



Environment – Documents on the Web – Winter 2010-2011

GOVERNMENT DOCUMENTS

CLIMATE CHANGE -- GLOBAL ISSUES

OUR CHANGING PLANET: THE U.S. CLIMATE CHANGE SCIENCE PROGRAM FOR FISCAL YEAR 2011

U.S. Global Change Research Program and Subcommittee on Global Change Research. January 31, 2011. 96 pages.

<http://downloads.globalchange.gov/ocp/ocp2011/ocp2011.pdf>

This report describes the activities and plans of the U.S. Global Change Research Program (USGCRP) established under the Global Change Research Act (GCRA) of 1990. The USGCRP coordinates and integrates scientific research on climate and global change and is supported by 13 participating departments and agencies of the U.S. government. This year's report highlights recent advances and progress made by participating agencies and includes budget information on each agency's contribution. The program going forward will place greater emphasis on impacts, vulnerabilities, and on understanding the options for adapting to the changing climate. The program will also continue its long-standing support for activities that contribute to a better understanding of the Earth system, including observations, research, and predictive modeling.

UNITED STATES GLOBAL ENGAGEMENT ON CLIMATE CHANGE AND PUBLIC HEALTH Fact Sheet. Bureau of Oceans and International Environmental and Scientific Affairs. U.S Department of State. January 5, 2011.

<http://www.state.gov/g/oes/rls/fs/2011/153994.htm>

The United States is collaborating with international partners in a broad range of activities designed to better understand and respond to climate change and its implications for human health. This fact sheet summarizes the whole range of current U.S. government initiated programs and studies.

ENHANCING CAPACITY FOR LOW EMISSION DEVELOPMENT STRATEGIES

Fact Sheet. Bureau of Oceans and International Environmental and Scientific Affairs. U.S Department of State. November 2011.

<http://www.state.gov/documents/organization/152281.pdf>

Enhancing Capacity for Low Emission Development Strategies (EC-LEDS) is a U.S. Government initiative to support developing countries' efforts to pursue long-term, transformative development and accelerate sustainable, climate-resilient economic growth while slowing the growth of greenhouse gas emissions. The initiative will build capacities in partner countries, provide targeted technical assistance, and build a shared global knowledge base on LEDS. This program is country-driven; support for

creating and implementing a LEDS will be tailored to each country's unique capacity, technical, analytical, and policy needs.

INTERNATIONAL FINANCING OF RESPONSES TO CLIMATE CHANGE

Jane A. Leggett. Congressional Research Service (CRS). November 23, 2010. 37 pages.

<http://www.fas.org/sgp/crs/misc/R41500.pdf>

Many voices, domestically and internationally, call for the United States to increase its international financing of measures to address climate change. Financing would help low-income countries pay for the extra costs of development incurred to reduce their emissions of greenhouse gases (GHG) and to adapt to climate variability and change. The United States and other industrialized countries committed to financial assistance in the United Nations Framework Convention on Climate Change (UNFCCC, 1992) and the Copenhagen Accord (2009). In the Copenhagen Accord, countries pledged \$30 billion in 2010 to 2012 as fast-start financing, and to seek \$100 billion annually by 2020, with funds to come from both public and private sources. The Obama Administration has not yet specified what shares of the two pledges it envisions the United States providing, nor a strategy to fulfill the 2020 pledge.

PROGRESS REPORT OF THE INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE: RECOMMENDED ACTIONS IN SUPPORT OF A NATIONAL CLIMATE CHANGE ADAPTATION STRATEGY

The White House Council on Environmental Quality. October 5, 2010. 72 pages.

<http://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf>

As concentrations of greenhouse gases and heat-trapping particles increase in the atmosphere, it is becoming ever more urgent to understand and prepare for the resulting changes in climate. These changes include not only temperature increases but also shifts in precipitation patterns, storm tracks, and other parameters. Climate change affects human health, water and energy supplies, food production, coastal communities, ecosystems, and many other aspects of society and the environment. The Obama Administration is committed to reducing greenhouse gas emissions to minimize the impacts of climate change. But mitigation alone is not enough. People are already feeling the impacts of climate change and future changes are inevitable. To prepare and respond to these impacts, the Administration is also committed to climate change adaptation.

CLIMATE CHANGE -- DOMESTIC ISSUES

METHANE CAPTURE: OPTIONS FOR GREENHOUSE GAS EMISSION REDUCTION

Kelsi Bracmort, Jonathan L. Ramseur, James E. McCarthy, Peter Folger and Donald J. Marples.

Congressional Research Service (CRS). January 7, 2011. 22 pages.

<http://www.fas.org/sgp/crs/misc/R40813.pdf>

Research on climate change has identified a wide array of sources that emit greenhouse gases (GHGs). Among the six gases that have generally been the primary focus of concern, methane is the second-most abundant, accounting for approximately 8% of total U.S. GHG emissions in 2008. Methane is emitted from a number of sources. The most significant are agriculture (both animal digestive systems and manure management); landfills; oil and gas production, refining, and distribution; and coal mining. As policymakers consider options to reduce GHG emissions, methane capture projects offer an array of

possible reduction opportunities, many of which utilize proven technologies. Methane capture projects (e.g., landfill gas projects, anaerobic digestion systems) restrict the release of methane into the atmosphere. The methane captured can be used for energy or flared. Methane capture challenges differ depending on the source. Most methane capture technologies face obstacles to implementation, including marginal economics in many cases, restricted pipeline access, and various legal issues.

FEDERAL AGENCY ACTIONS FOLLOWING THE SUPREME COURT'S CLIMATE CHANGE DECISION: A CHRONOLOGY

Robert Meltz. Congressional Research Service (CRS). December 23, 2010. 10 pages.

<http://www.fas.org/sgp/crs/misc/R41103.pdf>

On April 2, 2007, the Supreme Court rendered one of its most important environmental decisions of all time. In *Massachusetts v. EPA*, the Court held that greenhouse gases (GHGs), widely viewed as contributing to climate change, constitute "air pollutants" as that phrase is used in the Clean Air Act (CAA). As a result, said the Court, the U.S. Environmental Protection Agency (EPA) had improperly denied a petition seeking CAA regulation of GHGs from new motor vehicles by saying the agency lacked authority over such emissions. This report presents a chronology of major federal agency actions, mainly by EPA, in the wake of *Massachusetts v. EPA*.

MANAGING ALLOWANCE PRICES IN A CAP-AND-TRADE PROGRAM

Congressional Budget Office (CBO). November 2010. 32 pages.

<http://www.cbo.gov/ftpdocs/118xx/doc11872/11-04-2010-Cap-and-Trade.pdf>

This Congressional Budget Office (CBO) study examines the potential effects of features that would help manage allowance prices, and thus the cost of complying with a cap-and-trade program, by altering the number of allowances available to firms at various prices.

EPA'S BACT GUIDANCE FOR GREENHOUSE GASES FROM STATIONARY SOURCES

Larry Parker and James E. McCarthy. Congressional Research Service (CRS). November 22, 2010. 21 pages.

<http://www.fas.org/sgp/crs/misc/R41505.pdf>

Stationary sources -- a term that includes power plants, petroleum refineries, manufacturing facilities, and other non-mobile sources of air pollution -- are not yet subject to any greenhouse gas (GHG) emission standards issued by the EPA; but because of the Clean Air Act's wording, such stationary sources will become subject to permit requirements for their GHG emissions beginning on January 2, 2011. Affected units will be subject to the permitting requirements of the Prevention of Significant Deterioration (PSD) and Title V provisions. For PSD, this will include state determinations of what constitutes Best Available Control Technology (BACT) that affected facilities will be required to install. On November 10, 2010, EPA released guidance and technical information to assist state authorities in issuing permits and determining BACT.

FEDERAL OIL AND GAS LEASES: OPPORTUNITIES EXIST TO CAPTURE VENTED AND FLARED NATURAL GAS, WHICH WOULD INCREASE ROYALTY PAYMENTS AND REDUCE GREENHOUSE GASES

Government Accountability Office (GAO). Report to Congressional Requesters. October 2010. 57 pages.

