

Economic Burdens of LNG to Cameron County



Prepared by:

Patrick Anderson
Bill Berg
Jim Chapman
Maria Galasso
Edna Goette
Alma Leal
Madeleine Sandefur

Purpose:

The purpose of this document is to present brief, yet thorough, researched information for the public and elected officials of the Rio Grande Valley. This information pertains to tax dollars that would support the proposed LNG companies at the Port of Brownsville and tax dollars that would be used to address the consequences. This document also aims to highlight economic burdens that would be placed on the citizens of Cameron County. Cumulatively, this document provides micro and macro economic burdens of LNG operations and consequences thereof that are not included in their calculations of claimed economic benefits to Cameron County.

Disclaimer: Every attempt has been made to present up to date and accurate information. Due to the ongoing process with the Federal Energy Regulatory Commission, future facts, figures, or other details may change with any LNG company. As such, this document will continue to be updated.

Requests for further information, corrections, etc. can be directed to Patrick Anderson via email: PatrickTAnderson@yahoo.com

Table of Contents

Fact Sheet Summary of Economic Burdens on Taxpayers of Cameron County...4

Section I: Micro Economic Burdens

Tax Dollars to Provide Security.....	5
Tax Dollars to Provide Police Fire and EMT Services.....	5
Tax Dollars to Provide Public Utilities.....	6
Tax Dollars Towards Infrastructure.....	6
Tax Dollars for Public Assistance.....	7
County Tax Abatements Subsidize Jobless in Other Sectors.....	8
Minimal Economic Benefit to the Public of Cameron County.....	8
Tax Abatements May Add Economic Distress to Cameron County.....	8
Cumulative Risk May Be a Detractor to Other Sectors.....	9
Chapter 313.....	9
Health Care.....	9
Economic Cost From Environment Degradation, Pollution, and Climate Change.....	10

Section II: LNG Contributions to Macro Economic Burdens of Fossil Fuels

Economic Burden From Harm to Environment.....	11
Federal Tax Dollars will be used to support LNG.....	12
Exports of Natural Gas Will Affect Citizens Negatively Due to Higher Prices.....	12
Fossil Fuel Expenditures Will Continue to Increase.....	13-14
Other Considerations and Thoughts Regarding Costs Related to LNG.....	15

Summary of Economic Burdens of LNG to Cameron County Taxpayers

TAX DOLLARS WILL BE USED TO PROVIDE SECURITY

- Security for LNG incoming/outgoing tankers.
- Patrol of traffic during construction, particularly on Highway 48.

TAX DOLLARS WILL BE USED TO PROVIDE FIRST RESPONSE

- Police, fire, and EMT services will be used by LNG companies during construction. Construction related demands on local public services could include increased enforcement activities associated with issuing permits for vehicle load and width limits, local police assistance during construction at road crossings to facilitate traffic flow, and emergency medical services to treat injuries resulting from construction accidents. Some strain on these services for short periods is possible.
- First response will also be used during operations when an accident occurs such as fires, chemical spills, leaks, or pipeline failures.
- There will be a shared cost to periodic training programs that will be required for emergency responses throughout the duration of LNG operations.
- Equipment will be needed by emergency response teams to adequately handle emergencies.

TAX DOLLARS WILL BE USED TO PROVIDE PUBLIC UTILITIES

- LNG companies will be using public utilities for water generation, sewer, garbage collection, landfill disposal, etc.

TAX DOLLARS WILL BE USED TO MAINTAIN INFRASTRUCTURE

- Tax dollars will be needed to maintain and repair infrastructure such as roads during construction of LNG facilities and their pipelines. Operations will also require use of roadways in and around the Port of Brownsville and pipeline routes.
- Pipeline construction and operations will utilize both temporary and permanent access roads to include private roads, county roads, farm to market roads, state highways, and US highways. County roads utilized in the construction of the Rio Bravo pipeline include CR 2925, CR 803, CR1847. Details regarding pipeline construction have not been released by Annova or Texas LNG to date.

