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STRIKE THE IRON WHILE IT'S HOT:
SILVER LINING OF THE DEEPWATER HORIZON OIL SPILL

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Executive Summary

The 2010 Deepwater Horizon Oil Spill by British Petroleum/Beyond Petroleum was the largest oil spill catastrophe in U.S. history, with a three-year clean up, and ongoing negative externalities six years later. The spill revealed that BP's position as an industry leader in corporate social responsibility fails to deliver, and the company sits on a black throne painted green to fool consumers and the media. All involved parties were ultimately held culpable through monetary settlements. BP has downsized in the aftermath, which actually helped boost revenue in the subsequent years, and offset the damage of the 2015 crash in oil prices. Consumer boycotting has barely left a scratch on BP revenue. However, the Deepwater Horizon Spill provided a valuable window of opportunity for a drastic overhaul of energy regulatory agencies, as well as for interest groups to successfully lobby against oil drilling off the Atlantic coast. There still exists the threat of offshore drilling in Alaska, and potentially off the Pacific coast. While BP has paid for its negligence with plummeted stock prices and the largest settlement in U.S. history, there still does not exist sufficient incentive for self-regulation. In order to make offshore drilling and oil refinement less profitable than divestment into renewable energy, interest groups should act fast and take advantage of the current window of opportunity to propose an offshore drilling oil tax – that, if properly phrased, will benefit all stakeholders except the oil industry. Activists should immediately spread awareness and spark conversation by disseminating information suggesting the long-run profitability of renewable energy over oil, both for consumers and investors, through social media and word-of-mouth. Overall, there exists sufficient momentum for a strong push against the oil-industry hegemony and to lay the foundation for a future of renewable energy and oil-independence.

Background **Information**

Born in the late 20th century to a series of mergers and acquisitions, British Petroleum reigned as the worlds third largest oil company, as well as an industry leader in corporate social responsibility. Amidst a black sea of global warming skepticism and blatant regulatory defection, BP revolutionized the American climate change dialogue. "It is hard to isolate cause and effect. But there is now an effective consensus among the world's leading scientists and serious and well informed people outside the scientific community that there is a discernible human influence on the climate, and a link between the concentration of carbon dioxide and the increase in temperature… Climate Change is a reality, and we are partly responsible," (BP CEO Lord John Browne, 1997 speech at Stanford University)[1]. The same year, BP withdrew membership from the Global Climate Coalition (1989 – 2002), an interest group formed by the petroleum and automotive industries to oppose mandatory regulations to address global warming – specifically through "skeptical scientist" propaganda and heavy resistance to the Kyoto Protocol. In 2000, British Petroleum invested a rumored $211 million dollars into the rebranding of its company image. The new "Helios mark", a stylized sunflower symbolizing solar energy and environmental and cultural sensitivity (exhibit 1), illuminated the path to new internal initiatives and external campaigns aiming to deliver the promise of *Beyond Petroleum*[2]. Perhaps British Petroleum was truly a pioneer in its industry, with a sense of responsibility for greenhouse gas emissions and an unprecedented determination to do its part in mitigating the apocalyptic effects of global warming. Or, perhaps, BP executives foresaw the winner in the arbitrated climate change debate and strategized for its long-term survival with a bold and highly effective

[1] Lowe, Earnest A. "Taking Climate Change Seriously: British Petroleum's Business Strategy", *Corporate Environmental Strategy* <http://www.indigodev.com/BPclim.html>

[2] "BP | Case Study" *Landor*. Web. 01 Mar. 2016. <http://landor.com/work/bp>

corporate social responsibility campaign. After all, even the GCC's own technical experts were advising that the science backing the human influence on global warming was irrefutable[3]. Regardless, according to a clearly BP-sponsored blog article on *Landor*, a branding consultancy, "nine months after the launch, 97 percent of employees were aware of the brand idea, and 9 out of 10 agreed that BP was heading in the right direction." Browne publically committed to reduce BP's greenhouse gas emissions by 10 percent by 2010.

On April 20, 2010, BP was responsible for what is considered the largest marine oil spill in the history of the petroleum industry. The *Deepwater Horizon* explosion in the Gulf of Mexico, alternatively known as the BP oil spill, was an 87-day underwater oil leak that discharged an estimated 4.9 million barrels of oil, forming a continuous plume more than 35 kilometers in lengths and 1100 meters in depth[4]. Emergency clean-up measures post-spill, such as the spraying of chemical dispersants, exacerbated the irrevocable ecological damage of the catastrophe, further destroying marine ecosystems in contaminated waters[5]. The incident led to 11 deaths, 17 injuries[6], and caused, debatably, the worst environmental disaster in US history.

According to *New Scientist* magazine, eight major failures caused the BP oil spill:

1. Failure of sealing cement due to substandard formulation
2. Failure of pipe seals to stop the flow of gas

[3] Revkin, Andrew C. Industry Ignored Its Scientists on Climate, *New York Times*. April 23, 2009.

[4] Camilli, et al. "Tracking Hydrocarbon Plume Transport and Biodegradation at Deepwater Horizon." Science Magazine, Oct. 2010. Web. 09 Feb. 2016. <http://science.sciencemag.org/content/330/6001/201.short>.

[5] "A Lot of Oil on the Loose, Not So Much to Be Found." *Science* (n.d.): n. pag. AAAS, 13 Aug. 2010. Web. 09 Feb. 2016.

[6] Griffith, Angela. "Deepwater Horizon Oil Spill Cause Mapping." *Think Reliably*. Web. 09 Feb. 2016. <http://www.thinkreliability.com/CM-DeepwaterHorizon.aspx>.

3. Misinterpreted pressure indicators to determine whether the well was sealed
4. Late surface detection of the leak
5. Failure of blowout preventer valve to seal leak within the rig
6. Failure of the mud-gas separator to divert debris and flammable gas from the rig
7. Failure of the onboard gas detection system to sound an alarm and seal off contamination
8. A defective emergency shut-of system[7].

In essence, every operational step of BP's disaster-prevention mechanism failed miserably. Meanwhile, *Beyond Petroleum* Sustainability Review 2009 boasted, "We have decades of experience of using cutting-edge skills and technology to undertake complex oil and gas projects… such as ultra deep water. One of our recent finds, the Tiber field in the Gulf of Mexico, was made by drilling a well 31,000 feet deep into the earth in water 4,000 feet deep."[8]

Who is to Blame?

The central cause of the Deepwater Horizon drilling rig explosion was a failure of the cement seal at the base of the oil-containing well, exacerbated by a cascade of human and mechanical errors that allowed excessively pressurized natural gas to shoot onto the drilling platform, causing an explosion and fire. A 500-page, two-part report compiled by the Bureau of Ocean Energy Management, Regulation and Enforcement and the Coast Guard ultimately concluded that British Petroleum and the well's owner were responsible for the accident, citing seven violations of federal safety and environmental regulations. The report further asserted that BP's

[7] "The Eight Failures That Caused the Gulf Oil Spill." *New Scientist*. N.p., 08 Sept. 2010. Web. 09 Feb. 2016. <https://www.newscientist.com/article/dn19425-the-eight-failures-that-caused-the-gulf-oil-spill/>.

