# Maria Cristina Falls (Majestic Waterfalls)

Maria Cristina Falls in Iligan City is known as the city of “Majestic Waterfalls”. The Maria Cristina Waterfalls is the second highest falls in the Philippines. This waterfall coming from Agus River is known as the “Twin Falls”. This falls is popularly known for its stunning beauty; this flabbergasting waterfall reaches to a height of 98 meters and has a 320 meter water drop that makes its sight to remember.

Maria Cristina Falls is the main outlet of the country’s largest freshwater lake - the Great Lake Lanao. It is also the primary source of the city’s electric power so-called as the “Mother of Industry” and the “Fountainhead of Progress”. Industries and practically the entire region of Mindanao is enjoying electric power provided by the falls.

This falls powers the Agus VI Hydroelectric Plant, commissioned last May 31, 1953 operated by the National Power Corporation (NAPOCOR). The place has a viewing deck and is a must-visit when visiting Iligan City.

Indeed, Maria Cristina Falls is the highlight of many surprises when visiting the city. This is more than a park; it`s nature is the best! Every surrounding is cared by every people come and visit. They are volunteers helping, cleaning in the falls. The people maintain the beauty of the place by just cleaning and caring the place.

The Mindanao Generation Group is home to the Agus and Pulangi Power Plant Complexes. With a combined installed capacity of 982 mw, Agus and Pulangi Power Plant Complexes supply Mindanao electric power consumers more than 50% of its total electricity requirements.

In line with its power generation mandate, Mindanao Generation manages two (2) dams—the Pulangi Dam in Maramag, Bukidnon and the Agus IV HEP Dam at Balo-i, Lanao del Norte. It has implemented various strategies to ensure dam safety and flood control and mitigation.

Mindanao Generation is also engaged in watershed management and rehabilitation. It spearheaded in the protection and management of the Lake Lanao and Pulangi Watershed areas—two watershed areas vital to the sustainability of NPC's operations. In the year 2012, our watershed group worked closely with the Watershed Management Department in the Head Office in ensuring that NPC hits its target of reforesting 170 hectares.

## The Agus Power Plant Complex

The Agus Power Plant Complex consists of six cascading power plants snaking from the mouth of Lake Lanao in Marawi City down to the majestic Maria Cristina Falls in Iligan City. Strategically located along the Agus River, these hydroelectric power plants help fuel the economy of Mindanao by providing steady supply of cheap and reliable electricity. These hydroelectric power plants are: Agus I, Agus II, Agus IV, Agus V, Agus VI and Agus VII.

### Agus I HEP

Agus 1 HEP was commissioned in 1991. With a rated capacity of 80 MW, Agus 1 is located in Marawi City, right in the mouth of Lake Lanao. With an elevation of 702 meters above sea level, it is the upstream-most among the seven hydroelectric plants envisioned along the Agus River basin.

### Agus II HEP

Agus 2 HEP has a rated capacity of 180 MW. Commissioned in 1979, Agus 2 HEP has been a steady provider of cheap electricity. It is geographically located in the Municipality of Saguiaran, Lanao del Sur covering an area of 230 hectares and sits atop an elevation of 636 meters above sea level.

### Agus IV HEP

Agus 4 HEP is the first underground hydroelectric plant in Mindanao and the third in the Philippines. Located in Nangka, Balo-i, Lanao del Norte, the power plant is host to three generating units with a combined capacity of 158.1 MW.

As the first underground power plant in Mindanao, its power station is located about 120 meters below the ground surface accessible through an elevator or via a descending access tunnel. Construction of the power plant started in 1979 using the New Austrian Tunneling Method of rock support utilizing the combination of concrete and a systematic rock anchoring. This method was used for the first time in the Philippines.

Unit 1 was commercially operated on March 16, 1985; Unit 2 on March 26, 1985 and Unit 3 were commercially operated since April 16, 1985.

Agus IV HEP is also host to a power dam with an approximate area of 270 hectares.

### Agus V HEP

Agus V HEP is 2 unit run-of-the river hydroelectric power plant with a combined capacity of 55 MW. Geographically located in Iligan City, it is strategically positioned between the tail water of Agus IV HEP and the headwater of Agus VI HEP. It also enjoys the luxury of being near the two famous waterfalls of Iligan City - Tinago Falls and the Maria Cristina Falls.

The plant was constructed on October 17, 1980. On February 9, 1985, commercial operation for Unit 1 commenced while Unit 2 was commissioned on March 8, 1985.

