

National Plan to Rapidly Reduce Greenhouse Gas Emissions

Atmospheric carbon dioxide (CO₂) concentrations have now exceeded 400 ppm. Emissions are on track to exceed 800 ppm CO₂ and add a 4.5°C mean global temperature rise by 2100, a rate of increase unprecedented in millions of years of earth history. The climate and ocean chemistry consequences of these rapid increases (climate change, sea level rise, polar ice melt, and ocean acidification) threaten the security and economic wellbeing of our nation and the world. These effects will last for many generations unless action is quickly taken. Nothing short of a massive national and global effort to stabilize and reduce atmospheric CO₂ concentrations is now required.

The oceans have a renewable energy potential that is more than 2×10^6 TWh/yr or 13X that of current human energy use of 15×10^4 TWh/yr. Oceans absorb and sequester one third of our CO₂ emissions. However, unlike land-based renewable energy and CO₂ mitigation strategies, the potential of the oceans to help us transition to a sustainable energy existence and to manage atmospheric CO₂ remains a frontier of opportunities. Given the urgency and magnitude of the CO₂ problem, ignoring 70% of the earth's surface in our efforts to stabilize global atmospheric CO₂ is no longer an option.

The following is a national plan to include ocean-based technology to more quickly, safely, and cost-effectively achieve CO₂ emissions reductions and CO₂ mitigation goals, while also furthering national energy independence, job creation, technology leadership, and sustainable economic security.

The National Incentive Program for Low-Carbon Energy Independence

I. Objective: To incentivize and mobilize the private sector to respond unrestricted for the rapid development and expansion of the new oceanic clean energy sector. All qualified product producers are to be included in a Programmatic Environmental Impact Statement to facilitate sector progress.

II. Goals: Reduce or reverse CO₂ emissions by producing ocean-based renewable energy and removing CO₂ from the ocean/atmosphere system; reduce ocean acidification; restore the marine ecosystems; increase energy independence, economic growth, and national security.

III. Plan:

A. The 2014 US Congress is to pass legislation and authorize funding for a Purchase Order (PO) to buy 100 billion kilograms combined of hydrogen, methanol and bio-fuels and up to 1 terawatt of direct grid-supplied electricity from any US-owned vendors; tax-free income is to be granted for 50 years.

Specifications:

- Products are to originate only from ocean energy systems located on land, within the US-EEZ or in international waters, which include but are not limited to:
 - Deep Ocean Hydrothermal Vents (and/or ocean geothermal reserves)-US Navy Program
 - Ocean Thermal Energy Conversion (OTEC)-Lockheed offshore platform design
 - Wave, Current, Tide
 - Wind
 - Osmotic Pressure
 - Algae (micro- and macroscopic)
 - Other ocean-based energy systems and products pre-approved by the USDOE
- No time limit for product delivery
- After the PO is filled, it is to be renewed repeatedly for 100 years
- Products are to be pre-scheduled for delivery FOB to any capable US Port (or Territory)
- Purchase-on-delivery is to be based upon an audited annual facility-specific production cost plus 10 percent for effective life of the individual facility.

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- The receiving US Government entity has the option to ship products to all federal, state and local governments for consumption and to re-sell products on the open US and global markets.
- All qualified vendors to this PO are required to actively participate in the US (or any State) Carbon Credit Trading Program.

B. Congress is to provide significant and consistent incentives and funding for the research, development, and deployment of ocean-based technologies that have the potential to cost effectively, safely, and abundantly:

- produce or store energy in useable forms from ocean sources
- capture or remove CO₂ from point sources or from the atmosphere/ocean system, and sequester it in chemical forms that are safe and long lasting if not environmentally or commercially valuable
- avoid or otherwise reduce the effects of ocean acidification on marine ecosystems

End Plan A

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Bipartisanship in the US Congress may prove to be a political obstacle to enacting the National Incentive Plan to reduce greenhouse gas emissions. Due to extensive and continuing damages being incurred by governments, private enterprises and residents in the US, it is recognized by all parties that local and state governments lack adequate funds and revenues to respond and recover from the myriad of negative impacts resulting from climate change. This incident is recognized as both a local and national disaster and poses a persistent state of emergency for all government jurisdictions. Therefore, it is within the authority of each and every local, state and tribal government, including US territorial governments and other nations as signatories to emergency/disaster aid compacts to individually request the President of the United States to issue a Presidential Disaster Declaration, invoking the Stafford Act.