SECTION I: MICRO ECONOMIC BURDENS

Tax Dollars To Provide Security

- Local resources and public services will be diverted to service LNG security. Security for LNG tankers includes municipal costs of police, fire, and security personnel of \$37,500 as calculated in 2007 at the Everett, Massachusetts. Additionally, terminal costs of \$62,000 to the Coast Guard in addition to state dollars totaling \$100,000 per tanker.¹ Security for LNG in the RGV may include additional marine security, land based security, and related border patrol surveillance given the geographical location along an international border that is unsecured.
- As stated in the 2008 CRS Report, Representative Peter Defazio communicated to Homeland Security that the potential increase in security costs and the potential diversion of Coast Guard resources from other activities have been a persistent concern. If the proposed projects at the Port of Brownsville are approved, measures will need to be taken to prevent local resources and public services from being diverted to service LNG security.
- Will the jetties areas have to be closed off during the passage of LNG tankers? What is the economic consequence of LNG on Isla Blanca Park, Jaime Zapata Boat ramp, etc. due to closures or heavy security?

Tax Dollars To Provide Police, Fire, and EMT Services For LNG

- First response (police, fire, EMT, etc.) will be used by the companies for emergency response, accidents, and clean up during construction and operation. According to Texas LNG, project-related construction could result in short-term impacts on the availability of local community facilities and services such as police, fire, and medical. Construction-related demands on local public services could include increased enforcement activities associated with issuing permits for vehicle load and width limits, local police assistance during construction at road crossings to facilitate traffic flow, and emergency medical services to treat injuries resulting from construction accidents. Some strain on these services for short periods is possible.²
- Any cost incurred to train or provide support to LNG construction and operations will be addressed through a cost sharing plan and developed with

¹ Parfomak, Paul. CRS Report for Congress "*Liquefied Natural Gas (LNG) Infrastructure Security: Issues for Congress*". May 13, 2008. p. 21.

² Texas LNG Resource Report 5, p15 and Annova LNG Resource Report 5, p33 and Annova LNG Resource Report 5, p29.

state and local responders.³ Regular periodic trainings will occur onsite along with regular joint inspections.⁴

- Any increase in first response staff that would be required due to LNG operations would be at the cost of taxpayer dollars.⁵
- Tax dollars and resources will be used to respond to pipeline failures. According to the Pipeline Safety Trust analysis of federal data, new pipelines are failing at a rate on par with gas transmission lines installed before the 1940s.⁶ Arizona Corporation Commission's Pipeline Safety Section Supervisor references poor construction practices, not enough quality control, and quality assurance programs. Leaks from pipelines contribute to higher costs for natural gas, threatens public health and safety, causes explosions, and contributes to pollution.
- Accidents with pipelines are not uncommon. According to the Pipeline and Hazardous Materials Safety Administration (PHMSA), in 2015 there were 84 significant pipeline failures in Texas. Significant failures are defined as those that result in fatalities or injuries, \$50,000 in total costs, volatile liquid release of 5 barrels or more, other liquid releases of 50 barrels or more, or unintentional fire or explosion. The cost in 2015 to such pipeline failures in Texas was \$29,494,205.⁷

Tax Dollars to Provide Public Utilities

- LNG companies will be using public utilities for water generation, sewer, garbage collection, landfill disposal, etc. Texas LNG references sufficient landfill capacity, however provides no detail regarding their conclusion or to what extent they will be using landfill space in their Resource Report 5.⁸

Tax Dollars Towards Infrastructure

- Tax dollars will be needed to maintain and repair infrastructure such as roads during construction of LNG facilities and their pipelines. Operations will also require use of roadways in and around the Port of Brownsville and pipeline routes.
- Pipeline construction and operations will utilize both temporary and permanent access roads to include private roads, county roads, farm to

³ Texas LNG Resource Report 5, p15 and Rio Grande LNG Resource Report 5, p113, p123.