<http://www.gao.gov/new.items/d1134.pdf>

The Department of the Interior leases public lands for oil and natural gas development, which generated about \$9 billion in royalties in 2009. Some gas produced on these leases cannot be easily captured and is released (vented) directly to the atmosphere or is burned (flared). This vented and flared gas represents potential lost royalties for the Department of the Interior and contributes to greenhouse gas emissions. GAO was asked to examine available estimates of the vented and flared natural gas on federal leases; estimate the potential to capture additional gas with available technologies and associated potential increases in royalty payments and decreases in greenhouse gas emissions; and assess the federal role in reducing venting and flaring.

GREEN BUILDINGS

PRESIDENT OBAMA'S PLAN TO WIN THE FUTURE BY MAKING AMERICAN BUSINESSES MORE ENERGY EFFICIENT THROUGH THE "BETTER BUILDINGS INITIATIVE"

Executive Office of the President. February 03, 2011.

<http://www.whitehouse.gov/the-press-office/2011/02/03/president-obama-s-plan-win-future-making-american-businesses-more-energy>

The President is proposing new efforts to improve energy efficiency in commercial buildings across the country. Last year, commercial buildings consumed roughly 20 percent of all energy in the U.S. economy. Improving energy efficiency in our buildings can create jobs, save money, reduce our dependence on foreign oil, and make our air cleaner. The President's Better Buildings Initiative will make commercial buildings 20 percent more energy efficient over the next decade by catalyzing private sector investment through a series of incentives to upgrade offices, stores, schools and other municipal buildings, universities, hospitals, and other commercial buildings. This initiative builds on our investments through the American Recovery and Reinvestment Act (ARRA), and our continued commitment to passing the President's proposed "HOMESTAR" legislation to encourage American families to make energy saving upgrades in their homes.

ENVIRONMENTAL PROTECTION AND CONSERVATION

CLEAN AIR ACT: A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS

James E. McCarthy, Claudia Copeland, Larry Parker and Linda-Jo Schierow. Congressional Research Service (CRS). January 6, 2011. 27 pages.

<http://www.fas.org/sgp/crs/misc/RL30853.pdf>

The principal statute addressing air quality concerns, the Clean Air Act was first enacted in 1955, with major revisions in 1970, 1977, and 1990. This report describes the Act's major provisions and provides tables listing all major amendments, with the year of enactment and Public Law number, and cross-referencing sections of the Act with the major U.S. Code sections of the codified statute.

SAFE DRINKING WATER ACT (SDWA): A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS

Mary Tiemann. Congressional Research Service (CRS). December 10, 2010. 22 pages.

<http://www.fas.org/sgp/crs/misc/RL31243.pdf>

This report summarizes the Safe Drinking Water Act (SDWA) and its major programs and regulatory requirements. In addition to reviewing key programs and requirements of the SDWA, this report includes statistics on the number and types of regulated public water systems. It also provides tables that list all major amendments, with the year of enactment and public law number, and that cross-reference sections of the act with the major U.S. Code sections of the codified statute.

ENERGY-WATER NEXUS: A BETTER AND COORDINATED UNDERSTANDING OF WATER RESOURCES COULD HELP MITIGATE THE IMPACTS OF POTENTIAL OIL SHALE DEVELOPMENT

Government Accountability Office (GAO). Report to Congressional Requesters. October 2010. 75 pages.

<http://www.gao.gov/new.items/d1135.pdf>

Oil shale deposits in Colorado, Utah, and Wyoming are estimated to contain up to 3 trillion barrels of oil - or an amount equal to the world's proven oil reserves. About 72 percent of this oil shale is located beneath federal lands, making the federal government a key player in its potential development. Extracting this oil is expected to require substantial amounts of water and could impact groundwater and surface water. GAO was asked to report on what is known about the potential impacts of oil shale development on surface water and groundwater, what is known about the amount of water that may be needed for commercial oil shale development, the extent to which water will likely be available for commercial oil shale development and its source, and federal research efforts to address impacts to water resources from commercial oil shale development.

POLLUTION AND WASTE

AGRICULTURAL CHEMICALS: USDA COULD ENHANCE PESTICIDE AND FERTILIZER USAGE DATA, IMPROVE OUTREACH, AND BETTER LEVERAGE RESOURCES

Government Accountability Office (GAO). Report to Congressional Requesters. November 2010. 65 pages.

<http://www.gao.gov/new.items/d1137.pdf>

The use of pesticides and fertilizers contributes to U.S. agricultural productivity and helps ensure a generally stable, plentiful, and inexpensive food supply. However, these chemicals may also harm human health, water quality, and food safety. The U.S. Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS) collects, analyzes, and disseminates Agricultural Chemical Usage (ACU) data to meet regulatory, business, and other informational needs. In fiscal years 2007 through 2009, NASS substantially scaled back the ACU program before restoring it in 2010. GAO was asked to examine: what factors NASS considered in reducing the ACU program; how ACU data users were affected by the temporary cutback, and their views on the data's quality and usefulness; and the extent to which agricultural pesticide and fertilizer usage data are available from sources other than NASS.

METHYL BROMIDE

Remarks. Daniel A. Reifsnyder, Deputy Assistant Secretary, Bureau of Oceans and International Environmental and Scientific Affairs, U.S Department of State. 22nd Meeting of the Parties of the Montreal Protocol, Bangkok, Thailand. November 8, 2010.

<http://www.state.gov/g/oes/rls/remarks/2010/150788.htm>

The Parties to the Montreal Protocol have committed to reducing the production and consumption of methyl bromide because it is a potent ozone depleting substance. The United States takes this commitment seriously, and has worked extremely hard to facilitate the adoption of feasible alternatives across all sectors that use methyl bromide.

DEEPWATER HORIZON OIL SPILL

DEEPWATER HORIZON OIL SPILL: THE FATE OF THE OIL

Jonathan L. Ramseur. Congressional Research Service (CRS). December 16, 2010. 24 pages.

<http://www.fas.org/sgp/crs/misc/R41531.pdf>

The April 20, 2010, explosion of the Deepwater Horizon offshore drilling rig led to the largest oil spill in U.S. waters. Federal government officials estimated that the deepwater well ultimately released (over 84 days) over 200 million gallons (or 4.9 million barrels) of crude oil. Although decreasing amounts of oil were observed on the ocean surface following the well's containment on July 15, 2010, oil spill response officials and researchers have found oil in other places. A pressing question that has been raised by many stakeholders is where did the oil go?

FEDERAL CIVIL AND CRIMINAL PENALTIES POSSIBLY APPLICABLE TO PARTIES RESPONSIBLE FOR THE GULF OF MEXICO OIL SPILL

Robert Meltz. Congressional Research Service (CRS). December 16, 2010. 14 pages.

<http://www.fas.org/sgp/crs/misc/R41370.pdf>

Since the Deepwater Horizon oil spill began on April 20, 2010, Congress has given much attention to the compensatory liability provisions of the Oil Pollution Act and, to a lesser extent, those of the Jones Act and the Death on the High Seas Act. However, federal laws possibly relevant to the oil spill also impose civil and criminal money penalties, which may reach dollar amounts in connection with the Gulf spill greater than those for compensatory liability. This report summarizes selected federal civil and criminal penalty provisions that may be found violated in connection with the Gulf spill and related worker fatalities.

THINK TANKS AND RESEARCH CENTERS

The opinions expressed in these publications do not necessarily reflect the views of the U.S. Government

CLIMATE CHANGE -- GLOBAL ISSUES

CLIMATE CHANGE 101: UNDERSTANDING AND RESPONDING TO GLOBAL CLIMATE CHANGE

Pew Center on Global Climate Change. January 2011. 94 pages.

http://www.pewclimate.org/docUploads/climate101-fullbook_0.pdf

This report seeks to provide a reliable and understandable introduction to global climate change, giving policy makers the basic information they need as they face decisions about climate policy. This new edition incorporates the most recent information on climate change and major developments in the

climate field since the last update in 2009. It begins with an overview report and consists in a series of eight briefs covering climate science and impacts, adaptation, technological solutions, business solutions, international action, U.S. federal-level action, action in the U.S. states, and efforts by local governments.

