

Introduction

Data centers are facilities for the storage and processing of the vast amount of electronic data now required by American society's use of electronic media and computing capacity for a wide range of purposes by corporations, government and individual consumers. Data centers are expanding rapidly at locations across the country — driven particularly by cloud storage of data and by the rapid growth of Artificial Intelligence (AI) for multiple applications. While Florida is not seen as much of a national hot spot for data center growth like Virginia and Texas, there are already an estimated 120 data centers in Florida and substantial investment in data centers is likely with the attendant impacts described in this paper.



Physically, data centers are buildings filled with servers and computers linked to outside users operating 24 hours a day. They include systems to cool the equipment, which produces significant amounts of heat from its operation. Data centers require massive amounts of electricity and include banks of large generators as backup in case of power failures or shortages of power. Data centers are expensive to construct and equip (and represent substantial property value), but when operational, they employ relatively few people and fewer still highly paid workers.

The Impacts of Data Centers



Energy Demand

Data centers require vast amounts of electrical energy to power servers and cooling systems, according to the PEW Research Center, which has sourced data from the International Energy Agency. A typical AI-focused data center consumes as much electricity as 100,000 households. The larger data centers now under construction are expected to use 20 times as much. This translates into increasing overall energy demand, shown on the graph on the next page.

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