⁴ Rio Grande LNG Resource Report 5, p 115.

⁵ Rio Grande LNG Resource Report 5, p114.

⁶ Smith, Sarah. "As US Rushes to Build New Lines, Failure Rate of New Pipes Have Spiked". September 9, 2015. Available at; <https://www.snl.com/InteractiveX/Article.aspx?cdid=A-33791090-11060>

⁷ <https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages>.

⁸ Texas LNG Resource Report 5, p14.

market roads, state highways, and US highways. County roads utilized in the construction of the Rio Bravo pipeline include CR 2925, CR 803, CR1847.⁹ Details regarding pipeline construction have not been released by Annova or Texas LNG to date.

- During construction, Annova LNG expects 2,000 vehicle trips will occur each day based on a peak workforce of 1,000. The greatest impacts on roadway traffic from the Project would occur on SH 48, SH 4, and Farm to Market (FM) 511. Construction and operation details for the non-jurisdictional transmission line and water supply pipeline and the two natural gas pipelines are unknown.¹⁰
- During construction, Rio Grande LNG estimates at maximum output there could be 90 trucks per day or 630 trucks per week x 2 for round trips equaling 1,260 trucks running 24/7, mostly on 550/511, SH4 and SH48. A small portion of the LNG produced at the by Rio Grande LNG will be loaded onto third-party trucks for road distribution. The exact amount of LNG that will be loaded onto trucks will be dependent on market demand. LNG tanker trucks services will be arranged by the LNG customers that need LNG to be distributed by road. Four LNG tanker truck loading bays are included in the Terminal design, with each bay having the capacity to handle up to 12 to 15 tanker trucks per day. ¹¹
- During construction, Texas LNG expects the total number of vehicles per day at peak arriving and departing the facility during the construction of Phases 1 and 2 is approximately 1,686. The peak truck deliveries would be about 253 per day, while the peak manpower trips (consisting of direct labor, indirect labor, and staff) would be approximately 1,433 per day.¹²
- During operation, LNG companies will truck in refrigerants used in the processing of LNG such as propane and liquid ethylene.

Tax Dollars For Public Assistance

- Rio Grande LNG (and possibly Annova LNG and Texas LNG) may be contracting out jobs such as custodians and security guards. Such jobs often pay minimum wage that may result in taxpayer dollars to go to publicly funded assisted housing, welfare, and emergency room medical care.

⁹ Rio Grande Supplemental filing on 12/29/2016. Appendix 9.B-36.b

¹⁰ Annova Resource Report 1, p113.

¹¹ Rio Grande LNG Resource Report 1, p48.

¹² Texas LNG Resource Report 1

County Tax Abatements Subsidize Job Loss in Other Sectors

- Tax-payers would be subsidizing job losses in other sectors nationally. LNG exports would benefit the natural gas industry at the expense of the rest of the U.S. economy.¹³
- Because the manufacturing sector is sensitive to natural gas prices, a high export scenario (30 bcf/d) will have negative economic impacts including lower GDP, less employment, and higher trade deficit.¹⁴
- What impact will LNG have on the operations of eco tourism, and commercial fishing?

Minimal Economic Benefit (if any at all) to the Public of Cameron County

- Economic benefits of labor compensation and income from investment are projected to decline, while owners of the natural gas resources are projected to increase. Households with income from wage income or government transfers may not be a participant in economic benefits.¹⁵
- Capital income, wage income, and indirect tax revenues will drop while resource income and net transfers associated with LNG export increase.¹⁶

Tax Abatements May Add Economic Distress to Cameron County

- In the long term, how will giving tax abatements increase employment in other sectors? Why give a tax abatement to a company that can't locate elsewhere? Tax dollars from LNG companies could be used to provide better services and make Cameron County more competitive and more attractive to other businesses and industries. Research on the benefits of tax abatements show that there is limited benefit or consequences of distressing economies. Example of such research:
 1. *Policy Brief: Local Tax Abatement*. Ball State University Center for Business and Economic Research. December 2013.
 2. *Company Tax Abatements Hurt Michigan's Economy*. Michigan State University. October 15, 2007

¹³ Synapse Energy Economics, Inc., "Will LNG Exports Benefit the U.S. Economy?". January 23, 2013. p. 2.

