INFRASTRUCTURE / LOCAL GOVERNANCE

Data Centers, Energy Use, and Local Backlash

How infrastructure growth affects power systems, local communities, and public decisions

48PEGASUS Research / Co-authored by Jonathan G. Browning, Founder & CEO of 48PEGASUS

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RESEARCH OVERVIEW

Executive summary

CENTRAL FINDING

Approval should follow enforceable cost and impact evidence, not an announcement or a national average.

Evidence cutoff: November 19, 2026.

What the election result shows

Ballotpedia initially reported that the limiting side prevailed in 40 of 41 tracked November 3 contests. Its expanded tally counted 46 of 47. Both are counts of tracked measures, not national polling results. The limiting side sometimes won by defeating a pro-development proposal or by supporting an advisory question, not by enacting a ban. The updated tally is evidence of strong resistance where the question reached the ballot, not proof that voters everywhere oppose every data center. [1] [2] A separate September survey found local opposition among major partisan groups, with substantially different shares; it did not measure the effect of the issue on individual races. [9]

Scale makes the dispute consequential. The International Energy Agency estimates approximately 485 TWh of electricity was used by data centers worldwide in 2025 and projects roughly 950 TWh for 2030 in its updated central outlook. Those totals include non-AI workloads. Growth is concentrated in particular places, making the local peak and the capacity to serve it as important as national energy totals. [3]

What a defensible decision requires

Ask who pays if the facility opens late, uses less than promised, or closes early. Require separate estimates for on-site water, water embedded in electricity supply, local pollution and noise, and construction and land effects. A credible development agreement ties claims to meters, reporting, enforceable limits and a responsible authority. A credible moratorium has a defined scope, a public work plan and an expiration rule.

Where costs cannot be assigned or impacts cannot be bounded, delay or deny within lawful authority rather than assuming the community will be made whole. Where a project is demonstrably financeable, buildable and compatible, staged approval can preserve local benefits without locking the public into the entire speculative buildout.

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RESEARCH OVERVIEW

How to read the evidence

SCOPE

U.S. local decisions; global context only when the source boundary supports it.

Four evidence classes

An official canvass measures how ballots were counted in a specific contest. An editorial tracker measures selected, coded contests, and its historical snapshots can differ. An agency estimate or peer-reviewed model quantifies an explicitly defined population or scenario. A permit, tariff, or agreement establishes a specific constraint if it has legal effect; it is not proof that the promised outcome occurred. For every consequential claim, ask which class of evidence supports it.

This report uses official documents for rules and individual decisions where available, the tracker for the comparison it compiled, and model-based studies for estimated consumption and associated impacts. Captions label geography, year, unit and scope. Conceptual diagrams do not contain operational measurements. [2] [3] [5]

Reading order

Start with the ballot chapter for what voters actually decided. Read the power chapter to distinguish peak demand, energy and retail bills. Use the impacts and case chapters to test what is transferable to a specific project. The policy chapter turns those distinctions into a siting and ratepayer-protection checklist.

Treat forecasts as conditional. A national electricity projection does not establish spare capacity on a local feeder, water supply in an August drought, or the price on a family’s bill. A local case is often useful for its decision process, not as a forecast for another community. Official orders and certified results can change after the evidence cutoff; verify them before a hearing, investment or publication.

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RESEARCH OVERVIEW

One project, several different decision makers

DECISION RIGHTS

No single vote or contract determines every outcome.

Who controls what

A local land-use authority may choose a permitted use, impose lawful operating conditions, or reject a rezoning. A utility must determine whether it can serve the load and through which facilities. A state regulator may review rates, tariffs and the recovery of utility spending. Regional grid institutions may influence resource adequacy and regional transmission. Water, discharge and air permits can involve different authorities again. An approval in one venue is not a substitute for all the others.

A local official promising flat household rates may lack rate-setting power. Likewise, a utility contract cannot solve a community’s noise exposure or determine how residents use a local road. Readers should identify the entity with jurisdiction before asking it to act.

Maintain a decision ledger

Log the decision authority, docket or permit number, current instrument, proposed change, expiration, responsible decision maker and observable consequence. Record what remains contingent: a town may approve site use while a grid connection, financing, or final water plan remains unresolved. Publish nonconfidential information in a format residents can understand without relying on developer promotional materials.

At each phase, reconcile permits, utility milestones and construction. An approved building phase should not silently expand its power or water entitlement. A change in tenant, cooling design or generator operations can alter the effects even if the original address and project name stay the same. Define which changes trigger a fresh review.

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RESEARCH OVERVIEW

What a large load number means

UNITS

MW is power. MWh is energy. A booked request is neither delivered energy nor realized peak.

From design to delivery

Design capacity is not annual consumption. For an illustrative 100 MW facility with 75% annual load factor, average power is 75 MW and annual use is about 657,000 MWh, or 657 GWh, using 8,760 hours. This is arithmetic, not a prediction. If the 100 MW describes IT equipment rather than the whole facility, a separate facility-energy assumption is required to account for cooling and electrical overhead.

Peak demand is critical when the system is stressed. Annual MWh matters for energy purchases, fuel and emissions. Neither alone tells a planner how much reinforcement a specific location requires. The hourly load profile, ramp, interconnection configuration and capacity available at the time all matter. [4]

Reconcile the queue

A credible forecast distinguishes early inquiries, active studies, executed agreements, phased construction and energized load. A project shopping multiple jurisdictions can appear in more than one queue. A single leased phase can use less than its electrical design limit. A developer’s requested MW does not mean that amount will arrive as dependable load.

Model an upside, a downside and a timing delay. Identify which investments are reversible or reusable and which require an irreversible commitment. Stress test the downside before assigning cost to other customers. Do not label every data-center MWh as AI demand; data centers also serve storage, communications, ordinary enterprise applications and other digital workloads. [3] [4]

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RESEARCH OVERVIEW

Costs, rates and bills are not interchangeable

AFFORDABILITY

Compare costs with and without the project in the relevant utility territory.

Follow the cost chain

Physical infrastructure can include dedicated connection costs, shared planning upgrades and capacity or energy purchases. An accounting entry may be assigned to an industrial class, recovered under an approved tariff, covered by an up-front developer contribution or shared under a regulator-approved methodology. A wholesale cost increase does not become a household bill increase by itself. The commission order, class allocation, timing, customer usage and fixed charges determine the retail result.

