

## North korea electricity generation

In the previous installment in this series on electrical power generation in North Korea, we looked at how the country's shifting hydropower policy had, at the end of the Kim Jong Il era, moved away from mega dams to smaller stations installed as a series of cascades on rivers. In this article, we look at a remnant of the old policy and the current focus on smaller, local hydropower generation.

The local hydropower policy has roots in the 1960s when, according to North Korean media, Kim Jong Il instructed that small-scale hydropower stations be built to serve local communities. Kim dictated the policy during a visit to Jagang (Chagang) Province, and the region has continually been held up since then as an example for the country to follow. Today, the construction of smaller-scale hydropower stations is the main focus of North Korea's electric generation sector, and numerous projects are taking place across the country. Based on state media reporting, the power being generated is largely used in the region around each power station, helping to even out national power differences.

This push for local production has several potential advantages. It moves some of the burdens of electricity infrastructure development from the central government to the regions; in many cases, the local community reportedly even funds the new power stations. It also minimizes loss of electricity through the country's aging power transmission network and makes better use of smaller rivers that would be unsuitable for large-scale hydropower generation.

At the same time, there are some disadvantages to this kind of arrangement, such as the inability of power stations in one region to send energy across the country to other regions. However, as the whole of the country is power-starved, there is little surplus power to go around anyway.

### Orangchon Power Station No. 3

While North Korea began moving away from large-scale hydropower projects with massive dams around a decade ago, one such project had been under construction for so long, it only opened in August 2022. The Orangchon Power Station No. 3 was first approved by Kim Il Sung in June 1981, and the project outlived him and Kim Jong Il.

The power station is one of five that make up the Orangchon Cascade in North Hamgyong Province in northeastern North Korea. Water is initially fed about seven kilometers from a lake to the new station. It exits into an artificial lake that serves a subsequent power station and from that one into a roughly 20-kilometer-long underground pipe that serves three additional stations.

Collectively, the five power plants can generate 134 megawatts when at full capacity, which represents about 1.4 percent of North Korea's entire national electricity supply, according to estimates from the Nautilus

Institute.

In a report from August 6, 2022, the Korean Central News Agency reported that officials almost gave up on Power Stations No. 3 and No. 4 ever being completed. It noted stations No. 1, No. 2 and No. 5 were completed but then, "the overall construction of the station was almost suspended due to various difficulties and obstacles."

Orangchon Power Station No. 3 was eventually declared complete and was inaugurated on August 4, 2022. Kim was notably absent from the opening ceremony for the four-decade-long project.

## Local Hydropower: Jagang Province Power Projects

Kim Jong Il's instruction to develop small-scale hydropower in the 1960s was announced on a trip to Jangang Province, and the region has continually been cited in state media since then. The province, which borders China, is 98 percent mountainous, making it a good place for hydropower projects thanks to the numerous rivers that flow down through the terrain.

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