Almost singlehandedly responsible for the rise of NIMBYism in China, the country’s controversial paraxylene (PX) manufacturing industry strives to meet a need for this unique petroleum product that the country claims cannot be met elsewhere. However, a string of accidents, ongoing opposition from environmentalists, and stubborn concerns over public health continue to impede the expansion of a designated strategic industry.
On the afternoon of April 7, 2015 as members from environmental NGO Green Home of Fujian (GHF) arrived on the Gulei peninsula, the ruined husk of a local chemical plant, the scene of a massive explosion on the previous day, was still aflame. Although the majority of local residents had already been evacuated to a designated safe zone 20 kilometers away, some still remained in their homes, unwilling to leave despite the danger.

“The air was heavy with the smell of rotten eggs,” GHF’s Director-general Hong Zhi told NewsChina. “We wore masks, but still felt dizzy and nauseous.” Hong was among a group of representatives of this local advocacy group who visited the scene of the accident. To her surprise, locals informed her that they’d gotten used to the stench released from the plant, which, since beginning operations in 2013, had produced the chemical paraxylene (PX), a flammable chemical used in polyester and plastics manufacturing.

Explosion

According to local media reports, an oil depot at the Taiwanese-owned Dragon Aromatics (DA) chemical plant, located in Zhangzhou, Fujian Province, exploded at 7PM on April 6. Three storage tanks with total capacity of 12,000 cubic meters caught fire after the explosion.

Witnesses told local media that tremors from the explosion were felt up to 50 kilometers away, and that huge flames and a giant plume of smoke shot into the night sky. Homes and businesses nearest the plant had their windows blown out, and some villagers had to escape from the blaze by boat.

Even after firefighters extinguished the fires that engulfed three of the tanks, one continually reignited, while the facility’s fourth tank also burst into flame days after the explosion. It was not until the morning of April 9 that the fire was completely extinguished.

Zhangzhou’s deputy mayor Zhang Yiteng told reporters that one person was injured at the blast site and five more hurt by broken glass. Although some local netizens used microblog service Weibo to express doubts about official casualty figures, State media reported that a total of 14 people were hospitalized, with no fatalities. As the fire continued to rage, however, government rescue workers had evacuated some 30,000 local residents by April 9.

Wang Wensheng, head of the Fujian provincial fire service told NewsChina that 322 fire engines and 1,417 firefighters were deployed to combat the blaze. “As far as I know, this might possibly be the worst chemical factory explosion in Fujian’s, or even China’s, history,” Wang told NewsChina on April 12, adding that the seriousness of the accident was due to the placement density of oil storage tanks, the use of diversified oil products, the large scale of the fire and strong winds. Wang also stated that the materials within the tanks underwent changes of state caused by the extreme temperatures, which further fed the blaze.

“In a worst-case scenario, the chain effects of the explosion could destroy not only the factory but the whole peninsula,” he said.

Local authorities claimed that there were no leaks from the plant’s three chemical tanks and no signs of environmental contamination following the blast. However, local media reported that a fish farmer surnamed Huang from Daizai village on the Gulei peninsula found that large number of his farmed seahorses had died during the night of the explosion. In Dongshan, some five kilometers away from Gulei across a narrow strait and downwind from the PX plant, locals reported that rainwater had turned black.

Both State media and the Zhangzhou gov-
ernment have been at pains to play down the accident. Zhang, a 31-year-old Zhangzhou city resident, told NewsChina in mid-April that local media outlets including the Minnan Daily ran only a smattering of reports on the disaster.

Accident

The Zhangzhou explosion was the second to hit the Gulei PX plant, which broke ground in 2008, in 20 months. On July 30, 2013, local media reported a minor explosion at the factory when a pipeline filled with hydrogen cracked, causing the gas to ignite. At the time there were no reported causalities or toxic leaks.

