

From Aid to Trade: Rethinking Korea's Development Cooperation through Energy In- frastructure



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Korea's official development assistance (ODA) policy appears to be entering a period of strategic reassessment. With the recent reductions to the total budget allocated toward ODA, policy directions are increasingly emphasizing the efficiency of outcomes serving Korea's national interest as well as global development agendas. This shift in policy agenda comes at a time of growing uncertainty in global value chains and increasing fragmentation of the trade system. In such an environment, renewed attention on the role of development cooperation in supporting trade competitiveness and economic resilience has been emerging.

Among the various strategies for assisting development in partner countries, energy infrastructure ODA seems to offer a coherent and strategic way to align Korea's development cooperation with its policy objectives, particularly when explicitly framed as Aid for Trade (AfT). Energy infrastructure is not merely a development input but a foundational determinant of productivity growth in developing economies. Supporting such infrastructure could therefore help strengthen partner countries' production and export capacity while also creating

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conditions that may foster deeper trade relationships with Korea over time.

For decades, trade policy and development assistance have been treated as separate domains. Trade negotiators focus on tariffs, market access, and regulatory barriers while development agencies build roads, schools, and power plants. However, in practice, the ability to trade depends less on formal market access than on whether firms can reliably produce, transport, and deliver goods and services. Among the many constraints facing developing countries, unreliable energy supply stands out as one of the most binding. This is an area where Korea possesses both experience and technological capabilities.

Going back to the fundamental objective of Aid for Trade (AfT), which seeks to align to the goals of both donors and partner countries through trade, energy infrastructure emerges as a particularly relevant area of cooperation. Assistance in this sector may strengthen partner countries' export capacity while potentially advancing Korea's longer-term trade interests by diversifying the risks of associated with its energy sources. In addition, deeper engagement in energy-related development projects could contribute to broader economic partnerships that extend beyond aid itself.

Energy as a binding constraint on trade

One of the key aspects to consider when designing an effective development cooperation is identifying the bottlenecks of economic growth and building a consensus between partners that addressing those constraints is mutually beneficial. In many developing economies, inadequate and unreliable energy supply represents precisely such a bottleneck.

A growing body of empirical research suggests that unreliable and expensive electricity supply significantly suppresses firm productivity, export participation, and integration into global value chains. Firm-level studies consistently show that power outages reduce output, increase unit costs, and discourage firms from entering export markets.

World Bank enterprise surveys show that firms experiencing frequent power outages exhibit significantly lower productivity and export intensity than otherwise similar firms with reliable electricity. In low-income countries, electricity disruptions are often ranked above inadequate access to finance as a constraint to doing business. These micro-level distortions accumulate into macro-level trade underperformance. Cross-country evidence suggests that countries with weak electricity infrastructure tend to export fewer manufactured goods, remain concentrated in low-value primary products, and struggle to attract foreign direct investment. Even when tariffs are low and trade agreements are in place, firms cannot exploit market access if they cannot power factories, logistics networks, or digital services.

In this sense, energy infrastructure is not peripheral to trade for the partnering countries, it is a prerequisite for it.

Strategic economic benefits for Korea

From Korea's perspective, energy infrastructure ODA as Aid for Trade is not solely an altruistic endeavor. It may also generate a range of indirect economic benefits for Korea.

First, energy infrastructure stimulates demand for Korean capital goods and engineering services. Power plants, grids, and energy management systems rely on imported equipment and technical expertise. When projects are well-designed, they create long-term commercial linkages rather than one-off construction contracts. Otsubo (2014) finds that, in the case of Japan, the most direct response was seen in the rise of imports in machinery and parts required to meet Japanese technical specifications for infrastructure development in recipient countries.

Second, Aid for Trade type projects may reduce entry risks for Korean firms in partnering markets. Empirical studies show that firms from donor countries are more likely to export to and invest in aid-recipient countries when aid targets productive infrastructure rather than consumption-oriented spending. Hühne, Meyer, and Nunnenkamp (2014) found, using a gravity model, that imports from the donor country increase as a result of infrastructure building assistance.

Third, cooperation in energy infrastructure development could support broader economic partnerships with resource-rich partnering countries. As one of the top energy consumers in the world, Korea relies on imports to meet almost all of its energy needs due to limited domestic sources. While development cooperation does not directly guarantee access to energy supplies, stronger economic engagement with resource-rich partner countries may, over time, contribute to more diversified and resilient energy relationships.

These dynamics suggest that early and well-targeted investments in energy infrastructure ODA could increase the likelihood of mutually beneficial outcomes for both recipient countries and donors.

