

MODEL LNG TRANSPORTATION RESOLUTION – DE

WHEREAS, a fundamental purpose of government is to protect the health, safety, and welfare of citizens; and

WHEREAS, the State of Delaware Department of Natural Resources and Environmental Control (DNREC) envisions a Delaware that offers a healthy environment where people embrace a commitment to the protection, enhancement and enjoyment of the environment in their daily lives; where Delawareans' stewardship of natural resources ensures the sustainability of these resources for the appreciation and enjoyment of future generations; and where people recognize that a healthy environment and a strong economy support one another¹; and

WHEREAS, DNREC's Strategic Priorities are described as including: Preserving Outdoor Heritage and Promoting Tourism; Supporting Healthy Families; Improving Delaware's Preparedness; Creating Cleaner, Lower Priced and More Reliable Energy; Ensuring Clean Water; and Supporting Safe and Sustainable Communities²; and

WHEREAS, The State of Delaware Administrative Code prohibits the development of liquefied natural gas (LNG) terminals in the coastal zone in Delaware under current law³. The prohibition is based on safety and environmental issues and is detailed in the Final Environmental Impact Statement (FEIS) for Delaware's coastal zone management plan⁴; and

WHEREAS, the FEIS done in defense of Delaware's Coastal Zone Management Program's policy of the prohibition of LNG applied Federal Energy Regulatory Commission (FERC) siting criteria including: Population, Climate, Navigational Suitability for Tanker Traffic, Seismic Considerations, Topographic Conditions, Foundation Conditions, Terminal Area, Anchorage Suitability, Land Use Conflicts, Existing Environment, New Pipeline Requirements and Right-of-Way Availability, Seawater Exchange Systems⁵. These siting criteria have not been applied to the proposed Gibbstown Dock 2 LNG export terminal and no assessment of the suitability of the site has been conducted by the State of Delaware or any other agency. Application of these criteria conducted for the FEIS found "NO SITE IN DELAWARE SUITABLE FOR THE LOCATION OF ANY LNG IMPORT-EXPORT FACILITY"⁶; and

WHEREAS, the Delaware Coastal Management Program FEIS concluded that "The main shipping channel up the Delaware River and Bay also passes, in places, within a mile or two, of Lewes, and not much farther from Rehoboth Beach--both densely populated in the summer. A

¹ <https://dnrec.alpha.delaware.gov/mission/>

² Ibid.

³ TITLE 7 NATURAL RESOURCES & ENVIRONMENTAL CONTROL DELAWARE ADMINISTRATIVE CODE. 23 DE Reg. 222 (09/01/19), Section 4.1.5. <https://regulations.delaware.gov/AdminCode/title7/100/101.pdf>

⁴ "DELAWARE COASTAL MANAGEMENT PROGRAM AND FINAL ENVIRONMENTAL IMPACT STATEMENT". [From the U.S. Government Printing Office, www.gpo.gov]. U.S. DEPARTMENT OF COMMERCE, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management, *41T4 O74f. UNITED STATES DEPARTMENT OF COMMERCE, The Assistant Secretary for Science and Technology, Washington, D.C. 20230, JUL 2 1979.

⁵ Ibid. p. 228 of PDF.

⁶ Ibid.

tanker accident near either city could spell disaster” and “Further, the land requirements of LNG facilities, coupled with their tendency to induce additional development, make LNG facilities unsuitable for the area they would otherwise occupy-- the Delaware coastal zone” and that “The State's best transportation systems, including a major natural gas pipeline, occur near its highest area of population density—Wilmington”⁷; and

WHEREAS, the Delaware Coastal Management Program FEIS states that “...the still undefined dangers associated with LNG facilities in areas of population density and the potential impacts of shipments on environmental resources, appear to outweigh benefits related to the potential energy supply”⁸; and

WHEREAS, the Delaware Coastal Management Program FEIS states that the siting of LNG export/import ports is prohibited “...in Delaware Bay for environmental reasons, (i.e., spillage, dredging and spoil disposal)”⁹ and that “...[facilities such as] LNG terminals or deepwater ports, poses grave risks in or near areas used for high density recreation, and relied upon by commercially important fish. Moreover, such facilities and certain heavy industrial uses not only threaten the fragile coastal environment directly, but also typically generate pressure for additional development with negative impact of its own”¹⁰; and