QUANTIFYING VULNERABILITY TO CLIMATE CHANGE: IMPLICATIONS FOR ADAPTATION ASSISTANCE

David Wheeler. Center for Global Development. Working Paper 240. January 2011. 53 pages.

http://www.cgdev.org/files/1424759_file_Wheeler_Quantifying_Vulnerability_FINAL.pdf

The effects of climate change have been and will be worse in poor countries and small-island states, those least able to adapt to the climate-related disasters. In this paper, the author quantifies and makes available in an accompanying database the vulnerability of 233 countries to three major effects of climate change (weather-related disasters, sea-level rise, and reduced agricultural productivity). He develops a methodology for donors and others to craft cost-effective assistance for climate adaptation which can be applied easily and consistently to all 233 states and all three problems.

THE EVOLUTION OF MULTILATERAL REGIMES: IMPLICATIONS FOR CLIMATE CHANGE

Daniel Bodansky and Elliot Diringer. Pew Center on Global Climate Change. December 2010. 36 pages.

<http://www.pewclimate.org/docUploads/evolution-multilateral-regimes-implications-climate-change.pdf>

Copenhagen's "failure" has led many in and outside governments to begin rethinking the best way to mobilize an effective international response to climate change. To be certain, many parties remain fully committed to achieving new legally-binding commitments as quickly as possible; some are looking to do so at the 17th Conference of Parties (COP-17) to be held in 2011 in South Africa, or at Rio+20, the summit to be held in 2012 to commemorate the 20th anniversary of the Earth Summit in Rio de Janeiro. But many others are coming to believe that the path to a new legally-binding agreement will be longer and more incremental. In this view, the process of constructing a post-2012 international climate architecture will involve a gradual process of evolution. An evolutionary path is, in fact, quite common in multilateral regime-building. While the progression of every regime is unique, reflecting its particular policy needs and political constraints, broad patterns can be seen. Few regimes spring forth wholly formed. Generally, they grow over time, becoming broader, deeper and more fully integrated as parties gain confidence in one another, and in the regime itself.

STRENGTHENING INTERNATIONAL CLIMATE FINANCE

Pew Center on Global Climate Change. December 2010. 8 pages.

<http://www.pewclimate.org/docUploads/strengthening-international-climate-finance.pdf>

With climate finance needs in developing countries projected to grow significantly in coming decades, governments are considering steps under the UN Framework Convention on Climate Change (UNFCCC) to strengthen international climate finance. Key steps include: establishing a new multilateral climate fund with an independent board under the guidance of the UNFCCC Conference of the Parties (COP); a new UNFCCC finance body to advise the COP and promote coordination among funding institutions; a registry mechanism to link finance to mitigation actions; and stronger procedures for reporting and verifying flows.

POWER, RESPONSIBILITY, AND ACCOUNTABILITY: RE-THINKING THE LEGITIMACY OF INSTITUTIONS FOR CLIMATE FINANCE

Athena Ballesteros, Smita Nakhooda, Jacob Werksman and Kaija Hurlburt. World Resources Institute (WRI). December 2010. 84 pages.

http://pdf.wri.org/power_responsibility_accountability.pdf

Preparing for the inevitable impacts of global warming and avoiding even more dangerous levels of greenhouse gas emissions will require an unprecedented mobilization of financial resources. Much of this investment will need to take place in the developing world, to meet growing energy demands with low carbon alternatives, and to enable poorer countries to build resilience to the effects of rising temperatures. This report seeks to ground the debate on climate finance in an objective analysis of ongoing efforts to finance mitigation and adaptation in developing countries.

THE U.S. ROLE IN INTERNATIONAL CLIMATE FINANCE: A BLUEPRINT FOR NEAR-TERM LEADERSHIP

Andrew Stevenson, Nigel Purvis, Claire O'Connor and Andrew Light. Center for American Progress and The Alliance for Climate Protection. December 2010. 74 pages.

<http://www.americanprogress.org/issues/2010/12/pdf/climatefinance.pdf>

This report addresses the narrow but topical question of whether the severity of the climate crisis necessitates a U.S.-led global partnership with developing nations to share costs of reducing emissions. The authors' conclusion is that it does. Thus, the report also highlights the more specific opportunities for U.S. leadership as part of this partnership. Overall, the authors find that substantial opportunities exist to increase the ambition of emissions reductions in developing countries. Success will depend on the United States and other developed nations providing increased levels of international financing to help developing nations close the gap between current emissions reduction pledges and global climate goals set by the United States and other nations.

CANCUN CLIMATE NEGOTIATION

Sarah O. Ladislaw. Center for Strategic and International Studies (CSIS). December 15, 2010.

<http://csis.org/print/28305>

For the last two weeks international climate negotiators met in Cancun, Mexico, for the 16th Conference of Parties (COP) under the UN Framework Convention on Climate Change (UNFCCC). After last year's near-catastrophe in Copenhagen, countries spent the better part of the past year tamping down expectations for this year's round of negotiations. Instead of shooting for the completion of a legally binding agreement, the negotiators focused on making incremental progress on some of the foundational elements of a new regime while sidestepping the issue of whether to extend the Kyoto Protocol and avoiding a more serious discussion about the diminishing likelihood that the international community will be able to reach its collective climate goals.

THE CANCUN AGREEMENTS ON CLIMATE CHANGE

Nathan Hultman. The Brookings Institution. December 14, 2010.

http://www.brookings.edu/opinions/2010/12/14_climate_hultman.aspx

Delegates in Cancun did defer a couple of major questions, such as the status of the Kyoto Protocol and the central question of equitable burden sharing. These will present difficulties in the future. However, the Cancun Meeting's progress on a broad array of issues does provide a basis for a future agreement. While the legal form of such an agreement remains uncertain, the Cancun Agreements may reassure

governments that there is still a use for the broad international discussion under the UNFCCC, and may help focus preparations for the 2011 conference in South Africa.

MAKING CLIMATE CHANGE AND OZONE TREATIES WORK TOGETHER TO CURB HFC-23 AND OTHER “SUPER GREENHOUSE GASES”

Stephen O. Andersen, K. Madhava Sarma and David Doniger. Natural Resources Defense Council (NRDC). Issue Paper. November 2010. 24 pages.

<http://www.nrdc.org/globalwarming/files/hfc23.pdf>

This paper reviews problems with Clean Development Mechanism (CDM) climate change mitigation projects intended to destroy HFC-23, a powerful greenhouse gas. The CDM is a mechanism under the Kyoto Protocol that allows developed countries to get credit for emission reductions achieved through approved projects they finance in developing countries. HFC-23 is a greenhouse gas controlled by the Kyoto Protocol that is an unwanted byproduct of the production of HCFC-22. HCFC-22 is a chemical that contributes to both depletion of the ozone layer and climate change; it is being phased out under the Montreal Protocol. The paper proposes reforms to the CDM, complementary actions by the Montreal Protocol, and national policies that will achieve these key objectives: stop overpayment for HFC-23 destruction, ending perverse incentives to increase emissions harmful to the climate and the ozone layer; control HFC-23 emissions from all plants in all countries, not just those currently enrolled in CDM projects, on the basis of actual control costs, plus a reasonable return; harmonize policies under two treaties to accelerate reductions of HCFCs and HFCs.

THE ECONOMICS OF POPULATION POLICY FOR CARBON EMISSIONS REDUCTION IN DEVELOPING COUNTRIES

David Wheeler and Dan Hammer. Center for Global Development. Working Paper 229. November 2010. 34 pages.

http://www.cgdev.org/files/1424557_file_Wheeler_Hammer_Economics_Pop_Policy.pdf

Female education and family planning are both critical for sustainable development, and they obviously merit expanded support without any appeal to global climate considerations. However, even relatively optimistic projections suggest that family planning and female education will suffer from financing deficits that will leave millions of women unserved in the coming decades. Since both activities affect fertility, population growth, and carbon emissions, they may also provide sufficient climate-related benefits to warrant additional financing from resources devoted to carbon emissions abatement. This paper considers the economic case for such support. Using recent data on emissions, program effectiveness and program costs, the authors estimate the cost of carbon emissions abatement via family planning and female education.

