

**Committee on the Marine Transportation System (CMTS) –
Alternative Fuels Task Team
*Compendium of Relevant Agency Activities***

Purpose: This document describes many of the alternative fuels and liquefied natural gas activities carried out jointly or individually by CMTS member (and other) agencies. *This document is continually under review to ensure each agency is represented comprehensively and accurately.*

Department of Energy (DOE)

DOE Alternative Fuels Data Center (AFDC). The Alternative Fuels Data Center (AFDC) is a comprehensive clearinghouse of information about advanced transportation technologies. The AFDC offers transportation decision makers unbiased information, data, and tools related to the deployment of alternative fuels and advanced vehicles. The AFDC launched in 1991 in response to the Alternative Motor Fuels Act of 1988 and the Clean Air Act Amendments of 1990. It originally served as a repository for alternative fuel performance data. The AFDC has since evolved to offer a broad array of information resources that support efforts to reduce petroleum use in transportation. The AFDC serves DOE’s ‘Clean Cities’ stakeholders, fleets regulated by the Energy Policy Act, businesses, policymakers, government agencies, and the general public. <http://www.afdc.energy.gov/fuels/index.html>

DOE Bioenergy Technologies Office (BETO). The Bioenergy Technologies Office (BETO) sees the potential for biofuels produced for the aviation industry to help enable the growth of an advanced bioeconomy. Drop-in jet fuel replacements remain the only true alternative for the commercial aviation industry and the military, both facing ambitious near-term greenhouse gas reduction targets. BETO has been working with national labs, industry stakeholders, and airline partners to look at new research developments and market opportunities for renewable aviation fuels. The Bioenergy Technologies Office has formed strong partnerships with other related agencies, as well as the aviation community. The Office routinely collaborates on strategic activities meant to advance renewable jet fuels and develop the aviation market. In November 2012, BETO co-hosted the Aviation Biofuels Techno-Economic Analysis Workshop with the Federal Aviation Administration (FAA) and the Commercial Aviation Alternative Fuels Initiative (CAAFI). In September 2013, BETO also hosted a natural gas-biomass to liquids workshop. A primary focus of this workshop was the use of natural gas in coordination with biomass to produce aviation-grade fuels. http://www1.eere.energy.gov/bioenergy/aviation_fuels.html

DOE Fossil Energy Office LNG Export/Regulation. DOE has regulatory, policy, and technology responsibilities related to liquefied natural gas (LNG). The Office of Fossil Energy (FE) issues authorizations to import and export natural gas, by pipeline or as LNG, and conducts a data collection program to report annual and monthly levels of U.S. natural gas imports and exports. FE’s Oil and Natural Gas Division supports the development and deployment of technologies that will ensure the safety and surety of LNG vessel transport. Areas of focus include efforts to expand the public’s understanding of LNG, LNG safety, and R&D focused on advanced technologies for safe and efficient transportation and storage of LNG.

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<http://energy.gov/fe/services/natural-gas-regulation>

