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VIA ELECTRONIC FILING

January 27, 2012

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426
www.ferc.gov

Re: Sabine Pass Liquefaction, LLC and Sabine Pass LNG, L.P.
Sabine Pass Liquefaction Project (Cameron Parish, LA)
Docket No. CP11-72-000

Dear Secretary Bose:

On behalf of the Gulf Coast Environmental Labor Coalition ("GCELC"), a non-profit organization dedicated to the protection of the environment and worker interests in the Gulf Coast Region, and its individual members including its members who work, reside, and recreate in the vicinity of the above-referenced proposed project,[1] undersigned legal counsel submit the following written comments on the Draft Environmental Assessment ("EA") for proposed Sabine Pass Liquefaction Project to be located at 9243 Gulf Beach Road, Johnson Bayou, Cameron Parish, Louisiana. According to the Federal Energy Regulatory Commission ("FERC") notice:

> Sabine Pass LNG, LP, and Sabine Pass Liquefaction, LLC ("Permit Applicants"), request authorization to construct and operate facilities to be used for the liquefaction and exportation of natural gas at the existing Sabine Pass LNG Import Terminal in Cameron Parish, Louisiana. The Project would be capable of processing an average of approximately 2.6 billion cubic feet per day of pipeline quality natural gas from the Creole Trail Pipeline, which interconnects with the SPLNG Terminal. Sabine Pass would liquefy the natural gas, store the liquefied natural gas (LNG), and export approximately 16 million metric tons per annum of LNG via LNG carriers.

[1] GCELC was formed to ensure a balance between the rapid population growth, labor interests and the preservation of the natural environment in the Gulf Coast region with a commitment to unite labor leaders, union members, environmental activists and other concerned local citizens in the Gulf Coast region to fight for good jobs and a clean environment. GCELC consists of twenty-five different local labor unions and their constituent members totaling approximately 27,000 members throughout Louisiana, Mississippi, Texas and Oklahoma. At least forty-six members and their families reside in Sabine Pass, Texas, and Port Arthur, Texas, and Cameron Parish, Louisiana, within close proximity of the proposed Sabine Pass LNG Terminal.

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The FERC transmittal letter at 1-2, attached to the Draft Sabine Pass Liquefaction Project EA, states that the Proposed Project includes the following facilities:

- Four LNG liquefaction trains (each train contains gas treatment facilities, six gas turbine-driven refrigerant compressors, waste heat recovery systems, induced draft air coolers, fire and gas detection and safety systems, control systems, and associated infrastructure);
- Additional power generation (including up to two gas turbine-driven generators, transformers, and other electrical accessories to supplement existing onsite power generation);
- Other infrastructure and modifications (including storage tanks for propane and ethylene refrigerants and the amine make up, replacement of in-tank LNG pumps and piping modifications to increase flow capacity and facilitate loading of LNG carriers, impoundments for the liquefaction trains, flares, recycle boil-off gas compressors, potable water, service water, and demineralized water systems); and
- New and remodeled buildings.

Liquefaction plants are large, complex, industrial facilities. There are less than three dozen such facilities existing in the world, the majority of which are located in Africa and Asia.[2] The applicant's proposed Sabine Pass Liquefaction Project would be only the second such facility in the United States and the first within the Continental United States. The United States' first and only liquefaction plant – the ConocoPhillips Kenai LNG plant – commenced operation in Alaska in 1969 prior to the enactment of National Environmental Policy Act ("NEPA"). The proposed Sabine Pass Liquefaction Project would be built at a cost of more than $1.5 billion and would make the Sabine Pass LNG terminal the world's first bi-directional LNG facility.[3]

GCELC asserts that following significant adverse impacts to the human environment have not been mitigated; therefore, an Environmental Impact Statement ("EIS") must be prepared prior to FERC authorizing the Proposed Sabine Pass Liquefaction Project:

- Fugitive dust air quality impacts
- Impacts from greenhouse gas ("GHG") emissions
- Impacts due to emissions ozone precursor emissions (i.e., Volatile Organic Compounds ("VOCs") and Nitrogen Oxides ("NO_x"))
- Impacts due to Hydrogen Sulfide emissions
- Adverse impacts to Environmental Justice communities

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[2] World's LNG Liquefaction Plants and Regasification Terminals as of March 2011. http://www.globallnginfo.com/World%20LNG%20Plants%20&%20Terminals.pdf

[3] Pipeline and Gas Technology, 20 January 2011: "Cheniere Signs MOU for Bi-Directional Processing Capacity at the Sabine Pass LNG Terminal." http://www.prnewswire.com/news-releases/cheniere-signs-mou-with-edf-trading-for-bi-directional-processing-capacity-at-the-sabine-pass-lng-terminal-114270714.html.

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- Operational Noise Impacts
- Potential Hazards to public safety posed by liquefaction facilities including risks relating to the transportation and on/off-loading of hazardous chemicals

The FERC staff erred in recommending to the Secretary that approval of the Proposed Project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment for the following reasons:

(1) The Proposed Sabine Pass Liquefaction Project involves activities that FERC regulations state normally require the preparation of an EIS;
(2) The Draft EA fails to adequately identify and evaluate potential alternatives to the Proposed Action;
(3) The Draft EA is inconsistent with the stated purpose and need statement;
(4) The Draft EA fails to take a "hard look" at the potential adverse environmental and socioeconomic impacts of the Proposed Action and its alternatives;
(5) The Draft EA fails to adequately characterize or mitigate direct, indirect or cumulative adverse environmental impacts of the Proposed Action and its alternatives;
(6) The Draft EA fails to adequately assess or mitigate potential adverse impacts of the Proposed Action on Environmental Justice communities; and
(7) The Public's right to meaningfully participate in FERC's decision to authorize the Proposed Project as mandated by NEPA has been materially compromised.

Accordingly, FERC must prepare an EIS rather than rely on this inadequate Draft EA to meet the requirements of section 102(2)(C) of NEPA. Moreover, due in part to FERC failing to defer to the United States Environmental Protection Agency's ("EPA's) determination that the Proposed Project will result in significant increase in ozone pollution in Jefferson County, Texas, FERC has failed to meet its responsibility to engage Environmental Justice communities in FERC decision-making per Executive Order 12898 on Federal Actions To Address Environmental Justice In Minority Populations and Low-Income Populations. FERC, therefore, should utilize the EIS process to more fully disclose adverse air quality effects and the health consequences that the Proposed Sabine Pass Liquefaction Project will have on Environmental Justice communities in Jefferson County, Texas, including Port Arthur through the mandatory conduct of scoping meetings[4] and public meetings[5] on the Draft EIS. Such public involvement must include full consideration of the adverse environmental effects of the Proposed Project to Environmental Justice communities to ensure that FERC adequately integrates environmental considerations in FERC decision-making prior to the issuance of a Record of Decision ("ROD") and meet the obligations of Executive Order 12898.

[4] 40 C.F.R. § 1501.7.
[5] Id.

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I. THE PROPOSED SABINE PASS LIQUEFACTION PROJECT IS A MAJOR FEDERAL ACTION SIGNIFICANTLY AFFECTING THE QUALITY OF THE HUMAN ENVIRONMENT; NEPA REQUIRES THE PREPARATION OF AN EIS

A. An EIS is Required for the Proposed Project

The action-forcing provision of NEPA §102(2)(C) requires the preparation of an EIS for all "major Federal actions significantly affecting the quality of the human environment." The threshold for preparation of an EIS is evidence that a project "may significantly degrade some human environmental factor." Foundation for N. Amer. Wild Sheep v. United States Dep't of Agric., 681 F.2d 1172, 1178 (9th Cir. 1982). A court may order FERC to prepare an EIS where a petitioner raises substantial questions as to whether a project may have significant effects on the quality of the human environment without a showing that the significant effects will in fact occur. LaFlamme v. FERC, 852 F.2d 389, 397 (9th Cir. 1986). NEPA imposes obligations on every Federal agency to evaluate the environmental impacts of its major action prior to implementing a Federal action to facilitate informed agency and public decision-making as mandated by the Council on Environmental Quality ("CEQ") regulations. See, e.g., 40 C.F.R. § 1500.1. FERC has implemented its own NEPA regulations to supplement the CEQ regulations; but FERC must comply with all CEQ regulations unless inconsistent with FERC's statutory obligations per 18 C.F.R. § 380.1. As such, consistent with NEPA and the CEQ regulations, FERC is required to prepare an EIS for any major Federal action significantly affecting the quality of the human environment. LaFlamme, 852 F.2d at 398.

FERC regulations define an EIS as a "**detailed** written statement as required by section 102(2)(C) of NEPA." (Emphasis supplied.). 18 C.F.R. § 380.2(e) and § 380.6(b). Conversely, FERC defines an EA at 18 C.F.R. § 380.2(d) as a:

> **[C]oncise** public document … that serves to:
>
> (1) **Briefly** provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
> (2) Aid the Commission's compliance with NEPA when no environmental impact statement is necessary.
> (3) Facilitate preparation of a statement when one is necessary. Environmental assessments must include **brief discussions** of the need for the proposal, of alternatives as required by section. (Emphasis supplied.).

In the instant matter, due to the inherent limitations of FERC's EA process, FERC's Draft Sabine Pass Liquefaction Project EA inadequately examines the direct, indirect and cumulative effects of this Proposed Action. After all, EAs are intended to be brief, concise documents. See 40 C.F.R. § 1508.9(a); and 18 C.F.R. § 380.2(d). "[CEQ] has generally advised agencies to keep the length of EAs to not more than 10-15 pages." CEQ Memorandum for Federal NEPA Liaisons, Federal State, and Local Officials and Other Persons Involved in the NEPA Process,

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Answer to Question 36a.[6] As the Fifth Circuit has opined "[a]n environmental assessment is meant to be a rough-cut, low budget, preliminary look at the environmental impact of a proposed project." O'Reilly v. United States Army Corps of Engineers, 477 F.3d 225, 234 (5th Cir. 2007). Similarly, the CEQ cautions "[i]n most cases, however, a lengthy EA indicates that an EIS is needed." CEQ Memorandum for Federal NEPA Liaisons, Federal State, and Local Officials and Other Persons Involved in the NEPA Process, Answer to Question 36b.[7] In contrast, the Draft Sabine Pass Liquefaction Project EA is 142 pages long (excluding attachments), which indicates by sheer size alone that the preparation of an EIS for the Proposed Project is appropriate under the instant circumstances.

NEPA requires that an EA must "provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" per 40 C.F.R. § 1508.9. The Draft EA must conclusively establish FERC's assertion that the Proposed Action would not result in significant adverse direct, indirect, or cumulative impacts to any environmental, cultural, or physical resource before FERC may issue a finding of no significant impact ("FONSI"). In short, FERC has selected the wrong NEPA tool to complete the task. Simply stated, an EIS that evaluates the full impacts of FERC's Proposed Action to authorize the Sabine Pass Liquefaction Project – locally, regionally, nationally and globally – including all direct, indirect and cumulative impacts must be completed to satisfy NEPA § 102(2)(C).

B. The Proposed Sabine Pass Liquefaction Project Involves Activities Identified Under FERC Regulations as Normally Requiring the Preparation of an EIS

The Proposed Sabine Pass Liquefaction Project squarely fits into the conditions requiring an EIS set forth in the FERC NEPA regulations at 18 C.F.R. § 380.6. Thus, based on the plain language of 18 C.F.R. § 380.6, under normal circumstances FERC must prepare an EIS, not an EA for the Proposed Action as a liquefaction facility:

> **Actions that require an environmental impact statement.**
>
> (a) Except as provided in paragraph (b) of this section, an environmental impact statement will normally be prepared first for the following projects:
>
> (1) Authorization under sections 3 or 7 of the Natural Gas Act and DOE Delegation Order No. 0204–112 for **the siting, construction, and operation of jurisdictional liquefied natural gas import/export facilities used wholly or in part to liquefy, store, or regasify liquefied natural gas transported by water; (Emphasis supplied.).**

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[6] http://ceq.hss.doe.gov/nepa/regs/40/30-40.HTM.
[7] Id.

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FERC attempts to distinguish the Proposed Project and reject the regulatory preference for preparation of an EIS for liquefaction facilities based on the erroneous determination that the Sabine Pass Liquefaction Project will have "[n]o adverse environmental impacts outside the limits of the immediate Project site"[8] due to FERC's failure to adequately characterize or mitigate the significant adverse environmental impacts including the direct, indirect and cumulative impacts of FERC's Proposed Action on the quality of the human environment as discussed more fully below. In sum, FERC should conduct a detailed impact analysis as required by NEPA and FERC regulations through an EIS that meets the requirements of NEPA § 102(2)(C).

II. THE DRAFT IAAAP EA FAILS TO ADEQUATELY IDENTIFY AND EVALUATE POTENTIAL ALTERNATIVES TO THE PROPOSED ACTION

The Draft Sabine Pass Liquefaction EA is too narrow in scope; the Draft EA fails to identify or assess reasonable alternatives to FERC's Proposed Action that would avoid or minimize adverse effects of these actions upon the quality of the human environment as required by NEPA § 102(2)(C), and 40 C.F.R. §§ 1500.2(e) and 1508.9(b). In particular, the Draft Sabine Pass Liquefaction Project EA fails to evaluate the energy efficiency of the Proposed Project or consider "Alternative Configurations" that could be more energy efficient. FERC limited the consideration of alternative configurations to analysis of land use issues even though energy efficiency is the key driver to mitigation of adverse environmental impacts resulting from increased air emissions including NAAQS criteria pollutants and GHGs.

Moreover, FERC's failure to fully evaluate alternatives that may be more energy efficient and sustainable ignores FERC's mission as described in the FERC, Strategic Plan FY 2009-2014:

> RELIABLE, EFFICIENT AND SUSTAINABLE ENERGY FOR CONSUMERS
> Assist consumers in obtaining reliable, efficient and sustainable energy services at a reasonable cost through appropriate regulatory and market means.
>
> **Fulfilling this mission involves** pursuing two primary goals:
>
> 1. Ensure that rates, terms and conditions are just, reasonable and not unduly discriminatory or preferential.
>
> 2. Promote **the development of safe, reliable and efficient energy infrastructure that serves the public interest**. (Emphasis supplied.).[9]

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[8] Draft EA at 2-39.
[9] http://www.ferc.gov/about/strat-docs/FY-09-14-strat-plan-print.pdf.