WHEREAS, the Delaware Coastal Management Program FEIS states that a study cited by the U.S. Congress’ Office of Technology Assessment (OTA) “...recommends that population near proposed [LNG terminal] sites be "zero or very low" density within a one-mile radius, and low within a 6-mile radius”¹¹. The same report states, “There has never been a massive LNG spill on water. Estimated distance vary from less than one mile to more than 50 miles, depending on different assumptions. Work by the U. S. Bureau of Mines has indicated that a 25,000 cubic meter spill--the contents of one the cargo tanks in a big LNG tanker- - could produce a 1500 foot long plume, the major part of it is highly flammable. With stable weather conditions and a steady wind of about 7 miles an hour, the plume could theoretically travel some 19 to 38 miles according to the BLM study. More recent studies by the Coast Guard suggest that the impacted area would be from 1.25 to 3.2 miles under normal weather conditions and no more than 10.5 miles under extreme conditions.”¹²; and

WHEREAS, Delaware River Partners LLC, a subsidiary of Fortress Transportation and Infrastructure Investors, LLC, intends to ship Liquefied Natural Gas (LNG) originating from Pennsylvania Marcellus Shale gas wells; liquefied at a facility being built in Bradford County, PA; transported by truck or rail to Gibbstown, Gloucester County, New Jersey; transloaded into ships at a proposed Dock (“Dock 2”) to be built at the Gibbstown Logistics Center on the Delaware River; then shipped overseas on the Delaware River through the Delaware Bay, with no required review or permitting from DNREC; and

⁷ Ibid.

⁸ Ibid. page 16 of the PDF.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid. page 223 of PDF.

¹² Ibid. page 224-224 of PDF.

WHEREAS Delaware River Partners intends to ship LNG from the proposed export terminal dock on the Delaware River for sale overseas, to the benefit of the company and its investors, while those in Delaware who are potentially adversely impacted by the project and its operations are subject to bearing the external costs; and

WHEREAS, the transport of LNG by shipping vessel on the Delaware River will require the ships to traverse the Delaware River and Bay, passing many Delaware communities, including densely populated areas, environmental justice communities, and areas of unique and vulnerable environmental, economic, and natural value to reach the Atlantic Ocean and foreign ports; and

WHEREAS, the transport of LNG by shipping vessel will negatively impact the aesthetic, scenic, and recreational value of tourism and eco-tourism in Delaware's coastal communities and impinge on economically and environmentally important and irreplaceable coastal and marine resources; and

WHEREAS, New Fortress Energy is planning the overland transport of Liquefied Natural Gas ("LNG", also known as liquid methane) by truck on public highways and by rail car on existing railways from a yet-to-be-completed liquefaction plant in Wyalusing, Pennsylvania, to a proposed LNG export terminal in Gibbstown, New Jersey on the Delaware River (the "Gibbstown Logistics Center"), located upriver from Delaware 6.32 miles, within a possible impact zone from a LNG release at Dock 2 and related facilities. The likely LNG truck transportation route across the Commodore Barry Bridge is only 2.85 miles upriver from Delaware, within the potential zone of impact should there be an LNG release incident; and

WHEREAS, LNG is a liquefied cryogenic flammable gas, cooled to at least -260 degrees F. It is dangerous to handle, store, and transport bringing with it "unique safety hazards". When LNG liquid is released, it immediately expands by more than 600 times its liquid volume, making it more powerful than hazardous liquids that don't expand exponentially. An unignited ground-hugging vapor cloud can move far distances,¹³¹⁴ and exposure to the vapor can cause extreme freeze burns. If in an enclosed space such as a basement or tunnel, it asphyxiates, causing death¹⁵. If ignited, the fire is inextinguishable. A resulting pool fire is so hot that second degree burns can occur within 5 seconds for those exposed within .69 miles and 10 seconds of exposure could be fatal.¹⁶ An LNG release can cause a Boiling Liquid Expanding

¹³ "Immediate ignition with liquid still on the ground could cause the spill to develop into a pool fire and present a radiant heat hazard. If there is no ignition source, the LNG will vaporize rapidly forming a cold gas cloud that is initially heavier than air, mixes with ambient air, spreads and is carried downwind." P. 10 "Methane in vapor state can be an asphyxiant when it displaces oxygen in a confined space." P. 11. SP 20534 Special Permit to transport LNG by rail in DOT-113C120W rail tank cars. Final Environmental Assessment. Docket No. PHMSA-2019-0100. December 5, 2019. P. 10.

¹⁴ SP 20534 Special Permit to transport LNG by rail in DOT-113C120W rail tank cars. Final Environmental Assessment. Docket No. PHMSA-2019-0100. December 5, 2019. P. 11.