[8] "Sustainability Review 2009." Web. 09 Feb. 2016. <http://www.bp.com/content/dam/bp/pdf/sustainability/group-reports/bp_sustainability_review_2009.pdf>

chief contractors – Transocean, who owned the drilling rig, and Halliburton, who were responsible for cementing operations – shared the burden. Transocean, Halliburton, and BP, in response, engaged in multibillion-dollar litigation in an attempt to spread the enormous costs of the accident, as well as the subsequent fines and compensation packages. Halliburton released a public statement asserting, "operational responsibility lies solely with BP," attributing the failure to poor well design on the part of BP, not crew incompetence or subpar cement quality[9]. A spokesperson for Transocean claimed that BP made major decisions leading up to the blowout, while the crew followed their strict training and "took appropriate actions based on the limited information made available to them.[10]"

A study by the National Oil Spill Commission released in 2011 concluded that root causes of the oil spill were systemic to deepwater drilling – which, due to the increase in operations personnel compared to traditional drilling, leads to a "telephone" effect of miscommunications. However, the report underplayed the culpability of the corporate key players, citing "a failure of industry management" as the clear root cause of the blowout[11]. The panel recommended, "better management of decision-making processes within BP and other companies, better communication within and between BP and its contractors and effective training of key engineering and rig personnel." Dialogue regarding the root causes of the oil spill name the key players, but fall short of highlighting the root causes. Little official scholarly discussion exists regarding the role of government in the Deepwater Horizon disaster. No offshore drilling

[9] Broder, John. "BP Shortcuts Led to Gulf Oil Spill, Report Says." *The New York Times*. The New York Times, 14 Sept. 2011. Web. 09 Feb. 2016. <http://www.nytimes.com/2011/09/15/science/earth/15spill.html>.

[10] Broder, John. "Blunders Abounded Before Gulf Spill, Panel Says." *The New York Times*. The New York Times, 05 Jan. 2011. Web. 09 Feb. 2016. <http://www.nytimes.com/2011/01/06/science/earth/06spill.html?_r=1&ref=gulfofmexico2010>.

[11] New York Times, see 10.

regulation or disaster response regulations existed at the time of the oil spill. Perhaps worth noting as well is the role of the consumer in enabling BP's growth with environmentally damaging lifestyle choices, and reduced consumer pressure and oversight post-rebranding.[12]

In June 2012, BP established the $20 billion Deepwater Horizon Oil Spill Trust to settle claims arising from the oil spill. This came after the BP-established claims settlement organization Gulf Coast Claims Facility (GCCF) was deemed illegitimate by the US government and replaced by a court supervised settlement program[13]. Three years after the incident, BP announced that the compensation fund was beginning to dry up, and the organization would continue to pay settlements from profits[14]. Concurrently, BP attempted to stem the flow of incoming claims by tirelessly appealing claims and even filing a claim to remove the court-appointed administrator[15]. In January 2013, BP pled guilty to 11 counts of felony manslaughter, one count of felony obstruction of Congress, and violations of the Clear Water and Migratory Bird Treaty Acts Finally, in July 2015, BP agreed to pay $18.7 billion in settlements to the U.S. government and five states to resolve all claims, with the exception of worker compensation[16]. The Deepwater Horizon Oil Spill has shown that: governmental regulation for spill prevention and response are

[12] Angus, Ian. "Did Consumers Cause the BP Oil Disaster?" *Climate & Capitalism*, 15 Aug. 2010. Web. 09 Feb. 2016. <http://climateandcapitalism.com/2010/08/15/did-consumers-cause-the-bp-oil-disaster/>.

[13] McDonell, Colin (March 2012). "Comment. The Gulf Coast Claims Facility and the Deepwater Horizon Litigation: Judicial Regulation of Private Compensation Schemes" (PDF). *Stanford Law Review*

[14] Scheck, Justin. "BP Says Spill Fund Is Running on Fumes." Wall Street Journal, 30 July 2013. Web. 09 Feb. 2016. <http://www.wsj.com/articles/SB10001424127887323854904578637180606036090>.

[15] Gerken, James. "Patrick Juneau, BP Spill Claims Administrator, Urges Dismissal Of Company's Lawsuit." *The Huffington Post*. TheHuffingtonPost.com, 01 Apr. 2013. Web. 09 Feb. 2016. <http://www.huffingtonpost.com/2013/04/01/patrick-juneau-bp-spill-settlement_n_2994406.html>.

[16] Wade, Terry, and Kristen Hayes. "BP Reaches $18.7 Billion Settlement over Deadly 2010 Spill." *Reuters*. Thomson Reuters, 02 July 2015. Web. 09 Feb. 2016. <http://www.reuters.com/article/us-bp-gulfmexico-settlement-idUSKCN0PC1BW20150702>.

insufficient, and that industry standards and norms fail to ensure worker and environmental safety.

Underlying Causes

Why did British Petroleum, the original oil giant with a conscience, allow for the cost-cutting, irresponsible behavior that caused such a disaster? In 2009, a year before the incident, oil prices fell to an all time low at $53 a barrel, compared to $91 the previous year[17]. However, a glance at historical financial ratios indicates that, despite lower revenue, BP enjoyed a typical gross ratio of 21%. What did reflect the economic downturn for the oil industry were net income and earnings per share – which fell nearly $1.50[18], indicating that shareholder pressure may be another factor in BP's frugality.

Failure of governmental oversight, industry capture, and hubris set the stage. "In the event of an unanticipated blowout resulting in an oil spill," read the exploration plan that BP submitted on March 10, 2009, to the U.S. Department of the Interior's Minerals Management Service (MMS), which then managed and regulated offshore drilling, "it is unlikely to have an impact based on the industry-wide standards for using proven equipment and technology for such responses."[19] However, a 2000 environmental assessment for a Shell deepwater drilling operation, 2002 MMS environmental impact statement for the Gulf of Mexico drilling program, as well as a 2004 report commissioned by the MMS highlight the difficulties in containing a deepwater blowout.

[17] McMahon, Tim. "Historical Crude Oil Prices (Table)." *InflationData.com*, 01 Mar. 2015. Web. 09 Feb. 2016. <http://inflationdata.com/Inflation/Inflation_Rate/Historical_Oil_Prices_Table.asp>.

[18] "BP PLC ADR." *Growth, Profitability, and Financial Ratios for (BP)*. Morningstar, n.d. Web. 18 Mar. 2016. <http://financials.morningstar.com/ratios/r.html?t=BP>.

[19] Lehner, Peter, and Bob Deans. *In Deep Water: The Anatomy of a Disaster, the Fate of the Gulf, and Ending Our Oil Addiction*. New York: Experiment, 2010. 105. Print.