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Notwithstanding FERC's stated commitment to promote efficient energy infrastructure that serves the public interest, FERC failed to fully characterize and evaluate the energy efficiency of the proposed Sabine Pass Liquefaction Project by not considering and requiring the installation and operation of more energy efficient "Alternative Configurations." A recent article co-authored by Bechtel Corporation engineers, the design contractor for Sabine Pass Liquefaction Project, describes the factors affecting the thermal efficiency of an LNG Facility:

> **Given this situation and the fact that fuel not consumed can be converted to LNG, use of high-efficiency aeroderivative engines delivers significant benefits with a net present value (NPV) of hundreds of millions of dollars**. Because NPV is a strong function of feed gas costs and LNG sales price, it is highly affected by a plant's thermal efficiency, especially when the free on board (FOB) LNG costs are high, as in the current market.
>
> **The thermal efficiency of an LNG facility depends on numerous factors such as gas composition, inlet pressure and temperature, and even more obscure factors such as the location of the loading dock relative to the site of the liquefaction process**. Higher thermal efficiency is typically a tradeoff between capital and life cycle costs. **Gas turbine selection, the use of waste heat recovery and ship vapor recovery, and self generation versus purchased power all have a significant effect on the overall thermal efficiency of the process. Process flexibility and stability of operation are of paramount importance and must be incorporated into the considerations regarding thermal efficiency** because the value of a highly efficient process is diminished if plant reliability and availability are sacrificed. (Emphasis supplied.).[10]

This technical article reinforces that the basic economic viability of the Sabine Pass Liquefaction Project is keyed to the thermal efficiency of the system; an important consideration in a market where the price and availability of natural gas can have such a profound impact on plant operations. The Sabine Pass LNG Terminal was constructed only a few years ago as a natural gas import facility. At that time, the same fanfare – promise of economic benefit and job creation – was offered for natural gas import. In just a few short years, this promise has evaporated (no pun intended) as documented by the low number of ships berthing at the Sabine Pass LNG Facility.[11] The promised benefit has vanished with only the damaged environment and another speculative promise remaining.

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[10] Mejer-Homji, Hattenbach, Messersmith, Weyermann, Masani and Gandhi, "World's First Application of Aeroderivative Gas Turbine Drivers for the ConocoPhillips Optimized Cascade ® LNG Process" (2008) at 5. http://www.bechtel.com/assets/files/TechJournal/OGC%2001%20Aeroderivative%20Gas%20Turbine%20Final.pdf.

[11] According to a recent DOE Report, the Sabine Pass LNG Facility had only 29 tanker visits in 4 years: 2008 – 3 ships; 2009 – 9 ships; 2010 – 12 ships; and 2011 – 5 ships. DOE, Detailed Monthly and Annual LNG Import Statistics, 2004-2011, (July 29, 2011) at 5. http://fossil.energy.gov/programs/oilgas/storage/publications/LNG_Historical_Data_Slides.pdf.

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The Bechtel/ConocoPhillips report further states:

> The GE PGT25+ aeroderivative gas turbine is used as the refrigerant compressor driver at Darwin. **The PGT25+ is comparable in power output to the GE Frame 5D but has a significantly higher thermal efficiency of 41.1%. This improvement in thermal efficiency results directly in a reduction of specific fuel required per unit of LNG production. This reduction in fuel consumption in turn results in decreased CO2 emissions**, as depicted in Figure 7, which shows relative CO2 emissions for various drivers.
>
> **A similar beneficial greenhouse gas reduction comes from the use of waste heat recovery on the PGT25+ turbine exhaust used for various heating requirements within the plant. The use of this heat recovery eliminates greenhouse gas emissions that would have been released had gas-fired equipment been used. The result is an approximately 9.3% reduction in total greenhouse gases**. (Emphasis supplied.).

Examination of the benefit of thermal efficiency improvements for the Sabine Pass Project both as "Alternative Configurations" and for mitigation of significant environmental impacts is required under NEPA to support the issuance of a FONSI prior to commencement of construction of the Proposed Project. The Draft EA, however, fails to examine options to improve the energy efficiency and mitigate global warming impacts of the proposed Sabine Pass Liquefaction Project such as installation of waste heat recovery on the turbines and other alternative configurations referenced in the Bechtel/ConocoPhillips technical report cited above. GCELC submitted written comments to the Louisiana Department of Environmental Quality ("LDEQ") objecting to the draft air permits for the proposed modification of the Sabine Pass LNG Terminal dated August 15, 2011 (hereinafter "GCELC SPLNG Air Permit Comments to LDEQ") (Attachment 1) which are incorporated herein by reference, regarding the LDEQ's failure to require waste heat recovery in the form of heat recovery steam generators ("HRSGs"). See id. at 2, 3-8.

There is no issue of technical feasibility for adding heat recovery to the turbines. As noted in the GCLEC SPLNG Air Permit Comments to LDEQ at 15, the current configuration already includes heat recovery on the ethylene compressors:

> At the Sabine Pass LNG Terminal, each of the four LNG liquefaction trains will be comprised of six refrigeration compressor turbines – two will drive ethylene compressors, two will drive propane compressors, and two will drive methane compressors. The turbines driving the ethylene compressors will be equipped with waste heat recovery to provide process heat for regeneration of the amine and to regenerate the molecular sieves. No other process heat is needed.

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The assertion that other turbines would need to be slightly larger to accommodate heat recovery stages thereby eliminating the need for certain generator turbines reinforces the net benefit of this approach as well as the importance of examining this alternative configuration for the Proposed Project per NEPA §102(2)(C)(iii) and FERC's energy efficiency mandate. The fact that the Project Proponents have proposed a different configuration that is optimal from an energy efficiency and environmental standpoint should have no bearing on FERC's regulatory requirements.

LDEQ rejected GCELC's comment based on LDEQ's claim that requiring such a modification would be redefining the source and therefore is beyond LDEQ's authority in implementing the Clean Air Act ("CAA"). FERC authority, however, is not limited in this manner. Rather, promotion of such energy efficiency is fundamental to FERC's mission. GCELC, therefore, respectfully requests that FERC prepare a comprehensive EIS that properly considers energy efficient alternatives including alternative configurations that would fulfill FERCs promise to "[p]romote the development of safe, reliable and efficient energy infrastructure that serves the public interest" and satisfy the NEPA alternatives analysis requirements of NEPA § 102(2)(C)(iii).

III. THE PROPOSED SABINE PASS LIQUEFACTION PROJECT IS INCONSISTENT WITH THE STATED PURPOSE AND NEED STATEMENTS

The Draft Sabine Pass Liquefaction Project EA sets forth three distinct purpose and need statements on behalf of the Project Proponents, the Department of Army and the Department of Energy at 1-10 to 1-12. The Project Proponents defines the project's purpose and need as providing "a market solution to allow the further development of unconventional (particularly shale gas-bearing formation) sources in the United States."[12] The Project Proponents then declares that the Proposed Project is in the public interest due to the following benefits in the Draft EA at 1-10 to 1-12:

- Stimulation of the local, state, regional, and national economies through creation of jobs;
- Increased economic activity and tax revenues, and increased trade with neighboring countries;
- Improved domestic natural gas capacity and encouragement of solidarity in natural gas pricing;
- Support of the National Export Initiative by exportation of approximately 2 Bcf/d of natural gas valued at approximately $5 billion and the displacement of $1.7 billion in LNG imports; and
- Simultaneous regasification of LNG and liquefaction of natural gas, eliminating the current practice of venting the gases elsewhere.

[12] Draft EA at 1-10.

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As such, the Project Proponents' stated purpose and need envisions broad global impacts with economic stimulus and improvements to the local, state, regional and national economies and facilitation of international trade. Conversely, the Draft EA fails to fully characterize or mitigate direct, indirect and cumulative impacts of FERC's Proposed Action. As a result, FERC's claim in the Draft EA at 2-39 that "[n]o adverse environmental impacts outside the limits of the immediate Project site are anticipated" is arbitrary and capricious. Axiomatically, a project with such stated global implications for domestic energy production and international trade must be evaluated on a similar global scale in terms of adverse impacts to the human environment. The Sabine Pass Liquefaction Project EA, therefore, is inconsistent with the Project Proponents' stated purpose and need of facilitating global trade and development of new energy markets and "unconventional" natural gas sources for the United States.

Similarly, the Department of Energy's ("DOE's") purpose and need statement highlights broad global trade expansion for United States natural gas in the Draft EA at 1-12:

> **The DOE's FE must meet its obligation under Section 3 of the NGA to authorize the import and export of natural gas, including LNG, unless it finds that the import or export is not consistent with the public interest**. The purpose and need for DOE action is to respond to the September 7, 2010, application for authority to export LNG from the Project filed by Sabine Pass with the FE (FE Docket No.10-111-LNG).
>
> The DOE is conducting its review under Section 3 of the NGA to evaluate the Project application for long-term, multi-contract authorization to export up to 16 mtpa of domestic natural gas as LNG for a 20-year period, commencing the earlier of the date of first export or five years from the date of issuance of the requested authorization. Sabine Pass seeks to export the LNG from the SPLNG Terminal to any country: (1) with which the United States does not have a free trade agreement requiring the national treatment for trade in natural gas and LNG; (2) that has, or in the future develops, the capacity to import LNG; and (3) with which trade is not prohibited by U.S. law or policy. (Emphasis supplied.).

GCELC avers that the Draft EA's impacts analysis must reflect the implications of broad global trade expansion for US natural gas on human environment in the surrounding areas outside of the four corners of the existing facility. Moreover, the environmental justice communities of Port Arthur and Beaumont, Texas, must not bear the brunt of international expansion of the United States natural gas markets without full disclosure and mitigation of adverse air quality impacts in contravention of NEPA § 102(2)(C) and Executive Order 12898. Given the breadth and scope of stated purposes and needs for the Proposed Action, FERC's Draft EA is woefully inadequate.

Finally, GCELC objects to the Draft Sabine Pass Liquefaction Project EA purpose and need statement for the United States Army Corps of Engineers ("USACE" or "the

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Corps") characterization of the water dependency of the Proposed Action in the Draft EA at 1-12:

> The Project has a water-dependency purpose as it relates to the liquefaction and subsequent exportation of domestic natural gas. LNG ships would be utilized to transport LNG safely and efficiently worldwide. The Project would require a marine berth for loading and unloading of LNG vessels for waterborne transport of LNG. The marine facilities required for the export of LNG are already constructed and operational at the SPLNG Terminal. Locating the liquefaction facilities adjacent to the existing facility would provide the following benefits:
>
> - Reduction of wetland and sensitive habitat impacts;
> - Reduction of overall facility footprint;
> - Access to the existing marine berth;
> - Access to the existing infrastructure (LNG storage tanks and emergency equipment);
> - Installation of fewer additional air emission sources; and
> - Cost effectiveness.

GCELC submitted comments relevant to FERC's Draft EA objecting to the proposed issuance of a Clean Water Act ("CWA") § 404 individual permit for the Sabine Pass Liquefaction Project to the Felicity Dodson (USACE) dated April 25, 2011 (hereinafter "GCELC SPLNG Wetlands Comments to the USACE"), which are incorporated herein by reference (Attachment 2). GCELC SPLNG Wetlands Comments to the USACE at 6-8 provide analysis that establishes that the proposed Sabine Pass Liquefaction Project is **not** a "water-dependent" activity within the meaning of 40 C.F.R. § 230.10(a). As such, practicable alternatives that do not involve special aquatic sites must be considered by USACE to comply with the requirements of section 404 the CWA and EPA's 404(b)(1) guidelines set forth at 40 C.F.R. Part 230. The Project Proponents erroneously claim that the Proposed Action is a water-dependent activity within the meaning of 40 C.F.R. § 230.10(a)(3) but ignores the fact the Sabine Pass LNG Terminal already exists and possesses a marine berth for loading and unloading of LNG vessels for water borne transport of LNG. Thus, the Proposed Action only requires reasonable proximity to the existing Sabine Pass LNG Terminal, not water access. The USACE stated purpose and need, therefore, is based on a flawed premise. The Draft EA should reject the determination that the Proposed Action is "water-dependent" and consider less environmentally damaging practicable alternatives to mitigate the significant adverse environmental impacts of the Proposed Project on wetlands functions and acreage in accordance with section 102(2)(C) of NEPA.

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IV. THE DRAFT SABINE PASS LIQUEFACTION PROJECT EA FAILS TO TAKE A "HARD LOOK" AT THE ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS INCLUDING FORESEEABLE ADVERSE CUMULATIVE IMPACTS OF THE PROPOSED ACTION AND ITS ALTERNATIVES

The Draft EA fails to take a "hard look" at the environmental and socioeconomic impacts of the Proposed Action on the quality of the human environment and alternative outlined in the Draft IAAAP EA as required by NEPA §102(2)(C). Under NEPA, an agency is required to take a "hard look" at the environmental and socioeconomic consequences of its proposed action. Kleppe v. Sierra Club, 427 U.S. 390, 411 (1976), citing Natural Resources Defense Council v. Morton, 458 F. 2d 827, 838 (1972). As stated in Jones v. Gordon, 792 F.2d 821, 828 (9th Cir. 1986):

> An "agency cannot ... avoid its statutory responsibilities under NEPA merely by asserting that an activity it wishes to pursue will have an insignificant effect on the environment." Steamboaters v. FERC, 759 F.2d 1382, 1393 (9th Cir. 1985) (Steamboaters), quoting Township of Lower Alloways Creek v. Public Service Electric & Gas Co., 687 F.2d 732, 741 (3d Cir. 1982). Instead, an agency must provide a reasoned explanation of its decision. Steamboaters, 759 F.2d at 1393.

In particular, the Draft EA is fundamentally flawed due to FERC's failure to take a "hard look" at local, regional, national and global adverse impacts including direct, indirect and cumulative impacts that will result from air emissions from the Proposed Project including the human health effects to nearby Environmental Justice communities in Jefferson County, Texas, including Port Arthur and Beaumont.

A. Emissions from the Proposed Sabine Pass Liquefaction Project Will Have a Significant Adverse Affect on Air Quality and Human Health

1. The Draft Sabine Pass Liquefaction Project EA Fails to Adequately Characterize or Mitigate Significant Adverse Air Quality Impacts

As more fully describe below, the Draft EA fails to fully characterize or mitigate adverse air quality impacts that will result from increased emissions from the Proposed Project due to the following material errors and omissions:

- Calculation errors relating to Acid Vent System air emissions;
- Failure to characterize or mitigate adverse environmental impacts from increases in air emissions that will result from Creole pipeline modifications including addition of compressor stations;
- Failure to accurately characterize or mitigate adverse environmental impacts that will result from increased air emissions due to increased LNG tanker traffic;
- Omissions in reported emissions rates including emissions from ships idling, berthing or hoteling to conduct operations resulting from the Proposed Sabine Pass Liquefaction

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Project;

- Failure to accurately characterize or mitigate adverse environmental impacts from increases in air emissions that will result from wet and dry gas flares are not permitted to operate under the CAA other than on pilot mode and emissions will be CERCLA releases that are not characterized in the Air Permit or mitigated in the Draft EA;
- Misrepresented emissions that do not conform to federal or state requirements to accurately characterize the potential to emit of an emission source. The potential to emit may only be limited by terms that are federally enforceable and enforceable as a practical matter. The basis of permit includes emissions rates lower than the maximum rate for the process when the maximum rate is not limited by terms that are federally or practically enforceable; and
- Emissions calculations errors that invalidate the dispersion modeling and air quality impacts assessments as the emissions rates contained in the models substantially underestimate emissions of pollutants that will adversely impact human health.

Accordingly, the Draft EA does not accurately characterize or effectively mitigate adverse environmental effects that will result from construction and operation of the Proposed Sabine Pass Liquefaction Facility. Pollutant specific impacts are detailed below. However, both the Project Proponents and LDEQ appear to have made a significant error in calculating the emissions from the Acid Vent System resulting in a gross underestimation of the emissions by a factor of 1,000 for certain pollutants. As this error impacts multiple pollutants discussed below, this error is presented prior to the discussion of pollutant specific impacts.

a. Acid Vent System Calculation Errors

Emissions from the Acid Vent System have been underestimated by a factor of 1,000 due to a calculation error relative to molar flow as demonstrated by GCELC SPLNG Air Permit Comments to LDEQ at 15-16 (Attachment 1) and LDEQ's response to public comments on the Sabine Pass LNG Terminal Modification Air Permits.[13] Furthermore, the Project Proponents represent the maximum emissions rate to be 10% greater than the average emissions rate; independent mass balance calculations performed by GCELC establish that this assumption does not represent the maximum potential for calculation of potential to emit as required by federal and state law as demonstrated in greater detail in Attachment 3 – Calculation Errors in the Air Permit regarding Acid Gas Vents per LDEQ potential to emit requirements.