DOE Advanced Research Projects Agency – Energy (ARPA-E) ARPA-E plays an important role to develop transformational technologies to produce, store, and use energy. To date, ARPA-E has invested over \$900 million across 362 projects through 18 focused programs and two open funding solicitations (OPEN 2009 and OPEN 2012). ARPA-E has consistently invested in early stage alternative fuel technologies, such as biofuels and natural gas/methane. Currently ARPA-E has 4 focused programs targeting new technologies for alternative fuel feedstocks, direct use, and conversion/production. The Electrofuels program, commissioned in 2010, has demonstrated production of fuel and/or fuel precursors by chemoautotrophic microorganisms directly from carbon dioxide and several inorganic energy sources, including hydrogen and direct current, as well as the production of alcohols from formate derived from the electrochemical reduction of carbon dioxide. The program has demonstrated remarkable success in the development of new genetic tools for engineering traditionally genetically-intractable microorganisms. The PETRO (Plants Engineered To Replace Oil) program is developing engineered non-food crops that directly produce high energy fuel molecules and agricultural practices capable of producing these crops at yields and costs that are cost competitive with petroleum fuels. The PETRO performers have engineered sorghum, energy cane, tobacco, camelina, and pine trees to produce oils and terpenes, and have observed accumulation of these compounds up to 3% by dry weight. Three of the projects will be starting small scale field testing of the first generation plants in 2014, regulated by USDA. The MOVE (Methane Opportunities for Vehicular Energy) program, launched in 2012, seeks to lower the barriers to adoption of natural gas as a fuel for passenger vehicles by developing new technologies for natural gas compression and storage, including at-home compressors, conformable high-pressure tanks, and sorbent-based low-pressure tanks. MOVE targets the direct use of natural gas as an alternative fuel for the light-duty fleet and has spurred the formation of two startup companies. The REMOTE (Reducing Emissions using Methanotrophic Organisms for Transportation Energy) program seeks to develop biological conversion of low cost methane to liquid fuels as an alternative to large scale, capital intensive gas-to-liquids (GTL) processes. The newly deployed program targets high energy efficient and carbon efficient bio-based conversion of methane to fuels, as well as bioprocess intensification to dramatically improve system productivity required for techno-economic performance.

DOE/NARUC LNG Partnership. State public utility regulators and federal regulatory officials play an important role in the efficient development of LNG as an energy resource. DOE has partnered with the National Association of Regulatory Utility Commissioners (NARUC) to help educate energy decision makers and the public about LNG. The Partnership is designed to enhance communications with stakeholders to ensure responsible development of state and regional strategies relating to LNG education, resource development and deployment. NARUC's members include agencies from the 50 states, DC, Puerto Rico and the Virgin Islands that are responsible for regulating the activities of telecommunications, natural gas, electricity, and water utilities. <http://energy.gov/fe/science-innovation/oil-gas/liquefied-natural-gas>

Transportation Energy Futures (TEF) Study. The TEF study evaluates various technological, fuel substitution, and policy options for reducing transportation-related greenhouse gas (GHG) emissions and petroleum use. In 2009, 30 quadrillion Btu of energy were used in the

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transportation sector. Light-duty vehicles (LDVs), cars and light trucks, account for 55% of this energy use. The other 45% consists of freight and passenger transportation by way of medium- and heavy-duty trucks, buses, aircraft, marine vessels, trains, pipeline, and off-road equipment. While there has been considerable research focusing on energy efficiency and fuel substitution options for LDVs, much less attention has been given to non-LDV modes, even though they constitute close to half of the energy used in the transportation sector. DOE conducted an extensive literature review of the non-LDV modes, and in the report DOE brings together the salient findings concerning future energy efficiency options in the time period up to 2050. <http://www.nrel.gov/docs/fy13osti/55637.pdf>

Department of Agriculture (USDA), Department of Defense (DoD-Navy), and DOE

DPA Title III Advanced Drop-In Biofuels Production Project. As of June 19, 2013, Phase 1 awards have been made to four different companies to develop business plans for feedstocks and biorefineries. If successful through Phase 2, there is potential for 170 million gallons of drop-in compatible MILSPEC fuels (F-76, JP-5, JP-8) to start production by 2016. The weighted average price in 2013 dollars is less than \$4/gal. The project has \$100 million in FY12 funds from DOD, \$60 million in FY13 from USN that can't be reprogrammed. To date, USDA has contributed \$161 million in Commodity Credit Corporation (CCC) funds to defray feedstock costs for the refineries. Phase 2 awards are set to begin July 2014.