An average statewide price is descriptive, not a causal estimate of what a proposed local project would do. A home using more kWh may see a higher bill even if the rate is flat. Compare the same household usage or use weather-normalized evidence when possible. [6]

Ask three counterfactual questions

What investment would the system need anyway? Which incremental spending is unavoidable if the project arrives? Who is liable for incremental costs if the load is delayed, ramps down or leaves? Consider a dedicated substation that can be assigned directly, versus a line that serves other demand and might be useful later. Their cost treatment need not be the same.

A large load can spread fixed costs when its revenues are sufficient, or shift risk when commitments are weak and the utility must build ahead. Neither outcome should be assumed. Require a transparent base case and explicit downside cases. Minimum bills, collateral and exit terms may mitigate those risks, but only if their design, enforceability and sizing reflect the exposure.

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RESEARCH OVERVIEW

Water, emissions and noise need separate records

PLACE AND TIME

A low annual average can hide a local peak.

Draw the boundary first

On-site withdrawal is not the same as consumptive use; some withdrawals return to a system, and often at a different location or quality. Water used to generate electricity is upstream of the facility. A global modeled supply-chain estimate does not measure a particular water supplier’s reserve in a drought. Cooling design should be evaluated against the actual basin, seasonal temperature, drought commitments, source and discharge pathways. [7] [8]

A site’s greenhouse-gas accounting is not the same as local exposure to generator emissions. Corporate clean-power procurement and regional dispatch address different questions. Specify whether the emissions estimate is modeled location-based attribution, a contractual market-based figure or measured on-site combustion.

Build a physical record residents can verify

Ask for monthly and peak water demand, annual and peak electric demand, generator operating category, construction hours, and a baseline sound survey. Set conditions for future measurements at defined receptors and record the methods. Explain impacts that extend beyond the host parcel or tax district, including roads, watersheds and regional grid upgrades.

Verification should not force the release of security-sensitive plans or private records. Public summaries can disclose the legally relevant commitments and aggregate observations. Sensitive supporting details can be handled by authorized reviewers where justified. Preserve complaint channels, escalation deadlines and clear accountability when a limit is exceeded.

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RESEARCH OVERVIEW

Local approval is a choice among alternatives

OPTIONS

Compare approve, condition, phase, pause or deny under applicable law.

Compare alternatives with the same metric

A moratorium can create time to write a rule, collect baseline evidence or resolve a capacity question. Its benefit declines if it has no work plan, a vague scope or no sunset. A siting ordinance can define an ongoing standard, but only if the municipality has authority and staff to enforce it. A project-specific agreement can produce detailed commitments yet creates inconsistency if important terms remain confidential or depend on discretionary enforcement.

A ban can make a boundary clear. It may also shift activity, jobs or infrastructure elsewhere and should not be proposed without checking authority, vested rights and legal constraints. Staged approval can limit irreversible commitments when the next phase depends on externally verified performance.

Use benefits as evidence, not promises

Separate temporary construction activity, permanent on-site employment, county tax base, utility contributions, and supplier spending. Look at who earns the gains and who pays for incremental roads, water systems, and emergency services. Gross tax figures are not net fiscal benefits. Broader economic benefits can be real even if the host county’s benefit is smaller than the state’s.

A community benefit agreement is useful when it identifies a payer, deadline, recipients, remedy and a reporting mechanism. A nonbinding donation or unsupported job projection cannot stand in for ratepayer or environmental conditions. Preserve both the option to decline and the ability to revisit promises when facts change.

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RESEARCH OVERVIEW

A one-page decision test

RELEASE GATE

Evidence before commitment. Conditions before expansion.

The gate

Before approval, identify five pieces of evidence: (1) a current project definition with phases; (2) a grid and ratepayer plan that assigns incremental cost under downside cases; (3) utility and water capacity stress tests; (4) a permit-ready site impact assessment with enforceable limits; and (5) a monitoring and exit plan with a named authority. A missing item is a review finding, not a cue to fill the gap with assumptions.

If the project is approvable in stages, define what has to be verified before each increment. If a commitment has to be made early, document its reversibility. When protections depend on a contract, confirm that the term survives ownership changes and covers the duration of the underlying investment.

The decision record

For each benefit, report the baseline, assumptions, distribution and evidence. For each cost, identify the party responsible if the project underperforms or exits. For each local impact, name the trigger, measurement method, reviewer and enforcement tool. Write down the strongest dissenting concern and what additional evidence would change the outcome.

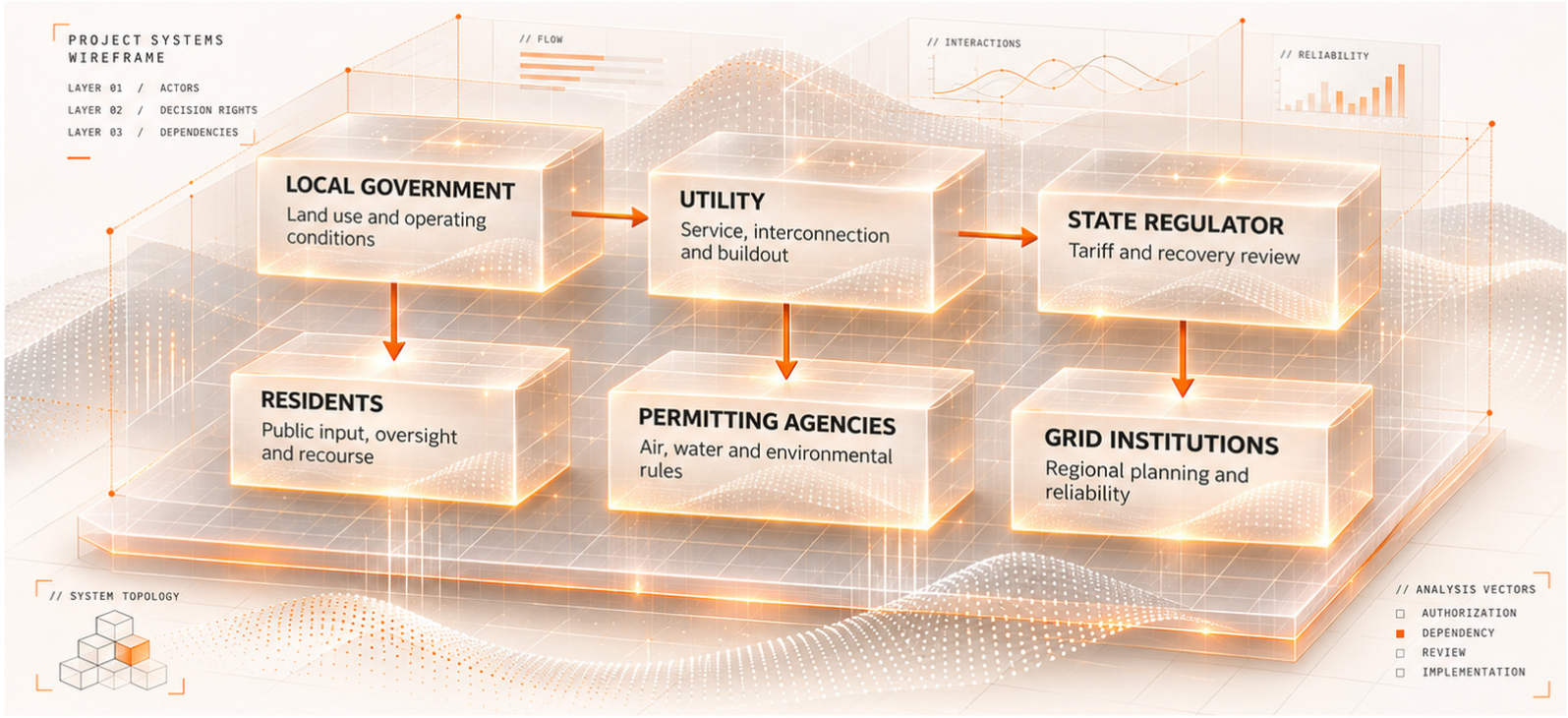
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VISUAL EVIDENCE