TRACKING CARBON WITH TRANSPARENCY: IMPROVING ACCURACY AND ACCOUNTABILITY IN THE INTERNATIONAL GLOBAL WARMING AGREEMENT

Natural Resources Defense Council (NRDC). November 2010. 4 pages.

<http://www.nrdc.org/globalwarming/files/trackingcarbon-fs.pdf>

Having a strong, credible, and transparent system for tracking greenhouse gas emissions and the actions of a country is an essential building block of an effective international system to address global warming. This was a key issue at the Copenhagen Climate Summit in 2009 as it was agreement on the elements of the transparency and accountability in the final hours that enabled the full package to be agreed upon by key countries. Resolving important details about how these pieces would be implemented has been a

central part of the ongoing global warming negotiations. Advancing progress toward robust measurement, reporting, and verification systems is an imperative for the Cancun Climate Summit.

OCEAN ACIDIFICATION: THE UNTOLD STORIES

Ellycia Harrould-Kolieb, Matthew Huelsenbeck and Virginia Selz. Oceana. November 2010. 24 pages.
http://na.oceana.org/sites/default/files/reports/Ocean_Acidification_The_Untold_Stories.pdf

Our use of fossil fuels, deforestation and land use changes are wreaking havoc on the oceans. Besides causing global climate change, which could cause catastrophic impacts around the world, the release of carbon dioxide from these activities is also leading to ocean acidification. The oceans ultimately absorb most carbon dioxide from the atmosphere, and thus play a critical role in regulating climate. They also help to mitigate human caused climate change. But the unprecedented amount of carbon dioxide being created by human activity has surpassed what the oceans can healthfully absorb, changing ocean chemistry and making them more acidic.

THE GLOBAL CLIMATE CHANGE REGIME

Council on Foreign Relations. Backgrounder. November 29, 2010.

<http://www.cfr.org/climate-change/global-climate-change-regime/p21831>

Distribution of global emissions reinforces the need for broad multilateral cooperation in mitigating climate change. Efforts to cut emissions -- mitigation -- must therefore be global. Without international cooperation and coordination, some states may free ride on others' efforts, or even exploit uneven emissions controls to gain competitive advantage. And because the impacts of climate change will be felt around the world, efforts to adapt to climate change -- adaptation -- will need to be global too. This paper offers a broad-sweeping look at international efforts to combat climate change.

A QUICK FIX FOR CLIMATE CHANGE?

Michael Richardson. Yale Center for the Study of Globalization. November 8, 2010

<http://yaleglobal.yale.edu/content/quick-fix-climate-change>

Spewing particles into the skies to block sunlight, releasing chemicals into the oceans to encourage plankton growth and carbon absorption, are just two examples of how geoengineering technologies might ease impacts of climate change. The interventions, still being tested, would be temporary and costly. The technologies could also cross borders, damage habitat, make some regions too hot or cold, disrupt industries that depend on clear skies or oceans, and pose other unintended consequences. Unchecked emissions could eventually cost about 5 percent of global GDP. Cost estimates of preventing climate change with conservation measures or alternative fuels are estimated at just 1 percent of global GDP over the next century -- while also solving the problem of a limited energy supply. Nations have failed to agree on how to reduce carbon emissions, and the author suggests that debate over geoengineering schemes could likewise stall.

MOBILIZING \$100 BILLION PER YEAR FOR CLIMATE FINANCING

Kemal Derviş and Katherine Sierra. The Brookings Institution. November 5, 2010.

http://www.brookings.edu/opinions/2010/1105_climate_financing_dervis_sierra.aspx?p=1

Today, the U.N. Secretary General's High Level Group on Climate Change Financing (AGF) reported that raising \$100 billion each year by 2020 to finance climate mitigation and adaptation in developing countries is "challenging but feasible." The group, made up of heads of state and government, as well as

finance leaders from both developed and developing countries, was tasked to develop the \$100 billion per year pledge of long-term financing under the Copenhagen Accord. Designed in parallel to the global climate negotiations under the UNFCCC, it aims to provide a technical assessment of financing options, filtered against criteria such as political acceptability. While the report will disappoint those who want a bold recommendation, it does move the dial by providing a menu of international and domestic financing options, some considered more promising than others.

A ROLE FOR THE G-20 IN ADDRESSING CLIMATE CHANGE?

Trevor Houser. Peterson Institute for International Economics. Working Paper 10-15. October 2010. 20 pages.

<http://www.iie.com/publications/wp/wp10-15.pdf>

Following the chaotic Copenhagen conference of the UN Framework Convention on Climate Change (UNFCCC), policymakers and pundits have discussed the G-20 as an alternative forum for advancing climate change diplomacy. This paper assesses the risks and rewards of tackling climate change in the G-20 and finds that despite its seeming attractiveness, the G-20, as structured, is not a suitable replacement for the UN-led process and has limited ability, at present, to advance climate change negotiations. There is much, however, that the G-20 can do to contribute to the goals of the climate negotiations outside of wading into the negotiations themselves. Building on its existing agenda the G-20 has the power to significantly reduce global greenhouse gas emissions, accelerate the deployment of clean energy technology, and help vulnerable countries adapt to a warmer world through the mobilization of public and private finance. Following through on the existing G-20 pledge to phase out and rationalize inefficient fossil fuel subsidies, establishing new green guidelines for multilateral development banks, coordinating green stimulus exit strategies, promoting open markets for environmental goods and services, and rebalancing global economic growth all fall well within the G-20's mandate and help meet the climate challenge.

SHIPPING SOLUTIONS: TECHNOLOGICAL AND OPERATIONAL METHODS AVAILABLE TO REDUCE CO₂

Ellycia Harrould-Kolieb and Jacqueline Savitz. Oceana. October 2010. 28 pages.

http://na.oceana.org/sites/default/files/reports/Shipping_report_2010.pdf

Global shipping is a major contributor of carbon dioxide to the atmosphere. If the global shipping fleet were a nation it would be the sixth largest emitter of carbon dioxide, only emitting less than China, the United States, Russia, India and Japan. The growth in shipping due to an expansion of global trade is projected to be responsible for a substantial increase in future emissions. In 2007 shipping was responsible for approximately 3.3 percent of global carbon dioxide (CO₂) emissions (over 1 billion tons). In the absence of emission reduction policies, emission scenarios predict a doubling to tripling of 2007 emission levels by 2050. Although technological advances will allow newbuilds to be more efficient than the ships of today, a sizable portion of the current fleet is relatively young and will potentially be in service for many years to come. Operational and technical measures that can drastically reduce emissions are available to the existing fleet, and need to be used.

CHANGING CLIMATE BRINGS IRREVERSIBLE DEVASTATION BENEATH THE SEAS

Alex David Rogers. Yale Center for the Study of Globalization. October 29, 2010.

<http://yaleglobal.yale.edu/content/devastation-beneath-seas>

Climate change takes its toll on rich marine habitats like coral reefs, not just with rising temperatures but also increasing absorption rates of carbon dioxide. The reefs serve as habitat for nearly a quarter of the globe's marine fish species, many of which struggle to adapt to acidification and fast-changing conditions. Early and careful management could help coral-reef ecosystems recover from bleaching events and prevent the loss of global biodiversity now underway. Paralysis to act brings doomsday closer for many species.

CLIMATE CHANGE -- DOMESTIC ISSUES

HOW DO THE COSTS OF CLIMATE POLICY AFFECT HOUSEHOLDS? THE DISTRIBUTION OF IMPACTS BY AGE, INCOME, AND REGION

Joshua Blonz, Dallas Burtraw and Margaret A. Walls. Resources for the Future (RFF). Discussion Paper 10-55. January 2011. 63 pages

<http://www.rff.org/RFF/Documents/RFF-DP-10-55.pdf>

This paper explores the near-term effects on household expenditures of legislative cap-and-trade proposals that restrict greenhouse gas emissions. The authors evaluate optimistic and pessimistic assumptions about the uses of allowance value, compared to relatively predictable results from a cap-and-dividend approach. They find the allocation of emissions allowances is significantly more important to distributional outcomes than the initial costs or regional variation of costs. Older households -- age 65 and older -- incur relatively less cost than other age groups due to automatic inflation indexing of Social Security. Low income households spend a larger fraction of earnings on energy than wealthier households; however, the distribution of allowance value and indexing of government programs offset this spending. High-income households fare well because of allowance value that ultimately flows to capital owners. The largest burden as a percentage of income falls on middle-income households, which receive neither low-income rebates nor value through ownership of capital stock.