USDA and DoD-Navy

Farm-to-Fleet. Farm-to-Fleet builds on the DOE/USDA/Navy partnership inaugurated in 2011, when President Obama challenged the three agencies to investigate how they could speed the development of domestic, competitively-priced "drop-in" diesel and jet fuel substitutes. Through this, the Navy will begin to add biofuels into its regular domestic purchases of approximately 80 million gallons of jet fuel (JP-5) and marine diesel (F-76) each year. The Farm-to-Fleet program uses the USDA's CCC funds to offset the costs of biofuel feedstock if there is a cost differential over conventional petroleum products, allowing Navy/DoD to procure alternative fuels at competitive prices. All fuels purchased will be price competitive with conventional fossil fuels, and will be purchased in annual one-year contracts by the Defense Logistics Agency Energy. The RFP will be open to all companies, worldwide. Solicitations are pending (spring 2014). Deliveries scheduled to begin: April 2015 and June 2015 covering all 50 states. An Industry Day to help get information out about the program was held on January 30, 2014. <http://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2013/12/0237.xml&printable=true&contentidonly=true>

USDA and DOE

Biomass Research and Development Board. The Biomass Research and Development Board is an interagency collaborative composed of senior decision-makers from eight federal agencies and the White House, co-chaired by USDA and DOE. Other federal agencies represented on the Board are DOT, EPA, DOI, DOD, NSF, and OSTP. The Board also oversees seven Interagency Working Groups focused on specific aspects of the Biomass supply chain:

- Feedstocks Production and Management

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- Feestocks Production—Genetic Improvement
- Feedstocks Logistics
- Conversion
- Transport and Distribution Infrastructure
- Algae
- Analysis

USDA and DOE annually implement the Biomass Research and Development Initiative, which consists of grants made available through FCEA Section 9008 and other programs. The Technical Advisory Committee is an independent body that provides input to agencies regarding the technical focus and direction of the Initiative. The Biomass Research and Development Act of 2000, later amended by Section 9001 of the Food Conservation and Energy Act of 2008 (FCEA), established Biomass Research and Development Board, annual Initiative solicitation, and Technical Advisory Committee.

<http://www.biomassboard.gov/>

USDA and DOT/FAA

Farm to Fly 2.0 (F2F2). Joint agreement signed in April 2013 between USDA, FAA, and aviation industry partners Commercial Aviation Alternative Fuels Initiative (CAAIFI), Airlines for America (A4A), and others to extend federal commitment to production of biofuels for use in airplanes. This is an extension of original Farm to Fly program meant to develop sustainable alternatives to fossil-based fuel for the aviation community.

http://www.usda.gov/wps/portal/usda/usdahome?navid=LATEST_RELEASES

DoD-Navy

Great Green Fleet (Navy/Marines). One of the five energy goals of the Navy is to demonstrate and then deploy a “Great Green Fleet,” a Carrier Strike Group fueled by alternative sources of energy, including nuclear power. The ships and aircraft in the Great Green Fleet demonstration in 2012 were powered by alternative fuel, either nuclear or advanced biofuel blends. The biofuel blends were 50-50 mixtures of biofuel (made from used cooking oil and algae) and petroleum-based marine diesel or aviation fuel. Navy surface ships were powered using 350,000 gallons of hydroprocessed renewable diesel (HRD-76) blended with an equal amount of marine diesel (F-76). Navy aircraft burned 100,000 gallons of hydroprocessed renewable jet fuel (HRJ-5) blended with aviation fuel (JP-5). Investments in an alternative to foreign sources of fuel will help the Navy and the nation become less dependent on foreign oil, and less subject to volatility in oil prices that can directly affect their readiness. <http://greenfleet.dodlive.mil/energy/great-green-fleet/>

Department of Transportation Maritime Administration (MARAD)

Biofuels, LNG, and Hydrogen Fuel Cell Projects. A primary mission of MARAD is to promote an efficient, economically viable, and environmentally sound U.S. maritime transportation industry and the increased use of U.S. mariners and U.S.-built, U.S.-flagged vessels for energy transportation. MARAD’s direct interest in alternative fuels is a result of

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evolving environmental regulations and growing concerns over ship and port related emissions, climate change, the need to reduce dependence on foreign oil imports, and other trends and changes in the energy sector. These factors and the highly cost competitive marine transportation sector have accelerated the search for less polluting maritime energy sources, higher efficiency marine power plants, and the infrastructure necessary to support new maritime energy technologies. Of particular importance, the President's June 2013 Climate Change Plan established as a national priority the introduction of innovative energy-related technologies in the maritime sector. MARAD is focused on exploring and demonstrating the use of the broad array of potential energies and technologies that may serve the marine sector. MARAD is currently actively working on projects involving LNG, biofuels, and hydrogen fuel cells.