Korea's comparative advantage in energy infrastructure

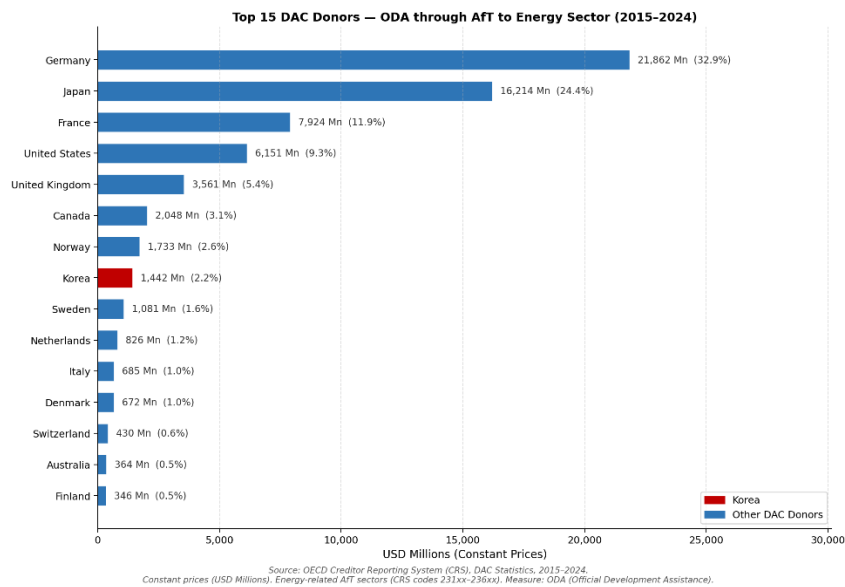
Korea's own development experience lends credibility to engagement in energy infrastructure development. The country's rapid industrialization during the 1970s and 1980s was supported by large-scale investments in electricity generation, transmission networks, and industrial energy management. Today, Korean firms are globally competitive in power plant construction, grid systems, energy efficiency technologies, and increasingly in renewables, hydrogen, and

smart energy solutions.

This background suggests that energy infrastructure may represent a domain in which Korea's development cooperation aligns well with the objectives of Aid for Trade. Compared with donors that primarily emphasize budget support or institutional reform, Korea may be particularly well positioned to deliver technology-intensive infrastructure projects that directly lower production costs and improve trade competitiveness in partner countries.

However, as illustrated in Figure 1 below, Korea currently ranks 8th among DAC donors in energy-sector ODA, contributing roughly USD 1.44 billion (2.2 percent) between 2015 and 2024. This places Korea well behind major donors such as Germany and Japan, suggesting significant room to expand its role. Given its comparative advantage in energy infrastructure, even a moderate increase in Korea's engagement could have meaningful strategic and economic impact.

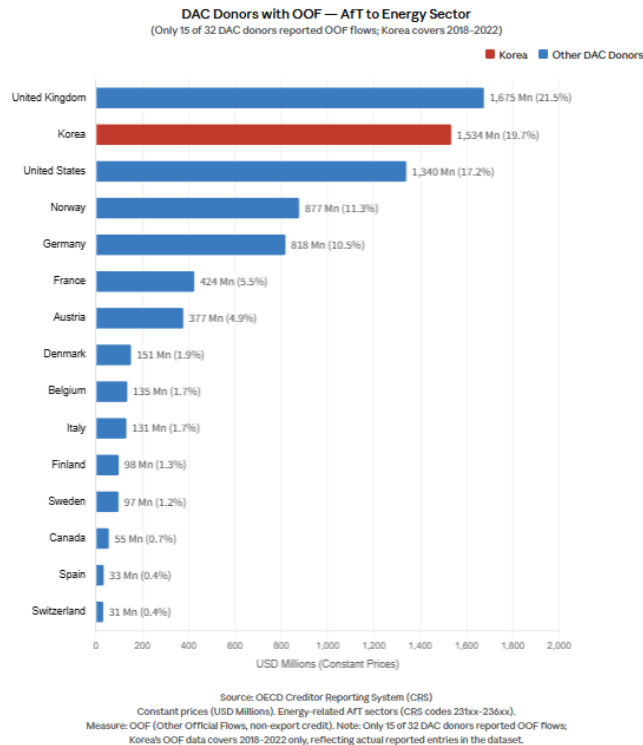
Figure 1. Top 15 DAC Donors in Energy-Sector ODA



In contrast, for the periods in which data is available, Korea ranks 2nd in Other Official Flows (OOF), with roughly USD 1.53 billion, accounting for nearly 20 percent of total OOF in the sector. Building on the observed imbalance between ODA and OOF, a more fundamental issue emerges regarding Korea's overall approach to development financing in the energy sector. The contrast between the two methods of assistance suggests not merely a difference in scale, but a lack of a fully integrated strategic framework that aligns concessional and non-concessional instruments toward common objectives. While Korea's strong position in OOF indicates a high level of engagement in commercially viable infrastructure projects, its relatively limited use of ODA in the same sector raises questions about whether financing tools are being

deployed in a manner that maximizes both development impact and long-term national interest.

Figure 2. DAC Donors with OOF – Aft to Energy Sector



A more integrated framework would therefore require systematic evaluation of which instruments are most effective under specific conditions, as well as stronger coordination across government agencies involved in development cooperation, export finance, and energy policy. Such an approach would allow Korea to move beyond a fragmented financing structure toward a strategically aligned model in which ODA and OOF jointly support both partner countries' development needs and Korea's broader economic and trade objectives.

Why Aid for Trade matters as a framing device

The WTO's Aid for Trade initiative aims to address supply-side constraints that prevent developing countries from benefiting from trade liberalization. Energy infrastructure fits well within this mandate. The *Aid for Trade at a Glance* report for 2024, published by the OECD and WTO, finds that aid targeted at economic infrastructure, including energy and transport, is more strongly associated with export growth than aid focused on social sectors alone. The study estimates that increases in infrastructure-related Aid for Trade are linked to higher exports, particularly in manufacturing and tradable services, when combined with complementary policies.

By framing energy infrastructure projects within the Aid for Trade framework, Korea may be

able to strengthen the economic rationale behind its development cooperation while linking projects more closely to measurable trade-related outcomes. **KIEP**

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