¹⁴ *US Manufacturing and LNG Exports: Economic Contributions to the US Economy and Impacts on Natural Gas Prices*. Charles River Associates. February 25, 2013. p9.

¹⁵ NERA Economic Consulting. "Macro Economic Impacts of LNG Exports from the United States". December 3, 2012. p 2.

¹⁶ Montgomery, David. *Macroeconomic Impacts of LNG Exports from the United States*. NERA Economic Consulting. December, 2012.

Cumulative Risk May Be a Detractor to Other Sectors

- LNG exports and their pipelines will add to other industries and operations such as Space X, condensate trains, and other Port of Brownsville operations, resulting in a cumulative risk that may detract other businesses, industries or professionals looking to relocate in the RGV. School districts and universities may find it more difficult to recruit educators/professors from outside the RGV.
- Tourism and tourism operations, including but not limited to, eco tourism (e.g. dolphin watches, bay tours, fishing tournaments, etc.), will be directly affected by LNG operations.

Chapter 313 is Bleeding the State Due to Lack of Oversight and Regulation

- a) Originally written to give incentive to a business/company that would otherwise locate out of the state.
- b) School districts can reduce a company's property valuations up to 90 percent for 10 years. They also get credits to offset higher school taxes they pay during construction in the first two years.
- c) Chapter 313 costs the state far more than its other business incentive programs, such as the Texas Enterprise Fund and Emerging Technology Fund
- d) Between 2005 and 2013, school districts have lost \$905.2 million in local tax revenue due to the tax breaks while the gains in local economic development are murky at best, according to the audit. Businesses stand to gain as much as \$786 million in additional school property tax credits between 2014 and 2030 through the agreements. Total property tax revenue losses from the agreements are likely to be significantly higher than that. (Texas Tribune, November 21, 2014)
- e) As of 2015, the program has cost Texas more than 7billion.

Health Care

- Currently, Cameron County ranks 213th out of 254 counties in Physical Environment Quality (particulate matters, water quality, housing problems, etc.), and 228th out of 254 counties in Quality of Life (physical health days, mental health days, and low birth weight).¹⁷ In an already environmentally distressed county, how much will additional degradation add to the cost of lost workforce productivity due to health effects caused by environmental conditions?

¹⁷ Robert Wood Johnson Foundation as reported by the Rio Grande Valley Coalition For Health Children FERC Intervention CP16-116.

- Emissions of PM2.5 will cause cardiac and respiratory disease amounting to \$75 to \$187 million in morbidity and mortality impacts during construction and millions more during operation of LNG facilities.¹⁸
- Emissions of volatile organic compounds (VOCs) will increase the risk of birth defects, cancer, and cognitive impairment in the children of Cameron County.¹⁹
- Health care costs will be an increasing burden on RGV residents. LNG will result in more fracking activity and significant air pollution. This is a concern as the state of Texas regulatory agencies does more to protect the gas and oil industry than it does to protect the public. Texas has sued the Environmental Protection Agency 18 times in the last decade, has only 5 air monitors in the 20,000 square miles of Eagle Ford Shale region, self regulated facilities, fines are rarely given to companies who break the law, and funding is continually cut for the Texas Commission on Environmental Quality. As a result, individuals living near the oil and gas industries like Eagle Ford Shale, are collateral damage. Chemicals released during oil and gas extraction have been found to cause a range of ailments from minor headaches to neurological damage and cancer.