Great Lakes Maritime Research Institute (GLMRI). Established in 2004 to pursue research efforts in marine transportation, logistics, economics, engineering, environmental planning, and port management, the US Maritime Administration (MARAD) designated GLMRI as a National Maritime Enhancement Institute on June 1, 2005. GLMRI represents a consortium of the University of Wisconsin-Superior Transportation and Logistics Research Center with the University of Minnesota Duluth's Swenson College of Science and Engineering and its Labovitz School of Business and Economics. The Institute is dedicated to developing and improving economically and environmentally sustainable maritime commerce on the Great Lakes through applied research. It conducts research on behalf of MARAD on alternate fuels (viz., LNG and natural gas). The Saint Lawrence Seaway Development Corporation (SLSDC) are members of the Board of this Institute.

Saint Lawrence Seaway Development Corporation (SLSDC) One of two DOT marine agencies, the SLSDC seeks to ensure safe, reliable, efficient marine transport through America's two locks on the binational (US-Canadian) waterway and market the Seaway domestically and abroad to enhance economic growth in an eight-state, two province region. Rapid and extensive development of gas production in the United States, especially in the Marcellus/Utica region adjoining the Great Lakes, has catalyzed plans for development of LNG liquefaction plants and modular gas-to-liquid plants. The SLSDC is monitoring regional economic developments that LNG/GTL startup activities promise this region and other industries impacting them (viz., pipelines and shipbuilding) given the Seaway's role as a key transport route serving this fast-growing energy supply chain. The agency leadership sits on the Advisory Board of the Great Lakes Maritime Research Institute, ensuring regular interaction between engineering/scientific staff and diverse business professionals.

General Services Administration (GSA)

GSA Fleet. GSA Fleet strives to assist federal customers in acquiring vehicles that help to meet federal sustainability requirements and reduce costs. Fleet has achieved measurable success in this endeavor. In FY 2013, the GSA leased Fleet had an overall MPG improvement of 19.42%, meaning on average, GSA Fleet put a vehicle in to the fleet that was 19.42% more fuel efficient than the vehicle it replaced. Federal agencies are to purchase alternative fuel vehicles, increase consumption of alternative fuels, and reduce petroleum consumption. Federal fleets are required to obtain 75 percent of their light-duty annual acquisitions as AFVs in Metropolitan Statistical Areas (MSAs). Section 301 of EPACT defines alternative fuels as: biodiesel; denatured alcohol; electricity; hydrogen; methanol; mixtures containing up to 85 percent methanol or denatured

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ethanol; natural gas; and propane (liquefied petroleum gas). In addition, the national defense authorization act of 2008 expanded the definition of an alternative fuel vehicle to include: any vehicle achieving a significant reduction in petroleum consumption; advanced lean burn technology vehicles; fuel cell vehicles; and hybrid electric vehicles.

http://www.gsa.gov/portal/content/104442?utm_source=FAS&utm_medium=print-radio&utm_term=afv&utm_campaign=shortcuts

National Oceanographic and Atmospheric Administration (NOAA)

Dual Fuel Project. As an extension of GLERL's exclusive use of B100 biodiesel, an effort was initiated in 2014 to engineer and implement vessel conversions to use natural gas in conjunction with B100 in existing engines was. This Dual Fuel project leverages advancements in allied industries and is designed to address technical and infrastructure issues unique to marine applications for natural gas. Natural gas will be used as compressed natural gas (CNG), fueled from shore side compressors. Dual Fuel technology is particularly well suited for coastal and waterways vessels with limited operating range and has gained commercial interest. The project includes conversion of Tier and legacy engines, installation of captive fueling stations, validation of emissions and plant performance measures. A phased timeline includes seven NOAA vessels over a two year period.