REDUCING GREENHOUSE GAS EMISSIONS FROM U.S. TRANSPORTATION

David L. Greene and Steven E. Plotkin. Pew Center on Global Climate Change. January 2011. 122 pages.

http://www.pewclimate.org/docUploads/Reducing_GHG_from_transportation.pdf

This report examines the prospects for substantially reducing the greenhouse gas (GHG) emissions from the U.S. transportation sector, which accounts for 27 percent of the GHG emissions of the entire U.S. economy and 30 percent of the world's transportation GHG emissions. Without shifts in existing policies, the U.S. transportation sector's GHG emissions are expected to grow by about 10 percent by 2035, and will still account for a quarter of global transportation emissions at that time. The report shows that through a combination of policies and improved technologies, these trends can be changed. It is possible to cut GHG emissions from the transportation sector cost-effectively by up to 65 percent below 2010 levels by 2050 by improving vehicle efficiency, shifting to less carbon intensive fuels, changing travel behavior, and operating more efficiently. A major co-benefit of reducing transportation's GHG emissions is the resulting reductions in oil use and improvements in energy security.

CONFRONTING THE AMERICAN DIVIDE ON CARBON EMISSIONS REGULATION

David Wheeler. Center for Global Development. Working Paper 232. December 2010. 23 pages.

http://www.cgdev.org/files/1424645_file_Confronting_the_American_Divide_FINAL.pdf

This paper asks why the US has failed to enact carbon emissions regulation, while Europe has succeeded. The author's analysis employs a stylized model of interregional carbon mitigation negotiations whose outcome is determined by differences in anticipated mitigation costs and the strength of regions' incentives to join an agreement. The model seems to fit the American and European cases reasonably well, with significant implications for policy in the US.

THE CORPORATE AVERAGE FUEL ECONOMY STANDARDS AND THE MARKET FOR NEW VEHICLES

Thomas Klier and Joshua Linn. Resources for the Future (RFF). Discussion Paper 10-68. December 2010. 31 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-68.pdf>

This paper presents an overview of the economics literature on the effect of Corporate Average Fuel Economy (CAFE) standards on the new vehicle market. Since 1978, CAFE has imposed fuel economy standards for cars and light trucks sold in the U.S. market. This paper reviews the history of the standards, followed by a discussion of the major upcoming changes in implementation and stringency. It describes strategies that firms can use to meet the standards and reviews the CAFE literature as it applies to the new vehicle market. The paper concludes by highlighting areas for future research in light of the upcoming changes to CAFE.

NEW VEHICLE CHARACTERISTICS AND THE COST OF THE CORPORATE AVERAGE FUEL ECONOMY STANDARD

Thomas Klier and Joshua Linn. Resources for the Future (RFF). Discussion Paper 10-50. December 2010. 49 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-50.pdf>

By 2016, the Corporate Average Fuel Economy (CAFE) standard will increase by 40 percent from its current level, representing the first major increase in the standard since its creation in 1975. Previous analysis of the CAFE standard has focused on its short-run effects (1-2 years), in which vehicle characteristics are held fixed, or its long run effects (10 years or more), when firms can adopt new power train technology. This paper focuses on the medium run, when firms can choose characteristics such as weight and power, yet have only limited ability to modify current technology. The authors first document the historical importance of the medium run and then estimate consumers' willingness to pay for vehicle characteristics. They employ a novel empirical strategy that accounts for the vehicle characteristics' endogeneity by using variation in the set of engine models used in vehicle models. The results imply that consumers value an increase in power more than a proportional increase in fuel economy. Simulations of the medium-run effects of an increase in the CAFE standard suggest that regulatory costs are significantly smaller in the medium run than in the short run.

CLIMATE CHANGE ADAPTATION: WHAT FEDERAL AGENCIES ARE DOING

Pew Center on Global Climate Change. November 2010. 47 pages.

http://www.pewclimate.org/docUploads/FederalGovernmentLeadershiponAdaptation_Nov2010.pdf

Federal agencies are stepping forward to meet the challenge of climate change adaptation and are beginning to "mainstream" consideration of climate change adaptation across their programs and policies. Some agencies are also taking a leadership role in enabling others -- state, local and tribal governments, businesses, and communities -- in their adaptation planning and projects. These federal actions are still diffuse and as such, this report attempts to capture and highlight these efforts to facilitate

communication and collaboration across federal agencies as well as with numerous non-federal stakeholders focused on domestic adaptation policy. Not all federal projects addressing climate change impacts or adaptations are included in this report. However, where a federal department or agency has implemented institutional mechanisms specifically for climate change adaptation, developed an agency-wide adaptation plan or set of policies, or provides adaptation resources or tools, it is the authors' intent to represent it within this report.

ARE ENERGY EFFICIENCY STANDARDS JUSTIFIED?

Ian W.H. Parry, David Evans and Wallace E. Oates. Resources for the Future (RFF). Discussion Paper 10-59. November 2010. 45 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-59.pdf>

This paper develops and parameterizes an overarching analytical framework to estimate the welfare effects of energy efficiency standards applied to automobiles and electricity-using durables. The authors also compare standards with sectorial and economywide pricing policies. The model captures a wide range of externalities and preexisting energy policies, and it allows for possible "misperceptions" -- market failures that cause underinvestment in energy efficiency. Automobile fuel economy standards are not part of the first-best policy to reduce gasoline: fuel taxes are always superior because they reduce the externalities related to vehicle miles traveled. For the power sector, potential welfare gains from supplementing pricing instruments with efficiency standards are small at best. If pricing instruments are not feasible, a large misperceptions failure is required to justify efficiency standards, and even in this case the optimal reductions in fuel and electricity use are relatively modest. Reducing economywide carbon dioxide emissions through regulatory packages (combining efficiency and emissions standards) involves much higher costs than pricing instruments.

BIOCHAR: ASSESSING THE PROMISE AND RISKS TO GUIDE U.S. POLICY

Stephen Brick. Natural Resources Defense Council (NRDC). Issue Paper. November 2010. 24 pages.

http://www.nrdc.org/energy/files/biochar_paper.pdf

Biochar, a charcoal-like substance made from biomass and used as a soil amendment, has been credited with multiple benefits, including the ability to improve soil fertility, protect water quality, and generate carbon neutral energy. But it is biochar's potential to capture and store carbon in soils, and thus its potential role as a climate mitigation tool, which has attracted the most attention in the last three years; indeed, for a time, biochar seemed to enjoy status as a miracle cure to the global climate challenge. However, there remains a great deal of uncertainty with respect to the environmental and economic performance of different biochar production pathways, as well as key environmental risks associated with the production and use of biochar that must be addressed. As a result, estimates of the potential for biochar production and carbon sequestration remain highly uncertain and largely premature at this time.

GETTING BACK ON TRACK: ALIGNING STATE TRANSPORTATION POLICY WITH CLIMATE CHANGE GOALS

Neha Bhatt, Colin Peppard and Stephanie Potts. Smart Growth America and Natural Resources Defense Council. November 2010. 66 pages.

http://www.nrdc.org/smartGrowth/files/GettingBackonTrack_report.pdf

With a comprehensive climate bill stalled at the federal level, many are turning to the states to make progress toward reducing carbon emissions. Are the states ready? To succeed, many sectors will need to reduce their carbon emissions. In this report, the authors examine what states are doing to curb emissions

caused by transportation. As such, it is the first report to compare state transportation policy as it affects greenhouse gas emissions and compare performance across the states.