Unfortunately, the reports also suggested a minimal likelihood (1.4%) of an unprecedented deepwater oil spill[20], causing MMS to simply ignore the risks.

Impact

Scientists are still in the process of quantifying the environmental impact of the Deepwater Horizon Spill. Reports have implied that the number of recovered carcasses equates number of deaths, which underestimates the actual toll by up to 50 times.

The oil spill led directly to a series of fishery closures. Five years later, the fishing industry in the Gulf of Mexico region remains gutted. Oyster season shrank from six months to only one month in the years following the spill, leading to a massive loss in income for small-business fishermen[21]. The tourism industry has suffered as well, with beach closures lasting three years after the spill and recovery slow to come. BP has contributed to short-term solutions with ad campaigns encouraging tourism to the Gulf, as well as rental of local homes and fishing boats for the three-year cleanup operation[22]. However, claims are slow to deliver and lump-sum compensation cannot remedy the long-term devastation to the local fishing industry.

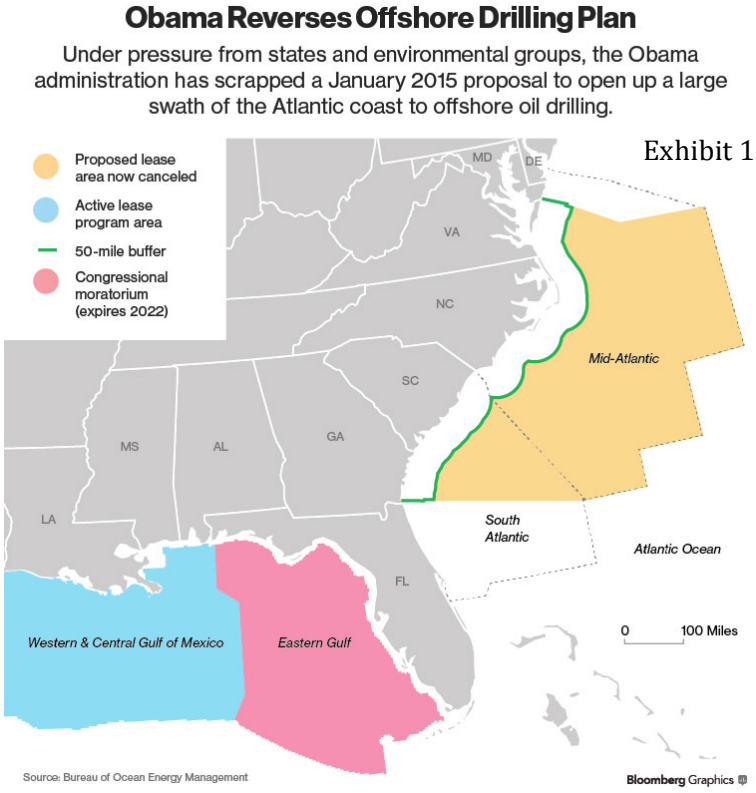
[20] Soraghan, Mike. "Industry Claims of 'Proven' Technology Went Unchallenged at MMS." *Energy & Environment*. New York Times, 02 June 2010. Web. 18 Mar. 2016. <http://www.nytimes.com/gwire/2010/06/02/02greenwire-industry-claims-of-proven-technology-went-unch-55514.html?pagewanted=all>.

[21] Ludwig, Mike. "Gulf Fishermen Still Struggling Five Years After the BP Spill." *Truthout*. N.p., 20 Apr. 2015. Web. 18 Mar. 2016. <http://www.truth-out.org/news/item/30319-gulf-fishermen-still-struggling-five-years-after-the-bp-spill>.

[22] Elliot, Debbie. "5 Years After BP Oil Spill, Effects Linger And Recovery Is Slow." NPR, 20 Apr. 2015. Web. 18 Mar. 2016. <http://www.npr.org/2015/04/20/400374744/5-years-after-bp-oil-spill-effects-linger-and-recovery-is-slow>.

In response to the incident, the Obama administration issued a moratorium on offshore drilling, enforced by the U.S. Department of the Interior. The ban was heavily contested by the oil industry and lifted six months later, along with new, loosely enforced regulations. The administration proposed a five-year ban on offshore drilling on the coasts, which encountered significant resistance in congress, and was compromised to cover only the Eastern Gulf of Mexico. In March 2016, the Obama administration proposed a new offshore leasing program, eliminating previously promised auctions in the Atlantic, and instead offering limited drilling rights in the Arctic near Alaska. This was a direct response to the public backlash following the Deepwater Horizon oil spills[23].

Exhibit 1



Mechanisms of Change

In order to prevent future incidents such as the Deepwater Horizon Spill, and to hold all culpable parties responsible, it is imperative that the legislators, regulators, and profit-makers place safety and environmental sustainability at a higher priority than profitability and efficiency. In essence,

[23] Dlouhy, Jennifer. "Obama Bars Atlantic Offshore Oil Drilling in Policy Reversal." Bloomberg Business, 15 Mar. 2016. Web. 18 Mar. 2016. <http://www.bloomberg.com/news/articles/2016-03-15/obama-said-to-bar-atlantic-coast-oil-drilling-in-policy-reversal>.

the key is to increased corporate social responsibility in the oil industry is to make offshore drilling unprofitable. The energy industry, as a collective entity, has one priority: to prolong its profitability for as long as possible. Within the industry, companies such as BP, Shell, and Chevron have occupied the highly profitable oil-and-gas niche. The oil industry has captured U.S. society and governance for decades, with negative impacts rippling through society ranging from the destruction of electric vehicles in California in the 1990s[24], to incentivizing military invasion of a foreign country in 2003.

Collective Action theory suggests that a "window of opportunity" (Kingdon, 1984) is imperative for effective change – i.e. even after resolving coordination problems, an interest group needs a catalyzing event that destabilizes the status quo in order to strengthen and maximize the impact of its collective action. Six years after the Deepwater Horizon Spill, the dust begins to settle as stakeholders shift focus to the future, rather than frantic damage control of the past. Oil and gas companies are diversifying their portfolios, heavily investing in renewable energy as future sources of revenue rather than reputational boons. Renewable energy consumption grew by 12% in 2014 globally, while oil consumption grew only 0.8% and coal and natural gas by 0.4%, all significantly below historic averages. Solar generation, in particular, grew 38%. In a side-by-side production versus consumption by region comparison released by BP (Exhibit 3), oil production significantly outpaces production[25]. Only the Asia Pacific has experienced a significant increase

