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# The Gulf Spill Context: Peak Oil, Risky Oil, and Energy Strategy

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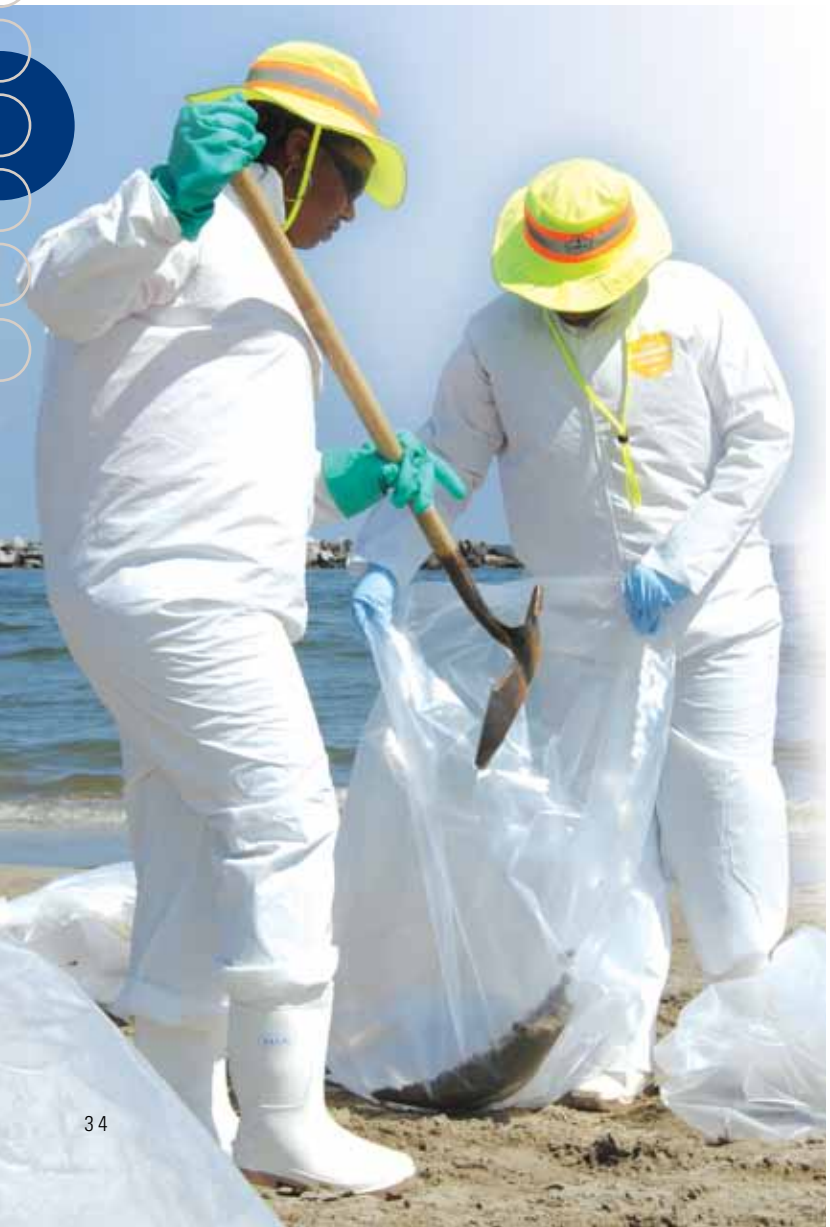
# THE GULF SPILL CONTEXT:

## Peak Oil, Risky Oil, and Energy Strategy

By Edward R. Parson

I'm going to begin this discussion of the Gulf oil spill by backing up and placing this catastrophe in the context of larger-scale problems with current energy policy, in the United States and globally.

As shocking as the situation in the Gulf of Mexico may be, in this broader context it must be regarded as a normal event. That's not to say that it's normal in relation to past experience. Rather, the Gulf spill is "the new normal," in the sense that our current energy strategy—or lack thereof—will make such events increasingly likely, even if we assume conditions of effective regulation and responsible compliance that evidently were not present on the Deepwater Horizon.



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The BP operation was 40 miles offshore, in water 5,000 feet deep, and yet it was far from being the most extreme of today's drilling locations. Plenty of wells are operating and in development deeper and farther offshore. The current record holder is in 10,000 feet of water, nearly twice the depth of BP's well.

Why are we pursuing resources in such difficult places? Partly because technology makes it possible; and partly because oil prices and supply constraints, current and anticipated, make it worth going after these resources.

The U.S. and world economies depend on fossil fuels for more than 80 percent of their total energy supplies, and for almost 100 percent of their transportation fuels. Yet even as world demand grows, particularly in the economies of Asia, production of easily extractable oil from easily reached places is in decline. Consequently, market conditions are forcing production toward increasingly remote, sensitive, and dangerous places, continually pushing the limits of advancing technology.

Absent a concerted move in a different direction, these trends will continue, bringing ever smaller extensions to the lifespan of these finite resources, at the price of increasing risk and environmental harm. On this trajectory, events like the Gulf spill may well become commonplace.

This is a global energy crisis—but we appear not to be noticing, largely because it is so unlike the energy crises of the 1970s. Those came on fast, triggered by individual acts and political events such as the OPEC embargo of 1973 and the Iranian supply disruption in the 1979 revolution.