[13] http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=8207429&ob=yes&child=yes.

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Table IV-A-1: Magnitude of Error in LDEQ Permit and Dispersion Modeling

Pollutant	Corrected Acid Gas Mass Flow lb/hr	Bechtel Pollutant Specific lb/lb acid gas	Corrected Pollutant Specific lb/hr	Corrected tpy	Independent Calculations in Comments - PTE tpy	Independent Calculations in Comments - average tpy	Permit and Bechtel Uncorrected tpy
CO2	39,083.1	0.9591	37,485	164,183	1,085,656	NA	164
VOC	39,083.1	0.0002	7.82	34.2	NA	NA	0.03
H2S	39,083.1	0.0007	27.36	119.8	203.4	135.6	0.12

Note - Bechtel based calculations are represented to be the average plus 10% contingency.

(i) GCELC Calculation of H_2S Emissions from Acid Vent System Establishes TRS Potential to Emit and Actual Emissions Above the Significance Level of 10 TPY for the Proposed Modifications at the Sabine Pass LNG Terminal Facility.

While the H_2S, GHG and VOC calculations for Acid Vent System emissions for the Sabine Pass Liquefaction Project cannot be replicated without additional data that apparently has not been provided in the FERC or LDEQ Public Record, H_2S and GHG emissions may be independently estimated based on publicly available data as set forth in Table IV-A-2 and Table IV-A-3 below. For H_2S, the amount of H_2S released to the environment may be estimated based on the assumption that the pipeline gas can contain up to 0.3 grains ("gr") per standard cubic foot ("scf") of H_2S by specification. Removal of this 0.3 gr/scf from the pipeline gas (or at least 0.2 gr/scf to meet the specification for natural gas of 0.1 gr/scf) provides a basis for calculating the potential to emit and the future actual emissions of the proposed modification to the Sabine Pass LNG Terminal. Pipeline natural gas contains up to 0.3 gr per 100 scf of H_2S. The exported natural gas is presumed to meet the 0.1 gr/scf standard for natural gas by removing 0.2 gr/scf[14] with the capacity of the facility is reported to be 2.6 billion cf per day.

Table IV-A-2 and Table IV-A-3 below set forth the potential to emit and projected actual emissions for the AGV H_2S after the proposed modifications to the Sabine Pass LNG Terminal Facility:

Table IV-A-2: Potential to Emit for AGV H_2S	
0.3	grains H_2S/100 scf
2,600,000,000	cf/day (average)
7,000	gr/lb
2,000	lb/ton
0.56	tons per day H_2S
203.4	tons per year

[14] http://www.epa.gov/airmarkt/emissions/gasdef.html.

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Table IV-A-3: Projected Actual Emissions for AGV H_2S	
2,000	grains H_2S /1,000,000 scf
2,600,000,000	cf/day (average)
7,000	gr/lb
2,000	lb/ton
0.37	tons per day H_2S
135.6	tons per year

Note: In comparison, the Sabine Pass Liquefaction Project Air Permit prepared by LDEQ and relied upon by FERC in the Draft EA reports 0.48 tons per year of H_2S for the entire Sabine Pass LNG Terminal Facility after modification according to the LDEQ Air Permits Briefing Sheet – Toxics Emissions Table attached to the draft Letter from Sam L. Phillips (LDEQ, Assistant Secretary) to Patricia Outtrim (Cheniere LNG, Inc.).[15]

GCELC calculations establish that potential and actual emissions from the proposed modifications to the Sabine Pass LNG Terminal Facility will be greater than the 10 tons per year ("tpy") significance level for Total Reduced Sulfur ("TRS") – which includes H_2S – under the applicable federal and state Prevention of Significant Deterioration ("PSD") Regulations.[16] See 40 C.F.R. § 51.166(b)(23)(i) and LAC 33:III.509.B. Accordingly, the FERC EA relies upon LDEQ analysis that failed to conduct PSD review for TRS from all emission sources including leaks from pipelines and process vessels at the Sabine Pass LNG Terminal Facility in accordance with federal and state requirements.

H_2S is extremely hazardous and noxious. As such, the Draft EA fails to adequately characterize or mitigate adverse effects to the human environment that will result from the Proposed Project since modeling of ambient impacts of uncontrolled releases of H_2S from pipelines and process vessels at the proposed Sabine Pass LNG Liquefaction Facility has not been properly conducted to ensure protection of human health and the environment. If the H_2S is combusted as a result of application of BACT, then the SO_2 released would be approximately 383 tpy (mw of SO_2/H_2S = 64/34). However, the amine treatment used to remove the H_2S from the pipeline natural gas would allow for proper control by converting the H_2S to elemental sulfur using a Claus Plant, which would likely represent the top tier of a BACT hierarchy. GCELC, therefore, respectfully requests that FERC prepare an EIS that properly characterizes uncontrolled releases of H_2S from pipelines and process vessels at the proposed Sabine Pass LNG Liquefaction Facility and explores the potential to reduce adverse environmental impacts resulting from uncontrolled releases of H_2S that have not been adequately characterized or mitigated in the Draft EA.

[15] http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=7998449&ob=yes&child=yes.
[16] http://www.deq.state.la.us/portal/portals/0/planning/regs/pdf/AQ253fin_w_TA.pdf.

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(ii) GCELC Calculations Establish that CO_2 Emissions from Acid Vent Systems Have Been Underestimated

Similarly, as noted in the FERC Environmental Data Request, Enclosure ¶ 24, the emissions estimate for GHG from the Acid Vents appear to be inconsistent with reasonable expectations. Pipeline natural gas can contain up to 2% CO_2 by specification. The permit states that the CO_2 must be removed prior to liquefaction. As shown in Table 4, this 2% GHG from the 2.6 billion scf of natural gas to be processed, on average per day, by the plant results in an estimate of 1.085 million additional tpy of GHG released by the Acid Vents.

Table IV-A-4: Potential to Emit CO_2 from Acid Vents	
2.0%	percent CO_2 in pipeline gas
2,600,000,000	cf/day
52,000,000	cf/day CO_2
0.11	lb/ft3
5948800.00	lb. per day H_2S
2974.4	tons per day
1,085,656	tons per year

Accordingly, GCELC respectfully requests that FERC direct the Project Proponents to address all data gaps, internally inconsistent data, apparent emission calculation errors identified herein and that FERC prepare an EIS that properly characterizes uncontrolled releases of H_2S from pipelines and process vessels at the proposed Sabine Pass LNG Liquefaction Facility and explores the potential to reduce adverse environmental impacts resulting from uncontrolled releases of H_2S that have not been adequately characterized or mitigated in the Draft EA. .

2. Ozone

a. The Draft EA underestimates the emissions of ozone precursors

VOCs and NO_x are the primary precursors to the formation of ambient air levels of ozone (O_3). Therefore, an assessment of how the proposed project would impact ambient air levels of ozone must rest on accurate estimates of emission rates of VOCs and NO_x from the Proposed Project.

Page 2-45 of the Draft EA discusses recent regulatory action relating to air pollutant emissions from the proposed project:

> The SPLNG Terminal is an existing PSD major source, and the Project would be a major modification. Based on a comparison of the net emissions increase to the PSD de minimis levels, PSD review is required for PM10, PM2.5, NO2, CO, and VOCs. Sabine Pass filed its revised air permit application with the LDEQ in March 2011. Facilities can trigger additional review by the USEPA if emissions

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> exceed attainment area major source thresholds (the PSD major source thresholds) and if project-associated emissions exceed the PSD Significant Emission Rate for existing facilities defined as a PSD major source. The LDEQ approved Sabine Pass' revised air permit application on December 6, 2011, subject to the emissions limitations, monitoring requirements, and other conditions set forth in the permit.

Estimates of the emissions of VOCs and NOx are provided in Table 2.7-7 (Potential to Emit for Criteria and Hazardous Air Pollutants) on page 2-56 of the Draft EA. However, these estimates unreasonable underestimate emissions of VOCs and NO_x from the Proposed Project. First, the estimates provided in Table 2-7-7 of the Draft EA incorrectly assume that acid gas vents are not sources of VOCs and NO_x emissions. However, during the LDEQ air quality permitting process, it was revealed that acid gas vents would emit at least 34.2 tpy of VOCs (see Table-IV-A-5 below).[17] Moreover, because the permit issued by LDEQ referenced in the Draft EA contains no operational constraints on the acid gas vents, the potential to emit VOCs from this source should reflect the maximum potential from the system.

The amine system removes VOCs from natural gas along with H_2S and GHG. This removal rate varies with operational characteristics of the system. The Draft EA and LDEQ air permit record , however, do not provide any information to the public on this aspect of the control system and failed to control or mitigate VOC emissions in any manner that would limit potential to emit. Until this omission is corrected, the potential to emit for the Proposed Project should be considered in the range from several hundred to several million tons per year of VOC. The 34.2 tons per year shown in Table IV-A-1 *supra* at 14 corrects the calculation errors in the Air Permit, but is not a reflection of the true potential to emit.

Second, the estimates provided in Table 2-7-7 of the Draft EA incorrectly assume that the amine contact system (for removal on natural gas impurities) is not a source of emissions of VOCs. VOC emissions from amine contact systems depend on operational parameters and include aromatic VOCs, such as BTEX.[18] Third, the Draft EA at 17 admits that additional compression may be installed as part of the Proposed Project. Additional compression is far more than a technicality. A new gas-fired pipeline compressor by itself can be a major air pollution source. For example, the recently permitted Chehalis compressor, a multi-engine, 25,000 hp facility is permitted to emit the following: NOx – 209 tons/year; CO – 189 tons/year; PM_{10} – 18.4 tons/year; VOC – 49.7 tons/year.[19]

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[17] LDEQ has underestimated VOC emissions from acid gas vents by a factor of 1000 by making a gross error in a computation. See Attachment 3. Correcting for the computation error yields an estimated emission rate of 34.2 tons per year of VOCs from the proposed facility's acid gas vents.

[18] Skinner, F.D., D.L. Reif, A.C. Wilson, and J.M. Evans, "Absorption of BTEX and Other Organics and Distribution Between Natural Gas Sweetening Unit Streams," *SPE 37881 Society of Petroleum Engineers*, Presented at 1997 SPE/EPA Exploration and Production Environmental Conference, Dallas, Texas, March 3-5, 1997; and Bullin, Polasek, and Fitz (Bryan Research & Engineering, Inc. Bryan, TX), "The Impact of Acid Gas Loading on the Heat of Absorption and VOC and BTEX Solubility in Amine Sweetening Units."

[19] http://www.swcleanair.org/permits/TitleV/SW98-6-R2AOP.PDF at 17.

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Finally, the estimates provided in Table 2-7-7 of the Draft EA omit substantial emissions of VOCs and NOx that are associated with increased ship traffic. The Draft EA at 1-9 erroneously claims (at page 1-9) that because loading rates for the project are the same as the unloading rates, there will not be any increase in ship traffic. Additionally, review of the modeling protocol for the original import permits shows that the emissions from ships were never modeled or permitted. Even if the ship traffic did not increase, the emissions were not then and are not now considered in evaluating the impacts of this facility. First of all, the Sabine Pass LNG Terminal has average approximately 7 ship visits annually over the last 4 years,[20] while the Proposed Project is authorized for up to 400 ship visits per year, so the export ship loading will be an actual increase over existing conditions. Secondly, as touted by the Project Proponents, the Sabine Pass LNG Terminal has been authorized bidirectional operation to export and import LNG at the same time. See *supra* fn. 3. The Draft EA at 1-16 dismisses this scenario as not being commercially viable and does not characterize or mitigate adverse environmental effects under these scenarios per Draft EA at 57; however, the Draft EA at 2-46 also notes:

> **The facility's modified Title V permit** was issued by LDEQ on December 6, 2011, and **included provisions allowing operation as both an export and import facility, with no restrictions on simultaneous operation of export and import equipment** (i.e., bidirectional operation). (Emphasis supplied.).

Moreover, the Project Proponents have claimed that they will operate as a bi-directional facility and touted that ship handling capacity for the Proposed Project is 400 ship callings per year.[21] The increased ship traffic from 7 (on average) to as much as 400 ships per year will result in increased air emissions from the operations of the ship boilers and other sources. The original FEIS for the Sabine Pass LNG Terminal at 213 stated that 300 ship callings would produce the following air emissions from the combustion of residual fuel oil: NOx – 494 tons/year; CO – 60 tons/year; PM_{10} – 28.3 tons/year; VOC – 23.4 tons/year; and SO_2 – 264 tons/year. Since the Draft EA for the Proposed Project states there will be 400 ship calls, these emissions totals should be multiplied by 33%, since those totals are only for 300 ships, to reflect an accurate potential to emit analysis.

b. The Draft EA Fails to Characterize or Mitigate Significant Increases in Ozone Levels that will Result from Proposed Project Air Emissions

EPA expressed serious concerns that the Proposed Project will cause increases in ambient ozone levels in the Environmental Justice communities of Beaumont and Port Arthur, Texas, that would result in significant health impacts in a letter from EPA Region VI to LDEQ dated August 15, 2011):

> Looking at the spatial plots of the maximum impacts on Sundays that were modeled, we observed estimated impacts due to Cheniere's emissions on the older

[20] See *supra*, fn. 9.
[21] Sabine Pass Liquefaction LLC. FERC Docket No. 10-85-LNG DOE/FE Order No. 2833 (Sept. 7, 2010) at 3.

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> of more than 1 ppb on Sundays in early and late June when ozone exceedances were recorded in BPA [Beaumont-Port Arthur], with base values as high as 95 ppb. **If the underestimation that is factored into the modeling of less than daily maximum emission rates is considered, it is possible that Cheniere's emissions could have modeled impacts of one to ppb on values monitored well above the 75 ppb ozone standard. Even Cheniere's analysis indicates that they impact grid cells above 1 ppb on a number of days. While EPA is not defined significance levels for ozone for single source, we have recently to find impacts from a state's emissions on another state's ozone levels as being significant when it was above 0.85 ppb on the DV**. From the analysis that Cheniere has completed, it is not entirely clear if the emissions could result in levels above the 0.85 ppb unspecific exceedances values, but the science of the impact to does raise concern definitions during the afternoon period (noon to 6 p.m.) should be prevented in the permit as they were modeled. (Emphasis supplied.).

Seemingly ignoring these concerns, the Draft EA at 2-64 concludes that impacts on ozone levels from the project would not be significant:

> The USEPA has not defined a significance threshold for ozone impacts, especially when evaluating a single facility's contribution to ozone impacts. The CAMx modeling performed by Sabine Pass has shown that the proposed liquefaction facility would result in small increases in ozone levels compared to existing (2006) and baseline 2009 future case design value concentrations at some monitoring sites and at some unmonitored locations. The potential impact on ozone levels in Louisiana would be minimal. The most pronounced impact on 8-hour ozone design value concentrations would be in Texas, because about one-half of the monitoring sites in the study area would show an ozone concentration increase with, some unmonitored areas potentially seeing an increase of up to 1.0 ppb. The increase in the design value concentrations would be less than 1% of the baseline 2009 future case design value concentrations. The results analysis does not show any new violations of the 8-hour ozone NAAQS[22] and/or does not show an increase in the severity and/or frequency of violations. Therefore, we do not believe impacts on ozone from the Project would be significant.