## Agus VI HEP

The Agus VI HEP is a 200 MW hydroelectric power plant. It is the oldest among the six (6) cascading power plants. With five (5) generating units, Agus VI has proven to be a steady source of electric power in Mindanao.

Construction of the project was authorized by the late President Elpidio Quirino. Units 1 (25 MW) and 2 (25 MW) of the power plant were commissioned in the early 1950s. After more than fifty years of operation, these two (2) generating units are now due for complete rehabilitation and up-rating.

The Agus VI HEP Plant was originally known as the Maria Cristina Falls Hydroelectric Plant, named after the famous scenic waterfalls just 100 meters in the background. The majestic and imposing waterfalls cascades from around 320 feet down to a sheer cliff and is a sight to behold.

In order to showcase Mindanao Generation's efforts to help protect and conserve nature, it had developed a Nature's Park which now hosts various tourists attractions and outdoor activities, e.g. bird's sanctuary, crocodile park, butterfly garden, mini zoo, zip line. Central to the Nature's Park is its main attraction—the Maria Cristina Falls. To date, tourists from around the country continue to flock to NPC's Nature's Park located inside the Agus VI and VII power plant complex.

## Agus VII

Located in Fuentes, Maria Cristina, Iligan City, the Agus VII HEP is the last of the existing cascading Agus Power Plant Complex. With an installed capacity of 55 MW, Agus VII was constructed in 1979.

## The Pulangi IV HEP

The Pulangi IV HEP is a 255-MW hydroelectric power plant located in Maramag, Bukidnon. With three generating units, the Pulangi IV HEP is a run-off the river type of power plant using

the most advanced hydroelectric power technology. It was commercially operated on December 21, 1985 and since then; it had generated more than 24,742,534 MWH.

In the first quarter of 2012, Pulangi IV HEP implemented its first dewatering activity aimed at addressing the large scouring underneath the concrete bed of the headrace channel approaching the surge pool area. The repair activity was successfully implemented within the target dates, resulting to more reliability in its operations.

NPC's operations of its hydroelectric power plants in resulted to an energy generation of 3, 569.6 GW hours as of September 30, 2012, resulting to a net income of more than 8 billion pesos. Needless to say, the income generated out of the operations of these hydroelectric power plants helped NPC and the government in paying for its obligations incurred in the conduct of missionary electrification and those arising from IPP contracts.

### Agus VI Hydroelectric Plant

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| Type | Cylindrical Steel, Partly Exposed |
| No. of Units | 2 |
| Inclination | 40° |
| Upper Head | 2.44 m |
| Lower Head | 2.28 m |
| Overall Length | 205.56 m |
| Upstream End | 1.0 in. |
| Downstream End | 0.5 in. |

Of the six (6) hydro sites constructed along the Agus River, the Agus VI Hydroelectric Plant was the first to be developed and completed because the site was the most feasible, the simplest and most economical to construct and the nearest to expected power consumers. Construction of the project was authorized by President Elpidio Quirino in 1950.

The Agus VI HE Plant, originally known as the Maria Cristina Falls Hydroelectric Plant was named after the famous scenic waterfalls just 100 meters in the background. The waterfalls cascades around 320 feet down to a sheer cliff and is only 8.5 kilometers southwest of Iligan City.

The source of water used for power generation is Lake Lanao located in the heart of Lanao Del Sur. The Agus River, which is the only outlet of Lake Lanao, flows due north for about 36.5 km before discharging into the Iligan Bay. At a point about 30 km from the lake's outlet, the river divides into two – the main Agus River and the Linamon River. Thus, as the water flows down

into the bay, NPC harnesses these natural resources to generate power for the service of man and to propel the industries in building our country's economy.

### Agus VII Hydroelectric Plant

Downstream of the existing Agus VI Hydroelectric Plant is Agus VII Hydroelectric Plant, constructed near the mouth of Agus River located at Fuentes, Maria Cristina, Iligan City.

The plant is the last of the downstream cascading hydroelectric plants built by the National Power Corporation in the Agus River from Marawi City to Iligan City.

On January 16, 1979, the construction of this project was started. The civil works were awarded and constructed by CDCP, which include the construction of the main powerhouse, dam structures, and diversion tunnel. Electro-mechanical erection works were performed by the National Power Corporation personnel under the supervision of Italian and Japanese consultants. The main equipment was supplied by Gruppo Industrie Elettro (GIE), Italy and the various control equipment by Fuji Electric Co. Ltd., Japan. The construction cost of the plant was 624.22 million pesos.

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