Retrofitting Marine Ships. NOAA's biggest role in alternative energy for marine operations has been to experiment and retrofit some of its fleet to use alternative energy. One of NOAA's labs in the Great Lakes led a Green Ship Initiative beginning in 1999. In 2006 received an award from the Department of Energy. This was led by Dennis Donahue, who was at the initial CMTS Energy Meeting, but is based full time in Ann Arbor, Michigan. NOAA's National Marine Sanctuaries has also converted vessels in its fleet to alternative fuels.

<http://www.glerl.noaa.gov/pubs/brochures/GreenShip.pdf>

Alternative Fuels Research. NOAA has supported research on alternative fuels work via grants to academic partners. In 2012, a NOAA scientist at a laboratory in North Carolina was the co-author of a paper on the risk of genetically modified microalgae for biofuel cultivation. NOAA has expertise in marine algae, but mostly in the area of marine algae is in the context of a threat to human health, i.e., Harmful Algal Blues/Red Tides, not for fuels.

Great Lakes Environmental Research Laboratory (GLERL) Green Ship Initiative. NOAA operates a fleet of research vessels and small boats on the Great Lakes through its Great Lakes Environmental Research Laboratory (GLERL). As part of its larger stewardship mission in the marine environment, NOAA has explored options to convert its research vessels from petroleum-based fuels and lubricants to renewable and environmentally-friendly products that reduce fossil fuel emissions. GLERL's Green Ship Initiative, begun in 1999, has led the nation by successfully converting the laboratory's entire diesel-powered vessel fleet to biofuels and bio-lubricants. This effort produced the first federal vessel to run completely on non-petroleum products. The marine diesel-powered vessels in the Great Lakes are now fueled by B100 (100%) soy biodiesel, a true renewable energy source. This is a significant advancement over the use of B20 petroleum blends (20% biodiesel and 80% petroleum diesel). All other shipboard mechanical and hydraulic systems on GLERL vessels have been converted to use bio-products (bio-based oils and

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lubricants made from rapeseed and canola oils) to meet the objective of totally petroleum-free vessels.

- **Green Ship Working Group.** Now that GLERL has met its goal of converting its vessel fleet to 100% biofuel, the lab is sharing its expertise to help others convert their vessels to petroleum-free operation. In 2002, GLERL formed the Green Ship Working Group, which has helped more than 150 small vessels from both the government and private sectors convert to biofuel.
- **Federal Green Fleet Working Group.** In 2010, GLERL began to focus its technology transfer efforts on the federal government through the Federal Green Fleet Working Group. Through this group, GLERL shares its expertise and resources and collaborates on projects with other federal agencies interested in marine applications of biofuels. As a leader in the field, GLERL developed a 5-Step Conversion Process to help other agencies move towards the use of biofuels in their large vessels. In 2011, both the U.S. Army Corps of Engineers (USACE) and the Maritime Administration (MARAD) conducted marine biofuel tests. The USACE test successfully implemented GLERL's Green Ship principles on four vessels stationed around the country. MARAD conducted one of the first large-scale tests of a biofuel consisting of 50% petroleum-based diesel and 50% biodiesel made from algae, which many experts believe is a promising source of biofuel.