Exhibit 01 Decision rights across a project



The actors need not approve in this order. The point is to identify each independent authorization and avoid assuming one stands in for another.

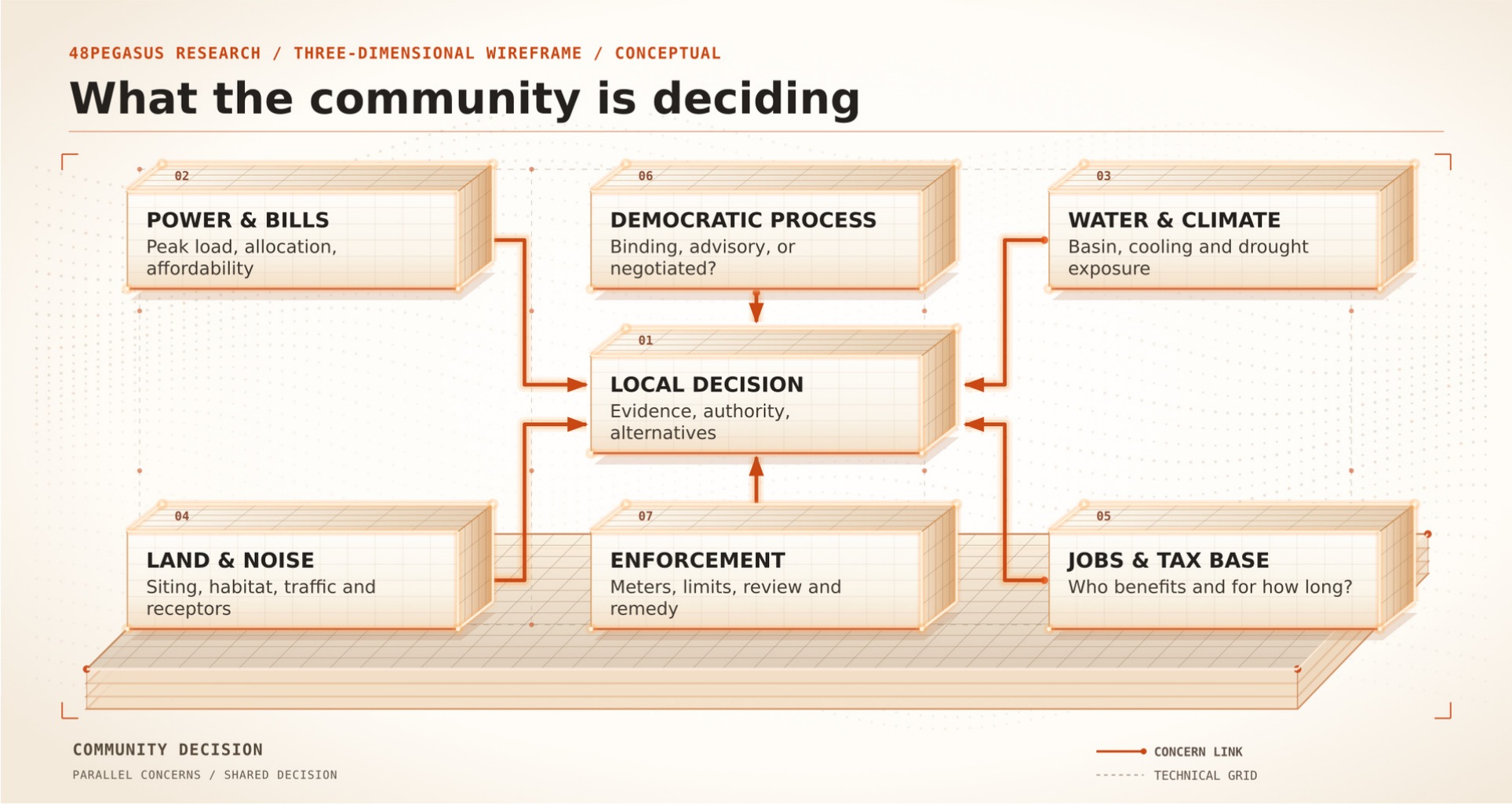
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VISUAL EVIDENCE

Exhibit 02 What the community is deciding



Concerns belong in parallel, rather than being reduced to one number or a generalized label for public support.

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BALLOTS AND PUBLIC RESPONSE

The ballot box became a siting signal

NOVEMBER 3, 2026

46 of 47 in updated tracking

40 of 41 in first report

Measures, not national voters

The count that changed

On November 6, Ballotpedia reported that outcomes favored limiting data center development in 40 of the 41 local measures it had identified for the November 3 U.S. midterms. Its expanded scorecard, with an analysis dated November 14, identified 47 measures on the same day and coded 46 as favoring limits. The change is coverage of the election, not evidence that six additional elections happened after November 6. The exception in both snapshots remained Harwood, North Dakota. [10] [11]

Outside the November election, the November 14 scorecard listed six earlier decisions, each coded in favor of limits, and four later measures not yet decided at that cutoff. That yields 52 of 53 decided contests favoring limits; 57 measures were tracked in 13 states across the calendar, including future contests. [11]

Why this matters

Projects that look bankable on power, fiber and capital can still face a local decision about where industrial demand belongs, what conditions apply and which risks hosts will accept. For a developer, that decision can change design, sequencing and cost before electricity demand ever reaches the grid.

