
To Burn or Not to Burn: The San Ramon Coal-Fired Power Plant

One Monday morning, Zamboanga City Hall was bustling with the usual queries. Mayor Maria Isabelle G. Climaco-Salazar or “Ma’am Beng” was busy evaluating the merits of a power generation program proposal. But at 10 a.m. the power went out. Some people remained quiet but others sighed in exasperation.

The seemingly unpredictable blackout lasted three hours. Residents in some parts of the city had no option but to wait for the power to come back on. Although there were emergency lights at City Hall, all work activity stopped.

Zamboanga City residents were outraged by the frequency of these power outages. Classes were disrupted, small- and medium-sized enterprises were severely impacted, and homeowners’ electric deep well water supply was affected. Residents felt robbed of the comforts of living. Ma’am Beng realized the city was facing an energy crisis. She and the *Sangguniang Panlungsod*ⁱ had provided some strategies to address the power outages. These included the implementation of an interruptible load programⁱⁱ in

i The *Sangguniang Panlungsod* refers to the local legislative branch.

ii The interruptible load program was established by the Philippines Department of Energy and Energy Regulatory Commission for periods of low energy supply. In this program, companies which opt to use their generators to supply the city with energy are compensated.

partnership with local business and purchasing new generator sets. The city was also considering new sources of energy including a coal-fired power plant and solar power.

The coal-fired power plant would be built in the Village of Talisayan, San Ramon, Zamboanga City. The company that would build the plant — the San Ramon Coal-Fired Power Plant, Inc. of the Alcantara Group of Companies — indicated it would generate 100 megawatts. There was also a proposal to build a solar power facility that would provide an additional 10 megawatts.

Although the coal-fired power plant seemed to be a good solution to the city's energy problems, the Village of Talisayan, village officials, and an environmentalist group opposed the plan due to environmental and health concerns.

Ma'am Beng had veto power over the construction of the facility. She had to weigh her options carefully and determine if building the plant was the best solution for the city.

Zamboanga City

Geographic Location and District Composition

The City of Zamboanga is situated in the southernmost part of Zamboanga Peninsula on Mindanao Island, Philippines. Mindanao is the second largest island in the southern part of the country. To the north of Zamboanga City are Zamboanga del Norte and Zamboanga del Sur, on the west is the Sulu Sea, on the east is the Moro Gulf, and on the south are the Basilan Strait and Celebes Sea.¹ Zamboanga City had a total land area of 1,483 square kilometers² and had a population of 807,129.³ **Exhibit 1** shows a map of Zamboanga City.

Education

There were six major universities and colleges in Zamboanga City (one state university, two state colleges, two private universities, and one private college). The formal education system in Zamboanga City is patterned after the American system.

Industries

Sardines and seaweed were the top two industries in Zamboanga City. Nine of the country's 12 sardine companies were based in Zamboanga City; 70% of Zamboanga City's business activity was sardine fishing and processing. The city was dubbed the "Sardine Capital of the Philippines."⁴ In addition, Zamboanga City played a major part in the production of the world's carrageenanⁱⁱⁱ supply.⁵ More than 70% of global seaweed production was based in Mindanao and most dried seaweed was produced in Zamboanga City.⁶

Government

Zamboanga City's mayor was responsible for enforcing laws and ordinances and implementing policies and programs, while the vice mayor served as the presiding chair of the *Sangguniang Panlungsod*. The *Sangguniang Panlungsod* was composed of *barangay* (village) chairpersons with legislative power.

The city was comprised of 98 *barangays*. These *barangays* formed two districts, each having a district representative in the House of Congress. District 1 had 37 *barangays* and was located on the west coast while District 2 had 61 *barangays* and was located on the east coast.⁷

iii Carageenans are polysaccharides or carbohydrates extracted from certain algae. They are mainly used as food additives due to their gelling and emulsifying properties.

Exhibit 1

Map of Zamboanga City, Philippines



Source: Images were edited from Google Maps at <https://www.google.com.ph/maps/place/Zamboanga,+7000/@7.1642819,121.024712,8z/data=!4m5!3m4!1s0x32506a09d96fc175:0x35526ebbce01e7a2!8m2!3d6.9214424!4d122.0790267> and Dreamstime at <https://www.dreamstime.com/stock-photography-philippines-map-image4965872>.

Ma'am Beng

Mayor Isabelle G. Climaco-Salazar or Ma'am Beng started her political career as a city councilor in 1998 and later became a city representative and vice mayor. In 2013, she became the second female mayor of the city. Ma'am Beng had filed and supported several resolutions and house bills that advocated for women, family, youth, children, education, and social welfare.

Dark Days

The Philippines experienced an energy crisis in the late 1990s, and again in 2013. In particular, Zamboanga City had experienced frequent power outages that lasted from a few minutes to several hours. Some of the city's businesses opted to purchase electric generators as a back-up source of energy.

Electricity Generation in the Philippines

The National Power Corporation (NPC) had a monopoly over electricity generation until Executive Order No. 215 was issued on July 10, 1987.⁸ EO No. 215 allowed private investors to generate electricity. The electricity generated by these investors was purchased by customers and the NPC. The NPC was in charge of electricity transmission, while investor-owned electric utilities oversaw electricity distribution.

