Data Center 101

What elected officials need to know before a large-load project becomes a public commitment

A data center houses computing equipment and the systems that keep it powered, connected, cooled, secure, and continuously available. The key public question is not the project label. It is what the specific facility will require, when those requirements begin, who will pay, and which commitments remain enforceable over its operating life.

How a data center works

Core element	What it means locally
Computing	Servers, storage, and networking equipment process and move digital information for cloud services, artificial intelligence, business systems, or a single enterprise.
Electric service	Utility lines, substations, transformers, and on-site systems deliver power. Backup generators and batteries support continuity but do not eliminate the need for grid capacity.
Cooling	Air, evaporative, chilled-water, liquid, or hybrid systems remove heat. Water demand varies materially by design and climate.
Connectivity	Multiple fiber routes connect the facility. Redundant routes can affect rights-of-way, easements, and construction sequencing.
Site and security	Buildings, equipment yards, fuel, fencing, lighting, and controlled access shape land-use, noise, visual, traffic, and emergency-response effects.

How to read the power numbers

MW	MWh	Load factor
Megawatts measure demand at a point in time - the draw the system must be able to serve.	Megawatt-hours measure energy used over time - the amount reflected in annual consumption and bills.	Load factor compares average demand with peak demand. Steady operation can produce high annual energy use without sharp daily peaks.

Why this is a large-load issue

Large-load projects can require substantial new electric capacity on compressed schedules and often seek highly reliable, around-the-clock service. Yet requested load may change as a campus is phased. A capacity request is not the same as verified demand, completed infrastructure, or an operating facility.

Terms elected officials will hear

- **Hyperscale or campus:** A very large facility or multi-building site designed to expand in phases.
- **Colocation:** A facility that leases computing space, power, and cooling to multiple customers.

CORE POINT	**The label does not determine the outcome. Public officials must evaluate the actual design, operating profile, infrastructure plan, fiscal terms, risks, and enforceable commitments.**

From project announcement to public decision

No single public body controls every part of a data center project. Utilities, regulators, and developers hold distinct responsibilities. Cities, towns, counties, regional bodies, and other jurisdictions may still control consequential decisions involving land use, infrastructure, incentives, agreements, public process, and legally authorized conditions.

The six questions that define the local exposure

Question	What to establish	Why it matters
1 What is being built	Use, phases, building area, equipment, schedule, ownership, operator, and customers	Different designs create different operating and community effects.
2 What will it use	Peak MW, annual MWh, ramp schedule, water, wastewater, fuel, and land	Resource demands drive infrastructure and service obligations.
3 Who builds and pays	Utility upgrades, roads, water and sewer, public safety, financing, and cost allocation	Operating and replacement obligations matter beyond initial construction.
4 What the public receives	Tax base, revenue timing, jobs by phase, wages, contracting, training, and community investments	Headline investment does not establish net public value.
5 What can change	Phasing, load reductions, delays, ownership transfers, technology changes, closure, and decommissioning	Agreements must work under plausible outcomes, not only the announced case.
6 How performance is enforced	Conditions, milestones, reporting, audit rights, cost recovery, remedies, and responsible parties	Commitments need to be specific, measurable, assigned, and enforceable.

Additional terms to verify

- **Redundancy:** Duplicate power, cooling, fiber, or equipment paths intended to preserve service during failures or maintenance.
- **PUE:** Power usage effectiveness compares total facility energy with computing energy; it does not measure total power, water, emissions, or local value.
- **Curtailment or flexibility:** An ability or obligation to reduce or shift demand under defined and enforceable conditions.

Minimum record before a final local commitment

Elected officials should be able to point to one integrated record containing the validated project baseline, lifecycle fiscal analysis, infrastructure responsibilities, land-use and public-service findings, negotiated commitments, implementation owners, milestones, reporting requirements, and remedies.

Selected sources: U.S. Department of Energy and Lawrence Berkeley National Laboratory, *2024 United States Data Center Energy Usage Report* (2024); U.S. Energy Information Administration, *Annual Energy Outlook 2026* and related analyses; U.S. Environmental Protection Agency, water-reuse resources. Requirements and legal authority must be verified for the specific jurisdiction, utility, and proposal.

DECISION RULE	**Do not trade speed for an incomplete record. Sequence approvals and incentives so material facts, cost responsibility, public value, and enforceable commitments are known before the public body becomes obligated.**