As in 2013, the most recent explosion at the plant was described as a production safety accident by official inspectors. One DA engineer told the Beijing News that the cause of the fire was a crack in a boiler pipeline which caused an oil leak that later ignited into a blaze that quickly spread to two nearby runoff tanks. The engineer, speaking anonymously, added that oil pipelines gradually corrode over time if not properly maintained, increasing the possibility of an explosion.

The attribution of the explosion to negligence infuriated local residents and led to a public outcry. China’s State Council quickly stepped in to express concern and urge the local authorities to launch an immediate investigation into the cause of the accident, and chastise those responsible. According to Yang Dongliang, director of the State Administration of Work Safety, the Dragon Aromatics plant explosion was a “typical case” of unqualified project approval, insufficient investment in safety controls, and a lack of safety supervision. “The [DA] incident should teach us a serious lesson and will surely have repercussions,” Yang commented during a conference held in Beijing on April 14.

Cao Xianghong, academician with the Chinese Academy of Sciences, told ScienceNet.cn that industrial accidents are usually caused either by shoddy hardware or human error. Jiang Shicheng from the Chinese Academy of Engineering shared Cao’s opinion, adding that PX was a mid-level oil processor, and, with sound safety controls and strict management, should have been immune to such accidents, leading him to conclude that “there might be a problem with its safety management.”

Wei Fei, professor of chemical engineering at Tsinghua University, told Caixin Weekly that, for a grand project worth tens of billions of dollars like the DA plant, architects and engineers should have made contingency plans for a variety of emergency scenarios. “Why is a potential source of ignition located close to an area with no measures designed to prevent oil spills?” Wei asked, ultimately concluding that lightning, static discharge or even human activity could have produced the fatal spark. “Big accidents like this one are the result of a chain reaction,” Wei continued. “Generally speaking, if regulations are followed, there should not be any safety issues.”

At press time, however, the Zhangzhou government, the city’s Administration of Work Safety, the local Environmental Protection Bureau and the Gulei Management Committee have all refused to respond to NewsChina’s enquiries about the disaster.

Propaganda

Initial investment in the DA project amounted to 13.78 billion yuan (US$2.24bn). The plant was designed to produce 800,000 tons of PX annually, but at the time of the disaster had already upped annual output to 1.6 million tons. Of major interest to the local authorities was the potential impact of this enterprise on local GDP, to
which the plant was predicted to contribute some 80 billion yuan (US$12.9bn) in each year of operations.

The plant was initially slated to be built in the coastal resort city of Xiamen, also in Fujian Province. However, environmental activists used text messages to disseminate information about the potential impact of a PX chemical plant on public health in this city of several million residents, provoking vehement and coordinated opposition. In mid-2007, tens of thousands of protesters took to Xiamen’s streets with banners calling for a halt to the project. Zhao Yufen, a professor at Xiamen University, launched a petition to stop the project that was ultimately presented to the Chinese People’s Political Consultative Conference (CPPCC), top advisory body to China’s legislature.

The campaign made headlines nationwide, and under mounting pressure from both the Chinese public and the international media, this rare example of Chinese NIMBYism forced local authorities to relocate the project. While the case was hailed as a rare victory for public protest, the plant was ultimately built in the nearby town of Zhangzhou.

Unlike their counterparts in Xiamen, the Zhangzhou government, eager to prioritize urban development, only made a low-profile introduction of the project to local residents. Local media followed the government’s lead, only reporting the DA plant’s construction as a “key petrochemical project,” and avoiding any mention of PX.

The government diverted huge resources to railroading public opinion. Local villagers on the Gulei Peninsula and fish farmers in neighboring Dongshan engaged in public protests, but had their accompanying petitions ignored. Various local sources confirmed to *NewsChina* that government employees were required to refrain from participating in any activities that directly opposed or even hindered construction. If spotted at a protest, their employers warned, they would lose their jobs.

Furthermore, the Zhangzhou government made no effort to solicit public opinion regarding construction of the plant. Public engagement largely consisted of government assurances via official media that the PX plant was being constructed according to the highest environmental standards and would, according to one press release, “definitely never” experience an accident. Bombarded with propaganda, and with dissenting voices effectively muzzled, most local residents began to believe the government’s line.

