### 2nc demonstrations turn

#### Federal demonstration projects empirically fail, they can’t reduce costs enough to spur adoption

**Ogden et al, 8** - senior policy analyst at the Center for American Progress (Peter, “A New Strategy to Spur Energy Innovation,” Issues in Science and Technology, Winter, <http://www.issues.org/24.2/ogden.html>

Direct federal support. The Department of Energy (DOE) is the agency that provides the most financial support for energy RD&D. Yet many of the demonstration projects undertaken by DOE since the 1970s have not been successful. Prominent examples include the Clinch River Breeder Reactor in the early 1970s; DOE-managed large-scale synthetic fuel projects such as Solvent Refined Coal; surface and in-situ shale projects; the Barstow, California, Central Solar Power Tower; and the Beulah, North Dakota, Great Plains coal gasification project.

There are many reasons why these demonstration projects failed, but three shortcomings stand out. First, the projects were based on overly optimistic engineering estimates of technological readiness and cost. Some of these difficulties could have been averted if more time had been spent gathering data from small-scale engineering development projects and more attention had been paid to modeling and simulation of process performance and economics.

Second, some of the demonstration projects met predicted levels of technical performance, but the cost was so far above the then-prevailing market prices that the projects were market failures. This was a particular problem for synthetic fuel projects. It can be avoided only if there is a clear differentiation between those projects that are intended to demonstrate technical performance, cost, and environmental effects and those that are undertaken to increase production with federal assistance or in response to federal mandates.

Third, DOE business practices differed dramatically from commercial practices, and thus its project results **were not credible demonstrations**

for private industry or investors. Tight DOE budgets caused projects to be funded inefficiently, which led to stretched schedules and increased capital costs. Budget pressure also invited cost-sharing requirements that were motivated by fiscal necessity rather than fair compensation for proprietary information. In addition, federal acquisition regulations, auditing, work rules, and project management contributed to **cost overruns**.

The underlying difficulty is that DOE, and other government agencies, are not equipped with the personnel or operational freedom that would permit the agency to pursue a first-of-a-kind project in a manner **that convincingly demonstrates** the economic prospects of a new technology. A different approach is needed.

#### Government R&D tradesoff with private sector R&D

**Taylor, 97 –** Director of Natural Resource Studies at the Cato Institute (Jerry,Federal Document Clearing House Congressional Testimony, 4/9, lexis

The argument that public R&D only acts to displace private R&D is tellingly made by Cambridge biochemist Terence Kealey:

The irrelevance of the government funding of science is illustrated by the comparative statistics ... Consider the first graph, which relates the wealth per capita of members of the OECD with the quality of their scientific papers, as judged by the number of times their scientific papers were cited. It shows a very strong correlation. A plot of national wealth per capita against the numbers of papers published per capita, or the numbers of patents published per capita, would look very similar.

This, to me, is a fundamental economic law: the quantity and quality of a nation's science and of its R&D is determined by its wealth per capita ... If a company is situated in a country where taxes are low, like Japan of Switzerland, it simply invests its own money.

If it is in a country like France or Germany, with high taxes, then it lobbies hard for its government to fund science. Either way, successful companies in rich countries ensure their research need are met. 48 48 Terence Kealey, "You've All Got it Wrong," New Scientist, June 29, 19960, p. 25.

Yet all things are not equal. A survey of OECD countries reveals a strong correlation between a country's total spending on civilian R&D and the degree to which private companies contribute to that expenditure. Governments that do not heavily fund R&D oversee economies that devote a greater proportion of their national spending to that activity. This suggests that publicly-funded R&D doesn't simply displace private R&D, but that it actually subtracts from what expenditures might otherwise have been. 49 49 Ibid, p. 26.

#### And it’s a meaningful distinction – tax credits are a completely different form of incentive

OECD (Organisation for Economic Co-operation and Development) 2005 (last cited) “MENA – OECD INVESTMENT ROGRAMME” http://www.oecd.org/mena/investment/36086747.pdf

There is a grey area between, on the one hand, investment promotion and facilitation, and¶ investment incentives on the other. Investment promoters may make information about their host location,¶ relevant laws and administrative procedures available as a public good, but as soon as they offer¶ facilitation and matchmaking tailored to the needs of individual investors then they are effectively¶ subsidising these investors. The monetary value to investors of such assistance may in some cases exceed¶ the value of outright investment incentives. Conversely, actual investment incentives are normally¶ considered as falling into three categories, namely “regulatory”, “fiscal” and “financial” incentives1:¶ • Regulatory incentives are policies of attracting investment projects by offering derogations from¶ national or sub-national rules and regulation. Where such derogations are offered on an economywide¶ basis they tend to focus on the environmental, social and labour-market related requirements¶ placed on investors. In the context of FEZs, they often consist in the relaxation of direct investment¶ regulations (e.g. nationality requirements; screening and authorisation procedures) in place¶ elsewhere in the host economy.¶ • **Fiscal incentives** consist of an easing of the tax burden on the investing companies or their¶ employees. Unlike many other incentives they are most commonly rules-based as changes in¶ taxation in most cases require legislative action. General fiscal incentives normally take the form of¶ reduced corporate tax rates or tax holidays; encouragement of capital formation (e.g. investment tax¶ credits and accelerated depreciation allowances); and preferential treatment of foreign operators (e.g.¶ lower tax on remittances; reduced personal income tax rates on expatriates). In FEZs fiscal¶ incentives, virtually by definition, also include lower import and export taxes and tariffs.¶ • Financial incentives consist of out of hand public spending to attract companies or induce them to¶ invest. They are often formally justified by a need to compensate investors for the perceived¶ disadvantages of a particular location (“site equalisation outlays”), or may take the form of tailoring¶ the infrastructure of a prospective location to the needs of investors. Other financial incentives¶ include subsidising the actual costs of relocating corporate units (e.g. job training cost; expatriation¶ support; and temporary wage subsidies).