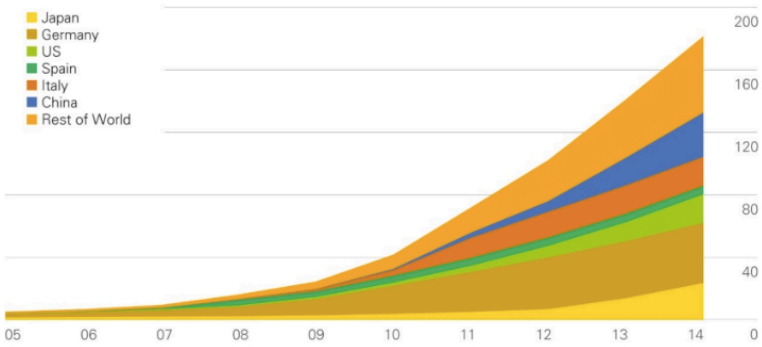
[24] *Note:* The oil and automobile industries joined forces to halt production of electric vehicles, unconditionally recall and destroy the vehicles, suspend research of improved technology, and pressure the California Air Resources Board to revoke its Zero Emissions Mandate, aimed to require 10% of all vehicles produced for sale in California be emissions free by 2003. The goal was not met, and the ZEV remains in perpetual revision.
Who Killed the Electric Car? Dir. Chris Paine. By Chris Paine and Martin Sheen. Prod. Jessie Deeter. Sony Pictures Classics, 2006. DVD.

[25] *Graphic sources:* "BP Statistical Review of World Energy 2015." *Fuel and Energy Abstracts* 37.1 (1996): 67. *BP Stats*. BP, June 2015. Web. 18 Mar. 2016.

in oil consumption; however, the region has also enjoyed the largest increase in consumption of renewable energy (Exhibit 2), and is in the early stages of establishing renewable-energy infrastructure to wean off of oil dependency. The global decline in demand is reflected in the recent drop in oil prices.

Solar PV generation capacity
Gigawatts

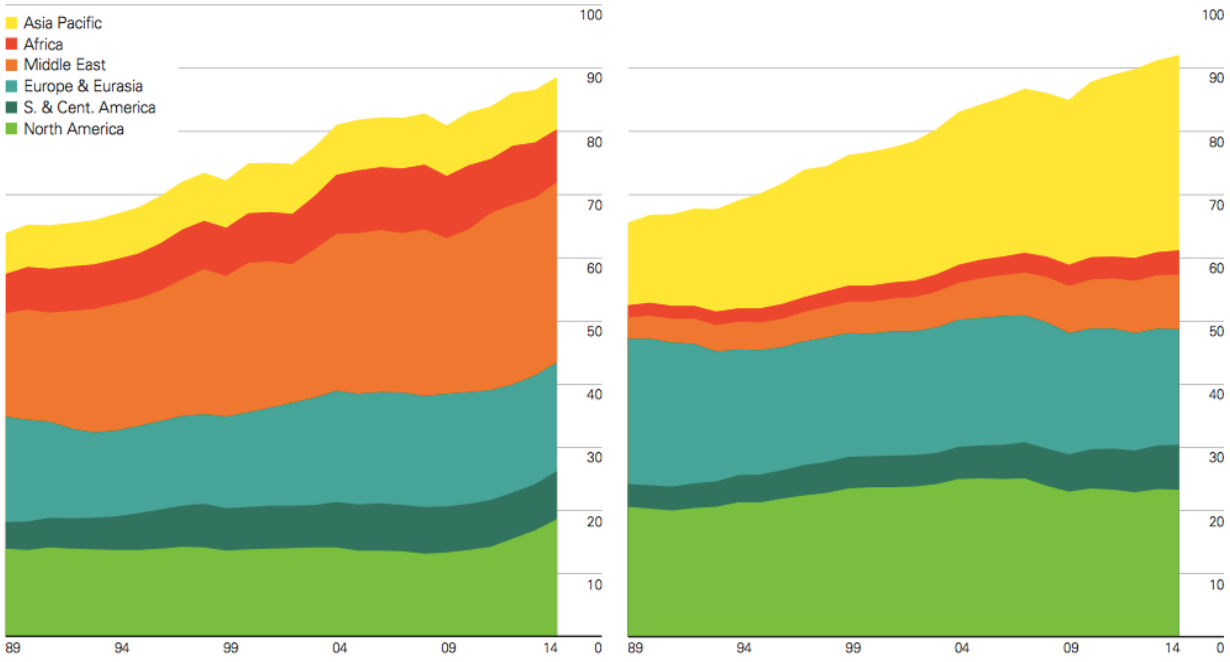
Exhibit 2



Production by region
Million barrels daily

Consumption by region
Million barrels daily

Exhibit 3



The 2015 United Nations Climate Change Conference (COP21) in Paris has committed 195 countries globally to emission reduction. Despite the vague language of the agreement and lack of enforcement, it set an important precedent for the future of the energy industry. Earth Institute

<http://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2015/bp-statistical-review-of-world-energy-2015-full-report.pdf>

Director Jeffrey Sachs advised investors against oil companies, stating that investors should divest from carbon-reliant firms if they could not react to political and regulatory efforts to halt climate change.[26] Oil and gas companies, exemplified by BP, are squeezed from the top and bottom to either change, or disappear. One could argue that the sole motivation for self-regulation is self-interest. A firm will only practice corporate social responsibility if the benefits outweigh the costs. The costs of oil and gas production have certainly increased since the oil industry's hegemony a decade ago, while benefits show long-run decline. This is the perfect window of opportunity: a combination of a decrease in international consumption of oil, and increased reputational costs of lack of self-regulation due to shift in global prioritization of environmental sustainability. Collective action efforts can minimize offshore drilling, significantly reduce the influence of the oil industry on state governance, and increase the costs of non-compliance to exceed profit.

There are two avenues of collective action: widespread consumer boycotting, and small group targeted lobbying. Consumer boycotting, in direct response to the Deepwater Horizon Spill, is a simple refusal to use BP or Arco (owned by BP) gas stations. According to NPR, anti-BP sentiment was widespread post-spill, and consumer watchdog organizations Public Citizen called for a nationwide boycott[27]. However, this has proven to be ineffective. BP stocks fell sharply after April 2010, and after experiencing impressive growth in 2011 and four years of relative stability, have fallen once again to a second all-time low[28]. BP downsized to fund the

[26] Pearce, Andrew. "Jeffrey Sachs: Fund Managers Have a Duty to Dump Fossil Fuels." *Financial News*. N.p., 07 Dec. 2015. Web. 18 Mar. 2016. <http://www.efinancialnews.com/story/2015-12-07/sachs222>.

[27] Neuman, Scott. "As BP Backlash Grows, So Do Calls For Boycott." *NPR*. N.p., 23 May 2012. Web. 18 Mar. 2016. <http://www.npr.org/templates/story/story.php?storyId=127110643>.

[28] "BP Stock Quote." *Market Watch*. Web. 18 Mar. 2016. <http://www.marketwatch.com/investing/stock/bp>.

