the university option. How large an endowment would be needed, Jane asked, to do the job right. Not less than \$5 million, Lowell replied. There was a short silence, and then Leland spoke up. “Well, Jane,” he said, “we could manage that, couldn’t we?”

Stanford wasn’t the only industrialist with such a dream. This was the Gilded Age, a time when the market ruled. By the turn of the century, John D. Rockefeller and his friends had chipped in with \$10 million to start the University of Chicago, and Andrew Carnegie had launched Carnegie Technical Schools, renamed Carnegie Mellon University in 1967.

Fast forward to 2005 and imagine the following scenario. Bill Gates, Harvard’s most famous dropout—and with more than \$40 billion, the richest man in the world—decides that, like Leland Stanford, he wants “to qualify students for personal success and direct usefulness in life.” The old-line east coast schools aren’t doing the job; echoing Stanford’s blunt views, he believes that “of all the young men who come with letters of introduction from friends in the East, the most helpless are college youth.”

Could Gates bring it off—could Bill Gates University become the Stanford of the Northwest? Conventional wisdom says no: institutional newcomers don’t have a chance in the rarified world of premiere American universities. Indeed, the only successful new schools in recent decades are the for-profit institutions like the University of Phoenix, and they aren’t in the same league. But profound changes in how universities develop and maintain their reputations—the fact that, simply put, money talks so powerfully—prompt me to think that Gates would have a decent shot at cracking the inner circle.

History cautions against this argument. Since Leland Stanford’s day, once a university has acquired its place in the pecking order it almost always stays there. Compare a hypothetical “Fortune 500” list of the top companies in 1900 with a similar ranking of universities from that year. While relatively few of these businesses still exist, the ranking of universities has changed remarkably little. In 1900, Harvard,

Columbia, Yale, Cornell, Princeton, Johns Hopkins, Berkeley, Pennsylvania, Michigan—and the two newcomers, Chicago and Stanford—formed the Association of American Universities, the self-selected organization of top research universities. A handful of schools like Clark University, a founding member of the AAU, have fallen from grace, and others have slipped a few notches. There have been some additions to the upper ranks, mainly science-driven schools like Cal Tech and MIT and state universities in the Midwest and West Coast. But the stability is what’s noteworthy. If you didn’t know better, you’d suspect it was a cartel.

How has this situation come to pass? An enormous investment would be needed to start a university with hopes of greatness. In 1885, \$5 million—about \$92 million in today’s dollars—could buy Leland Stanford a first-class university. Not so these days. In 2002, forty-six institutions had endowments larger than \$1 billion, and Harvard’s endowment is approaching \$20 billion. Big science costs buckets of money. So does keeping up with the institutional Joneses—what economist Gordon Winston calls positional warfare—with Jacuzzis in the dorm rooms, rock-climbing walls in the gym and sushi bars in the dining hall. Endowment is directly correlated with prestige, as Winston has shown: top-ranked schools invariably subsidize their students more than those lower on the pecking order.

It’s also true that higher education is a most peculiar market. The “sellers,” the universities, seek out the most attractive “buyers”—that is, students and professors. Nabisco doesn’t care much about who eats its cookies, but as Robert Frank notes, “the university’s consumers are one of the most important inputs in its production process, and this is not the case for producers of typical private goods and services. [Elite institutions] need top students every bit as much as top students need them.” The chief draw for top students, a survey at elite institutions shows, isn’t the quality of education, something that’s notoriously hard to decipher. Rather, it’s prestige—more precisely, its place in the *U.S. News & World Report* rankings. Those rankings inform prospective undergraduates that others just like them will also be enrolling. That assures them of similarly motivated classmates, and increases the chances that they can make the kinds of connections that can make careers. Even as college administrators complain about the formula that *U.S. News* uses, they’re working assiduously to improve their position.

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This means, in essence, being a well-heeled institution with a highly selective group of students.

Among research universities, star professors figure especially heavily in the calculus of prestige. That's why schools seek to maintain their position by outbidding one another, offering the big academic names bigger salaries and lighter teaching loads, as well as top-flight colleagues with whom they can work and good students who can make them look smarter. "For to the one who has it, more shall be given," says the Gospel of Matthew—in modern parlance, "the more, the more."

