Public Petition

Against the Project Called Gas Supply Structural Reinforcement in Baixada Santista region, popularly called the "Bomb Ship"

The Project, in which the companies LNG Regasification Terminal of São Paulo S/A (TRSP), Compass and Comgás (all of Grupo Cosan S.A.) are involved and which already has the installation license issued by Cetesb (state environment department), deals with the implementation of a system for receiving liquefied natural gas (LGN) from tankers ("*metaneiros"*) with a capacity of up to 175,000 cubic meters of LNG, coming from various parts of the world to unload in Santos, aiming to increase the supply of gas in the State of São Paulo - Brazil.

Arriving in Santos, the ship will dock at a pier to be installed in Largo do Caneú, located in the port's navigation channel, being transshipped to another ship, previously and permanently docked, where the gas will be vaporized and, by means of a pipeline, taken to the distribution center in Cubatão/SP (Image 01).

Image 01 - Vaporizer ship and tanker ship

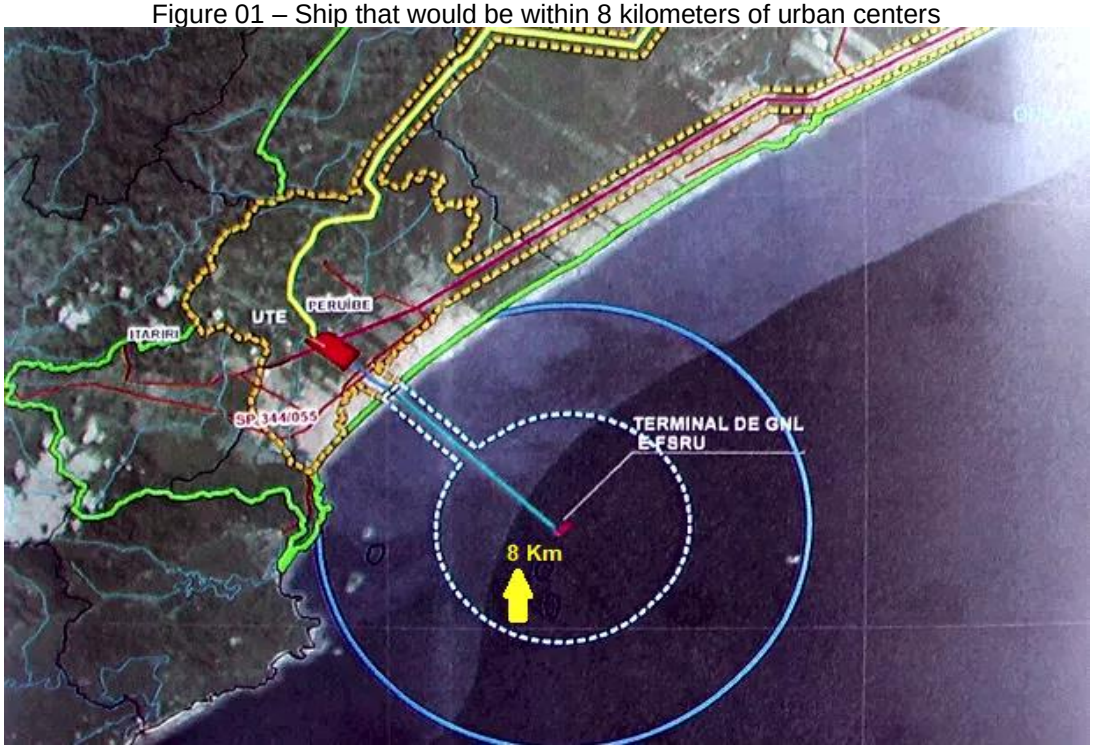
Source: https://staticshare.america.gov/uploads/2017/08/shutterstock_341612906_1.jpg

The pipeline of half a meter in diameter and 100 kilogram of pressure will extend for 8.5 km to the city of Cubatão, containing 13,575m3 and transporting 14 million m3 of methane per day, in gaseous form, passing through navigable channels that are periodically dredged, mangrove swamps, and close to urban communities.

In 2017, in a similar project that would be implemented in the city of Peruíbe, São Paulo State - Brazil, called Verde Atlântico Energia, under the responsibility of Gastrading Comercializadora de Energias S/A, the "bomb-ship" would be moored 8 kilometers from the coast, far from urban centers due to the risk of a possible explosion that could violently

hit the city (figure 01). Even so, CETESB did not grant the license, due to the project's environmental unfeasibility.

Figure 01 – Ship that would be within 8 kilometers of urban centers



Source:http://g1.globo.com/sp/santos-regiao/noticia/2017/02/peruibe-sp-pode-ter-termeletrica-para-abastecer-quase-2-mi-de-habitantes.html (Adapted).