FERC's conclusion in the Draft EA is simply wrong. Using human health effects as the appropriate yardstick, the Proposed Project's impacts on ozone levels are clearly significant (even if we assume that the air pollutant dispersion modeling presented in Section 2.7.1 of the Draft EA is valid). Significant human health effects have been documented for exposures to levels of ozone far below the present-day 8-hour ozone NAAQS of 75 ppb. Furthermore,

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[22] Presently, the 8-hour NAAQ for ground-level ozone is 0.075 ppm. However, in January 2010, EPA proposed strengthening the standard to a level between 0.06 and 0.07 ppm. National Ambient Air Quality Standards for Ozone - Proposed Rule.75 Fed. Reg. 2938 (Jan. 19, 2010). http://www.epa.gov/air/ozonepollution/fr/20100119.pdf.

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increases of ozone of even less than 1.0 ppb could result in quantifiable increases in serious health effects.

According to EPA's latest Integrated Science Assessment for Ozone and Related Photochemical Oxidants:

> An important consideration in characterizing the association of O3 with morbidity and mortality is the shape of the concentration-response relationship across the O3 concentration range. In this ISA, studies have been identified that attempt to characterize the shape of the O3 concentration-response curve along with possible O3 "thresholds" (i.e., O3 levels which must be exceeded in order to elicit a physiological response). These studies have indicated **a generally linear concentration-response function with no indication of a threshold for O3 concentrations greater than 30 or 40 ppb, thus if a threshold exists, it is likely at the lower end of the range of ambient O3 concentrations**. (Emphasis added).[23]

For example, according to the Draft EA at 2-64:

> The maximum change for the "most likely actual" emission scenario was a 0.5 ppb increase at a monitor in Jefferson County Texas; the maximum change for the "allowable emission" scenario was a 0.6 ppb increase at the same monitor site." A 0.5 ppb increase is one that can have a measurable dose-response impact on human health.

Jefferson County, Texas, includes the cities of Beaumont and Port Arthur, which have sizeable populations. Ground-level ozone is a problem in Jefferson County, where levels have been around 77 ppb.[24] In August 2011, maximum daily 8-hour ozone averages reached as high as 96 ppb.[25] According to recent census data, 252,273 persons reside in Jefferson County, of which 118,296 reside in the city of Beaumont, and 57,755 reside in the city of Port Arthur. Recent demographic information for the State of Texas indicates that of the general population, 6.8% are children between the ages of 1-6, implying that 17,155 such children reside in Jefferson County (of which 8,044 reside in the city of Beaumont, and 3,927 reside in the city of Port Arthur).

Scientists with the New York State Department of Health published findings showing

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[23] EPA (March 2011) "Integrated Science Assessment for Ozone and Related Photochemical Oxidants." http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=217463.

[24] "New pollution rules could hit area" (The Port Arthur News) – June 8, 2010. http://panews.com/local/x1910030847/New-pollution-rules-could-hit-area/print

[25] See TCEQ, Daily Maximum Eight-Hour Ozone Averages for August 2011, Beaumont-Port Arthur Monitoring Stations. http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl.

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that every 1 ppb increase in ambient ozone levels results in a 16-22% increase in hospital admissions of children between the ages of 1 and 6 years suffering from respiratory distress:

> The risk of hospital admissions increased 22% with a 1-ppb increase in mean ozone concentration during the ozone season.[26]

Using the same baseline hospital admission rate of children for respiratory distress of 0.87%[27] GCELC calculates that over any given five-year period **an increase in ozone levels of only 0.5 ppb associated with the proposed project would cause an estimated additional 12 to 16 hospital admissions every five years for respiratory distress among young children in Jefferson County**. Additionally, scientists with the Yale University, School of Forestry and Environmental Studies and Johns Hopkins School of Public Health presented findings that every 1 ppb increase in ambient ozone levels results in a 0.087% increase in overall human mortality:

> In the meta-analysis, a 10-ppb increase in daily ozone at single-day or 2-day average of lags 0, 1, or 2 days was associated with an 0.87% increase in total mortality).[28]

Recent demographic information for the State of Texas indicates that the baseline rate of annual mortality in Jefferson County would be an estimated 1694 deaths per year.[29] Therefore, over any given five-year period, **an increase in ozone levels of only 0.5 ppb associated with the proposed project would cause an estimated additional 3.7 mortalities (premature deaths) among residents of Jefferson County**. The Draft EA fails to adequately characterize (or disclose to Environmental Justice communities) and mitigate adverse environmental impacts that will be caused by the Proposed Project; a comprehensive EIS should be prepared by FERC in order to satisfy the requirements of NEPA for this major federal action significantly affecting the quality of the human environment.

1. Particulate matter

a. The EA Underestimates Emissions of Particulate Matter by the Proposed Project

As noted above, the EA does not take into account emissions of particulate matter from increased ship traffic and from new compressors, which total another 40 tons/year, or about a 20% increase over what was modeled.[30] VOC emissions from the acid gas vents are capable of

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[26] Lin, S.H., *et al*.,"Chronic Exposure to Ambient Ozone and Asthma Hospital Admissions," Environmental Health Perspectives, 116(12):1725-1730. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2599770/pdf/ehp-116-1725.pdf.
[27] Id.
[28] Bell, M.L., et al (2005) "A Meta-Analysis of Time-Series Studies of Ozone and Mortality With Comparison to the National Morbidity, Mortality, and Air Pollution Study," Epidemiology, 16(4):436-445. http://host231.virtual.yale.edu/uploads/publications/Bell_2005_Epidemiology.pdf.
[29] http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf.
[30] The Proposed Project's permitted PM emissions are 248.6 tpy and air modeling was likely based on that level of

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condensing to form aerosols – a type of particulate matter.

The primary method of mitigating of releases of air pollution is through proper application of BACT as required under the PSD Program for the Proposed Sabine Pass Liquefaction Project. Failure to install BACT on turbines and the Acid Gas System results in elevated emissions of $PM_{2.5}$ including precursors and condensible aerosols. As noted above, the VOC emissions from the Acid Vent System are likely to contain larger chain, more toxic organic constituents. These same compounds also are likely to be capable of condensing to form aerosols. Emissions from the turbines include both direct sources and precursors of $PM_{2.5}$. NO_x is not properly evaluated for mitigation as noted by EPA and GCELC. In response to these comments, LDEQ asserted that while they may have failed to require a "Top-Down BACT" analysis for the proposed modifications to the Sabine Pass LNG Terminal, such an analysis is not required. This assertion is plainly flawed as it contradicts LDEQ's assertions about the Sabine Pass LNG Terminal Air Permit itself as well as the standard language of LDEQ's prior PSD permits. See Top Down BACT Requirement (Attachment 4). As no proper evaluation of mitigation has been conducted by LDEQ, the Draft EA that relies upon the LDEQ conclusions does not mitigate adverse environmental impacts of these air emissions and must be rejected as incomplete.

In addition, the Proposed Project's air permit does not contain reasonable estimates for emissions of particulate matter from the flare systems. The air permit, in fact, is written to exclude those emissions that would occur from operation and pass regulation to the facility to report emissions as CERCLA releases. For this reason the EA underestimates particulate matter emissions and is incomplete. Finally, as noted above, particulate matter emissions for the ships idling, berthing or hoteling are omitted from the air permit and from the Draft EA. These emissions are a required element to properly characterize and mitigate adverse environmental impacts. EPA Letter on Ship Emissions (Attachment 5).

b. The EA Fails to Characterize the Significance of Increased Particulate Matter Levels

Many scientific studies demonstrate conclusively that increased of levels of air pollutants directly and immediately harm public health, even if the pollutant concentrations do not exceed the legal standards. With respect to fine particulate matter (PM_{10} and $PM_{2.5}$), several studies were recently summarized by the California Air Resources Board, demonstrating that an increase in the concentrations of fine particulate produced more attacks of aggravated asthma and lung ailments, and increased death rates among the exposed population, even if standards were not

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emissions. However, an additional compressor station on the Creole Pipeline will likely add about another 18 tpy of PM if emissions are similar to the Chehalis compressor station. Furthermore, an additional 300 ships will emit about another 28 tpy of PM, according to the original FEIS, for a total of about 46 tpy of PM. That emissions figure is conservative since 400 ships are expected. These PM sources would add a total of 46 tpy or almost 20% to the Proposed Project's permitted emissions of 248.6 tpy, and would likely trigger almost a 20% increase in ground level impacts, if added to the modeled impacts.

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exceeded.[31] The CARB report draws on the authenticated research in several earlier reports, including the "Harvard Six Cities" study, and other groundbreaking work by Dockery and Schwartz, of how elevated PM causes increased death rates and illnesses. The "Six Cities" and other studies' results originally caused the recent tightening of the PM standards.

The Project Proponents' modeling demonstrated that air emissions from the Proposed Project would cause more than 10% increase in $PM_{2.5}$ concentrations in nearby Port Arthur causing measurable adverse human health impacts including an increased death rate and increased lung ailments. The Project Proponents modeled the $PM_{2.5}$ increase at 1.17 ug/M3, compared to the existing $PM_{2.5}$ design value of 11.3 ug/M3, which was the 2005-7 average presented in a Minerals Management Air Quality Study for the Gulf Coast. The Project Proponents' modeling indicates that the Proposed Project will cause at least a 10% increase in PM levels; put another way, the Proposed Project's PM emissions, added to baseline levels, would produce total PM concentrations of 12.7 ug/M3. The CARB study demonstrates that PM levels that exceeded 12 ug/m^3 (the State standard), even if did not exceed the federal standard of 15 ug/m^3, would still cause elevated death and illness rates. The Proposed Project's PM emissions will cause exceedance of the 12 ug/m^3 level so it will cause adverse human health impacts. Since adverse environmental effects from the Proposed Project relating to PM emissions have not been adequately characterized or mitigated, FERC should prepare an EIS for this major federal action significantly affecting the quality of the human environment.

c. Carbon monoxide (CO)

Modeling of the significant impact area for CO did not use maximum potential emissions from the Sabine Pass LNG facility as required by NSR guidelines. The Significant Impact Area ("SIA") assessment for the PSD permit models only proposed sources for the Liquefaction Project and not existing sources from the Vaporization Project. Including emissions from the permitted Vaporization and Liquefaction Emissions Cap (EQT: GRP 0008) found in the Title V and PSD permits for the Proposed Project would increase modeled CO emissions by over 600 tons per year or approximately a 13% increase in emissions as set forth in Table IV-A-5 below.

Table IV-A-5: Emissions for the Significant Impact Analysis Modeling for the Proposed Sabine Pass LNG Project

	CO Tpy	CO g/s
Modeled Emissions	4772.18	137.2780
Vaporization and Liquefaction Emissions	5394.43	155.1822

[31] California ARB. 12/07/09. "Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California." http://www.arb.ca.gov/research/health/pm-mort/pm-mort_final.pdf.

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The primary method of mitigation of releases of air pollution is through proper application of BACT as required under the PSD Program. Failure to install BACT on turbines results in elevated emissions of CO. FERC's reliance on LDEQ's flawed BACT analysis results in the Draft EA inadequately characterizing and mitigating adverse impacts that will be caused by CO emissions of the Proposed Project including emissions from flares and ships as described above. FERC, therefore, should prepare an EIS for this major federal action significantly affecting the quality of the human environment.

d. Nitrogen oxides (NO_x)

Modeling of the significant impact area for NO_x and the impacts to the NO_x 1-hour, annual NAAQS and PSD NO_x increment also did not use maximum potential emissions from the Sabine Pass LNG facility as required by NSR guidelines. The SIA assessment for the PSD permit modeled only proposed sources for the Liquefaction Project and not existing sources from the Vaporization Project. Using the allowable emissions from the permitted Vaporization and Liquefaction Emissions Cap (EQT: GRP 0008) found in the Title V and PSD permits would increase the modeled NO_x emissions by over 500 tons per year or nearly a 20% increase in emissions.

Modeling of the impacts from the proposed project on the 1-hour NO_x standard does not include existing sources from the Vaporization Project. The Public Comments Response to Comment 3 of Sabine Pass EA acknowledges the 1-hour NO_x NAAQS modeling does not meet requirements for PSD modeling; yet, LDEQ does not provide adequate mitigation to this shortcoming in the modeling. LDEQ offers to include a permit condition requiring 1-hour NO_x NAAQS modeling if and only if emissions reach a certain level for a sustained period of time. This condition would only take effect if the calculated NO_x emissions from the natural-gas fired generator turbines, submerged combustion vaporizers, flares, and refrigeration compressor turbines exceed 637.29 pounds per hour for more than 175 hours in any 12 consecutive month period. The Title V and PSD Permits relied upon by the Draft EA allow for a vaporization and liquefaction annual average emissions cap for NO_x emissions of 733.28 pounds NO_x per hour. PSD permitting requires modeling of emissions from the maximum potential to emit ("PTE") not typical or average emissions. Annual NO_x NAAQS and PSD increment modeling calculate NO_x impacts from average emission rates of the existing vaporization portion of the facility instead of maximum potential emissions found in the PSD and Title V permits for the Proposed Project.

Moreover, the primary method of mitigation of releases of air pollution is through proper application of BACT as required under the PSD Program. Failure to install BACT on turbines results in elevated emissions of NO_x. FERC's reliance on LDEQ's flawed BACT analysis results in the Draft EA inadequately characterizing and mitigating adverse impacts that will be caused by NO_x emissions of the Proposed Project including emissions from flares and ships as described above. FERC, therefore, should prepare an EIS for this major federal action significantly affecting the quality of the human environment.

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e. Hydrogen sulfide (H_2S)

GCELC's calculations of hydrogen sulfide (H_2S) emissions from acid gas vents (AGVs) shows that potential and actual emissions of total reduced sulfur TRS) would be above the significance level of 10 tpy for the proposed modifications at the Sabine Pass LNG Terminal Facility.

While the H_2S, GHG and VOC calculations for AGV emissions within the Draft Air Permits cannot be replicated without additional data that apparently has not been provided in the LDEQ or FERC public record, H_2S and GHG emissions may be independently estimated based on publicly available data as set forth in Table IV-A-3 and Table IV-A-4 *supra* at 15-16. For H_2S, the amount of H_2S released to the environment may be estimated based on the assumption that the pipeline gas can contain up to 0.3 grains ("gr") per standard cubic foot ("scf") of H_2S by specification. Removal of this 0.3 gr/scf from the pipeline gas (or at least 0.2 gr/scf to meet the specification for natural gas of 0.1 gr/scf) provides a basis for calculating the potential to emit and the future actual emissions of the proposed modification to the Sabine Pass LNG Terminal. Pipeline natural gas contains up to 0.3 gr per 100 scf of H_2S. The exported natural gas is presumed to meet the 0.1 gr/scf standard for natural gas by removing 0.2 gr/scf[32] with the capacity of the facility is reported to be 2.6 billion cf per day.