This one, by contrast, is slow and structural, driven by the gradual but inexorable divergence between growing global demand and increasingly scarce and difficult supply, and it will have no simple or quick resolution. It cannot be reversed by any single act, such as persuading OPEC to lift its embargo, or by increasing U.S. domestic production, since there simply isn't enough available.

Rather, the only possible response is to reduce dependence on scarce energy sources through large-scale shifts in both demand (using less energy through efficiency improvements and other adjustments) and supply (developing new resources). This will mean higher—but not necessarily unreasonable—energy prices. Given a strong program of research, technology development, and investment, there are plenty of opportunities to achieve the required new energy supplies and demand reductions.

But there are perils on this path. We face not just one slow-moving energy crisis but two: the crisis of energy supply security as conventional oil and gas sources decline, and the crisis of climate change from the carbon dioxide ($CO_2$) emissions that are tightly linked to fossil-fuel use. These two crises are related, but they are not the same, and we must solve them both. Unfortunately, some widely supported solutions to the problem of energy supply security would not only fail to solve the problem of climate change but would make it much worse.

Whether we successfully navigate both crises will depend on where we turn for new energy sources as cheap oil declines. The simplest path would be to continue obtaining liquid fuels from fossil resources, chasing oil in ever more remote locations, and shifting to unconventional resources such as oil sands and liquids processed from coal or shale, which require intensive upstream processing.

From the viewpoint of present energy industries and regulatory approaches, this is the familiar path, with incremental development of existing technologies. There are plenty of these resources to meet world demand for decades, and the approach has strong proponents. But this path would make climate change much worse, not only because it would continue using carbon-based fuels to meet growing demand, but because the required upstream processing sharply increases the $CO_2$ emitted in delivering each unit of energy, nearly doubling that number for some sources.

Attempting to extend the energy supply in this way would commit us to a high-$CO_2$ pathway for much of the century, or a wrenching and costly adjustment if we later realize our error and change course after major investments are made.

**Our current energy strategy—or lack thereof—will make such events increasingly likely.**

Ultimately, the route to a climate-safe future is not compatible with large-scale movement toward liquids from coal, oil sands, or other heavy hydrocarbons as replacements for declining cheap oil. Avoiding dangerous climate change requires that, as cheap oil declines, we shift instead to new energy sources that do not emit greenhouse gases: renewables such as solar, wind, hydro, and nuclear power. This option does not require the sudden stoppage of fossil fuel use. There can be an extended transition period, provided new fossil investments include technologies to separate the carbon and store it underground, rather than emitting it into the atmosphere.

Taking this path would require sensible market incentives to develop and invest in climate-safe sources by making greenhouse gas emissions costly, such as emission taxes or cap-and-trade systems. With such policies steering investors toward low- and non-emitting technologies, the most dangerous routes to meeting energy demand as cheap oil declines would be priced out of the market.

If we develop these incentives sensibly—and implement them gradually—it's likely that we can still limit climate change at a modest cost. Most analyses suggest the price of avoiding the worst (but not all) risks of climate change to be about one percent of future GDP. The problem is, we've been waiting on the starting line for more than 20 years, and the time for such a low-pain fix is running out. The longer we wait, the harder it will be.

The BP oil spill is not merely a symptom of the destructive direction current energy policy is heading. It is an attention-grabbing event that will influence the broader politics of energy, for good or ill.

To his credit, President Obama has used the crisis to promote comprehensive energy and climate legislation. But the current congressional bills and administration proposals, although better than nothing, are too weak to drive the required reorientation of investment and research throughout the energy sector. Also, the president's June address to the nation was distressingly ambivalent as to the policies needed to end our dependence on fossil fuels.

While the spill may provide an opportunity to change the direction of America's dangerously unsustainable energy strategy, the opportunity to craft a more sustainable strategy poses many challenges and risks. It is hard to get the policies right, providing strong enough long-term incentives to move investment and R&D toward a radically different energy future while limiting short-term disruptions. It is perhaps even harder to get the politics right, because, with the possible exception of reducing federal entitlement programs, there is nothing in American politics more dangerous than raising the price of gasoline (just ask anyone involved in attempts to increase federal fuel taxes during the Carter or Clinton administrations).

Energy prices can only increase as the end of the cheap-oil era approaches; and they must increase a little more to move us to the energy path that limits climate change. Explaining this fact persuasively is among the jobs of the president and congressional leaders. Unfortunately, there are many ways for them to get it wrong.

They could, for example, draft legislation that gives away too much to current fossil interests (e.g., by over-reliance on "clean coal") or to other claimants (e.g., by building complex credit and offset systems that reward short-term trading and weaken incentives for long-term investments). Or they could subscribe to magical thinking about the ability of technology to solve the climate and energy problems, without policy incentives.

Perhaps most dangerous, reaction to the spill could trigger short-term energy price spikes. This could be caused by several factors, including the direct regulatory response to the spill, proposed new climate and energy policies, world market conditions, and strategic behavior by firms. (If you doubt the last possibility, recall Enron's role in the California electricity crisis of 2000.) Such a price spike, in turn, could lead to a backlash against long-term climate and energy policies and a panic to develop new fossil resources.

This is a real risk. If such a scenario unfolds, the resultant weakening or blockage of urgently needed climate and energy policies would be an even more damaging consequence of the spill than its direct harm to the Gulf region.