Besides the high risks involved, the vaporization process will use water collected directly from the channel and will operate in open circuit, that is, when passing the heat exchangers this water will be cold discarded in the estuary itself, with the possibility of spreading contaminants by the natural wear of the metals or even in case of failures and leaks (Figure 02). This is neither technically nor environmentally acceptable, due to the deleterious effects to the marine fauna.

Figure 02 - Open circuit vaporizer

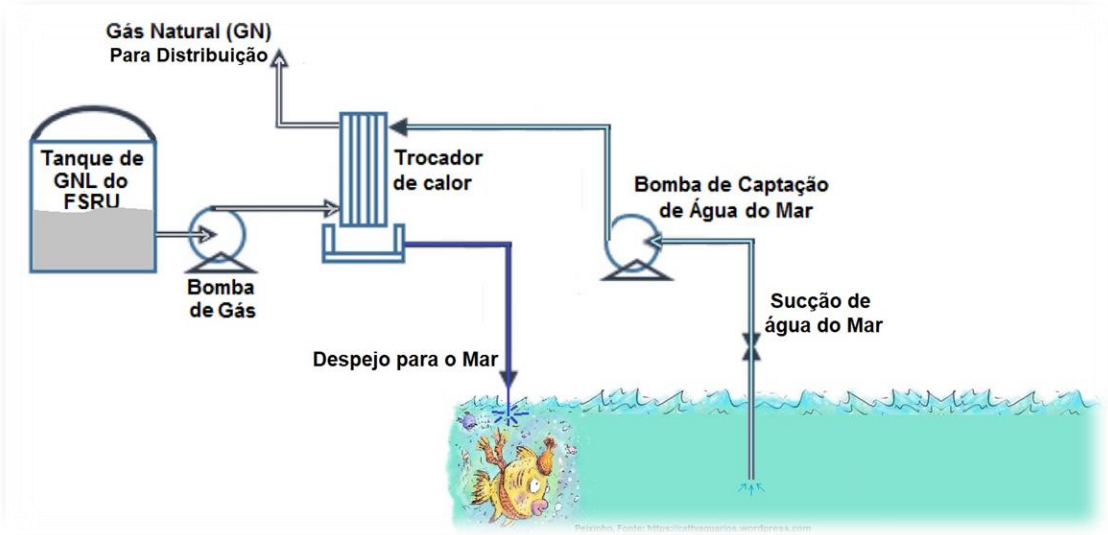
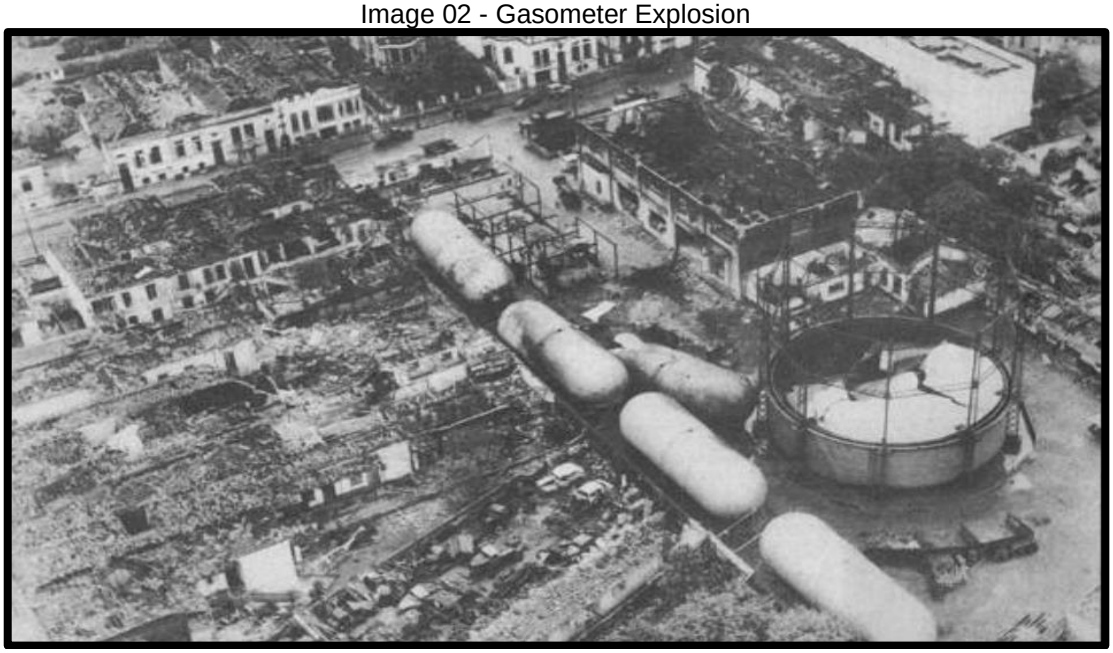


Image Source: COMGÁS (adapted)

Previous experiences in the city of Santos/SP are not good with the storage and distribution of large quantities of gas. In the not too distant past, a gasometer exploded in the district of Vila Nova, on the border with the district of Vila Mathias, which destroyed an entire block of houses causing panic throughout the city of Santos (Image 02).