US Army Corps of Engineers (USACE)

Alternative Fuel Initiative (LNG/CNG). The U.S. Army Corps of Engineers (USACE) Marine Design Center (MDC) hired the Bristol Harbor Group, Inc (BHGI) Team to investigate options with regards to the conversion of a USACE vessel from diesel to LNG powered, for the purposes of testing on a vessel. BHGI conducted a feasibility study that is currently in draft form. The team spoke to both the original equipment manufacturers (OEM) and aftermarket conversion companies to determine the available options, developed emissions reductions estimates, and developed rough order of magnitude costs for the conversions. In addition, they investigated the various regulatory standards regarding design, operation, and crew training and safety. <http://www.lngglobal.com/lng-for-fuel/u-s-army-corps-of-engineers-researching-lng-vessels.html>

Test of Alternative Fuels to Reduce Fossil Fuel Use in Corps of Engineers Floating Plant Operations. With the goal of reducing fossil fuel usage, tests of alternative fuels were conducted on a diverse group of Corps vessels. The USACE has approximately 2,800 floating-plant assets and an annual consumption of diesel fuel of around 8 million gallons. In excess of 150 of the floating-plant assets are involved in dredging activities. USACE conducted a feasibility study that led to evaluating biodiesel usage in an increased number, and more diverse type, of vessels, and additional testing of first- and second-generation biodiesel fuels with improved monitoring for fuel consumption and emissions. A study of diesel fuel additives conducted by the USACE with the objective of evaluating the potential fuel additives to reduce the use of fossil fuels included testing of an alcohol-injection system in a diesel-powered generator that provide backup power for Lock and Dam No. 4 on the upper Mississippi River.

Feasibility Analysis of Using Biodiesel Fuel on U.S. Army Corps of Engineers Floating Plant. Written in 2011, the report presented the results of a preliminary study to evaluate the

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feasibility of using biodiesel fuel on U.S. Army Corps of Engineers (USACE) floating plant operations as a replacement fuel. The study adopted the methodology used at NOAA's Lake Michigan Field Station (LMFS) that has successfully used biodiesel in a variety of vessels over the past several years in Muskegon, Michigan. This USACE study, funded jointly by the Dredging Operations and Environmental Research (DOER) program and USACE Headquarters, in conjunction with participating USACE Districts, used LMFS's methodology to convert four working USACE vessels to biodiesel, and monitor respective operational and environmental parameters. This evaluation not only provided a preliminary assessment of the feasibility and sustainability of USACE floating plant biodiesel fuel use in the near future, but it also created a paradigm that USACE can use in the future to demonstrate and evaluate other emerging fuel alternatives (e.g., second generation biodiesel, etc.) as they come on line and are deemed of interest.

Environmental Protection Agency (EPA)

Renewable Fuel Standard (RFS). EPA is responsible for developing and implementing regulations to ensure that transportation fuel sold in the US contains a minimum volume of renewable fuel. The RFS program was created under the Energy Policy Act (EPAct) of 2005, and established the first renewable fuel volume mandate in the United States. As required under EPAct, the original RFS program (RFS1) required 7.5 billion gallons of renewable- fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act (EISA) of 2007, the RFS program was expanded in several key ways:

- EISA expanded the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel, and set separate volume requirements for each one.
- EISA required EPA to apply lifecycle greenhouse gas performance threshold standards to ensure each category of renewable fuel emits fewer greenhouse gases than the petroleum fuel it replaces.
- RFS2 lays the foundation for achieving significant reductions of greenhouse gas emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector.

<http://www.epa.gov/otaq/fuels/renewablefuels/>

Offshore Deepwater Liquefied Natural Gas (LNG) Ports. EPA received three National Pollution Discharge Elimination System (NPDES) permit applications for wastewater discharges related to the construction and operation of deepwater LNG ports in state and federal waters of Massachusetts Bay. One was for construction-related discharges associated with the Northeast Gateway LNG deepwater port, one was for operations-related discharges associated with the Northeast Gateway LNG deepwater port, and the other was for both construction-related and operations-related discharges for the Neptune LNG deepwater port. The permits were issued in June 2007, October 2007, and June 2008 respectively.

<http://www.epa.gov/region1/npdes/offshorelng/>

Department of Interior (DOI) Bureau of Ocean Energy Management (BOEM)

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Energy Facility Siting Process (Partners: FERC, USCG, NOAA, DOE, EPA, USFWS).

