Data Centers

Data centers are the backbone of the internet, storing and managing everything from social media and cryptocurrency mining to artificial intelligence, cloud computing and streaming services. As these digital services expand, the size and number of data centers is growing rapidly, with many being sited in rural areas served primarily by electric cooperatives. This new load brings big opportunities and major challenges.

Why rural areas?
Companies are choosing rural locations for their data centers because of cheaper land, available power and possible tax breaks.

HVAC
Constant cooling is needed to ensure the servers function properly.

Servers
Servers are the "brains" of the data center, running applications and processing data 24/7. Each rack of servers can consume 10-30 kW, enough to power a small home or grain mill. A large data center may have thousands of server racks.

Infrastructure
Data centers often require new electrical infrastructure to accommodate their power needs.

Water source
Many large data centers are deploying evaporative cooling, which is more efficient than compressor-based systems.

Backup power
On-site generators keep data centers running during system outages and can be used to curtail load during peaks.

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Source: NRECA; Design: Jen Wheeler