Economic Cost From Environment Degradation, Pollution, and Climate Change

1. Consequences to eco tourism, recreational tourism, and business that support and are supported by tourism industries. This includes Jaime Zapata Boat Ramp, bay tours, dolphin watches, fishing tournaments, fishing tours, boat shops, bait shops, surf shops, etc.
2. Consequences to the RGV which is susceptible to climate change and costs there of including rising sea level, beach restoration, acidification of the Gulf, carbon absorption in the Gulf, longer and stronger hurricane seasons, etc.

¹⁸ Rio Grande Valley Coalition for Healthy Children FERC Intervention CP16-116; p7.

¹⁹ See foot note 9.

Section II: LNG Contributions to Macro Economic Burdens of Fossil Fuels

Economic Burden From Harm to Environment

- Fossil Fuels, and especially as recently natural gas, is a leading contributor to global warming which affects environment, health, and safety, all of which will inflict economic consequences from things such as
 - a) Sea level rise.
 - b) Increase severity of storms
 - c) Emergency response and cost to rebuild
 - d) Significant loss to agriculture and crops.
 - e) Increased insurance rates
 - f) Declining rainfalls and rising temperatures that result in extended drought conditions affecting agriculture, public health, greater formation of ozone smog, and increases in vector-borne disease.

- Fossil fuel industry is the leading source of air and water pollution. The Clean Air Act has estimated a cost of \$9 trillion from 1970 to 2000 with costs resulting from pollution-induced early mortality, illness, health care, and lost productivity.²⁰

- Fossil Fuel production damages our environment resulting in greater damage on the American economy and quality of life. Organizations such as the Natural Resources Defense Council, Lawrence Livermore National Laboratory, Carnegie Institution, World Bank Chief Economist Sir Nicholas Stern, and countless others have researched and reported such costs resulting from global warming, declined rainfalls, pollution, illnesses, health care costs, and clean up of accidents. As just one example, a study published March 16, 2007 in the online journal *Environmental Research Letters*, reported annual losses of \$5 billion dollars between the years of 1981-2002 from reduced production of wheat, corn, and barley from warming temperatures. These losses are passed to the consumer with higher prices at the grocery store.

- Sea level rise and severe weather patterns could cause as much as \$422 billion in damages in Atlantic and Gulf Coast states between 2025 and 2100.²¹

²⁰ Payne, Sarah; Figdor, Emily. *The High Cost of Fossil Fuels: Why America Can't Afford to Depend on Dirty Energy.* Environment America Research & Policy Center. June 2009, p2.

²¹ Payne, Sarah; Figdor, Emily. *The High Cost of Fossil Fuels: Why America Can't Afford to Depend on Dirty Energy.* Environment America Research & Policy Center. June 2009, p2.

- Building sea wall and retrofitting old ones could cost \$2 million - \$20 million per mile of wall.²²
- High-intensity hurricanes fueled by a warming planet could cause as much as \$422 billion in damage to Atlantic and Gulf Coast states between 2025 and 2100.²³

Federal Tax Dollars Will Be Used to Support LNG

- The Coast Guard will be used to support security operations of LNG companies. Will Border Patrol also be utilized?