$43.5billion compensation fund, which actually helped BP stay afloat during the 2015 35% downward spike in oil prices. However, based on BP's financials, revenue increased post-spill until 2015. BP's downstream (refined oil) business raked in a pre-tax profit of $2.3billion, an *increase* from the previous year, and significantly more profitable than the upstream (exploration and refinement) business, which netted only $800million pre tax, compared to $3.9billion in 2014.[29] This suggests that the repercussions of Deepwater Horizon – increased governmental restrictions and limited permit sales – combined with low per barrel price of refined oil has crippled BP's drilling business, yet consumer boycotting did not even make a dent in BP's refined oil sales. In fact, consumer boycotting of BP oil hurts gas station owners more than the company, who are trapped under long-term contracts, and whose earnings depend the stations' sales. The actual gasoline sold at any station is a mixture of fuel from multiple refiners, so the direct impact of any slowdown at BP-branded stations is minimal for the company, which can also sell excess supplies as private-label fuels to other retailers.[30] Therefore, BP and similar oil-and-gas companies are simply too big to fail, untouchable by consumer boycotting.

A "bottom-up" approach to exert pressure on BP to take corporate social responsibility responsibly has proven ineffective; therefore, top-down pressure from governmental oversight and internal pressure from employees and shareholders are the other available influences. Interest groups play a significant role in influencing governmental oversight, prominent economists and financial advisors influence shareholders, while media influences the employees.

[29] Ahmed, Kamal. "BP – Low Oil Price Isn't All Bad News." *BBC News*. N.p., 27 Oct. 2015. Web. 18 Mar. 2016. <http://www.bbc.com/news/business-34645976>.

[30] West, India. "Gas Station Owners Bear Brunt of BP Consumer Boycott." *Economy*. North American Media, 02 July 2010. Web. 18 Mar. 2016. <http://newamericamedia.org/2010/07/gas-station-owners-bear-brunt-of-bp-consumer-boycott.php>.

Increased Government Oversight

The sheer magnitude of the catastrophe destabilized the influence of oil industry in government; The White House took the window of opportunity to mobilize eleven diverse governmental agencies in a joint taskforce to address the oil spill, and billed BP for the largest settlement in U.S. History. Halliburton, the cement operating company, agreed to pay $1.1billion to settle its share of claims with Gulf Coast business owners. Transocean, the owner of the oil drill, settled a $1billion liability for violating the Clean Water Act. Transocean sued BP for legal fees, but contributed $212million to cleanup efforts[31]. These settlements set an important legal precedent, reinforcing that every hint of negligence involved in the incident can be held liable for the catastrophe.

The President also rejected a BP-funded investigative report; instead establishing an Oil Spill Commission consisting of the unbiased Coast Guard and Bureau of Ocean Energy Management, which is less likely to be swayed by oil industry bribes. The participation of several environment-oriented agencies in the cleanup of the spill legitimizes their significance, increases their funding, and strengthens their influence – particularly useful during a time when congress was infested by vocal climate-change deniers and proponents of offshore drilling, fraking, pipelining, and various environmentally damaging oil and gas industry practices. The international attention on the spill also launched an environmental fervor amongst the populace that undoubtedly influenced their governments to cooperate unanimously during the COP21 negotiations in 2015. The silver lining to the Deepwater Horizon Spill catastrophe is that the incident pulled a massive fire alarm on the failures of governmental oversight on offshore

[31] "BP Settles Oil Spill-related Claims with Halliburton, Transocean." *Reuters*. Thomson Reuters, 21 May 2015. Web. 18 Mar. 2016. <http://www.reuters.com/article/us-halliburton-bp-oilspill-idUSKBN0O52LL20150521>.

drilling, and the lack of effective disaster-prevention and containment infrastructure underscored the hubris of the oil industry.

The Minerals Management Service (MMS), previously delegated oversight for offshore drilling, was disbanded in 2011. The Bureau of Ocean Management (BOEM) took over as the regulatory body, while oversight is delegated to a separate Bureau of Safety and Environmental Enforcement (BSEE). Currently, the U.S. is a massive net oil exporter; despite an international push toward renewable energy, there are significant internal interests to maintaining U.S. dependency on oil. Exhibit 4 illustrates the organizational structure of the new BOEM, Exhibit 5 provides the original MMS organization structure, and Exhibit 6 shows the organizational structure of the BSEE. The new organization has several departments whose central mission is not the management of oil resources and revenue as was the MMS, but rather renewable energy and environmental sustainability. In addition, instead of one massive offshore management branch with limited oversight and whose negligence resulted in the Deepwater Horizon Spill, the BOEM is not only audited by a separate review unit, but has an intricate organizational structure that prevents negligence. Each regional department has its own environmental sub-division, while the BOEM also has a central Office of Environmental Programs for two-tiered preliminary evaluation. After a rig passes the initial inspection, the BSEE again has a two-tiered inspection system to ensure periodic checkups and consistent compliance to safety and environmental standards. In addition, in the same bureau that supervises offshore oil drilling, there exists the Office of Renewable Energy – effectively cementing governmental commitment to development of renewable energy and weaning off oil-dependency. The new BSEE-BOEM team ensures both fire alarm and police patrol oversight over not only offshore oil drilling, but also casts a shadow of influence the growth of the U.S. energy industries.

In a positive example of effective community organization, the Obama Administration recently cancelled extensive Atlantic Offshore Drilling Plans. This is the direct result of an adamant grassroots campaign led by all 34 East Coast chapters of the Surfrider Foundation, along with numerous local politicians, businesses, communities, and environmental groups. [32] The abolishment of MMS, the establishment of BOEM and BSEE, the harsh punishment of all parties linked to the incident, and revocation of the Atlantic Offshore Drilling Plans are all effective mechanisms of pressure that limit the influence of the oil-and-gas industry on regulation, and encourage adherence to the growing international norm of corporate social responsibility.

Internal Pressure – Stockholders

As previously mentioned, economist and special advisor to the UN Secretary General Jeffrey Sachs publically advised investors against investing in oil companies that fail to divest to renewable sources of energy. Mr. Sachs has predicted that if the Arabian peninsula continues to exploit oil unchecked, the Arabian Gulf will become uninhabitable in 2100[33]. In addition, due to global rise in renewable energy consumption (see Exhibit 2), supply of oil exceeds demand. Many regions of the world have already reached grid parity (Exhibit 7) – when an alternative source of energy is just as cost effective as the main electricity power grid. Therefore, forward-thinking stakeholders should either diversify to renewable energy companies, or exert pressure on oil-and-gas firms to divest away from oil and into renewable energy.

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[32] Stauffer, Pete. "Federal Government Just Canceled Plans for Extensive Atlantic Offshore Drilling." *The Inertia*. 16 Mar. 2016. Web. 18 Mar. 2016. <http://www.theinertia.com/environment/federal-government-just-canceled-plans-for-extensive-atlantic-offshore-drilling/>.