¹⁵ Ibid.

¹⁶ "The Council on Environmental Quality describes the danger: The characteristics of these fires on water, like the behavior of vapor clouds, are subject to great uncertainties and estimates of the safe distance from their intense radiant heat vary significantly. According to a recent FPC (Federal Power Commission) analysis, a generally safe distance from a 25,000-cubic-meter pool fire would be about 8,300 feet or 1.6 miles. People standing 3,600 feet away would blister in 5 seconds, and exposure for longer times-perhaps 10 seconds -- would be fatal. Estimates

Vapor Explosion.¹⁷ Spillage of LNG into water presents a hazardous situation where the water quickly transfers heat to the liquid methane, causing it to expand with explosive speed that can result in damage to nearby structures.¹⁸ Explosion can occur and have a cascading effect as the vapor cloud moves downwind or along topographical features such as a tributary, ditch, tunnel, or human built structures, threatening public safety, human life and the environment; and

WHEREAS, the transport of LNG endangers the public and property with consequential hazards, exposing those near the navigation path of shipping vessels and/or transportation routes over land or water or near facility sites to unprecedented and unjustifiable risk. Fire, explosion, freeze burning, embrittlement of ordinary carbon steel, and other potent effects of an accident pose significant and unacceptable threats to communities and the environment; and the 2016 US Emergency Response Guidebook advises fire chiefs initially to immediately evacuate the surrounding 1-mile area on land.¹⁹ Scientific research shows that a spill fire from a large LNG release on water could cause burns greater than one mile from the edge of the fire²⁰ and a vapor cloud can disperse 1.46 miles in a stable atmosphere²¹ and further if moved by wind or other forces. No federal field research has concluded a definitive impact zone so in the most recent serious Plymouth, Washington, LNG fire, they evacuated a 2-mile radius²². According to figures from a federal study, "...on a windless day when thermal radiation is greatest, unsheltered people at a distance of 9,600 feet, or nearly 2 miles, could suffer fatal burns"²³; and

WHEREAS, Delaware River Partners, LLC has submitted an application to the Delaware River Basin Commission under Docket D-2017-009-2 to construct a transloading facility ("Dock

based on Bureau of Mines figures indicate that the danger might extend farther. According to these figures, on a windless day when thermal radiation is greatest, unsheltered people at a distance of 9,600 feet, or nearly 2 miles, could suffer fatal burns." "DELAWARE COASTAL MANAGEMENT PROGRAM AND FINAL ENVIRONMENTAL IMPACT STATEMENT". [From the U.S. Government Printing Office, www.gpo.gov]. U.S. DEPARTMENT OF COMMERCE, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management, *41T4 O74f. UNITED STATES DEPARTMENT OF COMMERCE, The Assistant Secretary for Science and Technology, Washington, D.C. 20230, JUL 2 1979. P. 225 of PDF.

¹⁷ "LNG tank BLEVE is possible in some transportation scenarios." Sandia National Laboratories, "LNG Use and Safety Concerns (LNG export facility, refueling stations, marine/barge/ferry/rail/truck transport)", Tom Blanchat, Mike Hightower, Anay Luketa. November 2014. <https://www.osti.gov/servlets/purl/1367739> P. 23.

¹⁸ Rapid Phase Transitions of LNG illustrated at <https://www.youtube.com/watch?v=h-EY82cVKuA>

¹⁹ US DOT Emergency Response Guidebook. <https://www.phmsa.dot.gov/hazmat/erg/emergency-response-guidebook-erg>

²⁰ Jerry Havens, "LNG: Safety in Science", Bulletin of the Atomic Scientists January/February 2004, Research Article, <https://doi.org/10.2968/060001010>.

²¹ Phani K. Raja,*, Theodore Lemoffb, "Risk analysis based LNG facility siting standard in NFPA 59A", Journal of Loss Prevention in the Process Industries 22 (2009) 820–829.

[http://www.savepassamaquoddybay.org/downloads/2016Feb_Complaint_to_JusticeDept/individual_files/33_08_20_140625-5010\(29539740\).pdf](http://www.savepassamaquoddybay.org/downloads/2016Feb_Complaint_to_JusticeDept/individual_files/33_08_20_140625-5010(29539740).pdf)

²² <https://www.sightline.org/2016/06/03/williams-companies-failed-to-protect-employees-in-plymouth-lng-explosion/>

²³ "DELAWARE COASTAL MANAGEMENT PROGRAM AND FINAL ENVIRONMENTAL IMPACT STATEMENT". [From the U.S. Government Printing Office, www.gpo.gov]. U.S. DEPARTMENT OF COMMERCE, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management, *41T4 O74f. UNITED STATES DEPARTMENT OF COMMERCE, The Assistant Secretary for Science and Technology, Washington, D.C. 20230, JUL 2 1979. Cited study by the Office of Technology Assessment, an office of the [United States Congress](http://www.congress.gov) from 1972 to 1995 P. 225 of PDF.