The tally is a count of local questions, not a national plebiscite, a poll, a list of canceled projects or a count of votes cast. It gives the same weight to a tiny town’s advisory measure and a large city’s binding charter amendment. Some votes addressed only one parcel or industrial threshold; others addressed wider land-use policy. The right takeaway is not that the United States voted to ban data centers. It is that locally contested proposals repeatedly encountered support for restriction or tighter oversight when the question was put on these tracked ballots. [11]

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BALLOTS AND PUBLIC RESPONSE

How the 40 of 41 count was made

METHODOLOGY

Code direction, not yes/no

Use dated snapshots

Count one contest per ballot line

Definition of a restrictive outcome

The original November 6 count included 27 successful measures introducing limits or expressing opposition, and 13 unsuccessful measures that would have facilitated or expressed support for development. Both outcomes fall on the same side of a policy-direction code. That does not make an advisory statement legally equivalent to a charter ban. A 'no' vote on an industrial rezoning may also advance the restrictive side without changing broader zoning law. [10]

The November 3 preview identified 28 measures where a yes vote limited development and 13 where yes would facilitate it. With 27 of 28 restrictive propositions passing and all 13 facilitative propositions failing, the numerator is 27 + 13 = 40. The one remaining case was defeat of a restrictive initiative. This reproduces the arithmetic of the original snapshot; it does not establish that every possible local contest was captured. [12] [10]

Definition of an observable result

A reproducible ledger should store the date, jurisdiction, exact ballot text, direction of a yes vote, whether the measure binds, official results or reporting snapshot, and caveats. Archive links and access dates when possible; do not silently substitute an updated table for an earlier version cited in the narrative.

The denominator is contests, and the unit is a ballot question, not a facility or a jurisdiction. Four separate Wilmington zoning measures do not represent four independent towns deciding comparable policies. Ballot selection also favors places with enough controversy, petitioning capacity or institutional access to put an issue before voters. Public meetings, negotiated changes and projects approved administratively sit outside this denominator. The count cannot be extrapolated as an industry-wide cancellation rate or interpreted as a binomial sample of U.S. opinion. [11]

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BALLOTS AND PUBLIC RESPONSE

Audit of the expanded 47-question count

ELECTION RECONCILIATION

33 restrictive yes outcomes

13 facilitative no outcomes

1 restrictive no outcome

Break down the first half

The scorecard identifies 33 passed restrictions or opposition measures: five full bans, 13 partial bans, seven six-month moratoriums, two applications of zoning rules, three nonbinding opposition measures, two voter-approval requirements and one financial-guarantee requirement. These add to 33. Some partial bans preserve narrow exceptions; not every rule uses the same power threshold. [11]

The expanded breakdown has six more restrictive approvals than the November 6 write-up: one additional partial ban, four additional moratoriums and one additional advisory opposition measure at the category level. The tally of failed facilitative measures remains 13. These comparisons establish the change in reported coverage. Without a retained contest-by-contest copy of the first table, they do not establish every mapping between versions. [10] [11]

Break down the second half

The 13 failed facilitative measures comprise seven advisory support questions, four Wilmington rezoning questions, one Boulder City approved-use question and one Ashville term-summary referendum. The 47th contest, Harwood’s failed additional-review initiative, is the one development-favoring result by the scorecard’s coding. Neither a defeat nor an advisory vote should be translated into an awarded construction permit. [11]

There are different kinds of official evidence: the election authority supplies the yes and no counts; the ballot and adopted text establish the policy change; later records show implementation. The nationwide tally is attributed to the original tracker, with selected counts independently checked where available. It is not presented as a separate canvass of all 47. A concise reporting form is: “46 of 47 outcomes in Ballotpedia’s expanded Nov. 14 accounting of Nov. 3 local data center measures favored limits or expressed opposition.” [11]

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BALLOTS AND PUBLIC RESPONSE

What local measures actually govern

LEGAL MECHANISMS

Ban ≠ moratorium

Referendum ≠ permit

Advisory ≠ binding

Four categories of constraint

A full ban generally removes a defined use within the jurisdiction, subject to exact definitions, exemptions, effective dates and applicable law. A partial ban may exclude only facilities above a load threshold or include a narrow carveout. A moratorium delays approvals or applications under the written terms; whether it applies to pending or previously approved work depends on the instrument. Additional approvals preserve a possible route while adding cost, process or calendar risk.

The ballot language matters more than a label. One measure can regulate storage and data center uses together, whereas another amends broad industrial policy and may name data centers only as one example. Terms like “capacity,” “monthly demand” and “peak load” should not be treated as interchangeable when determining whether a proposed campus qualifies. [11] [17]

Match legal effect to the text

Parcel-specific rezoning can fail without prohibiting the same use on already entitled land. A vote against a development term summary may change negotiations without independently invalidating every separate prerequisite. A community-consent requirement may add a later vote rather than denying a particular proposal immediately. Advisory votes document a political instruction or preference but may leave formal authority elsewhere.

An analyst should retain separate fields for the public outcome, immediate legal action, practical project effect and outstanding approvals. Follow adoption, effective date, potential litigation, amendments, implementing rules and the next docket entry. The correct status after voting may be conditional, delayed, redirected or unchanged rather than permanently canceled. This distinction protects elected officials, residents, lenders and readers from treating a headline as a complete statement of power, permit or land rights. [11]

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BALLOTS AND PUBLIC RESPONSE

Harwood: the exception did not approve a campus

NORTH DAKOTA

Additional-review initiative failed

105 yes / 326 no in tracker

About 76% against

What voters considered

Harwood was the only November 3 result coded as development-favoring in both Ballotpedia releases. The tracked count of 105 yes and 326 no corresponds to 75.64% against among 431 reported yes/no votes. The initiative would have added review before city approval of certain industrial development, including data centers. Voters declined that added requirement. The question did not itself authorize a particular campus. [11] [13]

North Dakota’s Secretary of State election portal distinguished night reporting from official canvassing. The Harwood totals used here are the figures in the published tracker; they are not represented as independently certified by this paper. State results sites can contain multiple similarly named questions, so the analyst should match the home-rule amendment to the actual additional-review text before transcribing. [14]

What the result does not tell us

Some voters may have opposed an extra layer of procedure but also opposed a specific development. Others may have favored economic growth, trusted the existing process or rejected a detail in the proposed language. The vote does not reveal which motivation applied, whether views differ by party, or whether another measure with different safeguards would have passed.

