Pyongyang electricity distribution

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This report makes several contributions. First, it uses satellite imagery to evaluate two key projects in North Korea against global standards. It confirms that the Pyongyang Thermal Power Complex, one of North Korea"s two largest thermal electricity producers, is in a state of dire disrepair. The Orangchon Power Station Project, though under construction for over three decades, remains incomplete. Both projects fail to meet the Group of Twenty (G20) Principles for Quality Infrastructure Investment announced in June 2019. These initial evaluations underscore the poor state of North Korea"s existing energy infrastructure and its significant need for quality investment.

Finally, this report considers the strategic implications of reconnecting the Korean peninsula through energy infrastructure. Examples like the European Coal and Steel Community show how forging economic connections can help build the foundation for a lasting peace. But interdependence can also be weaponized, as Russia"s and China"s histories of using energy infrastructure as tools of coercion show. The United States should be mindful of these considerations as it works in coordination with its ally South Korea to ensure that a reconnected Korean peninsula develops in a manner that is sustainable, open, and resilient.

At the annual G20 Summit in June 2019, leaders from the world"s wealthiest economies adopted the G20 Principles for Quality Infrastructure Investment. The document presents a framework of voluntary, non-binding principles to make such investments more sustainable and transparent in the future.

Principle 1: Maximizing the Positive Impact of Infrastructure to Achieve Sustainable Growth and Development. Quality infrastructure investment should ensure sound public finances while also maximizing the positive economic,environmental, social, and developmental impacts of infrastructure to stimulate "a virtuous circle of economic activities."

Principle 2: Raising Economic Efficiency in View of Life-Cycle Costs. Quality infrastructure investment should be affordable and attain economic, social, and environmental value relative to a project"s life-cycle costs during all stages of the project, including "planning, design, finance, construction, operation and maintenance (O& M), and possible disposal."

Principle 3: Integrating Environmental Considerations in Infrastructure Investments. Quality infrastructure investment should account for the positive and negative impacts of projects on ecosystems, biodiversity, climate, weather, and resource use throughout the infrastructure investment process.

Principle 4: Building Resilience against Natural Disasters and Other Risks. Quality infrastructure investment should ensure the long-term adaptability of infrastructure and build resilience against the onset of environmental changes, and the growing number and magnitude of natural disasters and man-made risks.

Principle 5: Integrating Social Considerations in Infrastructure Investment. Quality infrastructure investment should enable the economic participation and inclusion of all and should consider and manage economic and social impacts throughout the life cycle of a project.

Principle 6: Strengthening Infrastructure Governance. Quality infrastructure investment should be governed soundly through the development of clear rules, robust institutions, and good governance to ensure cost-effectiveness, accountability, transparency, and integrity throughout the project life cycle.

Principle 1: Sustainable Growth and Development

Principle 2: Economic Efficiency and Life-Cycle Costs

Even with foreign aid and investment, the complex evidently lacks sufficient financing and plans for its operation and maintenance. News reports indicate the complex undergoes repair and maintenance procedures for turbines, generators, and boilers on a near-monthly basis. 2 Some South Korean news reports have also indicated that the government has considered closing the complex altogether, deeming it highly inefficient. However, at present, there are not sufficient alternative sources of power generation for the area the complex serves.Amid restrictions imposed by international sanctions, it is doubtful that the most current and innovative technologies will be leveraged toward economic efficiency in the complex"s life-cycle costs in the foreseeable future.