For the curious, a long list of letters and resolutions opposing offshore drilling: http://usa.oceana.org/seismic-airgun-testing/grassroots-opposition-atlantic-drilling

[33] Bouyamorn, Alan. "Warning to End High-cost Oil Production from Top US Economist." *The National*. N.p., 28 Jan. 2016. Web. 18 Mar. 2016. <http://www.thenational.ae/business/energy/warning-to-end-high-cost-oil-production-from-top-us-economist>.

Of course, there is resistance to Mr. Sachs's message. Forbes recently published an editorial titled, "Four Ways to Invest in the Eventual Rise in Oil Prices"[34], in which the writer recognizes the excess supply-to-demand ratio, but attributes it to a slow in global economy rather than a rise in renewable energy. The International Monetary Fund 2016 forecast predicts that Chinese growth will slow, Middle Eastern growth will increase, while European growth holds steady[35]. Referring to Exhibit 3, Asia is the biggest consumer of oil, while Middle Eastern and European consumption have held steady over the past two and a half decades. In addition, Exhibit 2 shows that China has shown exponential growth in renewable energy usage, and Europe has firmly established itself as the world leader in renewable energy development. From a big-picture economic standpoint, it is easy to see that the cost-benefit analysis leans in favor of renewable energy. It is imperative that stockholders come to that conclusion as well, and exert pressure on the oil-and-gas companies, so that the benefits of increased investment in renewable energy outweigh the loss of earnings in foregone oil production and refinement. The key is information dissemination. This can be done from two avenues:

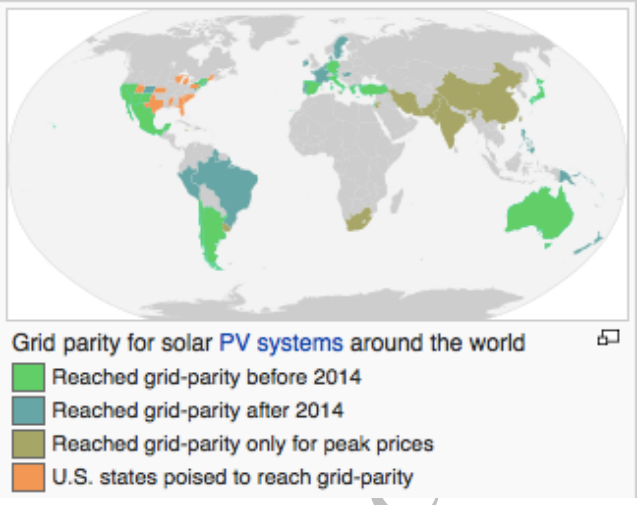


Exhibit 7
Source: Deutsch Bank, as of Feb 2015

[34] Wibberly, Ryan. "Four Ways To Invest In The Eventual Rise In Oil Prices." *Forbes*. Forbes Magazine, 26 Jan. 2016. Web. 18 Mar. 2016. <http://www.forbes.com/sites/ryanwibberley/2016/01/26/four-ways-to-invest-in-the-eventual-rise-in-oil-prices/#6e897b8e0133>.

[35] *IMF World Economic Outlook (WEO)*. International Monetary Fund, Jan. 2016. Web. 18 Mar. 2016. <https://www.imf.org/external/pubs/ft/weo/2016/update/01/>.

1. Scholarly Publications. Mr. Sachs, or an eager graduate student (Mr. McCord, perhaps?) could publish a paper predicting the long-run decline of the oil industry, and clearly outlining the benefits of renewable energy to the overall economy and to the sustainability of the energy industry.

2. Social Networking and Media. Mainstream investment forums such as Forbes, Investopedia, and CNN Money remain optimistic for the future of oil, and are actively encouraging investors to take advantage of the economic downturn, which is interpreted as part of the natural cycle of a commodity. There currently lacks prominent counterargument in favor of Mr. Sach's perspective. A simple blog post, community seminar, or even conversation in the right crowd can plant the seed for this perspective to seep into the mainstream. In addition, there exist numerous articles regarding Mr. Sach's conclusion. Interest groups can share those articles on social media, paired with information regarding the COP21 global commitment to renewable energy, as well as the boom in solar infrastructure across the world, particularly China. Given the speed at which information spreads online, this grassroots campaign will simultaneously educate the millennial populace – who will become the stockholders and stakeholders in the next decade – and generate conversation that will inevitably reach tech-savvy investors.

Interest Group Lobbying

While interest groups won a massive victory March 2016 by successfully lobbying against offshore drilling in the Atlantic, the Obama Administration still plans to auction drilling permits in the Arctic Ocean off Alaska, after a two-year ban instated in October 2015 expires in 2017. This diversion makes a bittersweet victory for Environmentalists. Shell, Dutch oil giant, has abandoned plans to drill in Alaska indefinitely after investors experienced cold feet at the

massive expenditure and disappointing quantities of resources[36]. The Arctic is considered one of the most technically challenging regions for petroleum exploration, as well as one with the most fragile ecosystem. Shell investors have already deemed the expedition unprofitable. With the Atlantic and two-thirds of the Gulf of Mexico off-limits, oil-and-gasp companies will likely target the Pacific. The newly established regulatory agencies will inevitably dull with time. If predictions of an oil economic recovery are correct, then the window of opportunity may last only two more years before the oil-and-gas industries re-accumulate wealth and power, and establish their influence. On the off-chance that a Republican takes office in 2016, and the senate demographic does not change, then the West Coast may very well face the same dilemma as the East Coast, with significantly less sympathetic leadership. Interest groups on the West Coast should begin conducting research immediately on potential allies, as well as engage in aforementioned social media information dissemination denouncing offshore drilling and praising the spread of renewable energy.

To make offshore drilling unprofitable, interest groups have two options: lobby for a moratorium on all offshore drilling, or instate an offshore drilling oil tax. The former, while ideal, is an ineffective solution: in 2008, George W. Bush rescinded Bill Clinton's executive order to ban offshore drilling in California until 2012. In addition, an offshore drilling oil tax will attract support not only from the Pacific region, but also throughout the coastal United States. Potential opponents are socially conservative taxpayers, the oil industry, the automobile industry, and associated demographics. Potential allies are the manufacturers of Electric Vehicles such as Tesla; surfers, divers, sailors, and ocean-sport enthusiasts; as well as coastal and gulf fishing and

[36] Gerken, James. "Shell's Alaska Offshore Drilling Plans Abandoned Until Next Year." *The Huffington Post*. TheHuffingtonPost.com, 17 Sept. 2012. Web. 18 Mar. 2016. <http://www.huffingtonpost.com/2012/09/17/shell-alaska-offshore-drilling_n_1889214.html>.

tourism industries, particularly in Alaska and the Pacific. As the largest economy in the United States, California has significant influence over Washington, particularly on issues concerning its own coastline. Sacramento lobbyists, interest groups, and environmentally conscious socialites should already engage in conversation regarding the future of offshore oil drilling, bringing up the 1969 Santa Barbara offshore drilling oil spill and refusing to allow the 2010 Deepwater Horizon Spill to fade into obscurity. Students will also play a significant role, as California has more degree-granting institutions than any other state, and all seven campuses of the University of California are influential research institutions. Three campuses are coastal – with UC San Diego as a world-renowned leader in environmental sustainability; UC Berkeley is notorious for social activism; UC Davis has close proximity to state governance in Sacramento; and the UCLA community has significant influence over media and popular culture. The majority will surely oppose further expansion of offshore off the Pacific Coast. If presented as the only viable option to suppress oil-and-gas industry expansionism, an offshore drilling tax could mobilize significant support. In order to properly coordinate such a large and diverse coalition, interest groups should begin planning and disseminating information immediately to establish a foundation.