2”) at the Gibbstown Logistics Center that would transfer LNG from trucks and railcars to shipping vessels for export; and

WHEREAS, the Delaware River Basin Commission has placed a “stay” on construction of “Dock 2” at the Gibbstown Logistics Center from which LNG would be exported overseas and is reviewing an extensive record produced by the administrative appeal of the original approval granted in 2019 such that the LNG export project is on hold²⁴; and

WHEREAS, the public has expressed opposition and grave concerns regarding the proposed project and has submitted over 50,000 petitions and numerous letters from different constituencies in opposition to “Dock 2”, the transport and handling of LNG, and the export of LNG from the terminal: and

WHEREAS, the Delaware River Basin Commission states, “The vision of the Delaware River Basin Commission is built upon the Compact signed in 1961 by Delaware, New Jersey, New York, Pennsylvania, and the federal government. It is defined in the Delaware River Basin Compact as, “the conservation, utilization, development, management and control of water and related resources of the Delaware River Basin under a comprehensive multipurpose plan will bring the greatest benefits and produce the most efficient service in the public welfare”²⁵; and

WHEREAS, the Delaware River Basin Commission has recently affirmed in its statement on Diversity, Equity, Inclusion & Justice that its “core values” are “Service: to the public, the regulated community and our DRBC colleagues; Respect: for each other, the public and the Basin’s water resources; Professionalism: defined by high ethical standards, integrity, continuous improvement and accountability²⁶; and

WHEREAS, Delaware River Partners (DRP) has not received a letter of recommendation from The United States Coast Guard approving the shipping of LNG from Gibbstown overseas through the Delaware River and Bay; and

WHEREAS, Delaware River Partners has not received a declaratory order from the Federal Energy Regulatory Commission (FERC) stating that DRP’s proposed liquefied natural gas transloading operations in Gibbstown is not subject to FERC jurisdiction under section 3 or section 7 of the Natural Gas Act, 15 U.S.C. 717b and 717f (2018) and yet DRP has no FERC approval; and

WHEREAS, neither the State of Delaware, the Delaware River Basin Commission nor any other agency has assessed the potential public safety, public health or environmental impacts of the proposed project; the LNG transloading operations proposed for Dock 2; the shipping of LNG from and through the Delaware River Basin, river and bay or the overland transport of LNG by truck or by rail car on the communities along the possible transportation routes; and

²⁴ https://www.nj.gov/drbc/library/documents/UnofficialTranscript_DRBC-Gen-Counsel-Rpt_excerpt091020.pdf

²⁵ <https://www.nj.gov/drbc/library/documents/DRBCvision-mission-values.pdf>

²⁶ <https://www.nj.gov/drbc/about/staff/DEIJ.html>

WHEREAS, no full scale Quantitative Risk Assessment, which quantifies the frequencies of events such as transportation accidents and their consequences, has been done of the trucks or rail cars that would contain the LNG that would travel to Gibbstown NJ²⁷; and

WHEREAS, neither the State of Delaware, the Delaware River Basin Commission, nor any other agency has conducted a comprehensive assessment of the cumulative and long-term impacts of the full scope of New Fortress Energy's plan to extract and liquefy natural gas from fracking wells in Northern Pennsylvania, transport the LNG to the Gibbstown Logistics Center, perpetually transload from rail and truck tanks to ships, and export by marine vessels overseas on the Delaware River past Delaware and South Jersey bayshore and ocean front communities; and

WHEREAS, training or support in [the township/county/district] has not been provided for emergency or first response service organizations to respond to accidents, fires, explosions, derailments, or other emergencies related to LNG shipping and transport within this jurisdiction; and

WHEREAS, the absence of such assessments and support prevents the appropriate management of and avoidance of shipping accidents, derailments, catastrophic events, health harms, property and infrastructure damage and environmental damage and degradation that could occur from the transportation of LNG near or through these communities, including risks to public health, property values and the clean air and water upon which all citizens and businesses depend; and