Exports of Natural Gas Will Affect Citizens Negatively Due To Higher Prices

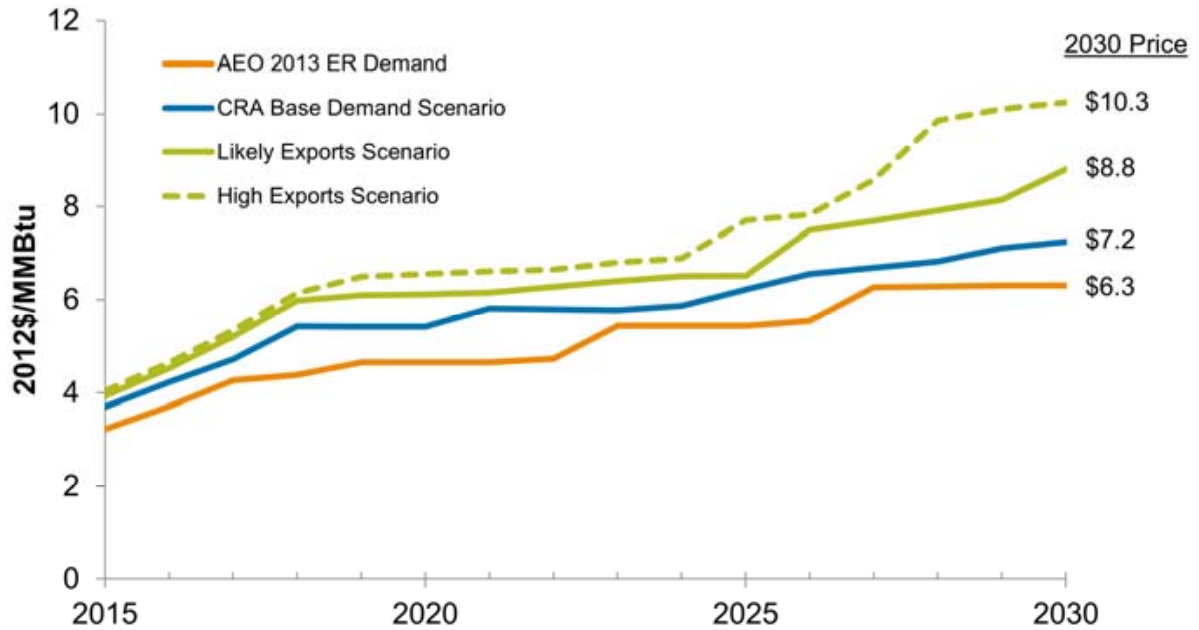
- As reported on September 23, 2016, U.S. Senators Al Franken (D-MN), Ed Markey (D-MA), Debbie Stabenow (D-MI) and Angus King Jr. (I-ME), have expressed concerns over an alarming rate of approvals of applications of LNG exports resulting in higher costs for energy and the contribution to climate change.²⁴
- America's Energy Advantage, the American Public Gas Association and Industrial Consumers of America all oppose the exportation of LNG as they state it will increase the domestic price of natural gas. This is also supported by the National Economic Research Associates in their 2012 report "Macroeconomic Impacts of LNG Export From the United States". The report states that higher natural gas prices will have negative affects on manufacturing output and employment. Natural gas prices will increase 3%-9% commercial, industrial, and residential consumers.
- A nationwide LNG export of 30 bcf/d will result on natural gas prices to nearly triple by 2030.²⁵

²² Frank Ackerman, Elizabeth A. Stanton, et al., Global Development and Environment Institute, Stockholm Environment Institute-US Center, Tufts University, and Natural Resources Defense Council, *The Cost of Climate Change: What We'll Pay if Global Warming Continues Unchecked*, May 2008.

²³ See foot note 10.

²⁴ Fisher, Joe. *Democratic Senators Raise LNG Export Concerns*. Natural Gas Intelligence. September, 23, 2016.

²⁵ *US Manufacturing and LNG Exports: Economic Contributions to the US Economy and Impacts on US Natural Gas Prices*. Charles River Associates. February 25, 2013. p



Source: CRA US Gas Model

- The national/macro economic impact of LNG is marginally positive with tradeoffs to higher prices for U.S. manufacturing.²⁶
- Natural Gas is also lost through pipelines and processing thereby exacerbating the loss of domestic natural gas resources. As reported in Senator Edward J. Markey's 2011 report *Natural Gas Pipeline Leaks Cost Consumers Billions* "gas distribution companies reported releasing 69 billion cubic feet of natural gas the atmosphere, almost enough to meet Maine's gas needs for a year, and equivalent to carbon dioxide emissions of six million automobiles.²⁷ Lost gas through pipelines is passed to consumers and also contributes to climate change, threatens public health, and adds risks to public safety.