These calculations establish that potential and actual emissions from the proposed modifications to the Sabine Pass LNG Terminal Facility will be greater than the 10 tpy significance level for TRS – which includes H_2S – under the PSD Regulations.[33] See 40 C.F.R. § 51.166(b)(23)(i) and LAC 33:III.509.B. Accordingly, the FERC EA improperly relies upon LDEQ who failed to conduct PSD review for TRS from all emission sources including leaks from pipelines and process vessels at the Sabine Pass LNG Terminal Facility in accordance with federal and state requirements.

H_2S is extremely hazardous and noxious. As such, modeling of ambient impacts of uncontrolled releases of H_2S from pipelines and process vessels at the proposed Sabine Pass LNG Liquefaction Facility must be conducted to ensure protection of human health and the environment. If the H_2S is combusted as a result of application of BACT, then the SO_2 released would be approximately 383 tons per year (mw of SO_2/H_2S = 64/34). However, the amine treatment used to remove the H_2S from the pipeline natural gas would allow for proper control by converting the H_2S to elemental sulfur using a Claus Plant and this is likely the top tier of a BACT hierarchy. Since adverse environmental effects from the Proposed Project relating to H_2S emissions have not been adequately characterized or mitigated, FERC should prepare an EIS for this major federal action significantly affecting the quality of the human environment.

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[32] http://www.epa.gov/airmarkt/emissions/gasdef.html.
[33] http://www.deq.state.la.us/portal/portals/0/planning/regs/pdf/AQ253fin_w_TA.pdf.

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f. Greenhouse Gases (GHGs)

GCELC's calculations show that that CO_2 Emissions from AGVs Have Been Underestimated. As noted in the FERC Environmental Data Request, Enclosure ¶ 24, the emissions estimate for GHG from the Acid Vents appear to be inconsistent with reasonable expectations. Pipeline natural gas can contain up to 2% CO_2 by specification. The permit states that the CO_2 must be removed prior to liquefaction. As shown in Table IV-A-4 *supra* at 16, this 2% GHG from the 2.6 billion scf of natural gas to be processed, on average per day, by the plant results in an estimate of 1.085 million additional tons per year of GHG released by the Acid Vents.

Since adverse environmental effects from the Proposed Project relating to GHG emissions have not been adequately characterized or mitigated including indirect impacts resulting from increased natural gas demands and cumulative impacts from other pending liquefaction projects in the Gulf Coast discussed in greater detail *infra* in Section V (Cumulative Impacts), FERC should prepare an EIS for this major federal action significantly affecting the quality of the human environment.

B. The Draft Sabine Pass Liquefaction Project EA Fails to Adequately Characterize or Mitigate Significant Wetland Impacts

1. The Proposed Wetlands Mitigation Scheme Fails to Adequately Mitigate Significant Adverse Environmental Impacts Resulting from the Loss of Wetland Acreage and Functions to be Caused by the Proposed Project

As a threshold matter, GCELC objects to the USACE's failure to respond fully and in a timely manner to GCELC's Freedom of Information Act ("FOIA") request and appeal for documents relating to the wetlands permitting for the proposed Sabine Pass Liquefaction Project. GCELC filed this FOIA request on April 12, 2011, well in advance of the Draft EA public comment period in order to obtain information and documents from the Army to assist in the preparation of comments on the Draft 404 permit and Draft EA for the proposed Sabine Pass Liquefaction Project (Attachment 6). By letter dated May 10, 2011, the Corps notified GCELC that the FOIA request had been denied in substantial part citing Exemption 5 without articulating what portions of GCELC's FOIA Request were being responded to or denied, or specific rationale for withholding any document or class of documents (Attachment 7). In response, GCELC filed a timely appeal on June 8, 2011, with the Corps Office of Divisional Counsel; however, the Corps has yet to rule on the GCELC FOIA appeal or provide additional documentation (Attachment 8).

The Army's ongoing failure to respond fully and in a timely manner to GCELC's outstanding FOIA request and appeal has compromised GCELC's ability to prepare wetland comments relating to the Draft EA and violates FOIA, 5 U.S.C. § 552(a), 32 C.F.R. §§ 518.8(d)

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and 518.17(d), and Department of Defense ("DoD") Regulation 5400.7-R, "Department of Defense Freedom of Information Act Program," as amended, including section C1.5.4 of DoD Regulation 5400.7-R requiring prompt action on FOIA requests and appeals within the statutory twenty (20) working days, as well as President Obama's directives to executive agencies regarding federal government transparency and Open Government.[34]

The Draft Sabine Pass Liquefaction EA at 2-16 errs in concluding that loss of wetlands – which are presumed to be special aquatic sites – resulting from the Proposed Project would be fully mitigated. In fact, the project area and local watershed will suffer permanent losses of wetland acreage and functions while the compensation wetlands to be purchased to offset wetland losses will be located in a distant watershed. The Draft EA fails to discuss any method of wetlands mitigation other than purchases from wetland mitigation banks. FERC received comments but did not consider in the Draft EA proposing mitigation of the Proposed Project's wetlands impacts through restoration projects in the nearby Cameron Wildlife Refuge. To meet the requirements of NEPA § 102(2)(C), the Draft EA should have considered and required mitigation of wetland acreage and function resulting from the Proposed Project via the restoration and/or creation of wetlands within the local watershed rather than by a distant mitigation wetlands bank purchase as discussed in GCELC SPLNG Wetland Comments to USACE (Attachment 2) at 12-14.

In characterizing the Proposed Project's impact on wetlands, the Draft EA did not adequately take into account that the Proposed Project is an expansion of an industrial facility in what was, until relatively recently, an undeveloped area. For example, the Draft EA at 2-16 states:

> Of the 136.28 acres of wetlands that would be impacted by the Project, **113.98 acres are wetlands that were created as mitigation for the previously authorized SPLNG Terminal** (Mitigation Areas C, D, and F). The remaining 22.30 acres would be within an adjacent onsite wetland area not associated with mitigation pertaining to a previous permit. The majority of wetlands on site are previously altered from historic dredge operations within Sabine Pass. Sabine Pass proposes to fully mitigate for the 136.28 acres of wetlands that would be impacted by the Project, including impacts on Mitigation Areas C, D, and F, at the ratios discussed in its wetlands mitigation plan through the purchase of credits at a ratio of 1.2:1. This would result in 164.07-acre credits to be purchased through the Petit Bois Mitigation Bank. (Emphasis supplied.).

Below are side-by-side satellite images of the project area before (2004) and after (2010)

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[34] President Barack Obama's Memorandum of January 21, 2009 – Freedom of Information Act, Transparency and Open Government, 74 Fed. Reg. 4683 (January 26, 2009). http://www.whitehouse.gov/the_press_office/Transparency_and_Open_Government/; and Open Government Directive, Memorandum for the Heads of Executive Departments and Agencies, from Peter R. Orszag, Director of the Executive Office of the President (December 8, 2009). http://www.whitehouse.gov/open/documents/open-government-directive.

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construction of the previously authorized SPLNG terminal:

If a project is destroying wetlands that were created to compensate for wetlands destroyed by an earlier phase of the project, then adequate mitigation requires creating an amount of new wetlands that, at a minimum, provide the same or greater wetland quality (i.e., function) and quantity (i.e., acreage) as the wetlands destroyed by the earlier phase and the present phases of the Sabine Pass LNG Terminal. Otherwise, the project could expand sequentially to cover a larger and larger area with compensation for only the wetlands destroyed by the initial phase of development in contravention of the "No Net Loss" mandate.

The Draft EA at 2-19 states:

> The Project would impact 2 percent of Mitigation Area C (2.13 acres of the original total 113.4 acres), 9 percent of Mitigation Area D (4.13 of the original total 46.5 acres), and 96 percent of Mitigation Area F (107.72 of the original total 112.02 acres). Wetland impacts from the SPLNG Terminal were originally mitigated at a 3:1 ratio for creation of Mitigation Areas C and D. With the reduction to the mitigation acreages due to the Project's impact, there would be no appreciable reduction in overall mitigation ratios. Therefore, Sabine Pass does not propose any additional mitigation for Mitigation Areas C and D to compensate for the loss of mitigation areas created as a result of the SPLNG Terminal.
>
> Of the 107.72 acres impacted by the Project to Mitigation Area F, 72.24 acres were incurred as a result of the SPLNG Terminal Phase II Expansion Project. Sabine Pass proposes to mitigate for those impacts using a 1.2:1 ratio, resulting in 86.96 acres of additional credits that would be purchased at the Petit Bois Mitigation Bank.

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However, the Draft EA fails to address the key question of the overall quality and quantity of the wetlands destroyed by the initial phase of development of the Sabine Pass LNG Terminal). Absent this information, the Draft EA cannot evaluate or determine whether the proposed mitigation – a total of 251.03 acre-credits to be purchased through the Petit Bois Mitigation Bank – will be adequate to compensate for the loss of wetlands resulting from construction and operation of the Sabine Pass LNG Terminal and the proposed Sabine Pass Liquefaction Project.

Moreover, the Draft EA errs in concluding that the proposed wetlands mitigation scheme set forth in the Draft EA effectively mitigates losses of wetland functions and acreage since the proposed wetlands mitigation would be created in unidentified locations in an entirely different watershed as acknowledge in the Draft EA at 2-19:

> Although the Project would be located in the Sabine Lake watershed, there are no existing wetland mitigation banks with available credits. Therefore, Sabine Pass would mitigate for the total 208.52 acres at a 1.2:1 ratio totaling 251.03 acres through the Petit Bois Mitigation Bank in the COE, New Orleans District. The Petit Bois mitigation bank is in the adjacent Calcasieu River Drainage Basin. The Project would result in a loss of wetlands in the Sabine Lake Watershed (which are currently low quality, disturbed wetlands) and mitigation would occur in higher functioned, higher value wetlands with bottomland hardwood vegetation.

A well-accepted principle of compensatory mitigation is that creation of new wetlands should occur as close as possible to the location of the wetlands that are lost by a project proposal. According to Kruczynski, "Options to be Considered in Preparations and Evaluation of Mitigation Plans," in Wetland Creation and Restoration: The Status of the Science (1990) at 564:

> **Restoration, creation or enhancement of wetlands should, in most circumstances, occur on site, that is within the same ecosystem and in the immediate vicinity of the proposed filling activit**y. …. There is adequate ecological justification for this approach since the ecosystem will remain unchanged and the chance at success of the mitigation is maximized since it is close to an area which already supports the vegetative community which is being replaced.
>
> **If there are no potential mitigation sites in the immediate area, off-site locations within the same in embayment, stream reach, or watershed (ecosystem) should be selected. If a thorough analysis reveals that there are no adequate mitigation sites within easy areas, this may be adequate reason to recommend that no permit be issued for the proposed activity**.
>
> **Only in unusual circumstances should off-site mitigation and different ecosystem or functional watershed be considered as acceptable mitigation**.

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> This is due to the difficulty in equating the impacts of the loss to one ecosystem with advantages to another system. **The burden of proof rests with the applicant to demonstrate that the anticipated advantages to the off-site area greatly outweigh any losses that would result through filling up a wetland site**.
>
> * * * *
>
> **Wetlands mitigation banking is an off-site compensatory mitigation concept which** may be used to aggregate smaller wetland impacts towards restoration, creation, or enhancement of larger wetland mitigation bank sites. However, it also **entails considerable legal, scientific and administrative complexity and has the potential for being seriously misused.** Therefore, due to the experimental status of this concept, it is recommended that development and use of a mitigation bank for an individual project be assessed by a thorough case-by-case review. (Emphasis supplied).

These wetlands mitigation principles are embodied in the Corps' Compensatory Mitigation Rule at 33 C.F.R. § 332.3(b):

> Type and location of compensatory mitigation. (1) When considering options for successfully providing the required compensatory mitigation, the district engineer shall consider the type and location options in the order presented in paragraphs (b)(2) through (b)(6) of this section. In general, **the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services, taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources (including the availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses**.…
>
> (2) Mitigation bank credits. **When permitted impacts are located within the service area of an approved mitigation bank**, and the bank has the appropriate number and resource type of credits available, **the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor**....
>
> (3) In-lieu fee program credits. **Where permitted impacts are located within the service area of an approved in-lieu fee program**, and the sponsor has the appropriate number and resource type of credits available, **the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor**....
>
> (4) Permittee-responsible mitigation under a watershed approach. **Where**

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> **permitted impacts are not in the service area of an approved mitigation bank or in-lieu fee program that has the appropriate number and resource type of credits available, permittee-responsible mitigation is the only option**. Where practicable and likely to be successful and sustainable, **the resource type and location for the required permittee-responsible compensatory mitigation should be determined using the principles of a watershed approach** as outlined in paragraph (c) of this section.
>
> (5) Permittee-responsible mitigation through on-site and in-kind mitigation. **In cases where a watershed approach is not practicable, the district engineer should consider opportunities to offset anticipated aquatic resource impacts by requiring on-site and in-kind compensatory mitigation.**
>
> "(6) Permittee-responsible mitigation through off-site and/or out-of-kind mitigation. **If**, after considering opportunities for on-site, in-kind compensatory mitigation as provided in paragraph (b)(5) of this section, **the district engineer determines that these compensatory mitigation opportunities are not practicable, are unlikely to compensate for the permitted impacts, or will be incompatible with the proposed project, and an alternative, practicable off-site and/or out-of-kind mitigation opportunity is identified that has a greater likelihood of offsetting the permitted impacts or is environmentally preferable to on-site or in-kind mitigation, the district engineer should require that this alternative compensatory mitigation be provided**. (Emphasis supplied.).

The proposed compensatory mitigation scheme set forth in the Draft EA lacks a "thorough analysis" necessary to justify off-site mitigation since the public record does not establish that there are no adequate mitigation sites in the Sabine Pass watershed or the "unusual circumstances" requiring consideration of off-site mitigation per 33 C.F.R. § 332.3(b). Contrary to the Compensatory Mitigation Rule, the proposed compensatory mitigation scheme for the Proposed Project set forth in the Draft EA is not "located within the same watershed as the impact site" and "located where it is most likely to successfully replace lost functions and services, taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources (including the availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses." The proposed compensatory mitigation scheme described in the Draft EA also does not support the determination that "on-site, in-kind compensatory mitigation" is not practicable … unlikely to compensate for the permitted impacts, or incompatible with the proposed project."

Finally, in the section on cumulative impacts, the Draft EA at 2-96 appears to erroneously state:

> The primary impact of construction and operation of the proposed facilities would be the temporary alteration and permanent loss of 136.28 acres of emergent

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> wetlands within the former DMPA. However, <u>there is no hydrologic connection to the surrounding watershed even though the wetlands are mapped within the Sabine Lake Watershed</u>. Therefore, removal of these wetlands in addition to other ongoing projects in the area would not have a cumulative impact on the overall watershed. (Emphasis supplied).

Below is a satellite image of the 136.28 acres of emergent wetlands at issue that appears to document a definite hydrologic connection, via canals, ditches and/or culverts, to the Sabine Pass Channel, which has a direct hydrologic connection via surface water flow to Sabine Lake:

Accordingly, the Draft Sabine Pass Liquefaction Project EA fails to adequately characterize the adverse impacts to wetlands functions and acreage in the Sabine Pass watershed that would result from the Proposed Project as more fully discussed in the GCLEC SPLNG Wetlands Comments to the USACE (Attachment 2 at 9-12**)**. Moreover, the proposed off-site wetlands banking set forth in the Draft EA fails to adequately mitigate significant adverse effects to these special aquatic sites. The Draft FERC EA, therefore, fails to support adequately the issuance of a FONSI. Under the circumstances, a comprehensive EIS must be prepared to satisfy the requirements of NEPA § 102(2)(C).