With the explosion of one of the distribution center's reservoirs, the city's entire gas system became unusable, the pipeline was completely dilated and destroyed, for miles, in a few seconds. The explosion was reported worldwide (NOVO MILÊNIO, 2014).

Image 02 - Gasometer Explosion



Source: http://www.novomilenio.inf.br/santos/fotos083.htm

It was a tragedy: a reservoir with a few hundred cubic meters of natural gas was able to destroy a block of Vila Nova, raising 100 meters of flames, razing hundreds of houses and leaving hundreds injured. (A TRIBUNA, 1967).

Besides the gasometer, the port of Santos has been the scene of other scary accidents in recent years, such as the fire at the Coopersucar warehouse in 2014, the fire in the fuel tanks at the Ultracargo company in 2015, the fire in the container yard of the Localfrio company in 2016. Brazil also accumulates expanded accidents with explosions of spheres containing liquefied gas, as occurred at the Duque de Caxias Refinery in 1972. The damage that can be caused by accidents with natural gas tankers near major urban centers is even more serious, such as those presented in the documentary "Communities at Risk: Dangers of LNG," a documentary produced abroad: [https://www.youtube.com/watch?v=uBAgvXPw1aI].

It cannot be ignored that the strategy of the São Paulo state government and the country to increase energy production based on the burning of fossil fuels (methane) undermines the efforts of the Paris agreement, concluded in 2015, which aims to promote the sustainable development with low greenhouse gas (GHG) emissions. The burning of natural gas (methane [CH4]) causes a significant local and global

environmental impact: for each ton of natural gas burned, 4 tons of oxygen are removed from the atmosphere and 2.75 tons of GHG (CO2) are returned, in addition to 2.25 tons of contamined acid water.

Recently the Public Prosecution Service of the State of São Paulo filed a Public Civil Action, which was distributed to the 2nd Circuit Court of the Treasury with the number 1025528-84.2020.8.26. 0562, in which it requires TRSP - Terminal de Regaseificação de GNL de São Paulo S/A (connected to Comgás), the City Hall of Santos and CETESB - Companhia Ambiental do Estado de São Paulo, among other requests, the immediate suspension of the environmental licensing process, the prohibition to start the works or it stoppage, as well as the relocation of the ship's operations in maritime areas outside the Santos estuary.

Based on the environmental impact study (EIA) the Public Prosecutor's Office traced the area that will be severely affected in the event of an accident: up to 790 meters (blue line) in all directions there will be thermal radiation and at 1,153 meters (red line) there will be high pressure (Figure 04).

Figure 04 - Isolines risk areas

Source: ACP-MPSP

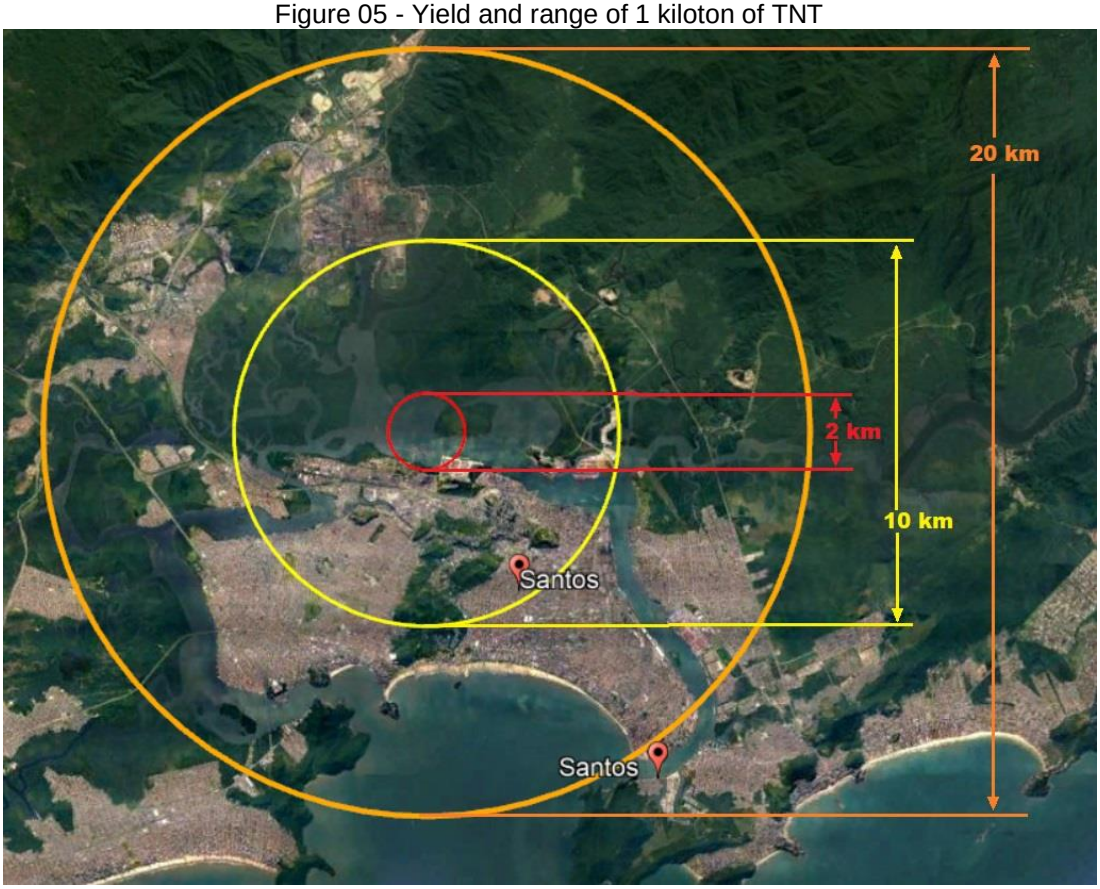
The evaluation presented in the EIA indicates a very high risk regarding the environmental, economic and social aspects for the entire santista society. However, the

