



Ammonia plant in Sinaloa

Background and risks of a fossil-fuel-based petrochemical project backed by German finance and engineering in Topolobampo, Sinaloa in Mexico.

Ammonia plant reaches 70% completion in Ohuira Bay, Sinaloa.

What is ammonia and what is it used for?

Ammonia is a highly toxic and explosive gas. Historically, it was first developed for wartime explosives. Today, its main use is the production of nitrogen fertilizers for industrial agriculture and monocultures, a model that depends on massive chemical inputs.

Ammonia production is extremely energy-intensive. Companies break apart fossil gas (mostly methane) and water, combining them with nitrogen through the Haber-Bosch process. Most fossil gas comes from fracking, a technique linked to water and air pollution, health impacts in nearby communities, and significant greenhouse gas emissions.

The entire process requires vast quantities of energy and water and generates substantial climate pollution.

What is happening in Topolobampo?

Gas y Petroquímica de Occidente (GPO), a subsidiary of the Swiss corporation Proman, is building a large ammonia plant in Ohuira Bay, Sinaloa, Mexico. The facility is designed to produce approximately 800,000 tons of ammonia per year, equivalent to around 2,200 tons per day.

The plant is being built inside Ohuira Bay, part of the Santa María-Topolobampo-Ohuira lagoon system, one of the most important wetland ecosystems in the Gulf of California. The area contains extensive mangroves, serves as habitat for migratory birds and endangered species, and supports fishing communities and Mayo-Yoreme Indigenous peoples whose livelihoods depend on the health of the bay.

Its construction has been enabled through finance provided by KfW IPEX-Bank, Germany's export and project finance institution, subsidiary of KfW which in turn is owned by the Federal Republic of Germany. **This directly links German public-backed finance to the development of a fossil-fuel-based petrochemical complex in an ecologically sensitive coastal area.** Additionally, another German component is the company thyssenkrupp Uhde that provides engineering and technological collaboration to the ammonia plant.

Why is the plant located there?

Ammonia production requires continuous access to large quantities of gas and seawater. The El Encino-Topolobampo pipeline connects the site directly to imported gas from the United States, ensuring a cheap and constant supply of gas obtained through fracking. The coastal location also allows the company to draw seawater for industrial cooling and discharge wastewater back into the bay, while port infrastructure facilitates exports.

What are the risks?

TO HUMAN HEALTH

Ammonia is extremely dangerous when released. Exposure can cause severe irritation, chemical burns, acute lung damage, respiratory failure, and death within minutes at high concentrations. GPO's own Environmental Risk Study states that a leak lasting only five minutes could place the entire bay in an "immediate danger to life or health" zone. **The resulting toxic cloud could extend up to 45 kilometers in diameter, potentially affecting more than 400,000 people.** The company's HAZOP process safety analysis also identifies a high probability of multiple potentially lethal leaks.

TO MARINE LIFE AND FISHERIES

If ammonia enters the water, it forms ammonium hydroxide, a compound that is extremely toxic to aquatic organisms. Even very small concentrations can kill fish and invertebrates. **Researchers note that a minimal amount of ammonia in a large body of water can be fatal to sensitive species.** Shrimp, which are central to the local economy and diet, are particularly vulnerable because ammonia damages their gills.

Local scientific estimates from CIIDIR-Sinaloa suggest **the project could reduce shrimp production in the bay by as much as 60 percent**, representing losses of hundreds of tons annually. Maritime experts have also warned that an accident involving ammonia cargo could contaminate vast areas of ocean.

What environmental impacts does the company acknowledge?

In its Environmental Impact Statement, GPO acknowledges that it will extract approximately 2,000 cubic meters of seawater per hour and discharge it back into the bay at higher temperatures and salinity. **Local water temperatures could rise by up to 3 degrees Celsius, which is enough to disrupt fragile ecosystems and cause die-offs of marine life.**

The plant will also burn fossil gas to operate continuously. This combustion generates particulate pollution and smog-forming emissions associated with respiratory and cardiovascular disease. Children and people who work outdoors, including fisherfolk who operate near the site every day, would face ongoing exposure to these pollutants.

What is the social and human rights context?

Mayo-Yoreme Indigenous communities and local fisherfolk have publicly opposed the project since 2014, stating that they were not consulted and did not give free, prior, and informed consent. **Members of the collective Aquí No and other defenders have reported threats, harassment, and physical aggression.** These concerns have been documented by human rights organizations and raised internationally by eleven United Nations Special Rapporteurs.

Why is this relevant for German audiences?

Because the project relies on financing and technical expertise connected to Germany, it is not solely a local development. The involvement of KfW IPEX-Bank and collaboration with thyssenkrupp Uhde means that German capital and engineering are playing a direct role in enabling a large fossil-fuel ammonia facility that carries significant environmental, climate and human rights risks. **This raises questions about policy coherence with Germany's climate commitments, biodiversity protection goals and human rights standards abroad.**

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