C. The Draft Sabine Pass Liquefaction Project EA Fails to Adequately Characterize or Mitigate Significant Water Quality Impacts that will Result from Wastewater and Stormwater Discharges from the Proposed Project

GCELC asserts that the Draft Sabine Pass Liquefaction Project EA fails to adequately characterize or mitigate the adverse impacts to water quality resulting from wastewater discharges and stormwater runoff from the Proposed Project. According to the Draft EA at 1-2:

> The Project would be designed to process approximately 2.6 Bcf/d of pipeline-quality natural gas that would be delivered to the SPLNG Terminal through the interconnecting Cheniere Energy, Inc.,Creole Trail Pipeline. Natural gas would

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be liquefied and stored in the SPLNG Terminal's five existing metal, double-walled, single containment storage tanks with secondary impoundment. LNG would be exported from the terminal via LNG carriers that would arrive at the SPLNG Terminal via marine transit through the Sabine Pass Channel. The liquefaction facilities would consist of four ConocoPhillips Optimized Cascade® LNG trains, each capable of processing up to 0.7 Bcf/d of natural gas, with average liquefaction capacity of approximately 3.5 to 4.0 million mtpa. Each liquefaction train would consist of facilities for pre-treatment and liquefaction as described in detail below. Sabine Pass anticipates constructing the proposed facilities in two stages.

Stage 1 would include the following facilities:

- Two liquefaction trains, including pre-treatment and liquefaction facilities described below (each train would include six LM2500+ G4 gas turbine-driven refrigerant compressors);

Liquefaction trains include refrigerant compressors that require extensive use of lubricants that generate oily wastewater and stormwater contaminated with oil and grease. Potential significant adverse environmental effects from contaminated wastewater and stormwater from the Proposed Project into surface water has not been adequately characterized or mitigated in the Draft EA. In contrast to the limited analysis provided in the Draft EA, an EIS prepared for the Australia Pacific LNG Project proposed by ConocoPhillips and Origen Energy, which involves a liquefaction project near Gladstone, in the State of Queensland, Australia, per the Queensland State Development and Public Works Organisation Act 1971[35] includes a full chapter consisting of thirty-one (31) pages to assess the potential impact of this Australian Liquefaction project on water quality.[36] The Australia Pacific LNG Project EIS includes the following discussion characterizes potential adverse environmental impacts from wastewater discharges as follows:

Potentially contaminated wastewater

An integral part of the LNG facility is a dedicated system to collect and treat process and oily wastewater, including oily water from the compressors and various hydrocarbon leaks, and potentially contaminated stormwater prior to re-

[35] The Queensland State Development and Public Works Organisation Act 1971 contains provisions and requirements analogous to NEPA: Section 26 of the Queensland State Development and Public Works Organisation Act 1971 provides: "(1) The Coordinator-General may— (a) declare a project to be a significant project for which an EIS is required." Section 27 of the Queensland State Development and Public Works Organisation Act 1971 further provides: "[i]n considering whether the project should be declared a significant project, the Coordinator-General must have regard to 1 or more of the following — (a) detailed information about the project given by the proponent in an initial advice statement; ... (e) the potential environmental effects of the project."
[36] Australia Pacific LNG Project EIS, Volume 4: LNG Facility, Chapter 11: Water Resources. http://www.aplng.com.au/pdf/eis/Volume_4/Vol_4_Chapter11_WaterResources.pdf.

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> use or discharge. Such wastewater will be treated by passage through an oil and water separator (corrugated plate interceptor), a dissolved air flotation unit and an effluent filter.
>
> The oily wastewater will be pre-treated in a hydrocarbon sump drum where vapours and condensate will be separated. The condensate will be pumped to the oil and water separator for retrieval of free oil, and the vapours will be sent to the wet gas flare for disposal. The separator produces three waste streams – sludge, treated effluent, and waste oil.
>
> The sludge will be temporarily stored in a sludge holding tank pending periodical transport by a licensed contractor for disposal at a licensed waste management facility. Waste oil will also be stored and transported off-site for recycling. The treated effluent from the oil and water separator will be sent to the dissolved air flotation unit and effluent filter to remove any remaining oil. It will be stored onsite in a tank with treated sewage effluent and is likely to be discharged into Port Curtis with the desalination plant brine if not used for onsite irrigation purposes.
>
> The indicative characteristics of the treated effluent are detailed in Table 16.8. It is anticipated that during steady state LNG production (four-trains), this water stream will flow at an average rate of 25m3/hr and up to a maximum rate of 100m3/hr.[37]

http://www.aplng.com.au/environment/environmental-impact-statement-pdfs.

In contrast, the Draft EA at 2-11 provides limited discussion of potential adverse water quality impacts from the Proposed Sabine Pass Liquefaction Project:

> Construction and operation of Stage 1 [trains 1 & 2] would occur within the footprint of the existing SPLNG Terminal facility. Stormwater removal from within the liquefaction area would be directed to the north of the Project site to three drain pipes to be installed at the northwestern edge of the liquefaction area. Other areas of the site would be graded to divert stormwater into existing drainages that also discharge into the Sabine Pass Channel.

The analysis of potential water quality impacts resulting from potential wastewater and stormwater discharges from the Proposed Project is inadequate because it fails to characterize or address fundamental questions regarding the management of oily wastewater, and stormwater contaminated with oil and grease, which are known to be associated with liquefaction plants including the following:

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[37] Id., Volume 4: LNG Facility, Chapter 16: Waste at 18.

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(1) What are the anticipated volumes and chemical composition of oily wastewater, and stormwater contaminated with oil and grease that the Proposed Project would generate?
(2) What treatment, if any, would these waste streams be subject to prior their release into the environment?
(3) Assuming that stormwater removed from within the liquefaction area is directed to the north of the Project site to three drain pipes to be installed at the northwestern edge of the liquefaction area, what would be the impact of these releases on surface water quality?

Absent answers to these questions and concrete, enforceable conditions to address the potential adverse effects to surface water resulting from releases of wastewater and stormwater from the Proposed Project, the Draft EA does not support the conclusion that the Proposed Project is not a major federal action significantly affecting the quality of the human environment. Under the circumstances, a comprehensive EIS must be prepared to satisfy the requirements of NEPA § 102(2)(C).

D. The Draft Sabine Pass Liquefaction Project EA Relies on Outdated Information to Arrive at a Dangerous Underestimate of the Potential for Hurricane-Induced Storm Surges to Impact the Project Area

The Draft EA fails to adequately characterize or mitigate public safety concerns relating to the vulnerability of the site for the Proposed Sabine Pass Liquefaction Project to hurricane-induced storm surges considering the nature of bulk LNG transfer facilities based, in large part, on FERC's reliance on stale out-dated reports that fail to consider the implications of more violent and destructive hurricanes that have devastated Louisiana Gulf Coast in recent years and the potential that the trend of more frequent and violent hurricane events will continue. For example, the analysis of the potential adverse environmental impacts of hurricane-induced storm surges on the project area set forth in the Draft EA at 2-2 states:

> Hurricanes and Associated Coastal Processes. The Louisiana Gulf Coast experiences hurricanes and tropical weather systems that produce storm surges, high rainfall amounts and flooding, shoreline erosion, and high winds. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the Project area is within Flood Hazard Zone VE, a 100-year flood hazard zone susceptible to coastal flooding. **The Digital Storm Atlas of Texas predicts that a worst-case, Category 5 hurricane striking the Project site could produce a storm surge of up to 22 feet (Slatton et al. n.d.). Recent hurricanes that have come ashore near the terminal include Hurricanes Ike (2008) and Rita (2005). Hurricane Ike came ashore at Galveston Island as a strong Category 2 storm, with a storm surge of 15 to 20 feet**. Hurricane Rita came ashore between Sabine Pass, Texas, and Johnson's Bayou, Louisiana, as a Category 3 storm, with a storm surge of 10 to 15 feet along the southwestern coast of Louisiana.

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> **The Louisiana Gulf Coast is experiencing the highest rates of coastal erosion and wetland loss in the U.S. (Ruple 1993).** The average coastal erosion rate is 4.2 meters per year in Louisiana and 1.8 meters per year along the northern Gulf of Mexico shoreline. However, the most serious erosion and land loss is occurring in the eastern part of the coastal area, east of Atchafalaya Bay. **Sabine Pass does not appear to be subject to the same degree of overall land loss (USGS 2003).** (Emphasis supplied.).
>
> The Draft EA at 2-4 further provides:
>
> Hurricane and Storm Surge. **The Project is designed for a 100-year storm surge of 14 feet for Port Arthur/southern Sabine Lake (COE 1968). This is roughly equivalent to the anticipated storm surge from a Category 3 hurricane making landfall at the SPLNG Terminal. Additionally, all critical components would be elevated to a minimum of 18.5 feet above mean sea level (MSL)**, thus minimizing potential impacts due to flooding associated with storm surge." (Emphasis supplied.).

Similarly, the storm surge analysis and mitigation developed are based on other outdated information such as the following:

1. The Draft EA at 2-2 states "The Digital Storm Atlas of Texas predicts that a worst-case, Category 5 hurricane striking the Project site could produce a storm surge of up to 22 feet" citing to "Slatton *et al. n.d*." The References section in the Draft EA does not provide a date for the Slatton *et al. n.d*; however, information set forth at the link provided in the References section indicates that the material in "Slatton *et al. n.d*." was written before 2000; well before major hurricanes (Hurricane Rita [2005] and Hurricane Ike [2008]) impacted and transformed the project area. In fact, it is clear from reading "Slatton *et al. n.d*." that the report is nothing more than a refinement of "interferometric synthetic aperture radar (INSAR) data over low-relief regions on the coast of Texas" that was collected in June 1996 – more than fifteen (15) years ago.

2. The Draft EA at 2-2 asserts that "Sabine Pass does not appear to be subject to the same degree of overall land loss" citing to "USGS (2003)." However, substantial changes to Coastal Louisiana have occurred since 2003 including substantial losses in the Chenier Plain, the proposed location of the Sabine Pass Liquefaction Project that apparently were not taken into consideration, disclosed or considered in the Draft EA. For example, according to USGS (2009a) ["Land Area Change and Overview of Major Hurricane Impacts in Coastal Louisiana, 2004-08." http://pubs.usgs.gov/sim/3080/downloads/SIM3080.pdf] the Chenier Plain lost 432.6 square kilometers of land to coastal erosion from the period of 2004 to 2008, principally as a result of Hurricane Rita and Hurricane Ike:

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Table 2. Changes in land area and rates of land loss in coastal Louisiana by period and physiographic province, 2004–08.

[Area change measurements provided in km² (negative measurements indicate land loss, while positive ones indicate land gain); percent area change equals area change per period divided by total area change from 2004 to 2008]

Period	Years	Deltaic Plain		Marginal Deltaic Plain		Chenier Plain		Coastal Louisiana	
		Area change	Percent area change	Area change	Percent area change	Area change	Percent Area change	Area change	Percent area change
[1]2004 to 2006	2	-230.5	-65	-2.6	-4.2	-292.7	-67.7	-525.8	-61.9
[2]2006 to 2008	2	-124.3	-35	-59.5	-95.8	-139.9	-32.3	[3]-323.7	-38.1
2004 to 2008	4	-354.8	100	-62.1	100	-432.6	100	[3]-849.5	100

3. The Draft EA at 2-4 provides that "the Project is designed for a 100-year storm surge of 14 feet for Port Arthur/southern Sabine Lake" citing to United States Army Corps of Engineers (COE). 1968. Floodplain Information, Sabine River and Adams Bayou, Orange, Texas, Area. U.S. Army Engineer District Galveston, Texas. FERC's reliance on floodplain information for Sabine River and Adams Bayou, Orange, Texas, dated 44 years ago (1968) to support its conclusion regarding the height of the 100-year storm surge in the project area in 2012 is arbitrary and capricious.

In fact, recent data establishes that the proposed site of the liquefaction project is now more vulnerable to hurricane-induced storm than was understood in 1968 based on the storm surges experienced during Hurricane Rita and Hurricane Ike per data contained in the Draft EA. According to USGS (2009b) "Hurricane Rita and the destruction of Holly Beach, Louisiana: Why the Chenier Plain is Vulnerable to Storms," which the Draft EA apparently did not reference or consider:

> Hurricane Rita devastated gulf-front communities along the western Louisiana coast in 2005. LIDAR (light detection and ranging) topographic surveys and aerial photography collected before and after the storm showed the loss of every structure within the community of Holly Beach. Average shoreline change along western Louisiana's 140-km-long impacted shore was − 23.3 ± 30.1 m of erosion, although shoreline change in Holly Beach was substantially less, and erosion was not pervasive where the structures were lost. Before the storm, peak elevations of the dunes, or berms in the absence of dunes, along the impacted shore averaged 1.6 m. The storm surge, which reached 3.5 m just east of Holly Beach, completely inundated the beach systems along the impacted western Louisiana shore. The high surge potential and low land elevations make this coast extremely vulnerable to hurricanes. **In fact, most of the western Louisiana shore impacted by Rita will be completely inundated by the storm surge of a worst-case Saffir-Simpson category 1 hurricane. All of this shore will be inundated by worst-case category 2–5 storms**. (Emphasis added).[38]

[38] http://specialpapers.gsapubs.org/content/460/127.abstract.

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The loss of coastal wetlands that has occurred in the Chenier Plain during the period of 2004-2008, makes the proposed site for the Sabine Pass Liquefaction Project more vulnerable to hurricane impacts because of the capacity of wetlands – now missing – to attenuate storm surges. In addition, the anticipated rise in sea-level associated with global climate change will disproportionately increase the height of hurricane-induced storm surges. According to Wamsley, et al., "The Potential of Wetlands in Reducing Storm Surge," Ocean Eng 37:59–68 (2010): "A critical component of flood protection in some coastal areas is expected to be the potential contribution of wetlands to the lowering of surges as they propagate inland from the coast."[39]

Gedan, et al., "The Present and Future Role of Coastal Wetland Vegetation in Protecting Shorelines: Answering Recent Challenges to the Paradigm," Climatic Change, 106:7–29 (2011), further provides:

> Hydrodynamic models of storm surges traversing landscapes suggest that vegetation roughness slows and reduces surge. **Wamsley et al. (2010) modeled several storms approaching the Louisiana coast across present wetland cover and a predicted future coast with reduced wetland cover and found that wetlands can play a large role in attenuating storm surge (up to 16.6 cm attenuation per kilometer of wetland), but that this effect is dependent upon the characteristics of the wetland and the storm**. Field based observations of storm surges traversing wetlands also indicate a dampening effect (Lovelace 1994; Day et al. 2007; Krauss et al. 2009; Wamsley et al. 2010). These effects range from a dampening of 4.4 cm (Hurricane Andrew, Lovelace 1994) to 15.8 cm/km of coastal wetland traversed (Hurricane Charley, Krauss et al. 2009). (Emphasis supplied).[40]

In conclusion, the Draft EA does not adequately mitigate the potential risk from hurricane induced storm surge events at the proposed project site. First of all, the Proposed Project is designed for a 100-year storm surge of 14 feet which is roughly equivalent to the anticipated storm surge from a Category 3 hurricane making landfall at the Sabine Pass LNG Terminal despite the fact that the Digital Storm Atlas of Texas cited in the Draft EA predicts that a worst-case, Category 5 hurricane striking the proposed project site could produce a storm surge of up to 22 feet. Secondly, the Draft EA does not appear to reference, consider or apply the findings of recent studies relevant to evaluating the impacts of hurricane induced storm events at the proposed project site. As such, the storm surge capacity of the Proposed Project is based on stale data that underestimates the Proposed Project's vulnerability to hurricane-induced storm surges and potential adverse environmental effects that would result therefrom. Reliance on the Draft EA to support the issuance of a FONSI, therefore, would be arbitrary and capricious since the potential adverse environmental impacts that would result from a hurricane induced storm surge

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[39] http://workhorse.europa.renci.org/~bblanton/OEVol37Issue1/OE2010Vol37Issue1art8.pdf.
[40] http://people.virginia.edu/~mlk4n/papers/Gedan2011.pdf.