GOBBLING LESS GAS FOR THANKSGIVING: HOW CLEAN CARS CAN SAVE AMERICANS MONEY AND CUT OIL USE

Alex Wall. Environment America Research & Policy Center. November 2010. 15 pages.

<http://www.environmentamerica.org/uploads/48/0c/480c5690f64c48478598f1588edff380/Gobbling-Less-Gas-for-Thanksgiving-report.EA.pdf>

The transportation sector accounts for nearly two-thirds of the more than 19 million barrels of oil consumed each day in the United States. The largest percentage is consumed by passenger cars and light duty trucks, such as SUVs, vans, and pickup trucks. Requiring automobile manufacturers to meet strong global warming pollution and fuel efficiency standards represents the greatest opportunity to cut America's oil consumption, reduce global warming pollution from the transportation sector, and deliver important economic benefits to both consumers and businesses -- including saving Americans billions of dollars at the pump.

FOREIGN POLICY AND THE 2010 MIDTERMS: ENERGY AND CLIMATE POLICY

Toni Johnson. Council on Foreign Relations. Backgrounder. October 14, 2010.

<http://www.cfr.org/energy/foreign-policy-2010-midterms-energy-climate-policy/p23112>

President Barack Obama and Democratic leaders in the 111th Congress took office with promises to produce comprehensive energy and climate legislation. But lingering questions over economic recovery, a bitter debate over healthcare reform, and a massive oil drilling accident in the Gulf of Mexico have disrupted policy goals in both areas. And action in the next congressional session is uncertain. Environmental and energy advocates foresee post-election challenges to some of Obama's energy initiatives, especially the EPA regulation of greenhouse gas emissions. Still, some experts say clean energy, which could provide a much needed economic boost, could benefit regardless of which party controls Congress after the election.

GREEN ECONOMY

THE PORTER HYPOTHESIS AT 20: CAN ENVIRONMENTAL REGULATION ENHANCE INNOVATION AND COMPETITIVENESS?

Stefan Ambec, Mark A Cohen, Stewart Elgie and Paul Lanoie. Resources for the Future (RFF).

Discussion Paper 11-01. January 2011. 26 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-11-01.pdf>

Twenty years ago, Harvard Business School economist and strategy professor Michael Porter stood conventional wisdom about the impact of environmental regulation on business on its head by declaring that well-designed regulation could actually enhance competitiveness. The traditional view of environmental regulation held by virtually all economists until that time was that requiring firms to reduce an externality like pollution necessarily restricted their options and thus by definition reduced their profits. After all, if profitable opportunities existed to reduce pollution, profit-maximizing firms would already be taking advantage of those opportunities. Over the past 20 years, much has been written about what has since become known simply as the Porter Hypothesis (PH). Yet even today, we find conflicting evidence and alternative theories that might explain the PH, and oftentimes a

misunderstanding of what the PH does and does not say. This paper provides an overview of the key theoretical and empirical insights into the PH to date, draws policy implications from these insights, and sketches out major research themes going forward.

GREEN BUILDING AND GREEN INFRASTRUCTURE

THE VALUE OF GREEN INFRASTRUCTURE: A GUIDE TO RECOGNIZING ITS ECONOMIC, ENVIRONMENTAL AND SOCIAL BENEFITS

American Rivers. January 2011. 80 pages.

<http://www.americanrivers.org/assets/pdfs/reports-and-publications/the-value-of-green-infrastructure.pdf>

Green infrastructure (GI) is a network of decentralized stormwater management practices, such as green roofs, trees, rain gardens and permeable pavement, that can capture and infiltrate rain where it falls, thus reducing stormwater runoff and improving the health of surrounding waterways. While there are different scales of green infrastructure, such as large swaths of land set aside for preservation, this guide focuses on GI's benefits within the urban context.

NATURAL DEFENSES: SAFEGUARDING COMMUNITIES FROM FLOODS

American Rivers. November 2010. 4 pages.

<http://www.americanrivers.org/assets/pdfs/reports-and-publications/natural-defenses.pdf>

In the first decade of the new millennium, extreme rainfall events, combined with changes in land use, have resulted in an increase in flood events and in an increase in annual flood losses from \$6 billion to \$15 billion despite the billions of dollars invested in flood control. The rising toll of annual floods sends a clear message: it is time to adopt a 21st century approach to flood management. One that places our "natural defenses" -- wetlands, rivers, floodplains, and upland areas -- at the core of flood management. This green infrastructure is the most reliable, cost-effective, and flexible practice for communities to adapt to a changing climate.

ENVIRONMENTAL PROTECTION AND CONSERVATION

SCANNING THE CONSERVATION HORIZON: A GUIDE TO CLIMATE CHANGE VULNERABILITY ASSESSMENT

Bruce Stein. National Wildlife Federation. January 2011. 176 pages.

http://www.nwf.org/News-and-Magazines/Media-Center/Reports/Archive/2011/~//media/PDFs/Global%20Warming/Climate-Smart-Conservation/ScanningtheConservationHorizon_Jan18.ashx

Rapid climate change is the defining conservation issue of our generation. The effects of climate change are increasingly apparent, from drowned coastal marshes and drying prairie potholes to melting glaciers. These climate-driven changes will profoundly affect our ability to conserve fish and wildlife and the habitats on which they depend. Indeed, preparing for and coping with the effects of climate change -- an endeavor referred to as climate change adaptation -- is emerging as the overarching framework for conservation and natural resource management.

IT'S GETTING HOT OUT THERE: TOP 10 PLACES TO SAVE FOR ENDANGERED SPECIES IN A WARMING WORLD

Endangered Species Coalition. January 2011. 15 pages.

http://na.oceana.org/sites/default/files/reports/digital_endangered_report.pdf

This report highlights ecosystems that are hotspots for threatened and endangered species, many of which are highly vulnerable to climate change now. Each was chosen because we have an opportunity to increase its resiliency, or the resiliency of their species, to climate change if we immediately implement needed conservation measures. Of course, aggressively reducing greenhouse gas pollution is the most important step to guard against climate change. But the impacts of climate change are already being felt across the country, and these ecosystems highlight the need to exponentially increase additional conservation measures now. Assisting species adaptation to the rapidly changing world will be essential to ensuring their survival.

HIGHLY MIGRATORY SHARKS NEGLECTED IN ICCAT

Oceana. November 2010. 4 pages.

http://na.oceana.org/sites/default/files/reports/ICCAT_Highly_Migratory_Sharks_English_2.pdf

Many shark species migrate vast distances through our oceans, swimming across various national and international jurisdictional boundaries along their way. These species of sharks, like tunas and swordfish, call large swaths of the ocean their home and their populations cannot be claimed by any specific country. The United Nations Convention on the Law of the Sea (UNCLOS), the most important treaty for international maritime law, establishes that fishing nations must cooperate to ensure the conservation of “highly migratory species” (HMS) both within and beyond their exclusive economic zones through appropriate international organizations. UNCLOS includes 72 shark species among its list of “highly migratory species” and thus these species should be under international management. Unfortunately, the management of shark fisheries has been virtually ignored on an international level.

IS YOUR FOOD MAKING THE PLANET SICK?

Amy Kaleita. Pacific Research Institute. October 2010. 48 pages.

http://www.pacificresearch.org/docLib/20101101_MakingPlanetSick.pdf

Modern agriculture has been blamed for a host of environmental problems, including global warming, water pollution, and ecosystem damage. While growing crops and raising livestock does have significant environmental impact, in many cases the situation has been exaggerated or oversimplified, and some of the proposed solutions have been ineffective or more costly than the benefits derived, according to the author.

ENVIRONMENTAL PROTECTION AND CONSERVATION AFTERMATH OF THE DEEPWATER HORIZON OIL SPILL

U.S. DEEPWATER DRILLING'S FUTURE

Toni Johnson. Council on Foreign Relations. Backgrounder. January 11, 2011.