Fossil Fuel Expenditures Will Continue to Increase

- Economic benefit from jobs is negated from fossil fuel expenditures. Between 2010 and 2030, most states will spend several times the current total annual earnings of all their workers on fossil fuels.²⁸

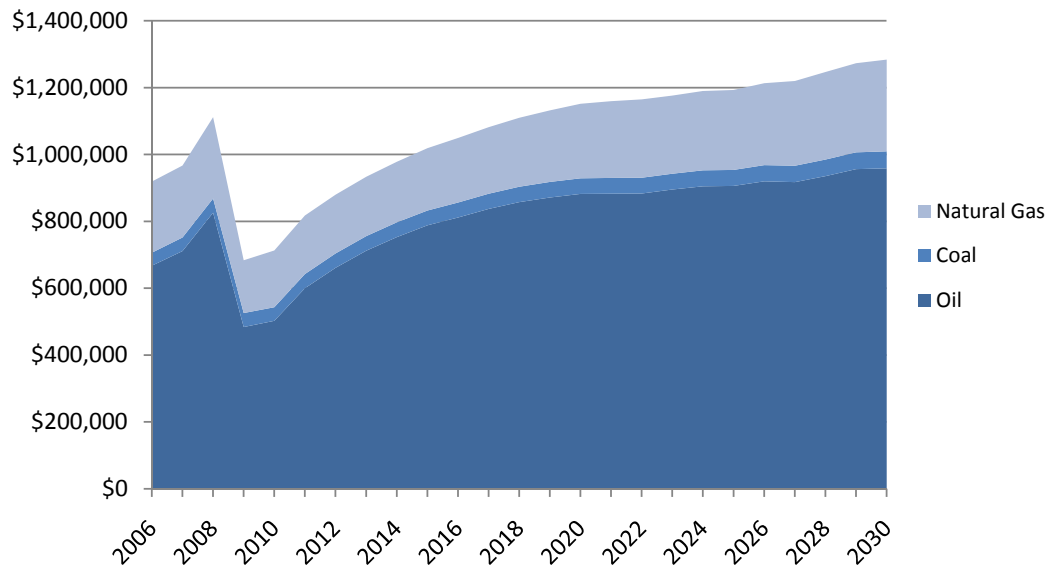
²⁶ Cooper, A.; Kleiman, M.; Livermore, S; Medlock, K. *Macroeconomic Impact of Increasing U.S. LNG Exports*. Oxford Economics, Rice University, National Energy Technology. October, 29, 2015.

²⁷ Markey, Edward. "Natural Gas Pipeline Leaks Cost Consumers Billions". August 1, 2013.

²⁸ Payne, Sarah; Figdor, Emily. *The High Cost of Fossil Fuels: Why America Can't Afford to Depend on Dirty Energy*. Environment America Research & Policy Center. June 2009, p16.

- Failure of fossil fuel infrastructure (pipelines, rigs, wells, etc.) imposes costs for emergency response, clean up, etc. Between 1990 and 2006 51 large oil spills in the U.S. resulted between \$8.6 million and \$1.1 billion.

Figure ES-1. Projected U.S. Expenditures on Fossil Fuels (2007 dollars), Reference Case



From: *"The High Cost of Fossil Fuels: Why America Can't Afford to Depend on Dirty Energy"*. Environment America Research and Policy Center.

**Other Considerations and Thoughts Regarding Costs
To The Public Related to LNG**

- All added together, there will be a transfer in wealth in favor of the natural gas industry from an already economically distressed area.
- Would giving a tax abatement to LNG companies detract from manufacturing sectors to locate in the RGV knowing exports are rising their costs of operation?
- What is the economic consequence of increased property taxes, increased health care costs, impact of missed work days to seek health care, higher energy costs, and higher costs for goods and services?
- What will be the cost for increased environmental monitoring of air, water, and seismic activity?
- What will the consequences be of increasing fracking, a water intensive procedure, in a drought prone area such as Eagle Ford?
- What will the cost be to respond to ground water contamination due to fracking?
- What is the cost of measures or adaptations relating to climate change? To infrastructure? To agriculture?