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have not been adequately characterized or mitigated.

V. The Draft EA Improperly Fails to Adequately Consider Direct, Indirect and Cumulative Impacts of the Proposed Action

The Draft Sabine Pass Liquefaction Project EA fails to adequately identify, characterize and mitigate adverse environmental impacts – direct, indirect and cumulative – associated with the Proposed Action. Under the CEQ regulations the federal agency is required to consider the so-called direct "effects" or impacts of the proposed action. 40 C.F.R. § 1508.8. Direct effects or impacts are those which are "caused by the action and occur at the same time and place." 40 C.F.R.§ 1508.8(a). Effects include impacts from the proposed action that may be beneficial and detrimental. Agencies need to assess not only direct effects, but also "aesthetic, historic, cultural, economic, social, or health" effects, "whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8 (b). In the instant matter, the Draft EA fails to adequately identify, assess and then mitigate the direct impacts of the proposed Sabine Pass Liquefaction Project with regard to project impacts on the human environment.

The CEQ regulations also require agency consideration of secondary/indirect effects or impacts "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." 40 C.F.R. § 1508.8(b). The key phrase is "reasonably foreseeable" which should eliminate any remote or speculative effects. There must at least be a causal relationship between the proposed action and the indirect effect. Florida Wildlife Fed'n v. Goldschmidt, 506 F. Supp. 350 (S.D. Fla. 1981). NEPA also includes consideration of indirect effects outside of the reviewing agency's jurisdiction/control. Florida Wildlife Fed'n v. United States Army Corps of Engineers, 401 F.Supp. 2d 1298 (S.D. Fla. 2005) (requiring consideration of growth inducing effects of a proposed biotechnology research park.)

The Draft EA, therefore, must consider the Project Proponent's effects on shale gas production and processing as indirect or secondary impacts. As discussed below in more detail, the Project Proponent's gas demand is a growth-inducing impact that will cause increased growth of gas production and its consequential air and water pollution. These impacts are reasonably foreseeable because the Project Proponent's purpose and need statement set forth in the Draft EA at p. 1-12 specifically indicates that the Proposed Project will support increased gas production from shale fields. As such, the Draft EA is inadequate and inconsistent with the stated purpose and need statement since it fails to adequately address these indirect, yet reasonably foreseeable impacts of the Proposed Action.

In addition, the Draft EA fails to adequately identify, assess and then mitigate the cumulative impacts of the Proposed Action. The CEQ regulations define a proposed project's cumulative impacts as "the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions

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regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7; see also 40 C.F.R. § 1508.25 (requiring agencies take cumulative impacts into consideration during NEPA review). "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. The Fifth Circuit directs that as part of a cumulative impacts analysis, agencies must consider "[c]losely related and proposed or reasonably foreseeable actions that are related by timing or geography." Vieux Carre Prop. Owners, Residents, & Assocs., Inc. v. Pierce, 719 F.2d 1272, 1277 (5th Cir. 1983). Federal agencies are required to consider cumulative impacts in both EAs as well as EISs. Barnes v. U.S. Dep't. of Transportation, 655 F.3d 1124, 1142 (9th Cir. 2011). ("Given that so many more EAs are prepared than EISs, adequate consideration of cumulative effects requires that EAs address them fully.").[41] Most importantly, NEPA requires the preparation of an EIS where several actions have a cumulative significant environmental effect. Te-Moak Tribe of Western Shoshone of Nev. v. United States Dep't of Interior, 608 F.3d 592 (9th Cir. 2010).

The CEQ has delineated eight principles governing cumulative effects analysis:

(1) Cumulative effects are cause by the aggregate of past, present, and reasonably foreseeable future actions;
(2) Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions take, no matter who (federal, nonfederal, or private) has taken the actions;
(3) Cumulative effects need to by analyzed in terms of the specific resource, ecosystem, and human community being affected;
(4) It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful;
(5) Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries;
(6) Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects;
(7) Cumulative effects may last for many years beyond the life of the action that caused the effects;
(8) Each affected resource, ecosystem, and human community must be analyzed in terms of capacity to accommodate additional effects, based on its own time and space parameter.[42]

FERC must evaluate the Proposed Action in light of these guiding principles and identify, assess and then mitigate the cumulative effects of the Proposed Action. The Draft Sabine Pass Liquefaction Project EA is inadequate in that it fails to address key issues as part of a cumulative

[41] CEQ, Considering Cumulative Effects Under the National Environmental Policy Act at 4 (Jan. 1997). http://ceq.hss.doe.gov/nepa/ccenepa/ccenepa.htm.
[42] CEQ, Considering Cumulative Effects Under the National Environmental Policy Act at 8 (Jan. 1997). http://ceq.hss.doe.gov/nepa/ccenepa/ccenepa.htm.

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impacts analysis. First, the Draft EA does not fully address the cumulative impacts of the existing facility vis-à-vis the Proposed Action. Nor does the Draft EA consider the cumulative effects of the bidirectional pipeline flow as set forth in the Draft EA at 1-9 and 1-16. In addition, the Draft EA requires water line modifications as set forth in the Draft EA at 1-10, but fails to evaluate the effects of those modifications on the Proposed Project. Most critically, as discussed below in more detail, (1) the Draft EA fails to adequately characterize or mitigate cumulative impacts from expanded natural gas extraction due to increase demand spurred by the Proposed Project; and (2) the Draft EA fails to adequately characterize or mitigate cumulative impacts resulting from other proposed liquefaction projects in the area.

A. The Draft Sabine Pass Liquefaction Project EA Fails to Adequately Characterize or Mitigate Indirect/Cumulative Impacts Resulting from Expanded Natural Gas Extraction Due to Increased Natural Gas Demand Spurred by the Proposed Project

The Draft EA fails to characterize or mitigate the many reasonably foreseeable cumulative impacts related as a result of construction of the Proposed Project. Most significantly, the Project Proponent's large demand for natural gas will most likely drive significant increases of gas production in the surrounding areas and throughout the United States with commensurate environmental impacts which should have been considered by FERC in the Draft EA. For example, in a recent study by the United States Energy Information Association ("EIA")[43] significant environmental and economic impacts of exporting large amounts of LNG are documented. These impacts may include:

- **Increased natural gas exports lead to increased natural gas prices.** Larger export levels lead to larger domestic price increases, while rapid increases in export levels lead to large initial price increases that moderate somewhat in a few years. Slower increases in export levels lead to more gradual price increases but eventually produce higher average prices during the decade between 2025 and 2035.
- **Natural gas markets in the United States balance in response to increased natural gas exports largely through increased natural gas production.** Increased natural gas production satisfies about 60 to 70 percent of the increase in natural gas exports, with a minor additional contribution from increased imports from Canada. Across most cases, about three-quarters of this increased production is from shale sources.
- **The remaining portion is supplied by natural gas that would have been consumed domestically if not for the higher prices.** The electric power sector accounts for the majority of the decrease in delivered natural gas. Due to higher prices, the electric power sector primarily shifts to coal-fired generation, and secondarily to renewable sources, though there is some decrease in total generation due to the higher price of natural gas.

[43] United States Energy Information Association, "Effect of Increased Natural Gas Exports on Domestic Energy Markets," (January 2012) (describing the environmental and economic impacts of exporting large amounts of liquid natural gas). http://www.eia.gov/analysis/requests/fe/.

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There is also a small reduction in natural gas use in all sectors from efficiency improvements and conservation.

- **Even while consuming less, on average, consumers will see an increase in their natural gas and electricity expenditures.** On average, from 2015 to 2035, natural gas bills paid by end-use consumers in the residential, commercial, and industrial sectors combined increase 3 to 9 percent over a comparable baseline case with no exports, depending on the export scenario and case, while increases in electricity bills paid by end-use customers range from 1 to 3 percent. In the rapid growth cases, the increase is notably greater in the early years relative to the later years. The slower export growth cases tend to show natural gas bills increasing more towards the end of the projection period.

The EIA report's detailed analysis sets out a panorama of indirect and cumulative impacts from the Project Proponent's and others' export of natural gas that were not considered in the EA. These impacts include increased air and GHG pollution, increased coal mining and coal combustion for energy, and skyrocketing natural gas prices that are all indirect, cumulative and highly controversial impacts that should be studied in an EIS, rather than an EA.

FERC also erred by not considering the extent to which the Project Proponents's gas demands will cause and contribute to increases in VOC and NOx emissions, ozone exceedances, and negative impacts on surface and groundwater. The Draft EA fails to mention the Proposed Action's contribution to any of these cumulative impacts that arise from increased production to satisfy the demand created by the Proposed Action.

The Project Proponent's gargantuan demand for gas will also cause and contribute to an enormous level of natural gas production and processing, roughly equal to half the current production of the Haynesville Shale play. The proposed export of 2.6 bcf/day would be met with increased gas production. The 2.6 bcf/day shipping capacity equals almost one-half of Haynesville's current gas production of about 5.5 bcf/day. The Armendariz Study concluded that the Barnett Shale's GHG emissions are about 12 million tpy.[44] The Haynesville Shale has 10% more gas production than the Barnett Shale, so the GHG emissions from the Haynesville are likely to be approximately equal. Since the Haynesville Shale's GHG emissions are roughly equal to the Barnett Shale's GHG at 12 million tpy, half that figure, or 6 million tons/year, should be added to the proposed direct GHG emissions of 4 million tpy, for a total of 10 million tpy, along with the new compressor and tanker GHG emissions. The Proposed Project would be ranked equally with some of the dirtiest coal-fired power plants in the entire United States if both its direct and indirect GHG emissions were totaled; in fact, even the Proposed Project's direct GHG impacts are significant. For comparison, EPA's recent release of GHG emitting sources showed that a 700-MW coal-fired power plant, the AB Brown Generating Station in Mt. Vernon Indiana, had GHG emissions of 2.2 million ton/year, or only about half of Project Proponent's

[44] Armendariz, "Emissions from Natural Gas Production in the Barnett Shale Area and Opportunities for Cost-Effective Improvements." http://www.edf.org/sites/default/files/9235_Barnett_Shale_Report.pdf.

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emissions.[45]

B. The Draft Sabine Pass Liquefaction Project EA Fails to Adequately Characterize or Mitigate Indirect/Cumulative Impacts Resulting from Other Proposed Liquefaction Projects

The Draft EA at 2-95 provides that "for purposes of this cumulative analysis, only projects directly in the vicinity of the Project are considered." However, it is reasonably foreseeable that several other liquefaction projects including the proposed Cameron LNG facility in a nearby Louisiana parish and the proposed Trunkline/Lake Charles Export facility about a half hour away in Lake Charles will be constructed in the same Gulf Coast area. These additional facility proposals are known to FERC and are proceeding through similar NEPA review processes. Within this same area, pending LNG export terminal applications include the Freeport LNG facility in Freeport, Texas, the Sempra terminal in Cameron Parish, Louisiana, Brownsville, Texas.[46] Facilities such as the proposed Cameron Export facility and the proposed Trunkline facility will more likely than not obtain gas from the same nearby shale gas production fields as the Project Proponent and will draw ship traffic to the same water bodies. Given the close proximity of the proposed Cameron Export facility, the proposed Trunkline facility, and the proposed Sabine Pass LNG facility, their construction crews and operational workers will more likely than not all use the same roads and public services, polluting the same air sheds.

The Draft EA fails to take into consideration the cumulative impacts of these other proposed liquefaction projects on the regional air quality or the anticipated implications of global warming associated with the construction of several new liquefaction projects. Such analysis is critical in a fully developed impacts analysis. Given the number of facilities being proposed in the nearby and surrounding areas and the cumulative and indirect impacts associated with these projects, FERC should conduct an EIS that fully analyzes the cumulative impacts of these facilities on the human environment. In sum, GCELC asserts that FERC must conduct a comprehensive EIS on environmental impacts (and surrounding communities) to accurately and fully evaluate the adverse direct , indirect and cumulative environmental impacts – locally, regionally, nationally, and globally – of this major federal action that would significantly affect the quality of the human environment as required by NEPA § 102(2)(C). FERC must explore the broad cumulative impacts of increased gas production, gas processing and gas exportation all concentrated in one area in a detailed EIS.

VI. THE DRAFT SABINE PASS LIQUEFACTION PROJECT EA FAILS TO ADEQUATELY ASSESS OR MITIGATE ADVERSE IMPACTS OF THE PROPOSED ACTION ON ENVIRONMENTAL JUSTICE COMMUNITIES

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[45] Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2009. USEPA #430-R-11-005.

[46] DOE, Summary: Long Term Applications Received by DOE/FE to Export Domestically Produced LNG from the Lower-48 States (as of December 22, 2011). http://fossil.energy.gov/programs/gasregulation/LNG_Summary_Table_1_17_12_revised.pdf.

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Executive Order 12898 on Federal Actions To Address Environmental Justice In Minority Populations and Low-Income Populations states:

> [E]ach Federal agency shall make achieving environmental justice part of its mission by indentifying and addressing, as appropriate, disproportionately high adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States….

Under Executive Order 12898, FERC, as a federal governmental is required to adequately consider environmental justice issues and then mitigate any potential impacts in an EA. As FERC acknowledges in Section 2.5.3 of the Draft Sabine Pass Liquefaction Project EA entitled, "Environmental Justice, "[e] nvironmental justice considers disproportionately high and adverse impacts on minority or low income populations in the surrounding community resulting from programs, policies, or activities of federal agencies. Issues considered include human health or environmental hazards, the natural or physical environment, and associated social, economic, and cultural factors. Environmental justice analysis is conducted in compliance with EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations."

Moreover, in 2008, the Department of Energy (DOE), the parent agency of FERC, issued its new Environmental Justice Strategy document and Five-Year Implementation Plan with a specific pledge to be a federal leader in environmental justice.[47] FERC, on the other hand, lacks an environmental justice policy of its own; however, that does not vitiate FERC's need to address environmental justice concerns as part of an EA.

In Section 2.5.3 of the Draft Sabine Pass Liquefaction Project EA, FERC cavalierly concludes:

> All proposed facilities within both stages would be constructed and operated within the existing, leased 853-acre terminal site. **No adverse environmental impacts outside the limits of the immediate Project site are anticipated.** Construction and operation of the Project would not disproportionately affect any population group, including low-income and minority populations, and no environmental justice issues are expected as a result of construction or operation of the Project." (Emphasis supplied.).