<http://www.cfr.org/united-states/us-deepwater-drillings-future/p22204>

In an effort to prevent overdependence on oil imports, domestic oil production as a percentage of U.S. consumption has grown even as environmental concerns have prevented new exploration in places like the Arctic National Wildlife Refuge and along most U.S. coasts. The U.S. government's Energy

Information Service (EIA) estimates that in the near term, most new U.S. oil production will be in the deep waters of the Gulf of Mexico. The massive oil spill from the explosion of the Deepwater Horizon rig in April 2010 spotlights the growth of deepwater drilling and the challenges of balancing strong environmental regulation with efforts to expand U.S. domestic oil production.

SEA TURTLE HOMECOMING, CLASS OF 2010: A PROACTIVE COASTAL CONSERVATION AGENDA FOR FLORIDA

Patty Glick, Doug Inkley and Gary Appelson. National Wildlife Federation. January 2011. 20 pages.

http://www.nwf.org/News-and-Magazines/Media-Center/Reports/Archive/2011/~//media/PDFs/Wildlife/Conservation/NWF_SeaTurtleHomecoming.ashx

For the people who live near the Gulf of Mexico -- and, indeed, for Americans everywhere -- the catastrophic Deepwater Horizon oil spill during the summer of 2010 will be an event forever etched in our memories. It was a time of great uncertainty and fear about the plight of the region's coastal wetlands, beaches, and ocean waters and the many benefits that they provide for us all. But it also was a time in which our conservation ethic truly bloomed. One of the most compelling symbols of our love and concern for the species that share our coastal and marine systems was the unprecedented effort to relocate the nests of threatened and endangered sea turtles along the Gulf Coast to oil-free habitats on Florida's Atlantic Coast.

RISK MANAGEMENT PRACTICES: CROSS-AGENCY COMPARISONS WITH MINERALS MANAGEMENT SERVICE

P. Lynn Scarlett, Igor Linkov and Carolyn Kousky. Resources for the Future (RFF). Discussion Paper 10-67. January 2011. 59 pages.

<http://www.rff.org/RFF/Documents/DP-10-67.pdf>

This paper reviews implementation of the risk management frameworks used by eight federal and foreign agencies -- including the Minerals Management Service (MMS, now the Bureau of Ocean Energy Management, Regulation, and Enforcement, or BOEMRE) -- and summarizes the features of a robust tolerable risk (TR) framework. A TR framework conceptually breaks risk into three categories -- acceptable, unacceptable, and tolerable -- separated by numerical boundaries. Most of the agencies surveyed in this review have adopted a TR or modified TR framework, but MMS (BOEMRE) generally has not (although the agency does use an Oil Spill Risk Model to assess spill probabilities and possible trajectories). The study argues that while numerical thresholds are not essential to risk management, they provide a transparent goal against which to benchmark practices, equipment, standards, and facilities, and would be a valuable tool for BOEMRE. The authors also recommend that BOEMRE develop better risk assessment and management guidance; identify and more systematically collect information for understanding and evaluating risks and safety performance; and strengthen performance-based risk management by adopting proven approaches, such as those used in Norway and the United Kingdom for offshore oil and gas development.

PRELIMINARY EMPIRICAL ASSESSMENT OF OFFSHORE PRODUCTION PLATFORMS IN THE GULF OF MEXICO

Lucija Anna Muehlenbachs, Mark A Cohen and Todd Gerarden. Resources for the Future (RFF). Discussion Paper 10-66. January 2011. 38 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-66.pdf>

This paper reports on a preliminary analysis of performance indicators on 3,020 platforms operating in the Gulf of Mexico between 1996 and 2010. Statistical analysis reveals that company-reported incidents (such as blowouts, fires, injuries, and pollution) increase with water depth, controlling for platform characteristics such as age, quantity of oil and gas produced, and number of producing wells. In addition to company-reported incidents, the authors examine government inspections and the type of enforcement action (warning, component shut-in, facility shut-in, or civil penalty review) following an inspection. Fewer incidents of noncompliance are detected during inspections on deepwater platforms compared with shallow-water platforms; however, the magnitude of the effect of depth on noncompliance is not large. The authors provide a preliminary analysis of the effect of prior findings of noncompliance, suggesting that noncompliance is persistent. They also find significant variability in both self-reported incidents and noncompliance across leaseholders.

DEEPWATER DRILLING: LAW, POLICY, AND ECONOMICS OF FIRM ORGANIZATION AND SAFETY

Mark A Cohen, Madeline Gottlieb, Joshua Linn and Nathan Richardson. Resources for the Future (RFF). Discussion Paper 10-65. January 2011. 55 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-65.pdf>

Although the causes of the Deepwater Horizon spill are not yet conclusively identified, significant attention has focused on the safety-related policies and practices -- often referred to as the safety culture -- of BP and other firms involved in drilling the well. This paper defines and characterizes the economic and policy forces that affect safety culture and identifies reasons why those forces may or may not be adequate or effective from the public's perspective. Two potential justifications for policy intervention are that: a) not all of the social costs of a spill may be internalized by a firm; and b) there may be principal-agency problems within the firm, which could be reduced by external monitoring. The paper discusses five policies that could increase safety culture and monitoring: liability, financial responsibility (a requirement that a firm's assets exceed a threshold), government oversight, mandatory private insurance, and risk-based drilling fees. The authors find that although each policy has a positive effect on safety culture, there are important differences and interactions that must be considered. In particular, the latter three provide external monitoring. Furthermore, raising liability caps without mandating insurance or raising financial responsibility requirements could have a small effect on the safety culture of small firms that would declare bankruptcy in the event of a large spill. The paper concludes with policy recommendations for promoting stronger safety culture in offshore drilling; the authors' preferred approach would be to set a liability cap for each well equal to the worst-case social costs of a spill, and to require insurance up to the cap.

MANAGING ENVIRONMENTAL, HEALTH, AND SAFETY RISKS

P. Lynn Scarlett, Arthur G. Fraas, Richard D. Morgenstern and Timothy Murphy. Resources for the Future (RFF). Discussion Paper 10-64. January 2011. 113 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-64.pdf>

This study compares and contrasts regulatory and related practices -- in particular, regulatory decisionmaking, risk assessment and planning processes, inspection and compliance, and organization structure, budgets, and training -- of the Minerals Management Service (MMS, now the Bureau of Ocean Energy Management, Regulation, and Enforcement, or BOEMRE) with those of the Federal Aviation Administration (FAA) and the Environmental Protection Agency (EPA). Comparing MMS practices with those of other federal agencies that also manage low-probability but high-consequence environmental risks provides a basis for identifying opportunities for enhancing regulatory capacity and

safety performance in managing deepwater energy exploration and production. The authors' research finds important differences in processes for setting standards; peer review contribution to the rulemaking process; establishment of tolerable risk thresholds; and training of key staff. The paper concludes with several recommendations for how various EPA and FAA practices might be modified and used at BOEMRE to strengthen its regulatory and risk management processes.

ORGANIZATIONAL DESIGN FOR SPILL CONTAINMENT IN DEEPWATER DRILLING OPERATIONS IN THE GULF OF MEXICO: ASSESSMENT OF THE MARINE WELL CONTAINMENT COMPANY (MWCC)

Robert Anderson, Mark A Cohen, Molly K. Macauley, Nathan Richardson and Adam Stern. Resources for the Future (RFF). Discussion Paper 10-63. January 2011. 64 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-63.pdf>

The Deepwater Horizon oil spill in the Gulf of Mexico in April 2010 led to the deaths of 11 workers, a six-month moratorium on deepwater drilling in the Gulf, and nearly three months of massive engineering and logistics efforts to stop the spill. The series of failures before the well was finally capped and the spill contained revealed an inability to deal effectively with a well in deepwater and ultradeepwater. Ensuring that containment capabilities are adequate for drilling operations at these depths is therefore a salient challenge for government and industry. In this paper they authors assess the Marine Well Containment Company (MWCC), a consortium aimed at designing and building a system capable of containing future deepwater spills in the Gulf. They also consider alternatives for long-term readiness for deepwater spill containment. They focus on the roles of liability and regulation as determinants of readiness and the adequacy of incentives for technological innovation in oil spill containment technology to keep pace with advances in deepwater drilling capability. Liability and regulation can significantly influence the strength of these incentives. In addition, they discuss appropriate governance structure as a major determinant of the effectiveness of MWCC.