In order to initiate this action, it will be necessary for one or more government jurisdictions to submit an official request for disaster assistance from their superior government authority (local to state, state to federal, tribal to federal; and, independent nation to the US President).

Plan B – Presidential Disaster Declaration and Continuing State of Emergency

- I. Logical Sequence of Requesting Eligible Applicants for Federal Assistance
 - a. Indian Tribal Councils-many tribal lands currently are experiencing coastal erosion, frequent flooding by tides and storms and subsidence due to loss of permafrost and ice. Each tribe has the individual authority to request federal assistance through the disaster declaration process and/or request the regional tribal council to collectively make the request to the President for a disaster declaration. The declaration process is described in the federal publication, FEMA PA 322 (2007) and in the Stafford Act.
 - i. Alaska Region-representing 229 tribes with 80,000 members
 - ii. Eastern Region-Miccosukee & Seminole Tribes of Florida
 - b. Local County Governments-individually request emergency assistance from the State Governor, who then justifies a request for federal assistance to the President by meeting specific FEMA “threshold” formulas.
 - i. 285 Atlantic Coastal Counties
 - ii. 142 Gulf of Mexico Coastal Counties
 - iii. 87 Pacific Coastal Counties
 - c. State Governments-US Ocean Coastlines- states can submit a request for federal assistance from the President by meeting specific FEMA “threshold” formulas.
 - i. 14 Atlantic States
 - ii. 5 Gulf of Mexico States
 - iii. 5 Pacific States
 - d. Independent Nations- Under the direction and coordination of the U.S. Agency for International Development-Office of Foreign Disaster Assistance (USAID-OFDA), FEMA communications personnel from Incident Management Assistance Teams (IMAT), and a Mobile Emergency Response Support (MERS) team, as well as support from FEMA external affairs, can be activated by the President to provide disaster assistance to other nations. Request for US disaster assistance is to be made by the President of the impacted nation.
 - i. Canada
 - ii. Mexico
 - iii. Island Nations (Bahamas, Caribbean Islands, some Pacific Islands)

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- II. Federal Assistance for Response and Recovery from Climate Change
 - a. The Department of Homeland Security manages the Federal Emergency Management Agency in accordance with the Stafford Act.
 - b. DHS also coordinates with other federal agencies within the State Department to provide assistance to disaster-damaged nations.
 - c. Upon issuance of a Presidential Disaster/Emergency Declaration, Congress is authorized to establish adequate funding to support response and recovery actions of federal agencies, tribes, states, local governments and other eligible applicants.
 - d. The term of the Presidential Declaration can be extended as long as it takes to complete the response and recovery actions; incident start date is to be based on NOAA-ESRL CO₂ average monthly data exceeding 350 ppm first recorded April 1986 at Mauna Loa.
 - e. While the Presidential Disaster Declaration is “open”, any local government, tribe or state can request to be added to the Declaration by meeting specific FEMA “threshold” formulas.
- III. Eligible Activities of the Presidential Declaration
 - a. Typically, FEMA describes eligible response and recovery actions under Categories A through G (FEMA PA 322).
 - b. Specific action items can be limited or expanded by the President including:
 - i. Plan A-National Incentive Program to rapidly reduce GHGs by development of a large ocean renewable energy sector can be referenced in the Declaration.
 - ii. National Laboratory R&D activities can be authorized to support response activities
 - iii. Military Branches can be activated for specific purposes as a national security interest, including R&D activities by DARPA and US Naval Laboratories, etc.
 - c. Purchase Orders can be authorized to mobilize industries to support disaster activities.
 - d. Federal Government organized and managed, purpose-focused projects can be implemented on the scale of the Manhattan Project.

The individual request for a Presidential Declaration should include an estimate of specific government assets that have been damaged and will be damaged during the incident period, which would encompass multiple decades for the climate change disaster. FEMA will be authorized to perform a Preliminary Damage Assessment (PDA) of the disaster area and make a recommendation to the President to issue the Declaration or not. With the Declaration, specific Project Worksheets (PWs) are determined eligible and federal funds obligated typically requiring a 75-25 percent cost share with the eligible government applicant. The applicant can elect to manage the disaster or request the federal government to assume the responsibility for response and recovery. FEMA can issue federal project worksheets of any cost magnitude and scope to accomplish their mission assignment.

A dedicated effort will need to be made to communicate the call-to-action first to the Tribal Nation and then to local coastal county governments. Buy-in to Plan B for requesting a Presidential Disaster/Emergency Declaration by one or more eligible applicants must be secured to move forward with this optional national response to climate change.

End Plan B