This bold conclusion is made without any analysis or data. EPA Guidance on environmental justice and NEPA provides that at a minimum:

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[47] U.S. Department of Energy, Environmental Justice Strategy (2008) (identifying four goals whereby the DOE will function in a leadership role on environmental justice). http://www.lm.doe.gov/env_justice.

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> [I]f the environmental justice screening analysis does not identify minority communities or low-income communities and suggests no disproportionately high and adverse effects on those communities and/or tribal resources, then the EA and FONSI should describe the analysis and note the conclusion."[48]

FERC fails to meet even this minimal level of analysis. Rather, the Draft EA fails to characterize fully or mitigate direct, indirect and cumulative adverse impacts that will result from increases in air emissions from the Proposed Project on the surrounding environmental justice communities. Had FERC conducted even a minimal initial environmental justice screening it would have easily identified the environmental justice communities in Jefferson County, Texas, including Port Arthur and Beaumont, Texas. According to the United States Civil Rights Commission in its analysis of environmental justice issues, the two major cities in Jefferson County, Beaumont and Port Arthur, are predominately minority and suffer most from the ongoing hazardous exposures associated with the multiple sources of air pollution in the vicinity.

> Beaumont, with a population of slightly more than 113,000, is 45.8 percent African American and 7.9 percent Hispanic; while Port Arthur, with 57,755 residents, is 43.7 percent African American and 17.5 percent Hispanic. Clark Refining and Marketing, Inc., in Port Arthur, and Mobile Oil Corporation, in Beaumont, each ranked in the worst 10 percent in the country for criteria air pollutant emissions in 1999. In addition to these two facilities, 19 other chemical plants and refineries and related industries operate in just these two cities. In the two mostly white communities in the same area of Jefferson County, Port Neches and Winnie, there are only three facilities. (Citations omitted.). [49]

Port Arthur is one of 10 locations chosen for EPA's 2010 national Showcase Project initiative to address environmental justice challenges using collaborative, community-based approaches to improve public health and the environment.[50] EPA Region 6 has noted that Port Arthur is more than 50 percent African American and Hispanic with a disproportionate amount of chemical plants and refineries and a hazardous waste incinerator. As part of this national initiative EPA is specifically looking at the cumulative effects of multiple environmental impacts in Port Arthur.[51] As part of the scoping process, FERC should have reached out to EPA Region 6 to ensure that FERC was coordinating with EPA to utilize the information and community contacts that EPA has gathered as part of the EPA Showcase Project.

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[48] U.S. EPA, Final Guidance For Incorporating Environmental Justice Concerns in EPA's NEPA Analyses (April 1998), Section 3.2.3.1, "Incorporating Environmental Justice Concerns into EA Development. http://www.epa.gov/compliance/ej/resources/policy/ej_guidance_nepa_epa0498.pdf.

[49] United States Civil Rights Commission, "Not in My Backyard: Executive Order 12898 and Title VI as Tools for Achieving Environmental Justice" (Chapter 2) (last modified in 2010). http://www.usccr.gov/pubs/envjust/ch2.htm.

[50] EPA, Port Arthur Community Showcase, http://www.epa.gov/region6/6dra/oejta/ej/index.html; US EPA, Showcase Project Update, http://www.epa.gov/region6/6dra/oejta/ej/ej_pdfs/showcase_update_08-17-10.pdf.

[51] EPA, Environmental Justice Showcase Communities. http://www.epa.gov/compliance/environmentaljustice/grants/ej-showcase.html.

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In addition, there are significant potential impacts associated with the proposed Sabine Pass Liquefaction Project that FERC failed to identify in the Draft EA. Once significant adverse impacts on an environmental justice community are identified, an EIS is warranted. As EPA Guidance advises with regard to an EIS: "[i]f the environmental justice screening analysis concludes that there is a potential for disproportionately high and adverse effects, then the [NEPA analyst] should ensure that the EIS scoping process raises environmental justice concerns and that sufficient data and information are generated to evaluate these potential effects."[52] EPA stresses the need for early community involvement and outreach to the minority communities that will be affected. Id. Port Arthur is home to internationally known environmental community activists who have worked on environmental justice issues in the past including Hilton Kelly and his Community In-Power & Develop Association (CIDA).[53] FERC should have reached out to groups such as CIDA to ensure that CIDA, as a representative of the Port Arthur community, participated in initial scoping meetings for the Project. However, since FERC incorrectly limited its EA analysis to the existing Project site, FERC did not consider the impacts on Port Arthur's residents.

As stated in the CEQ's Environmental Justice Guidance under the National Environmental Policy Act:

> **Early and meaningful public participation in the federal agency decision making process is a paramount goal of NEPA. CEQ's regulations require agencies to make diligent efforts to involve the public throughout the NEPA process. Participation of low income populations, minority populations, or tribal populations may require adaptive or innovative approaches to overcome** linguistic, institutional, cultural, economic, historical, or other potential **barriers to effective participation in the decision-making processes of Federal agencies under customary NEPA procedures**. (Emphasis supplied.). [54]

As discussed in Sections IV and V above, the Sabine Pass Liquefaction Project will significantly impact the environmental justice communities in Jefferson County, Texas, including Port Arthur and Beaumont, Texas. FERC, however, has failed to adequately assess or mitigate adverse impacts of the proposed action in these surrounding environmental justice communities. FERC fails to even acknowledge that the proposed project is located in close proximity to well-known and documented environmental justice communities. To ensure proper

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[52] EPA, Final Guidance For Incorporating Environmental Justice Concerns in EPA's NEPA Analyses (April 1998), Section 3.2.3.2, "Incorporating Environmental Justice Concerns in EIS Scoping Development." http://www.epa.gov/compliance/ej/resources/policy/ej_guidance_nepa_epa0498.pdf.

[53] See, e.g., "The Avenging Angel: Hilton Kelly's Fight to Save His Hometown," (O Magazine, Sept. 2011) http://www.oprah.com/spirit/Environmental-Activist-Hilton-Kelley-Port-Arthur-Texas/1 (detailing the work of Hilton Kelly and the Community In-Power & Develop Association (CIDA) in Port Arthur, Texas).

[54] CEQ Environmental Justice Guidance under the National Environmental Policy Act, at 13 (December 10, 1997), http://www.epa.gov/compliance/ej/resources/policy/ej_guidance_nepa_ceq1297.pdf. See also EPA's Action Development Process Interim guidance on Considering Environmental Justice during the Development of an Action, at 13-14 (Jul 2010). http://www.epa.gov/environmentaljustice/resources/policy/considering-ej-in-rulemaking-guide-07-2010.pdf.

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analysis of the significant environmental impacts on environmental justice communities, FERC should proceed with an EIS that would necessitate consideration of environmental justice issues for all of the environmental justice communities in Jefferson County, Texas including Port Arthur and Beaumont, Texas.

Sabine Pass Liquefaction's Proposed Action may profoundly impact minority and low-income populations in the vicinity of Port Arthur and Beaumont, Texas, who reside, work and recreate in the area of the Proposed Project including: (1) significant increases in ambient ozone concentrations; (2) air quality impacts resulting from substantial emissions of nitrogen oxides, VOCs and particulate matter; (3) increased noise pollution from the shipping traffic and operation of the facility; (4) liquefaction industrial processes resulting in discharge of contaminated wastewater impairing water quality; (5) contamination of water as a result of spills from the operation of the facility and increased shipping traffic; (6) increased threats to public safety as a result of the hurricane damage to the facility; and (7) the potential impact of the proposed water pipeline on local water supplies in the Port Arthur area.

FERC has failed to ensure that environmental justice communities are involved in the NEPA process and has refused to address important environmental justice issues in the Draft EA. In the DOE Environmental Justice Strategy document, the DOE recognizes the importance of public participation and public involvement throughout the NEPA process to ensure participation from the affected environmental justice communities beginning with the proper identification of high risk populations and then the development of outreach and communication mechanisms to improve public participation.[55] FERC's Draft EA flies in the face of the DOE initiative.

By failing to ensure adequate public participation by environmental justice communities and intentionally segmenting the Project to avoid giving any consideration to environmental justice issues, FERC has violated Executive Order 12898 and the related DOE, CEQ and EPA guidance setting forth agency strategies to ensure meaningful participation by and equal treatment for environmental justice communities.

VII. THE PUBLIC'S RIGHT TO MEANINGFULLY PARTICIPATE IN THE FERC'S DECISION TO AUTHORIZE THE PROPOSED PROJECT AS MANDATED BY NEPA HAS BEEN MATERIALLY COMPROMISED

The public's ability to meaningfully participate in the decision-making process relating has been materially compromised in violation of NEPA § 102(2)(C), applicable CEQ regulations set forth at 40 C.F.R. §§ 1500.2(d), 1501.4(b) and 1506.6. As noted by the Supreme Court in Dep't of Transportation v. Public Citizen, 541 U.S. 752, 768 (2004):

> The NEPA EIS requirement serves two purposes. First, "[i]t ensures that the agency, in reaching its decision, will have available, and will carefully consider,

[55] DOE, Environmental Justice Strategy at 2-3 and 5 (2008) (stressing the importance of developing tools to ensure public participation by environmental justice communities). http://www.lm.doe.gov/env_justice.

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> detailed information concerning significant environmental impacts." Second, it "guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision. (Citations omitted.).

Nevertheless, numerous plans and strategies recommended by FERC staff set forth in Section 4 of the Draft EA to mitigate potential adverse effects to the human environment resulting from the Proposed Project have not been completed or made available for public review and comment including, *inter alia*, the following:

1. Plan to address impacts to hydric soils identified in the Draft EA at 2-9.
2. The SPCC plan for the Sabine Pass LNG Terminal Facility has not been updated per Draft EA at 2-11.
3. Inspection and enforcement strategy to protect against the release of invasive species into Louisiana waters is not identified or evaluated per Draft EA at 2-12. Compliance by ships that visit the Sabine Pass LNG Terminal Facility is "assumed." Id.
4. Strategies to mitigate risks posed by the transportation and on/off loading of propane and ethylene. The Draft EA at 2-39 estimates that each year approximately 78 trucks (8,800 gallons each) would deliver propane and 57 trucks (8,800 gallons each) would deliver ethylene to the Sabine Pass LNG Terminal Facility truck-loading stations. Methane, propane and ethylene are identified in the Draft EA at 2-70 at a "simple asphyxiants and may pose extreme health hazards, including death, if inhaled in significant quantities within a limited time. However, the Draft EA does not appear to discuss transportation or on/off loading risks posed by vapor dispersion of methane, propane or ethylene or present any strategies to mitigate these risks to human health and the environment. Similarly, the plan to mitigate ethylene design spill vapor risks is not available for public review in the Draft EA.
5. The Risk Management Plan ("RMP"). The Draft EA does not appear to include any description of the toxic or flammable chemicals subject to RMP requirements or the volumes of these chemicals that are likely to be present at the be the Facility. The Draft EA, therefore, does not provide the public with adequate information to determine whether a RMP will be required and developed for the Sabine Pass Liquefaction Project. Similarly, since the RMP is not available, neither FERC nor the public can evaluate the risks posed by RMP chemicals at the Facility or the efficacy of the RMP to mitigate risks to the public and first responders.
6. The Fugitive Dust Plan to address adverse environmental effects from fugitive dust generated during construction and operation of the proposed Sabine Pass Liquefaction Project that are deemed significant by FERC in the Draft EA at 2-54.
7. The plan to address operational noise impacts described in the Draft EA at 2-67.
8. The revised Emergency Response Plan ("ERP") to address potential public safety hazardous scenarios referenced in the Draft EA at 2-74.

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9. Vapor barrier inspection plan referenced in the Draft EA at 2-92.
10. Access control plan set forth in the Draft EA at 2-93.

Moreover, as discussed above, underlying data and calculations to support certain emission factors relied upon by the Project Proponent's design engineers has not been made publicly available. Under the circumstances, FERC's issuance of a FONSI based on the Draft EA would be arbitrary and capricious and the public's ability to meaningfully comment on the Draft EA has been materially compromised. FERC, therefore, should prepare a comprehensive EIS and make the above referenced plans and strategies available for public review and comment prior to authorizing the Proposed Sabine Pass Liquefaction Project.

VIII. CONCLUSION

Based on the comments set forth above, the GCELC respectfully requests that FERC prepare a EIS that fully evaluates all impacts to the human environment relating to the proposed Sabine Pass Liquefaction Project including …. FERC's Proposed Action – authorization of the proposed Sabine Pass Liquefaction Project – is a major federal action that requires the preparation of an EIS because the relocation will significantly affect the quality of the human environment. The Draft EA does not adequately assess or mitigate the significant and far-reaching impacts to the quality of the human environment posed by FERC's Proposed Action. Accordingly, to ensure informed agency and public decision-making as mandated by NEPA, an EIS, which identifies and evaluates the myriad potential adverse environmental and socioeconomic impacts of the Proposed Action and other alternative actions to the human environment, must be prepared.

Finally, GCELC quotes the proud Cajun blues pianist Marcia Ball, who was raised in nearby Vinton, Louisiana. Ms. Ball's song, "This Used to Be Paradise," reminds us all of the beauty and importance of the Louisiana Gulf Coast's natural resources and the adverse impacts the natural gas and oil industry has wrought and continues to wreak on these unique and vital natural resources and the people who reside, work and recreate in the area:

My Granddaddy was a fisherman
Lived on the water more than the land
He could tell the seasons by the turn of the tide
I grew up right by his side
He was a proud Cajun and he worked real hard
The Atchafalaya Basin was his front yard
I can hear him saying with a tear in his eye
This used to be paradise
This used to be paradise

Brown pelicans and sac au lait
Big salty oysters and alligators
So many fish they would jump in your boat

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Throw in a line and that's all she wrote
We had a little house on high ground
Cypress trees all around
Good living, peace and quiet
This used to be paradise
This used to be paradise

Then one day the oil man came
He gave us jobs and everything changed
We still run our boats and we drag our nets
But every day we get less and less

I guess you can't stop the way time goes by
But I can't think of any reason why
They had to come and take our way of life
Now we don't know if we can even survive
They took the very land our house was on
And the shrimp and the pelicans, they are just hanging on
It's a damned shame to make an old man cry
This used to be paradise
This used to be paradise
This used to be paradise
This used to be paradise

My Granddaddy was a fisherman [56]

The profound and far-reaching adverse impacts to the human environment that will result from FERC's authorization of this Proposed Project and other pending liquefaction project proposals in the Gulf Coast must not be trivialized or discounted. Under the circumstances, at a minimum, a comprehensive EIS that fully evaluates and describes the significant affects of this major federal action on the human environment – locally, regionally, nationally and globally – is required to meet NEPA's mandate. After all, "[t]his used to be paradise…."

Thank you for your consideration of GCELC's comments.

[56] http://www.marciaball.com/cd-ra.html.

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Very truly yours,

/s/

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ATTACHMENTS

1. GCELC SPLNG Air Permit Comments to LDEQ (August 15, 2011)
2. GCELC SPLNG Wetlands Permit Comments to USACE (April 25, 2011)
3. Calculation Errors in the Air Permit regarding Acid Gas Vents
4. Top Down BACT Requirements
5. EPA Letter on Ship Emissions
6. GCELC FOIA Request to USACE (April 12, 2011)
7. USACE Partial Denial of GCELC FOIA Request (May 10, 2011)
8. GCELC Appeal of USACE Partial Denial of GCELC FOIA Request (June 8, 2011)

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