What potentially gives Bill Gates—or Warren Buffet or the Walton (Wal-Mart) family—an opening into this rarified world is the fact that, during the past quarter of a century, American higher education has been transformed by the power as well as the ethic of the marketplace. Entrepreneurial ambition, once regarded in academe as a necessary evil, has become a virtue. In Britain, where in the *Brideshead Revisited* world privilege counted for everything, the great modern success story has been the resolutely democratic Open University. That school opened in 1970 and, as its name suggests, it's open to all comers. Now Open University enrolls 180,000 undergraduates in Britain alone, many more in Europe and Asia. The government's Quality Assurance Agency ranks it among the top thirty British universities in research and among the top ten in teaching; in engineering instruction it outperforms Oxford or Cambridge. By contrast, in America the great success story of modern times is NYU, whose achievements reveal the profound potential impact of money on institutional reputation.

In 1975, NYU was literally teetering on the edge of bankruptcy. Then it recruited a veteran politician and able fundraiser as its president, and its situation started to improve. Millions of dollars were lavished on super-stars, many of whom were given their own research centers. The arrival of each new faculty recruit created what economists call a signaling effect, letting more timid souls know that it was safe to jump from Chicago or Princeton to Washington Square. In determining its priorities, NYU opted not to break the bank with investments in Big Science, focusing instead on some of professional schools and liberal arts departments. The most dramatic transformation came in philosophy. Philosophers are relatively cheap; all they need, the old joke goes, is a ream of paper, lots of sharpened pencils and a wastepaper basket for their false starts. NYU was able to

recruit established professors from schools like MIT and Oxford, bringing together people who welcomed the chance to work together. In 1995, the university lacked an accredited Ph.D. program in philosophy; five years later, it was ranked #1.

Traditionally NYU was a commuters' school, but millions of dollars were spent to create a vibrant campus. As word of these developments spread, students from across the country with stronger academic records started showing up, and that change registered on the *U.S. News* rankings. The school was also able to exploit its connections to attract heads of state, including Bill Clinton, Tony Blair and Jacques Chirac, to a widely-publicized conference at NYU's overseas center in Florence; that coup gave credibility to the university's boast that it was a leading player in higher education across the globe. The familiar principle applies: the more the more.

Could Bill Gates duplicate NYU's feat? Gates starts out with the great advantage of instant and generally positive name recognition. (Whether students a century ago were eager to enroll in Robber Baron U isn't known.) Though he doesn't have New York City going for him, as NYU does, when NYU first made its move it was in the pre- "I Love New York Days," when the city wasn't such a draw. Besides, Bill Gates' home town of Seattle is far more appealing than New Haven, home to the nation's second most prestigious school.

Doubtlessly, Gates would emphasize science, and that costs packets of money. Yet at least in high tech he has an enormous leg up, and his university would give new meaning to industry-university collaboration. Gates U could also buy talented students with generous scholarships based not on the traditional criterion of need but rather on merit; that's what schools on the make such as Washington University are increasingly doing.

If Gates were to convert half of his fortune into an endowment for this new institution, he'd instantly match Harvard's resources, but there is no need for such a dramatic gesture. Endowments at top-flight schools such as Brown, Vanderbilt and Johns Hopkins are less than a tenth as big as Harvard's. About such a sum Bill Gates could say to his wife Melinda just what Leland Stanford said to Jane: "We could manage that." Moreover, with Gates as the lead donor, others would contribute, for there are always dormitories, libraries and professors' chairs to be named.

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## *Bill Gates University - continued*

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The NYU story contains another lesson: raising endowment may not be crucial to institutional success, at least in the short term. Why should a school spend just 5 percent of the money that it raises—the typical payout from endowment—when it can spend it as fast as it takes it in? NYU, impatient for status, opted for this “spend it now” approach. NYU’s endowment barely topped \$1 billion in 2002. That’s just a quarter the size of Emory University’s endowment and smaller than Williams College’s.

Even if Bill Gates U or something like it eventually opens, the longstanding dominance of a school like Harvard or Yale wouldn’t be threatened. In many ways, including the ineffable cachet, they have too much going for them. But a place like NYU—or even Chicago or Stanford, where similar ventures began in an earlier Gilded Age—would be closely monitoring these developments. The fact a new university

could join the ranks of the elite in the course of a single generation is another example of how, for good as well as bad, the market has come to dominate higher education.

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