For a pipeline forecast, the right status change is narrower: remove the proposed review requirement as an expected hurdle in this jurisdiction unless a future action revives it. Keep outstanding land-use, utility, water and public approvals on separate lines. This is also why describing Harwood as “the one community that voted to build” misstates the evidence; it was the lone outcome favoring development under the tracker’s classification, not a direct affirmative vote to issue approval. [11] [13]

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BALLOTS AND PUBLIC RESPONSE

Ohio: the count was geographically concentrated

OHIO

State concentration matters

Screen charter provisions

Do not double-count projects

Multiple policy choices in one state

Ballotpedia’s original election-day preview identified 21 Ohio questions among its 41 then-tracked contests. This concentration matters for interpretation: neither the original nor expanded count is a geographically balanced U.S. sample. One instrument cannot be used to describe the entire Ohio set. Illustrative choices ranged from local bans to applying zoning, refusing a term summary, rejecting rezoning and adding guarantees for developers seeking incentives. [12] [11]

Piqua appeared in the general election’s issue results; Miami County separately lists a Piqua special election. The two files should not be conflated. Ballotpedia’s issue page lists 4,118 yes and 2,066 no for the charter initiative. The measure defines covered facilities by aggregate monthly demand or peak load greater than 25 MW, so the summary label “prohibit data center construction” alone is incomplete. [19] [18]

Four votes, one place

Wilmington supplies a clear denominator example. Four measures separately addressed specific rezoning proposals that could allow data center construction. Each failed and each counts in the scorecard. Four failures are four ballot decisions but do not establish four independent labor markets, four distinct operators or four canceled campus projects. Track parcel and project identifiers separately. [11]

Conversely, Grove City introduced a decision gate rather than adopting a general data center ban, while Perry targeted the financial risk of certain incentives. An Ohio comparison should normalize the measure types before comparing margins or estimating implications. The useful output is a register of restrictions by boundary and legal mechanism, not a single statewide vote share. Interpret the possible flow of investment as contingent: a different parcel might still be eligible, yet it may require different power or network infrastructure and a fresh approvals timeline. [11] [17]

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BALLOTS AND PUBLIC RESPONSE

Grove City: development consent, not prohibition

OHIO CASE STUDY

Issue 28

11,317 yes / 9,411 no

54.60% in Nov. 4 county report

What the county reported

Franklin County’s November 4 unofficial return gave the Issue 28 charter amendment 11,317 yes and 9,411 no votes, or 54.60% yes among votes recorded for or against the issue. All 30 applicable precincts were shown reporting; the report also listed 638 undervotes and two overvotes. Reporting completeness is not identical to certification, and the denominator for vote share excludes the over- and undervotes. [15]

Grove City’s public information and ballot records describe an additional citywide approval requirement for covered developments, expansions or transfers. The thresholds were at least 50 contiguous acres, more than 20 MW of peak electrical demand, or more than 500,000 gallons of water per day. Exact text controls; a summary should not replace it. [17] [16]

What changes in the model

This kind of trigger adds an official decision after ordinary technical evaluation and may also affect other large developments. It is not a ban on all computing facilities, and it does not prove approval for projects that fall below one threshold; other triggers and permitting rules may still apply. The city had separately announced a one-year data center moratorium approved by council in June, a distinct instrument rather than the November result. [17]

For underwriting, anchor the project timeline to the applicable future election and preserve independent entries for zoning, interconnection, construction permits and community-impact standards. Test whether proposed phasing changes the measured peak or only changes the marketing description; authorization should hinge on the actual scope and controlling law. For public reporting, compare the likely burden with and without the new vote while being clear about which residents, uses and districts are covered by the charter text.

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BALLOTS AND PUBLIC RESPONSE

Two narrow votes: Ashville and Perry

DEVELOPMENT TERMS

Ashville: no on upholding summary

Perry: yes on guarantees

Both coded restrictive

Ashville: negotiations were the target

The Ashville referendum asked whether to uphold a term summary guiding negotiations between the village and EdgeConneX for two data centers. Ballotpedia reports 331 votes in favor and 1,469 against. A no vote therefore registers as a restrictive outcome. The wording matters: the vote was about a particular negotiated instrument, not a referendum on all computing facilities or a completed construction contract. [11]

To assess the development implications, identify which provisions depended on that summary and which obligations or rights already existed under separate documents. Do not assume that an instrument guiding future negotiations guarantees an economic benefit, or that a vote against it automatically voids every land and utility arrangement.

Perry: the incentive was the leverage point

Perry’s Issue 16 required financial guarantees from hyperscale developers seeking certain incentives, according to the measure register. The tracked result was 946 yes to 140 no. The difference in vote directions is the simplest demonstration of why one cannot sum “no” votes as opposition: Ashville’s restrictive outcome came through a no vote, while Perry’s came through a yes vote. [11]

A financial guarantee can make certain obligations collectible if a developer falls short, but its value depends on the amount, trigger, issuer, beneficiary and expiration. It is not evidence on its own that no local public costs remain. Evaluate whether security covers stranded infrastructure, promised payments, road restoration or other defined exposures. A useful public reporting template identifies who can call the guarantee and when, what performance triggers release, and how much exposure would remain after collection.

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BALLOTS AND PUBLIC RESPONSE

Maine: communities chose time to write rules

MAINE

Seven six-month moratoriums in tracker

Wells Article 5

Temporary pause, not ban

A policy deadline, not permanent rejection

Seven Maine measures in the expanded November 3 count adopted six-month moratoriums. That cluster often gets summarized as seven communities saying no to data centers, but the specific policy was a pause. A moratorium changes the time during which a defined application may be considered or approved. It creates an interval for rulemaking and study, not proof of which ordinance will replace it. [11]

In Wells, the special town meeting warrant set out a retroactive moratorium rather than simply asking whether residents supported data centers. The town clerk certified 5,818 yes, 1,282 no and 459 blank on Article 5, confirming the tracker's count. The warrant is the authority for the measure's scope and timing. [20] [21] [11]

What good use of a pause looks like

A practical pause should have a defined work plan. Assign responsibility for reviewing noise and emergency equipment, quantifying water and power requirements, analyzing compatible land uses, and proposing measurable standards with enforcement. Publish a realistic date for public review and a plan for unfinished work. If the temporary policy has a retroactive reach, identify how previously filed applications will be handled instead of telling readers all work stopped.

For investors, track the expiration and the next policy hearing as separate schedule events. A facility can remain an active opportunity when construction is not immediately permitted. For residents, an end date is valuable only if it produces readable rules on the exposures that prompted the pause. A policy can be time-limited yet still materially affect financing, procurement and project sequencing. Do not turn temporary votes into permanent losses of electricity demand in a forecast.

