

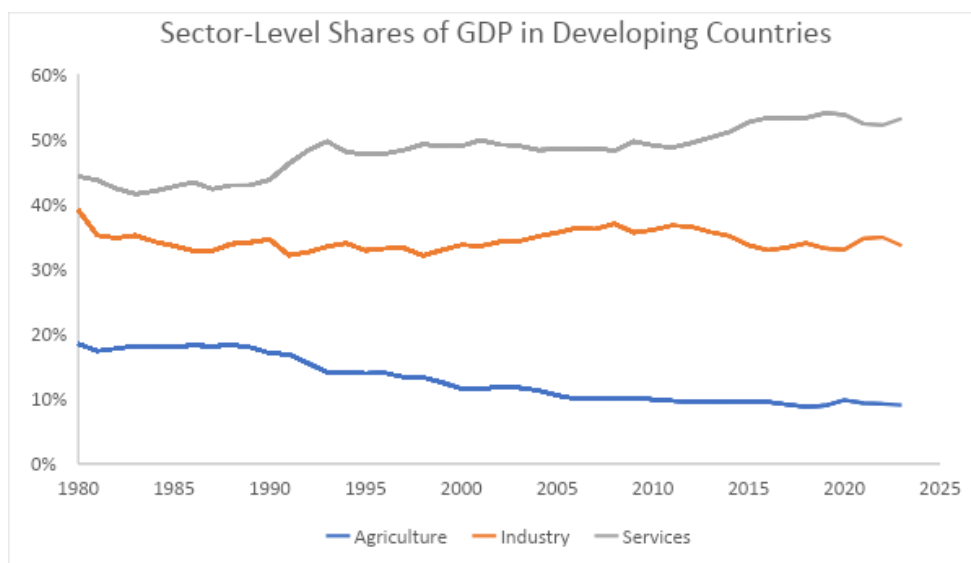
## Power Solutions for a Growing Services Sector

**Summary:** The services sector is an increasingly vital component of developing economies. As the sector’s electricity demand increases with the growing use of information and communications technology (ICT), addressing its needs for supply and reliability becomes more crucial. Given the sector’s geographic dispersion, a decentralized energy approach may be especially useful.

**The Issue:** Services is the fastest growing sector in developing countries. It accounted for about 55% of GDP across developing economies in 2023, compared to 35 and 10%, respectively, for the industrial and agricultural sectors (Figure 1). It is also the largest employer across developing countries, accounting for about 44% of employment in 2023, compared to the industrial (32%) and agricultural (24%) sectors.<sup>1</sup>

Policy discussions and research on alleviating electricity constraints for firms tend to focus on the industrial sector. However, power consumption in the services sector has grown faster than in the industrial sector, reflecting its increasing size and dependence on electricity. Global electricity consumption quadrupled in the services sector between 1980 and 2019, relative to a tripling in the industrial sector.<sup>2</sup> It is, therefore, important to address the specific electricity needs of the services industry, and to do so in a way that takes into account its geographical dispersion.

**FIGURE 1:**



**Source:** World Development Indicators (<https://databank.worldbank.org/source/world-development-indicators>).

## ICT is driving increased electricity demand in the services sector

The increasing use of ICT is an important driver of the service sector's electricity demand. Since services tend to be more interactive and information-intensive, involving frequent communication between firms and clients, the services sector has adopted ICT solutions faster than any other segment of the economy.<sup>3</sup> Recent estimates suggest that the average ICT intensity of the services sector is almost one and a half times that of the industrial sector.<sup>4</sup>

The adoption of ICT requires computing equipment and, hence, can drive up electricity demand. Data centers and telecommunication networks alone accounted for about 2% of global electricity consumption in 2022,<sup>5</sup> equivalent to the entire consumption of Brazil.

As the services sector increasingly uses ICT, electricity constraints become more salient. A quarter of services firms across developing countries report electricity as a major or very severe obstacle to their operations,<sup>6</sup> underscoring the importance of addressing their electricity needs. This would have far-reaching impacts on economic development. Research has shown that improving electricity access can enhance the adoption of ICT,<sup>7</sup> which in turn has been linked to broader productivity growth.<sup>8,9,10</sup>

## Why the services sector may require distributed energy solutions

Industrial parks alleviate electricity constraints for the industrial sector by providing reliable electricity within a designated geographic area. This clustering allows for generator-sharing or dedicated substations. However, this approach is less feasible for most service firms because they are often spread out across various locations to be closer to their clients.

The geographic dispersion of services firms lends itself to a more decentralized energy approach. Distributed or decentralized energy resources (DERs) offer a potential solution, particularly when budgetary and technical constraints hinder the expansion and improvement of the main grid. DERs are small-scale power sources, typically using renewables such as solar and wind, that can power a single consumer, such as a business or a household, or be aggregated into larger systems. Examples include rooftop solar systems for individual consumers or solar mini-grids supplying electricity to a small local group of consumers.

Bangladesh, which has the world's largest national off-grid electrification program based on DERs, offers valuable policy lessons.<sup>11</sup> Under the program, the government provided microfinance institutions with grants and soft loans funded by the World Bank and other development partners. The microfinance institutions then sold and installed solar systems for customers on credit with affordable payment plans. The solar systems benefited businesses, including educational institutions, restaurants and retail shops, by providing power for appliances<sup>11</sup> and increasing access to ICT.<sup>12</sup> For instance, a case study highlighted how a rural entrepreneur used a solar home system to power computers and printers, providing villagers with services such as scanning and assistance with online forms.<sup>13</sup> The decentralized nature of the power sources makes them particularly conducive to the services sector because it does not require geographic clustering and also allows access to electricity in remote areas the main grid does not reach. This enables services firms to gain access to reliable electricity while maintaining proximity to their clients.

Since the services sector is the largest contributor to output and employment in developing countries, designing electricity programs that are more inclusive of the sector will help it leverage ICT to increase productivity and drive overall growth.

## Endnotes

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