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Deepwater Drilling and Least-Cost Energy Decision Making

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The continual release of 35,000 to 60,000 barrels of crude oil per day from the BP *Deepwater Horizon* well in the Gulf of Mexico should cause us to pause and consider our energy policy decision making and how we compare costs and benefits of various alternatives (Press Briefing, National Incident Commander Coast Guard Admiral Thad Jones (June 30, 2010).

Shortly after the platform exploded and the project became an uncontrolled gusher, President Obama, through the Department of the Interior Secretary Salazar, ordered a moratorium on deepwater drilling in the Gulf of Mexico while the government considered whether drilling in deep waters could be done safely. Litigation over this moratorium continues as this is being written. *See* John M. Broder, *Court Rejects Moratorium on Drilling in the Gulf*, N.Y. TIMES, July 9, 2010, at A15.

The environmental and economic risks from oil drilling are great and long lasting. In comparison, the rewards of exploiting a new oilfield are relatively small within our nation's energy context and are short lived. The potential new oil will barely dent our dependence on imported oil to fuel our transportation system. In 2007, Gulf of Mexico wells 200 meters or deeper provided only 313 million barrels of crude oil to our supply, U.S. E.I.A., Gulf of Mexico Offshore Production (10/29/2009) www.eia.gov/dnav/pet/pet_crd_gom_s1_a.htm, but in 2007 we consumed 7.55 *billion* barrels (20.7 million barrels per day). U.S. E.IA. ANNUAL ENERGY REVIEW 2008, Table 5.1.

Reevaluating how we license, regulate, and monitor deep-sea oil drilling is important so that it can proceed without unduly risking environmental damage. Consideration of the value of additional blowout preventers and the cost of establishing an oil recovery infrastructure to protect the environment and regional economy are important. However, it is too narrow a review. The project-based approach to reviewing proposals for oil drilling in the Gulf of Mexico in deep waters does not address the larger question as to whether the costs and benefits of oil drilling outweigh the costs and benefits of alternative means of providing energy for our transportation system. We must rethink how we approach energy decision making and evaluate societal costs and benefits, risks, and rewards. Unfortunately, our legal decision-making structure discourages thinking in a larger context outside specific projects or plans, and the legal tools, such as alternatives analysis under NEPA, which might help us achieve better policy are moribund.

When we remove our project-based blinders and look at decisions within a broad spectrum of policy options, a wider range of alternatives appear. Let us consider deep-sea drilling in the Gulf of Mexico for petroleum. Most of the oil we import and produce is used to meet the demand of the transportation sector of the U.S. economy. In 2008 we burned over 13.6 million barrels of oil each day to meet our transportation fuel needs for cars, small trucks and SUVs, and large trucks. *See* U.S. E.I.A, ANNUAL ENERGY REVIEW 2008 (June 2009). This fueled our 256 million motor vehicles to travel about 2.97 trillion miles in 2008. However, in 2008 the United States domestically produced only 6.7 million barrels per barrels per day and imported another imported 11 million barrels daily.

So, how much oil can we expect to get from the BP Tiber well? Although BP did not disclose its estimate of the field size when it announced the find in September 2009, oil analysts estimated the well tapped into a 3 to 5 billion barrel oil field and that at a 20 to 30 percent recovery rate, typical for this kind of oil field, could yield, over its lifetime, about 600 to 900 million barrels. *See BP Makes Giant Oil Find in Deep U.S. Gulf Well*, Dow JONES *available at* www.dowjones.de/site/2009/09/bp-makes-giant-oil-find-in-deep-us-gulf-well.html (Sept. 9, 2009). That would be enough oil to supply the United States with about a 30- to 40- day supply of gasoline.

Instead of heroic efforts to maintain supply by drilling in the Gulf, what if we reduced our demand for gasoline? This could be done by making our fleet more efficient or by reducing the number of miles traveled or a combination of both. In May 2010 EPA issued its final rule on Light Duty Vehicle Greenhouse Gas Standards and Corporate Average Fuel Economy Standards (CAFE). 75 Fed. Reg. 25,3233 (May 7, 2010). This rule establishes new fuel economy standards for model years 2012– 2016. Over their lifetimes, the cars and light-duty vehicles produced in model years 2012–2016 will save 1.85 billion barrels of oil, reduce greenhouse gas emissions by 960 million tons, and significantly reduce ground-level air pollution from motor vehicles (e.g., ozone, particulates, carbon monoxide, nitrogen dioxide, etc). EPA estimates that the costs of improving vehicle efficiency will be $51.5 billion, the lifetime benefits (discounted to present value) will be $240 billion for a net savings of $189 billion (at 3 percent discount and assuming a carbon dioxide price of $21 per ton). *See* 75 Fed. Reg. 25,346–7.