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BALLOTS AND PUBLIC RESPONSE

Boulder City: the geography of authority

NEVADA

Question 1

2,165 yes / 5,227 no in tracker

Specified area only

Read the boundary explicitly

Boulder City’s published Question 1 asked whether data center facilities should be an approved land use in the Eldorado Valley Transfer Area outside the specified habitat conservation easement. Ballotpedia recorded 2,165 yes and 5,227 no, roughly 71% opposed among yes/no votes. The area named in the question determines the decision’s reach. A rejection there cannot be described as a citywide ban on every possible project. [22] [11]

A land-use decision can affect one application pathway while leaving others unresolved. Municipal, county, state and federal decisions may involve different territories and records. The same metropolitan project name can be used for separate parcels or proposals. When mapping project exposure, treat parcel, controlling title or easement, jurisdiction, permitting agency and stage as distinct fields instead of assigning a single regional status.

A test for a misleading schedule

Ask whether an alternative site can actually substitute the same service date. A new parcel may need a different substation, transmission upgrade, cooling design, water agreement or environmental review. An asset that is portable on a national map may not be portable as a contracted power load or operating campus. If the developer has only an option on alternative land, record that option separately from a deliverable plan.

Do not infer the outcome of other nearby proceedings from the city ballot. Track them independently and report which body can decide each question. A reader should be able to distinguish three claims: local voters opposed an approved-use designation at the defined site; a separate project needed another government’s action; and actual operating capacity will depend on completion of its own approvals. Only the first follows from Question 1 itself. [22]

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BALLOTS AND PUBLIC RESPONSE

Illinois: why advisory votes count but do not bind

ILLINOIS

Different question wording

Advisory results are directional

Check implementing action

Not every yes vote meant the same thing

The expanded Ballotpedia table records Bloomington’s advisory large-scale moratorium measure with 22,119 yes and 6,376 no. In Joliet, an advisory question asking voters whether the city should approve AI data center construction instead received 3,883 yes and 14,599 no. Each result reflected restriction or opposition in the tracker, but neither was itself a binding land-use ordinance. [11]

Other Illinois advisory votes appeared in the same count, including measures in Madison County townships and Morgan County. Separate maps and district boundaries are essential; a township’s advisory result is not necessarily the result for all residents of an overlapping municipality or county. Broad headline labels can obscure who was entitled to cast a vote and which officials received the advice.

Evidence of policy preference, not completion

An advisory result can be an early warning for council actions long before a final ordinance is enacted. It may change political incentives, prompt a moratorium or motivate a developer to redesign, withdraw or defer. None of those outcomes should be tracked as a fact until a decision, filing or company disclosure demonstrates it.

A useful issue register records the deadline for a response, if any; the authority to enact subsequent policy; whether planning staff released recommendations; and the date of the next hearing or council vote. Good governance does not require treating the question as if it already changed law, nor should it mean ignoring the result. A responsible executive can acknowledge the preference, document the specific burdens residents raised, and explain the next actual decision where revisions can still occur. [11]

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BALLOTS AND PUBLIC RESPONSE

Public opinion: three instruments, different questions

NATIONAL POLLS

Pew: comfort

[*REDACTED*]: opposition

Quinnipiac: opposition

Do not pool the results

Use the right denominator

[*REDACTED*]'s March 2–18 survey found 71% opposition to constructing an AI data center locally, including 48% strongly opposed. Quinnipiac's September 24–27 poll of 1,202 adults found 72% opposed, 21% supportive and 7% without an opinion about building an AI data center in their community. Its March release reported 65%, 24% and 11% respectively. Quinnipiac reported an overall September sampling margin of ±3.5 percentage points including the design effect. [25] [24]

Pew's July 20–August 9 survey asked about comfort with a new local data center. Sixty percent said they would be not too or not at all comfortable; the question and response categories differ from the other polls. Annenberg's June 16–July 19 panel found 61% opposed to new area data centers, compared with 49% in its spring wave. [23] [26]

Agreement without false precision

These independently designed surveys show widespread national concern about local development. They do not establish that a particular proposal would lose at the same rate. Question framing, locally negotiated conditions, response options, sample design and field dates vary. An average of the four rates would be numerically possible but substantively weak, and neither a [*REDACTED*]–Pew difference nor a cross-poll month-by-month line is a clean trend.

Quinnipiac's September release contains a separate 73% result about concern over AI's potential threat to human survival. The local data-center opposition result is 72%, not 73%. Sources should be read by question and figure, rather than relying on a headline centered on a different topic. Large-sample precision also cannot eliminate framing or survey nonresponse limitations. [24]

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BALLOTS AND PUBLIC RESPONSE

Party: broad concern does not mean equal intensity

POLITICAL INTERPRETATION

54% Republicans / leaners uncomfortable

68% Democrats / leaners uncomfortable

Survey association, not causation

What the subgroup data show

Pew’s summer scenario found that 54% of Republicans and Republican-leaning independents and 68% of Democrats and Democratic-leaning independents were not too or not at all comfortable with a new local data center. [*REDACTED*] in March also found majority opposition across party groups, with strong opposition more common among Democrats (56%) than Republicans (39%), and independents at 48%. These are distinct samples and questions, but they independently support breadth of concern with unequal intensity. [23] [25]

Pew found majority discomfort in urban, suburban and rural groups. It also reported more negative assessments in both party groups since January on several effects. That is a reason to test assumptions about acceptance in every market, not a reason to label all residents in a given partisan or geographic category as opponents. [23]

What election returns cannot show

A ballot result cannot identify who voted no by party or why. Even comparing precinct returns with congressional votes cannot establish that the same voters supported restrictions and switched candidates; that would require suitable individual-level evidence, and selection and issue-salience problems would remain. A candidate who runs on utility affordability may also address inflation or unrelated local concerns; winning does not isolate one election driver.

Publish a party comparison as survey evidence about reported attitudes, not an assertion about turnout, campaign effects or the national midterm outcome. If a report codes elected officials’ positions, archive campaign statements with dates and separate strict prohibition, utility cost protection, site-specific opposition and conditional support. Candidate positions belong in a different table from voter returns. Neither table should be filled from partisan stereotypes.