damage is still undersized for a possible serious accident. In case of leakage caused by collisions, instrumental or operational failures in the coupling, vaporization or pumping actions, a large cloud of liquefied natural gas vapor can be released and ignited with the slightest spark or ignition source (e.g. light switch, lighter, etc.) and can cause a huge lethal fireball within a radius of several kilometers. Risks include death from cryogenic freezing, fire, or explosion; asphyxiation; thermal radiation burns; damage or destruction of property by fire, forest fires or sudden displacement of air.

Studies conducted in England by Sheffield University estimate that the yield from the explosion in Beirut (4 August 2020) was between 500-1100 tonnes of TNT. That explosion caused severe destruction within a mile of its epicenter. Within a radius of 5 km structures were heavily damaged and broken windows were reported in up to 10 km.

If this explosion occurred in the city of Santos/SP, at the intended location of the tanker "Bomb Ship", it would reach practically the entire city, as can be seen in Figure 05.

Figure 05 - Yield and range of 1 kiloton of TNT



Source: Google Earth (adapted)

It turns out that the TNT equivalent of the bomb ship that will be unloading daily in the port of Santos/SP, is much higher than the 2,750 tons of ammonium nitrate that exploded in Beirut. According to the North-American publication "Brittle Power", this ship has a TNT power equivalent to 55 Hiroshima bombs, that is, 825 kilotons. That means a power of destruction 825 times greater than the Beirut explosion. The direct and secondary effects

of an explosion of this magnitude include the total destruction of the city of Santos, with severe damage in the cities of Cubatão, São Vicente and Guarujá.

Given the seriousness of the threat posed by this project, the undersigned entities call the support of the national and international community, so that: a) the discharge and mooring of the vaporization system be moved away from urban areas, in open sea, to more than 10 km from the coast; b) the layout of the pipes be modified so that they do not cross rivers that are usually dredged and do not come close to human populations; and c) the project's vaporization system be modified, from open to closed system.

Here's the subscribers' gratitude:

Santos, SP, Brazil

Fórum Social Permanente da Baixada Santista
Fórum da Cidadania de Santos
Frente Ambientalista da Baixada Santista
Rede Brasileira de Justiça Ambiental (RBJA)
Associação de Combate aos Poluentes (ACPO)
Movimento Contra as Agressões a Natureza (MoCAN)
Movimento Popular Salve o Rio Itapanhaú
ECOPHALT – Cidadania, Sustentabilidade, Ecologia
Associação de Saúde Socioambiental (ASSA)
Associação Cultural José Marti
Santos Lixo Zero
Sindicato dos Bancários de Santos e Região (SEEB)
Instituto Sócio Ambiental e Cultural Vila dos Pescadores (ISAC)
Coletivo Verde América
Fórum Social da Natureza
Toxisphera Associação de Saúde Ambiental
AMAR Associação de Defesa do Meio Ambiente de Araucária
Instituto Terramar/CE
Associação Brasileira dos Expostos ao Amianto (ABREA)
Centro de Referência do Movimento da Cidadania pelas Águas Florestas e Montanhas Iguassu Iterei
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Justiça Global
CRIOLA
Campanha Nem um Poço a Mais
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Grupo de pesquisa e extensão Política, Economia, Mineração, Ambiente e Sociedade (PoEMAS)
Instituto Brasileiro de Proteção Ambiental (PROAM)