UNDERSTANDING THE COSTS AND BENEFITS OF DEEPWATER OIL DRILLING REGULATION

Alan J. Krupnick, Sarah Campbell, Mark A Cohen and Ian W.H. Parry. Resources for the Future (RFF). Discussion Paper 10-62. January 2011. 64 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-62.pdf>

The purpose of this paper is to provide a conceptual framework for understanding how analysis of costs and benefits might be incorporated into an assessment of regulatory policies affecting deepwater drilling. The authors begin by providing a framework for analyzing the life-cycle impacts of oil drilling and its alternatives, including onshore drilling and importing oil from abroad. They then provide background estimates of the different sources of oil supplied in the United States, look at how other oil supply sources might respond to regulations on deepwater drilling, and consider the economic costs of these regulations. After providing a comprehensive description of the potential costs and benefits from various types of drilling -- including, when possible, estimates of the magnitude of these benefits and costs -- they discuss the extent to which these costs and benefits may already be taken into account (or reinforced) through the legal, regulatory, and tax systems and through market mechanisms. They conclude by presenting a framework and simple example of how a cost-benefit analysis might be used to inform regulation of deepwater drilling, and sum up the policy implications of their work.

PRECURSOR ANALYSIS FOR OFFSHORE OIL AND GAS DRILLING: FROM PRESCRIPTIVE TO RISK-INFORMED REGULATION

Roger M. Cooke, Heather L. Ross and Adam Stern. Resources for the Future (RFF). Discussion Paper 10-61. January 2011. 33 pages.

<http://www.rff.org/RFF/Documents/RFF-DP-10-61.pdf>

The Oil Spill Commission's chartered mission -- to "develop options to guard against ... any oil spills associated with offshore drilling in the future" (National Commission 2010) -- presents a major challenge: how to reduce the risk of low-frequency oil spill events, and especially high-consequence events like the Deepwater Horizon accident, when historical experience contains few oil spills of material scale and none approaching the significance of the Deepwater Horizon. In this paper, the authors consider precursor analysis as an answer to this challenge, addressing first its development and use in nuclear reactor regulation and then its applicability to offshore oil and gas drilling. They find that the nature of offshore drilling risks, the operating information obtainable by the regulator, and the learning curve provided by 30 years of nuclear experience make precursor analysis a promising option available to the U.S. Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) to bring cost-effective, risk-informed oversight to bear on the threat of catastrophic oil spills.

THE FLORIDA KEYS RESPONSE TO THE GULF OIL DISASTER: STORIES SHARED AND LESSONS LEARNED

Sarah Chasis, Ali Chase, Julie Hauserman and Paul Johnson. Natural Resources Defense Council (NRDC). Issue Paper. November 2010. 36 pages.

<http://www.nrdc.org/oceans/files/FloridaKeysIP.pdf>

Oil spills can travel vast distances and even drilling that occurs hundreds of miles away in the Gulf of Mexico can have real impacts on the health of the protected places like the Florida Keys National Marine Sanctuary. The Keys were at risk because the Loop Current that flows up into the Gulf of Mexico loops down along the western shore of Florida and then heads right along the Florida Keys before picking up the Gulf Stream and shooting along the Atlantic Ocean's shoreline. When oil started gushing, state, federal, and local officials in the Keys snapped into action. Citizens prepared for the worst. Thankfully, an unusual current -- dubbed the "Franklin Eddy" -- pinched off the Loop Current and kept the oil from reaching the Keys. One of the most environmentally sensitive island chains in America was spared oiling of its shores.

TOO MUCH AT STAKE: DON'T GAMBLE WITH OUR COASTS

Michael Gravitz. Environment America Research & Policy Center. November 2010. 64 pages.

<http://www.environmentamerica.org/uploads/35/c4/35c4d04704627e6fd7ac2e72d08fa02e/Gamble-Report11-5--EA-and-SC-logos-2.doc>

Both the Bush and Obama administrations have proposed expanding offshore drilling outside the Central and Western Gulf of Mexico. But for economic and environmental reasons, the authors believe that offshore drilling should not be expanded beyond the Central and Western Gulf to areas like the Eastern Gulf of Mexico, the Atlantic Ocean, the Pacific coast, or Alaskan waters. Offshore drilling is incompatible with more sustainable activities like tourism and fishing because drilling inevitably results in large oil spills, chronic pollution, and industrializing the coast for oil facilities. In addition to the large economic benefits that flow from use and enjoyment of the ocean, this report highlights the special marine ecosystems, treasured beaches, and extraordinary marine life in the waters.

POLLUTION AND WASTE

PRICING POLLUTION

Ted Gayer. The Brookings Institution. Winter 2001.

http://www.brookings.edu/articles/2011/01_pricing_pollution_gayer.aspx?p=1

Over the past few years, a debate has raged in Washington about whether the government should restrict carbon emissions in order to reduce the risk of climate change. Because the legislation stirring this debate is fairly recent, the cap-and-trade concept has come to seem like a new innovation devised solely to achieve reductions in carbon emissions. But in fact, the idea has been discussed by economists for more than four decades. It has long been considered a means of using economic incentives to curb activities that reduce environmental quality -- like the emission of harmful particles into the air or water, or unsustainable over-fishing of the seas. Some version of a pollution tax or cap-and-trade system is likely to be the best way to attain environmental benefits while minimizing the costs to American producers and consumers.

DIRTY ENERGY'S ASSAULT ON OUR HEALTH: MERCURY

Shelley Vinyard and Lauren Randall. Environment America Research & Policy Center. January 2011. 78 pages.

<http://www.environmentamerica.org/uploads/83/56/83566b5bc25d544a1cbd87b33c8bc9ed/Mercury-Report.pdf>

Our dependence on oil and coal-fired power plants has broad detrimental impacts on our health and our environment. Power plants represent America's single biggest source of air pollution, affecting our waterways, destroying ecosystems, and polluting the air we breathe. Pollution from coal-fired power plants in particular contributes to four of the five leading causes of mortality in the United States: heart disease, cancer, stroke, and chronic respiratory diseases. Dirty Energy's Assault on our Health is a series of reports examining the numerous threats that power plants pose to our environment and our health. Each segment in the series focuses on a different pollutant emitted by power plants. This report looks at the health and environmental impacts of mercury pollution from power plants.

CORPORATE AGRIBUSINESS AND AMERICA'S WATERWAYS

Tony Dutzik, Travis Madsen, Elizabeth Ridlington and John Rumpler. Environment America Research & Policy Center. November 2010. 48 pages.

http://www.environmentamerica.org/uploads/47/a8/47a8e73ea019004c57a534a3be5e110d/EnvAm_Ag_v6_print.pdf

Pollution from agribusiness is responsible for some of America's most intractable water quality problems, including the "dead zones" in the Chesapeake Bay, Gulf of Mexico and Lake Erie, and the pollution of countless streams and lakes with nutrients, bacteria, sediment and pesticides. Farming is not an inherently polluting activity. But today's agribusiness practices -- from the concentration of thousands of animals and their waste in small feedlots to the massive planting of chemical-intensive crops such as corn -- make water pollution from agribusiness both much more likely and much more dangerous.

MANAGING SPENT NUCLEAR FUEL: STRATEGY ALTERNATIVES AND POLICY IMPLICATIONS

Tom LaTourrette, Thomas Light, Debra Knopman and James T. Bartis. The Rand Corporation. November 15, 2010. 97 pages.

http://www.rand.org/content/dam/rand/pubs/monographs/2010/RAND_MG970.pdf

Increasing awareness of the need to reduce greenhouse gas emissions has renewed interest in nuclear power generation. At the same time, the longstanding logjam over how to manage spent nuclear fuel continues to hamper the expansion of nuclear power. If nuclear power is to be a sustainable option for the United States, methods for managing spent fuel that meet stringent safety and environmental standards must be implemented. This monograph evaluates the main technical and institutional approaches to spent nuclear fuel management and identifies implications for the development of spent fuel management policy.

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<http://france.usembassy.gov/web-alert.html>