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BALLOTS AND PUBLIC RESPONSE

Why residents object, and why some support projects

PUBLIC MOTIVES

Open-ended responses

Cost, land and trust

Projects may differ materially

Concerns are not interchangeable

[*REDACTED*]'s April open-ended follow-up found that local opponents often pointed to resource use, with water and energy each mentioned by 18% of opponents; other concerns included pollution, quality of life and economic costs. Among supporters, roughly two-thirds cited economic benefits and 55% mentioned job opportunities. The denominators are opponents and supporters in the follow-up, not all U.S. adults. These are reported reasons, not direct measurements of environmental or economic effects. [25]

Pew's data show increasing awareness as well as more negative expectations across several surveyed effects. Awareness can travel through announcements, news and opposition efforts; a rising survey rate does not identify which channel changed individual opinions. Public questions about jobs, tax revenue or electricity bills often call for different evidence than questions about changing the character of a place. [23]

Resolve facts before debating values

The engineering assessment should describe peak draw, annual consumption, cooling system, emergency generation and construction schedule. The economic assessment should specify who gets which fiscal and employment benefits and when. The public record should then separately address values that numbers cannot eliminate: acceptable land-use change, community autonomy, privacy and perceived fairness in who absorbs burdens.

Do not treat acknowledgement of concerns as proof that a predicted impact will occur. A specific facility might use substantially less direct water than another design, shift noise with different setbacks or pay for certain upgrades. Equally, a generic promise of sustainability does not answer whether an individual utility or neighborhood would face a cumulative burden. Credible engagement starts by showing where there is evidence, what remains contested, and what decisions residents can still influence. [25] [23]

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BALLOTS AND PUBLIC RESPONSE

The missing denominator: opposition outside elections

SELECTION BIAS

Petitions are not ballots

Approvals can occur off-ballot

Governance limits vary

What the election ledger excludes

Citizens can oppose a project through hearings, administrative challenges, public records, petitions, initiative campaigns or other mechanisms. Some petitions never reach a ballot because of signatures, deadlines or legal authority. Ballotpedia’s tracker separately catalogs proposed measures that did not qualify, including disputes in jurisdictions not represented in the election results. Such cases are not additional “no votes.” They can still alter the project’s expected timing and risk. [11]

Similarly, approvals made administratively, projects redesigned before a vote, and facilities built in industrial districts without a new ballot question are not observations in the November count. Nor is a withdrawn proposal with unresolved financing necessarily canceled because of backlash. Attribution requires a record connecting the withdrawal to the cause.

Compare governance, not just headlines

A full pipeline ledger should begin with proposed developments, not elections. Record a date and source for announcement, application, permit decision, formal challenge, pause, redesign, capital commitment and operation. If the project has no verified public name or location, label it unresolved rather than guessing. Maintain a separate inventory of jurisdiction rules and an event log for petitions and hearings.

This structure supports two different metrics: the share of tracked ballot questions favoring limits and the share of contemporaneous projects facing documented changes. The second needs a defensible project denominator and status definitions. Depending on the question, counts can be weighted by committed or expected MW, but that creates a different measure and adds uncertainty. The 46-of-47 finding cannot serve as that denominator. It belongs as a strong data point within the particular institutional path in which it was observed. [11]

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BALLOTS AND PUBLIC RESPONSE

From engagement to enforceable conditions

COMMUNITY GOVERNANCE

Publish early

Name who bears costs

Define compliance and remedies

Start before the site is irreversible

Publish a dated project description and a nontechnical summary while residents and agencies can still change material features. Identify land parcels, physical scale, construction windows, operating phase, power arrangements, cooling concept and emergency equipment. Separate target values from contractually binding commitments. For proprietary details, explain why they cannot be made public and provide independently reviewable ranges where appropriate rather than leaving the relevant burden unknown.

Create a comment-response register by topic. Permit several participation channels, distinguish questions from formal objections, and avoid claiming that turnout represents all voters. A process can be transparent without guaranteeing agreement. The governance objective is informed consent where the law requires it and credible accountability whenever substantial local impacts are possible.

Translate the pledge into a condition

For each material term specify a metric, limit, measurement method, responsible party, reporting cadence, verification source and remedy. For example, a proposed particulate or noise requirement needs a boundary, measurement conditions and exception policy; a water use commitment needs its withdrawal and consumption definitions and treatment of seasonal peaks. Identify who pays for monitoring, who investigates noncompliance and whether a commitment attaches to a successor operator.

Use enforceable instruments for obligations that matter to underwriting or public affordability. A public summary should identify the governing agreement or permit, the authority empowered to enforce it, and the limits of that authority. Community benefits funded only under one scenario should not be represented as guaranteed in all scenarios. This checklist is a recommended framework, not a statement that any jurisdiction has adopted the same requirements.

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BALLOTS AND PUBLIC RESPONSE

Local benefit models need downside cases

FISCAL DILIGENCE

Net revenues, not press releases

Jobs by phase

Model downside and rebound

Make the headline numbers comparable

Construction employment should be reported as labor-years, duration and peak headcount where available. Operating employment belongs in a separate row with expected full-time positions and an estimated start date. An operator’s payroll figure is not the same as local wage income unless worker residence and subcontracting are known. Jobs announced for the last construction phase should not be attributed to the first facility.

Compute net effects for each government entity. Include tax abatements, payment-in-lieu terms, credits, agreements to reimburse infrastructure, expected public service costs, and which district collects each dollar. An increase in total assessed value does not necessarily increase funding for every entity if allocation rules or incentives redirect revenue.

Test the project that never reaches plan

Model phased, delayed and canceled cases. Ask who paid for road, substation or water capacity that is now unused and whether deposits, collateral or minimum bills cover it. Distinguish private ownership of equipment from pledged municipal obligations and explain which commitments actually trigger. A published bond authorization cap is not necessarily debt issued, taxpayer liability, investment already spent or final assessed value.

Set an explicit time horizon, phase schedule and discount assumptions. Show the no-project counterfactual and plausible alternative uses of the site. An alternative use may bring less electricity demand but more durable employment, or impose its own public costs; this is a location-specific question, not a predetermined finding. The result is an auditable framework for comparing exposures. It prevents a large nominal total from doing the work of a credible local fiscal analysis.

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BALLOTS AND PUBLIC RESPONSE

Upcoming votes: different measures, same discipline

AS OF NOVEMBER 19, 2026

Dec. 1 Clarksville x2

Dec. 8 Hollis

Dec. 15 Mandan

Schedules may change

Four pending questions in the tracker

The November 14 Ballotpedia scorecard lists two December 1 Clarksville, Arkansas referenda, each about a distinct industrial development bond ordinance and related leasing and payment-in-lieu arrangements. The ceilings are up to $50 billion for [*REDACTED*] and up to $5 billion for SF ARK1. They are caps in the described authorizations, not evidence that $55 billion has been spent or borrowed. Read the separate provisions before adding figures. [11]

The same tracker lists a December 8 Hollis, Maine measure to establish a 180-day moratorium and a December 15 Mandan, North Dakota measure addressing data centers with anticipated capacity or demand of at least 25 MW. These were pending as of the cutoff. The key facts to monitor are the official elections calendar, final ballot wording, results and separate implementation records. [11]

How to avoid an erroneous update

Do not append these four contests to the numerator or denominator for November 3, and do not label them “defeated” based on the preceding trend. For each event, start with its power to change the project. One might affect a bond arrangement without directly authorizing construction; another may temporarily close an application window; the third may remove qualifying projects as a permitted use under the actual legal instrument.