WHEREAS, the shipping vessel navigation path and the potential land transportation routes would travel past and/or through dense urban areas such as Wilmington and other communities with proportionately more minority and low income populations, compounding environmental injustices²⁸; and

WHEREAS, DNREC's stated priority of creating cleaner, lower priced and more reliable energy includes implementing energy efficiency recommendations, investing in clean and renewable energy infrastructure, modernizing power plants, working to reduce cross-state air pollution, and promoting cleaner transportation solutions²⁹ and the shipping of LNG perpetuates the development of fossil fuels that produce pollutants and greenhouse gas emissions. Delaware has taken recent significant legal action based on the harm caused to the state by climate change, fueled by greenhouse gas emissions from fossil fuels. Delaware's Attorney General Kathy Jennings filed suit against "...31 fossil fuel companies on behalf of the state's residents and

²⁷ "The QRA will help to evaluate the derailment and release probability of LNG rail cars over certain segments of the network, and account for a variety of track and train characteristics...An LNG risk model can be used to understand the probability and consequences for LNG transportation incidents for both rail and truck delivery. Even though they are treated differently, the underlying event tree analysis approach is the same. When the probability of LNG tank car derailment is understood, better decisions can be made regarding the crashworthiness, placement, and operation of rail cars and the potential consequences from an LNG release due to a derailment. Further study for modeling the probability and consequences of transporting LNG by rail and truck will help decision-makers understand public risks and make informed decisions." "Risk Assessment of Surface Transport of Liquid Natural Gas", prepared for U.S. DOT Pipeline and Hazardous Materials Safety Administration, Office of Hazardous Materials Safety prepared by Cambridge Systematics, Inc. with MaineWay Services, LLC, Rutgers University, Transport Analytics, LLC. ScienceSmith LLC, March 20, 2019. P. ES-9.

²⁸ Delaware Riverkeeper Network, <https://www.delawariverkeeper.org/taxonomy/term/1174>

²⁹ <https://dnrec.alpha.delaware.gov/mission/>

businesses to hold them accountable for decades of deception about the role their products play in causing climate change, the harm that is causing in Delaware, and for the mounting costs of surviving those harms.”³⁰; and

NOW, THEREFORE, BE IT RESOLVED that:

1. The [Township/County/District] calls upon the members of the Delaware River Basin Commission to disapprove the Dock 2 project, Docket D-2017-009-2.
2. The [Township/County/District] calls upon the State of Delaware to act in furtherance of its policy to transition away from fossil fuels by taking all measures possible to prevent the transportation of LNG by ship, truck and/or by rail through Delaware and by conducting a public health and safety analysis, a quantitative risk assessment, and a comprehensive environmental review of the potential impacts to communities and the natural environment in Delaware.
3. An official copy of this resolution be filed with the Delaware River Basin Commission, 25 Cosey Road, P.O. Box 7360, West Trenton, NJ 08628-0360 and that copies are sent to the voting members of the DRBC at their respective locations: the Governors of Pennsylvania, New Jersey, New York, and Delaware and the U.S. Army Corps of Engineers.
4. An official copy of this resolution be filed with the Honorable John Carney, Office of the Governor, Tatnall Building, 150 Martin Luther King Jr Blvd South, Dover, DE, 19901.

³⁰ A Press Release from Delaware Attorney General Kathy Jennings on September 10, 2020 included these quotes: “For too long, there has been a concerted effort by some in the fossil fuel industry to mislead the public about the science behind climate change and its devastating effects,” said U.S. Senator Tom Carper, who serves as Ranking Member of the U.S. Senate Environment and Public Works Committee and “While some companies have since seen the error of their ways, and are now working in good faith to find climate solutions, others have poured millions, maybe billions of dollars into hiding the truth about climate change. The people of Delaware see the effects of climate change in Delaware every day. Families and businesses in our state are already experiencing the environmental and economic consequences of the worsening climate crisis. It is unfortunate that litigation is necessary to drag those remaining bad actors into the light, but my hope is that this litigation will hold those actors accountable.” “Delaware and our residents are suffering from sea level rise, increased temperatures, heavy precipitation and flooding due to climate change, and that is adversely impacting our public health, environment and economy,” said Secretary Garvin. “The science is clear that these climate impacts are directly attributable to the products produced by fossil fuel companies.” <https://news.delaware.gov/2020/09/10/ag-jennings-announces-suit-to-hold-exxon-american-petroleum-institute-29-others-accountable-for-climate-change-costs/>