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Can India Power the AI Dream?

By: Manoj Pant, M Rahul

As India rushes to embrace artificial intelligence, the technology's impact on jobs, electricity consumption, and water usage needs to be taken into account.

India is hosting a massive global [Artificial Intelligence \(AI\) Impact Summit](#) between 16-20 February, with over 20 heads of state, 60 ministers, and around 500 global AI leaders attending. There is huge optimism, driven by the government, about [India being at the forefront](#) of the defining technology of this century. Many view AI as the 21st century's equivalent of the steamship or the aeroplane in the 20th. However, it is worth examining what AI actually entails and the less visible costs associated with it.

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Early last year, Karnataka and Andhra Pradesh competed to host global technology giant Google's AI processing centre. The \$15 billion project eventually [went to Andhra](#). Telangana soon entered the race after [Microsoft committed \\$17.5 billion](#) to establish a similar centre in Hyderabad. These investment promises quickly became political talking points.

At the national level, the union government announced a major push for artificial intelligence through its [IndiaAI Mission](#) in 2024.

Yet, the implications of India's rush to embrace AI need to be taken into consideration.

Steve Jobs once described computers as "[bicycles for the mind](#)", tools that augmented human capabilities in calculation and information processing. Artificial intelligence represents a qualitative shift from this role. Rather than merely assisting humans or augmenting their capabilities, [AI systems can increasingly perform tasks](#) such as writing, coding, data analysis, and generating images and videos autonomously. Large language models and agentic AI are already reshaping how work is organised and how productivity gains are achieved.

The speed at which AI is reducing demand for traditional labour is becoming evident.

Demand for entry-level tech workers is already declining, with [media reports](#) indicating a sharp fall in the hiring of new graduates. One report from eastern Europe mentions that there are on average as many as [149 candidates for a single IT job](#). Combined with tighter immigration policies in the US, a similar slowdown in labour demand is now visible in India's IT sector.

At the same time, investment in AI companies such as Nvidia continues unabated. However, it remains unclear how this investment will translate into a corresponding increase in consumption or output. Although India, too, has joined what many describe as the 'AI bandwagon', demand-side outcomes remain uncertain.

There is also the critical question of sustainable capacity. AI data centres are highly resource-intensive, particularly in terms of electricity and water for cooling. Does India have the capacity to support such infrastructure?

The Andhra Case

A closer look at Andhra Pradesh offers some insight.

As of January 2026, the state's total installed capacity was [21.1 GW](#), with 37% from renewables, 48% from thermal power, and 14% from hydroelectric sources. Existing generation capacity cannot be redeployed to meet the requirement from data centres, since it is already committed to serving current demand and peak-load obligations.

As the initial euphoria over large foreign investments in AI capacity subsides, the basic question of India's absorptive capacity will require careful consideration.

The official power generation target for AI data centres in Andhra Pradesh is an installed capacity of **6 GW by 2030**. If these centres operate continuously, their annual energy requirement would be approximately 52,560 GWh. This amounts to nearly 77% of the state's total electricity consumption in 2024, which stood at **68,626 GWh**. However, this comparison of annual energy figures is misleading unless one also considers the timing and reliability of supply.

Assuming an unrealistically high 100% efficiency in converting installed capacity into usable power, meeting this target would require the power system to supply a near-constant load equivalent to 6 GW dedicated solely to data centres. This is over and above the state's existing electricity demand, which fluctuates over the day and across seasons and is partly met by intermittent sources.

However, this figure accounts only for the IT equipment. Additional power is required for overheads such as cooling and auxiliary systems. Calculating the total power requirement using the global average Power Usage Effectiveness (PUE) of 1.56, the figure rises to 9.36 GW. In practice, the required generation capacity would be even higher once plant efficiency and transmission losses are considered. Expressed in energy terms, a continuous load of 9.36 GW corresponds to roughly 81,994 GWh per year, far above the 68,626 GWh consumed in 2024.

The challenge is not just augmenting annual energy availability.

Data centres require continuous, reliable power. Renewable sources such as solar and wind cannot provide this without storage. Andhra Pradesh would therefore need to add significant thermal, nuclear, or large hydroelectric capacity.

Even if work on new thermal power projects were to begin immediately, the gestation period would be at least five years, excluding delays related to land acquisition, environmental clearances, and financing. Nuclear projects would take even longer. Under these conditions, meeting Andhra Pradesh's 2030 data centre targets appears highly challenging.

This challenge is not unique to India. In the United States, counties such as Chandler and Tucson in Arizona have **rejected AI data centre proposals** due to their power demands. Similar concerns have emerged in Georgia, Maine, and Indiana. In Oregon, some proposals require data centre developers to bear the capital costs of new utility infrastructure.

Despite its constraints, India remains an attractive destination for the AI business due to its large pool of software professionals and the vast volumes of data generated by its population - both essential inputs for training AI models.

However, as the initial euphoria over large foreign investments in AI capacity subsides, and the demands of the industry scale up, the basic question of India's absorptive capacity will require careful consideration.

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