Conservative tax-payers could potentially be persuaded to join the cost as well. The majority of car owners would oppose an oil tax on the already exorbitant California gas prices. However, with the rise of electric vehicles in California, there is great potential. California already subsidizes electric vehicles, with charging stations installed in urban hubs and many universities. In addition, existing offshore oil rigs in California and the Gulf of Mexico have been highly contested for decades. The increased tax revenue from them can help the Gulf region expedite its recovery; and relieve overpopulated coastal cities that suffer from parking problems with increased public transportation, and even electric buses – which will further lower the demand

for oil consumption. As electric vehicles become increasingly popular, the love affair between the oil and automobile industries is nearing the end of its honeymoon stage. All but 13 US states have renewable energy standards (Exhibit 7); with new green energy infrastructure built daily, the future of legislation points toward increased emissions regulation and subsidization of renewable energy. Demand for electric cars is on the rise. With proper phrasing, an offshore drilling oil tax can benefit everyone except the oil industry.

Exhibits

Exhibit 1

Exhibit 2

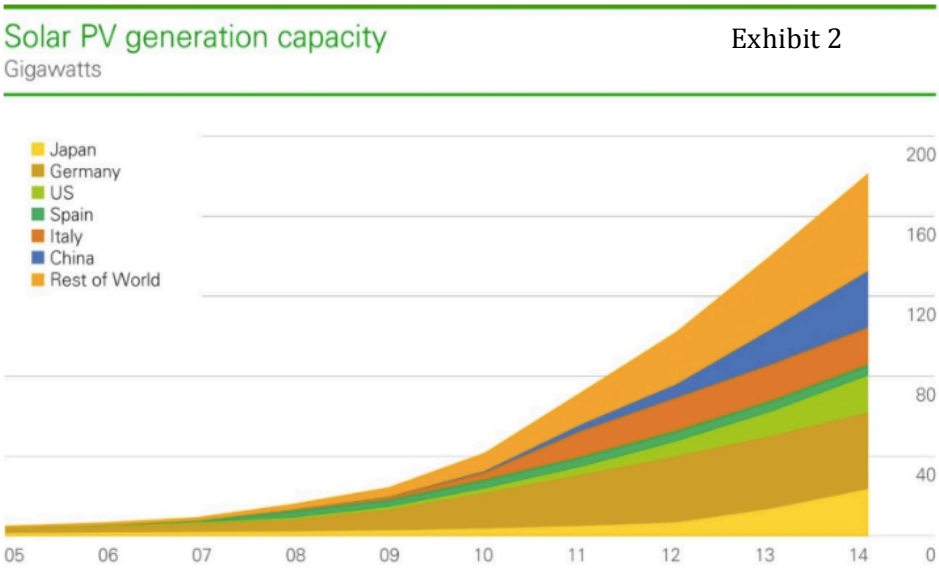


Exhibit 3

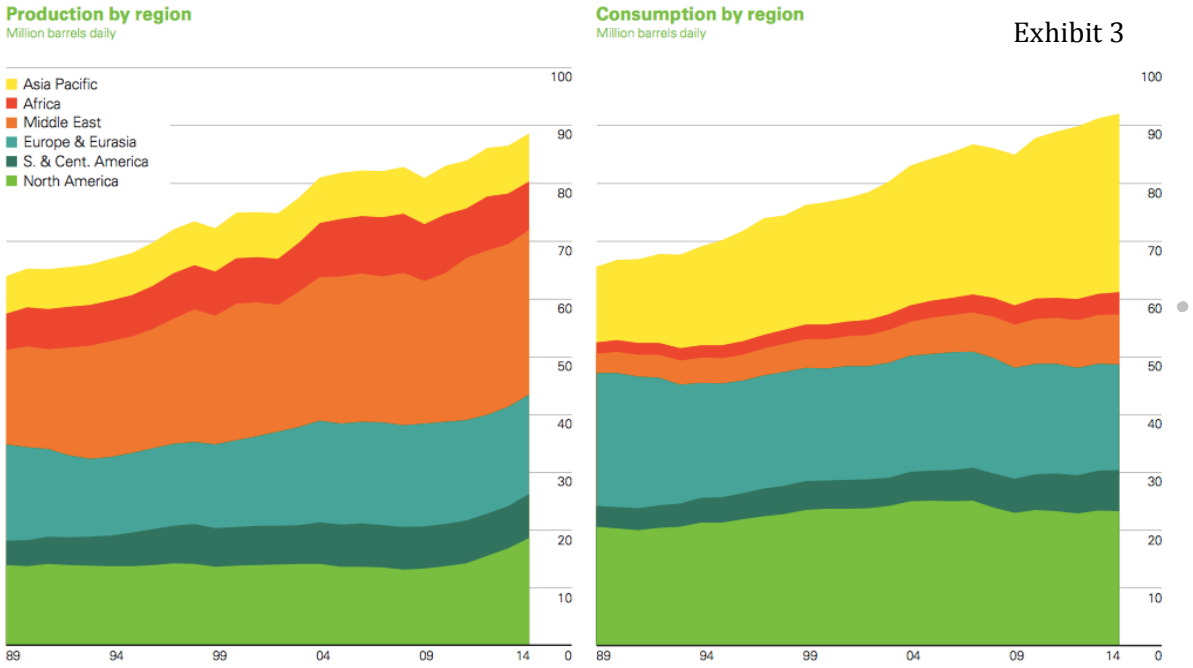


Exhibit 4

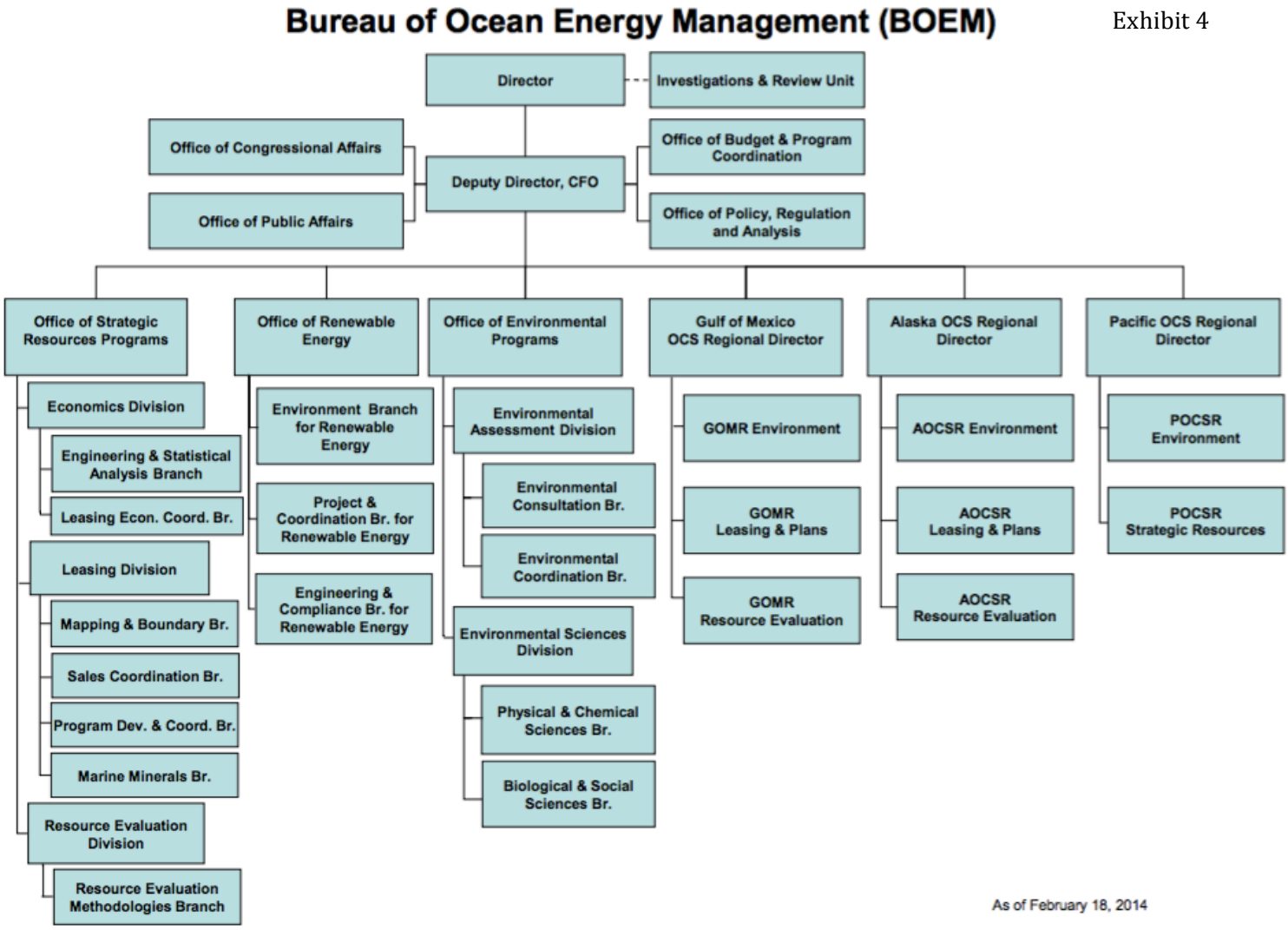
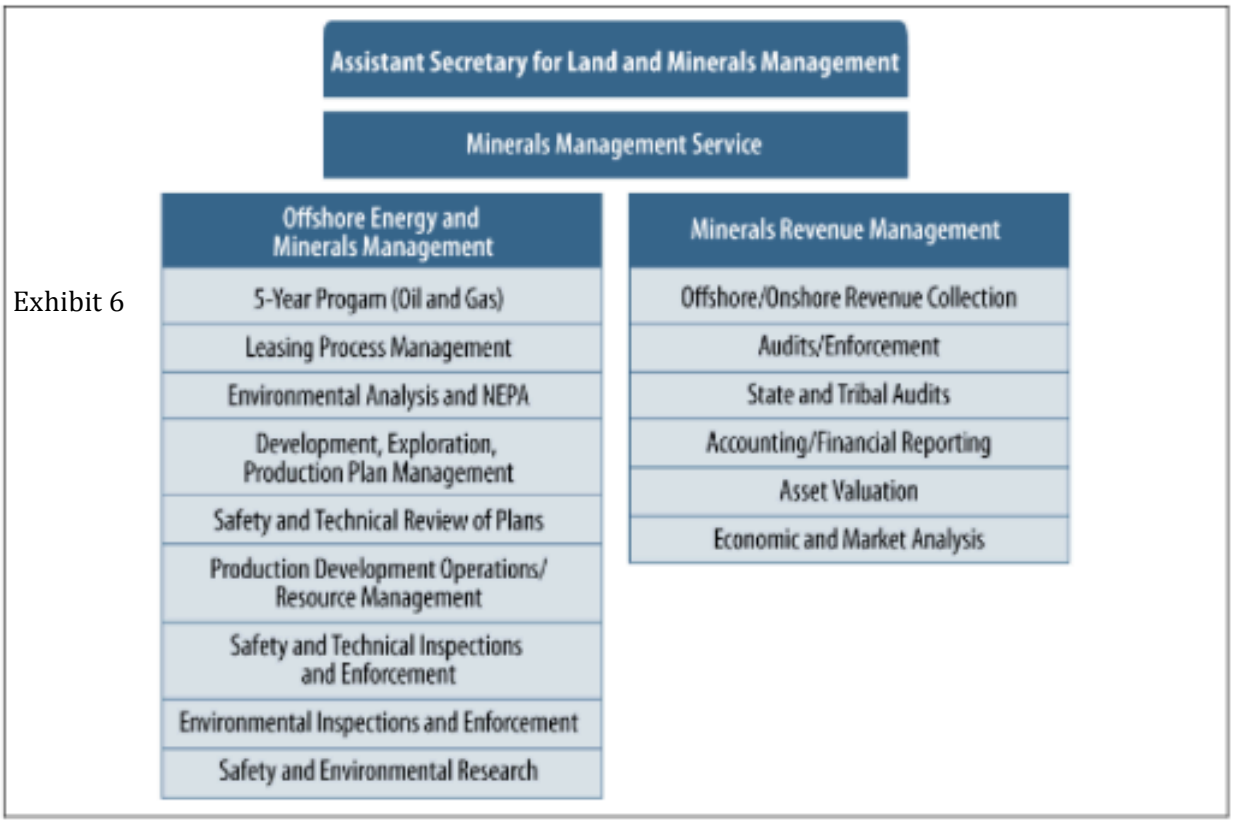


Exhibit 5 **Pre-Reorganization Distribution of BOEMRE/MMS Functions**

As characterized by the Department of the Interior

Exhibit 6



Source: U.S. Department of the Interior, "Implementation Report: Reorganization of the Minerals Management Service," issued July 14, 2010, p. 5. Available at http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=38543.

Exhibit 6