The construction of PX plants has been highly controversial in China due to questions surrounding both safety and environmental impact. However, national authorities claim that high domestic demand for the chemical necessitates the expansion of the industry. According to government statistics, domestic PX production in China meets less than 50 percent of total demand, and while public confidence continues to wane, new projects are moving through the approval process.

“Theoretically speaking, the latest explosion won’t have a long-term impact on the domestic PX industry, but could possibly create obstacles for its near-term development,” Professor Lin Boqiang, director of the China Center for Energy Economic Research at Xiamen University, told *NewsChina*. “The general public will use this recent accident as evidence to oppose the further development [of the PX industry].”

**Destructive**

In May 2008, the investment agreement contract between the Zhangzhou government and Dragon Aromatics was formally signed. After one year spent on an environmental assessment and securing land resource, construction began in May 2009, and the plant began trial operations the fol-
Following March.

The project led to 30,000 local villagers in Gulei being relocated to a newly built settlement named Xingang (New Harbor), 15 kilometers away from their former homes. Although each family who willingly relocated could expect compensation of around 1 million yuan (US$16,140), the bulk of this money was spent buying their new homes in Xingang. Most had to abandon their livelihoods along with their homes, and struggled to find work in their new communities.

Those who chose not to relocate experienced a dramatic change in their quality of life, and learned what it means to live in the backyard of a chemical plant. Other than the foul smells emanating from its ventilation system, villagers alleged that the plant’s opening coincided with a rise in mortality among their farmed abalone, a major source of local income. Most blamed runoff from the plant.

Worse still, these hangers-on face eviction from the peninsula’s surviving eight villages, all of which are slated for evacuation by October 2015, when the local government has determined it will convert the entire area into a vast chemical processing zone.

For over three hundred years, people on the narrow Gulei Peninsula have made a living through agriculture, fishing and fish farming. Not wanting to be left behind by China’s coastal industrial boom, the Zhangzhou government began actively seeking investment from major projects in 2002. Prior to DA’s arrival, the largest local industrial project only secured investment of 360 million yuan (US$58m). Despite the recent disaster, which its own spokespeople assured locals was impossible, there are no signs the government will scrap its plan to turn the entire peninsula into a vast chemical processing zone.

By April 10, the villagers evacuated from Gulei after the explosion had mostly returned home, eager to return to their crops and to feed their farmed abalone. However, how long they can sustain their old livelihoods remains unknown.

“AFTER the explosion, we dare not eat any local seafood, for fear of marine pollution,” Zhang, the Zhangzhou city resident, told NewsChina in a recent telephone interview. “The seafood market has suffered, and everyone is complaining, hoping the PX plant will be relocated, but no one dares to speak up.”

**Major Events for Zhangzhou PX**

March 2007, 105 CPPCC members raised petition to the central government, opposing building the PX project in Xiamen.

June 1, 2007, over 5,000 Xiamen residents demonstrated against the PX project.

December 13-14, 2007, a symposium was held by the Xiamen government addressing the PX project. Most city residents taking part in the symposium spoke against the project.

The Ministry of Environmental Protection approved the Zhangzhou PX project in principle, with investment increased from 10.8bn to 13.78bn yuan (US$1.74bn to 2.2bn).

May 8, 2009, the PX project started construction in Zhangzhou, and scheduled to be in operation by April 2012.

In 2012, due to fluctuation in the international market price for raw materials, Zhangzhou PX presented a new Environmental Impact Assessment Report (EIAR) to the MOEP for approval.

January 25, 2013, the MOEP called a halt to the Zhangzhou PX project and a penalty of 200,000 yuan (US$32,280) for launching construction without approval.

February 2013, the new Zhangzhou PX project EIAR was approved by MOEP.

June 2013, trial operations begin.

July 30, 2013, minor hydrogen explosion of caused by cracked pipeline.

April 6, 2015, oil depot explodes causing major conflagration.