These agencies work to address energy needs, reduce coastal use conflicts and preserve coastal resources, by fostering state coastal management programs that have policies and planning processes to address energy and government facility siting that could affect the coastal zone. Planning for energy facilities can be challenging. Coastal managers must coordinate with a variety of authorities at federal and state levels. Plans should be proactive and not reactive to individual energy facility proposals. Even when sited in suitable areas, there can be "not in my backyard" opposition. In addition, for many of the newer renewable energy facilities, there is often limited information available on the coastal impacts from siting or operating these facilities - http://coastalmanagement.noaa.gov/issues/energy_federal.html

Department of State (State)

Bureau of Energy Resources (ENR). The Bureau of Energy Resources (ENR) leads the State Department in the whole of government effort to promote international energy security. ENR plays a leadership role in a number of multilateral, regional, and bilateral efforts to promote alternative fuels, including fuels and natural gas. Through the Global Bioenergy Partnership (GBEP), the International Renewable Energy Agency, the U.S.-Brazil Memorandum of Understanding on Biofuels Cooperation, the Energy and Climate Partnership of the Americas, and the Sustainable Energy for All initiative, ENR seeks to promote the sustainable development of bioenergy industries, the creation of liquid and stable global and regional markets for alternative fuels, and economic growth, both domestically and abroad.

<http://www.state.gov/e/enr/>

Bureau of Economic and Business Affairs (EB). The Bureau of Economic and Business Affairs (EB) works to ensure that U.S. government policies support the use of biofuels as a tool to address the inter-related challenges of economic growth and job creation, food security, energy security, and climate change.

<http://www.state.gov/e/eb/index.htm?country=->

Other

The International Association of Ports and Harbors (IAPH) World Ports Climate Initiative (WPCI) LNG Fueled Vessels Working Group. The Working Group is tasked among other things with developing guidelines on safe procedures for LNG bunkering operations, providing ports around the world with an implementation guideline, if they wish to pursue this technology. The Port of Antwerp is chairing this initiative and representatives from the ports of Amsterdam, Bremen/Bremerhaven, Brunsbüttel, Gothenburg, Hamburg, Le Havre, Los Angeles, Long Beach, Rotterdam, Stockholm and Zeebrugge are also active participants in the Working Group. The Working Group maintains close contacts with industry stakeholders currently using and/or handling LNG, as well as government agencies. Participation in the Working Group is open to all ports, whether as active participant or as member of the reference group. The Working Group consists of three sub-Working Groups:

- LNG Bunkering Checklist
- LNG Bunkering Risk Perimeters

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- LNG Public Awareness

http://www.marinelog.com/index.php?option=com_k2&view=item&id=3733:ports-respond-to-growing-interest-in-lng-as-ships-fuel&Itemid=231

LNG Congressional Working Group. On March 15, 2013 Representatives Tim Ryan (D-OH) and Bill Johnson (R-OH) announced the establishment of a bipartisan congressional Liquefied Natural Gas Export Working Group. The group's mission will be to advocate for expanded exports of domestic liquefied natural gas (LNG) as well as conduct meetings and briefings to keep Members apprised of new developments on the issue of LNG exports.

<http://www.lexology.com/library/detail.aspx?g=8b377419-d508-40eb-8621-fb690978339c>

Federal Maritime Commission (FMC) Maritime Environmental Committee. The FMC is the independent federal agency responsible for regulating the U.S. international ocean transportation system for the benefit of U.S. exporters, importers, and the U.S. consumer. The Maritime Environmental Committee provides an environmental issues clearinghouse for information on maritime environmental issues, news, resources, laws and regulations, and best practices. In its role as a regulator of marine terminal operators and ocean carriers, the FMC has seen environmental issues become increasingly central to the agreements and shipping practices we monitor and regulate. As ports and ocean carriers adjust to reduce their environmental footprint, the FMC will serve as a partner.

http://www.fmc.gov/news/maritime_environmental_issues.aspx