In 2014, 77,260,997 megawatts was generated by three island grids in the Philippines (**Exhibit 2**).⁹ About 73% of the power generated came from Luzon, 14% from the Visayas, and 12% from Mindanao. The main power generation plants were coal (43%), natural gas (24%), geothermal (13%), hydro (12%), and oil-based diesel (6%). Other plants included oil-based combined cycle, oil-based gas turbine, oil, wind, solar, and biomass.

Exhibit 2

Gross Power Generation in 2014

Philippines By Grid	Power in MWh	% Share
Luzon	56,766,481	73.47%
Visayas	11,013,924	14.26%
Mindanao	9,480,592	12.27%
Total	77,260,997	100.00%
Philippines by Plant Type		
Coal	33,053,518	42.78%
Oil-based	5,707,748	7.39%
Combined Cycle	514,980	0.67%
Diesel	4,730,219	6.12%
Oil	462,550	0.60%
Natural Gas	18,690,077	24.19%
Geothermal	10,308,113	13.34%
Hydro	9,137,273	11.83%
Wind	152,052	0.20%
Solar	16,517	0.02%
Biomass	195,699	0.25%
Total Generation	77,260,997	100.00%
Mindanao		
Coal	1,257,542	13.26%
Oil-based	2,599,495	27.42%
Geothermal	863,542	9.11%
Hydro	4,744,638	50.05%
Solar	1,477	0.02%
Biomass	13,897	0.15%
Total Generation	9,480,592	100.00%

Source: Department of Energy. "Power Situation Report 2014." Accessed 18 May 2016. <<https://www.doe.gov.ph/electric-power>>.

According to a report by the Economic Intelligence Unit (EIU), the Philippine's electricity consumption would expand by 5.7% a year from 2015 to 2020. However, the EIU also predicted that during this time, electricity generation would lag by 5.3%.¹⁰

In Zamboanga City alone, a total of 80 megawatts was needed, yet only 60 megawatts was being supplied.¹¹

Environmental and Health Effects of a Coal-Fired Power Plant

Coal-fired power plants emit pollutants in the atmosphere that cause respiratory problems including asthma, bronchitis, allergies, heart attacks, and even death for individuals with heart or lung disease. Particulate matter is the most damaging, but the plants also release toxic elements like arsenic, mercury, fluorine, cadmium, lead, selenium, and zinc, which accumulate in fish and endanger the population. For

example, ingestion of mercury-contaminated fish by pregnant women can affect the brain development of unborn children.¹²

Solutions to the Energy Crisis

As the blackout continued that Monday morning, Ma'am Beng contemplated how to provide a fast solution to the power outages. Building the coal-fired power plant seemed to be the only viable option. Nevertheless, she had to take into account the feelings of the residents of the community where the plant would be built, the village's officials, and the environmentalist group opposing the move. She had a tough decision to make, but she would have to make it soon. She took out a pen and paper and began to write the pros and cons of each option.

Endnotes

- 1 Zamboanga – Asia’s Latin city. “Location and Physical Profile.” Accessed 3 April 2016. <http://www.zamboangacity.gov.ph/index.php?option=com_content&view=article&id=3916&Itemid=70>.
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- 4 Dakudao, Michael. “Zamboanga’s Leading Tuna and Sardines Processing Plant.” *Mindanao Times*. 1 Sep. 2015. Accessed 18 May 2016. <<http://mindanaotimes.net/cultural-potpourri-permex-zamboangas-leading-tuna-and-sardines-processing-plant/>>.
- 5 FiskerForum. “As Mindanao Seaweed Exports Surge, Industry Focuses on Sustainability.” 15 Dec. 2008. Accessed 18 May 2016. <<http://www.fiskerforum.dk/en/news/b/As-Mindanao-seaweed-exports-surge-industry-focuses-on-sustainability>>.
- 6 van Duijn, Arie Pieter, et al., “The Philippine Seafood Sector: A Value Chain Analysis.” CBI Ministry of Foreign Affairs of the Netherlands. Mar. 2012.
- 7 Zamboanga – Asia’s Latin city. “Political Boundaries by District.” Accessed 20 May 2016. <http://www.zamboangacity.gov.ph/index.php?option=com_content&view=article&id=3842&Itemid=327>.
- 8 Department of Energy. “Republic of the Philippines. Power Restructuring.” Accessed on 18 May 2016. <<https://www.doe.gov.ph/doe-help-desk?page=7>>.
- 9 Department of Energy. “Power Situation Report 2014.” Accessed 18 May 2016. <<https://www.doe.gov.ph/electric-power>>.
- 10 Torres, Ted. P. “Power Demand to Outpace Supply in 5 years — EIU.” *Philippine Star*. 22 May 2015. Accessed 16 Jun. 2016. <<http://www.philstar.com/business/2015/05/22/1457277/power-demand-outpace-supply-5-years-eiu>>.
- 11 *Mindanao Examiner*. “Power Crises Cripple Businesses in Zamboanga City.” 14 Apr. 2015. Accessed 16 Jun. 2016. <<http://mindanaoexaminer.com/power-crises-cripple-businesses-in-zamboanga-city/>>.
- 12 Casteleden, William et al. “The Mining and Burning of Coal: Effects on Health and the Environment.” *Med J Aust* 195(6): 333-335. Accessed 19 Aug. 2016. <http://www.fof.org.au/uploads/media/MJA_Coal.pdf>.