A wide range of technologies to meet the new EPA mileage and greenhouse gas standards are already developed and available There are engine improvements,

> such as use of gasoline direct injection and downsized engines that use turbochargers to provide performance similar to that of larger engines, the use of advanced transmissions, increased use of start-stop technology, improvements in tire rolling resistance, reductions in vehicle weight, increased use of hybrid and other advanced technologies, and the initial commercialization of electric vehicles and plug-in hybrids. EPA is also projecting improvements in vehicle air conditioners including more efficient as well as low leak systems.

Id. at 25,323.

Let us assume that the BP field has a 50+ year lifespan, as is typical for most "giant" fields (a "giant" oilfield is one that can produce at least 100,000 barrels per day for a year). Mikael Höök, et al, *The Evolution of Giant Oil Field Production Behaviour*, 18 NAT. RES. RESEARCH 39–56 (Mar. 2009) (noting that "a majority of the largest oil fields are over 50 years old."). Over its lifetime the BP well might produce 600 to 900 million barrels of oil. Typically, it takes about 3 years from discovery for a well to begin commercial production, field production rapidly increases to a peak or plateau, where maximum rates of oil are produced on average (median) for thirteen years until the field begins its steady decline at a rate of 5 to 6 percent annually. *Id.* Table 1.

By comparison, over that same fifty-year span ten traunches of five car model years will supply cars and light-duty vehicles to our roads. Thus, assuming the new CAFE standards remain in place and are improved over time to reflect technological advances, the CAFE savings will be repeated ten times during

the field's life, for a savings of 18.5 billion barrels of oil—20 to 38 times more oil saved than the field would produce—at a savings of about $1.89 trillion (plus the money saved by not drilling, by avoiding oil spills, and in net national security benefits from importing less oil.) In addition, 9.6 billion tons of carbon dioxide emissions would be avoided. And, the oil will still be underground, available for use by future generations. To put these numbers in perspective, consider that there are only about twenty giant oil fields in the world, Mikael Höök, et al, *The Evolution of Giant Oil Field Production Behaviour, supra*, and we can put more efficient vehicles on the road faster than finding and drilling new oil fields.

So, why has this less expensive and dramatically better alternative not been chosen when drilling in the Gulf of Mexico was evaluated by the government? Why is the Department of the Interior moratorium on drilling focusing only on how to drill safely in deep water? Obviously, the decision as to whether we meet our transportation fuel needs through increased supply or reduced demand is a major federal action that will significantly affect the quality of the human environment and so requires an environmental impact statement (EIS) that addresses this choice. NEPA, 42 U.S.C. § 4332(C). Moreover, CEQ regulations promulgated in the 1970s direct that the evaluation of "adverse environmental consequences . . . the relationship between short-term uses of man's environment and the maintenance ad enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal . . . *shall* include discussions of . . . energy requirements and conservation potential of various alternatives and mitigation measures." 40 C.F.R. § 1502.16(e).

However, in 1978, the Supreme Court refused to require the Nuclear Regulatory Commission to consider whether energy conservation might obviate the need for a nuclear power plant. It held that 40 C.F.R. § 1502.16(e) did not apply to EISs prepared prior to adoption of the regulation. It also ruled that consideration of energy conservation as an alternative in future matters would be governed by a "rule of reason."

Ten years later, the Secretary of the Interior's Outer Continental Lease program was challenged on the grounds, inter alia, that the Secretary had failed to consider CAFE standards as an alternative to off-shore oil drilling, even though using energy conservation would achieve the same transportation fuels needs but would save 15.8 billion barrels of oil, thereby eliminating or dramatically reducing the need for the off-shore drilling. The challenged EIS contained an appendix with a broad, general discussion of energy conservation. Without mentioning 40 C.F.R. §1502.16(e), the court deemed this general discussion to be sufficient for NEPA "informational" purposes. *Natural Resources Defense Council v. Hodel*, 865 U.S. 288, 296 (D.C. Cir. 1988):

> [T]he Secretary's coverage of conservation in this case serves NEPA's informational function, although the FEIS and NEPP themselves deal with the matter in general terms and do not provide petitioners with detailed responses to their comments. The Secretary has not disregarded conservation alternatives, and we have no warrant to insist on more particulars from him, in view of his showing that, despite reasonable government regulation to achieve conservation, the nation's energy needs call for the contribution OCS development can make.

And so, without a change of law, deepwater drilling will continue without serious consideration of least-cost alternatives. NEPA must be amended to require us to question business-as-usual assumptions, to consider new approaches to old problems, and require that external environmental costs be monetized and included in all decision-making analyses. NEPA should require that the government adopt the alternative with the least long-term cost (including environmental externalities) to society.

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