Use separate time stamps for scheduled date, reported votes, canvass, effective date and implementation. If the results fail to answer whether a developer will proceed, preserve the gap in the record. A dated forward watchlist is different from a prediction. The report’s purpose is to say which decision would change which dependency, not to substitute a forecast of residents’ preferences or to tie national electricity growth to the result of one pending vote.

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BALLOTS AND PUBLIC RESPONSE

Decision protocol: how election risk reaches a project

SITING RISK CHECK

Confirm authority

Identify decision gate

Model delay and relocation

Verify actual outcomes

Read the sequence

First identify the scope: current proposal, usable parcels, all unsettled approvals, largest requested utility commitments and phase schedule. Then link each election or policy to a dependency: zoning, ballot consent, financial incentive, utility rate protection, or a temporary delay. Record whether the dependency is necessary for the current concept or can be substituted. A restriction might move investment out of one neighborhood without immediately changing national compute demand or might slow demand until a different site is built.

Assign a scenario to each credible result. If a vote is advisory, the next decision lies elsewhere and its schedule belongs in the model. If the measure is binding and applies, identify the earliest verified effective date and alternative pathway. Include potential redesign, smaller phasing, revised guarantees and withdrawal, without assuming any one response is the developer’s plan. [11]

Treat public acceptance as a measurable operational issue

Set triggers for reforecasting: a certified vote, permit denial, withdrawal, adopted ordinance, signed infrastructure agreement or verified phase revision. Track public complaints and formal conditions separately; a surge in public engagement is informative before it changes legal rights. Compare the implied local outcome with actual land, construction and utility commitments.

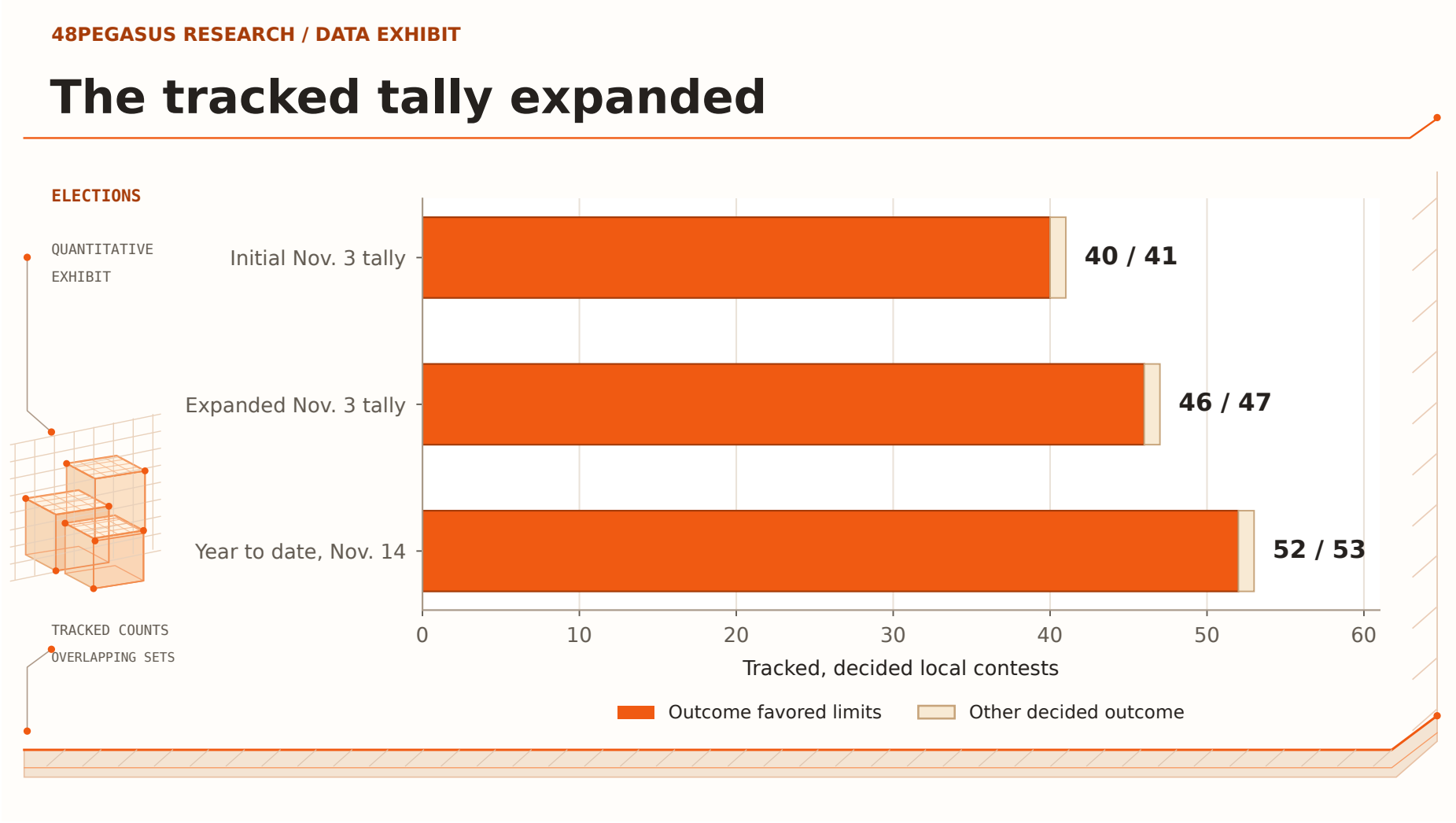
In the November dataset, the central finding is robust to the tracker’s expanded coverage, but its interpretation remains bounded. It demonstrates organized local political resistance in a self-selected set of contests, not a national ban or a deterministic election effect. It creates a case for quantified terms, independent checks, honest polling interpretation and distinct project-stage reporting. If uncertainty remains after the vote, the responsible conclusion is to name the missing approval or evidence, not to force a binary “built” or “blocked” verdict. [10] [11]

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VISUAL EVIDENCE

Exhibit 03 The tracked tally expanded



The Nov. 6 initial snapshot reported 40 of 41. The later November 3 set is 46 of 47; the year-to-date count is 52 of 53 as of Nov. 14. These are overlapping snapshots, not three independent election samples or estimates of national opinion.

Ballotpedia, 2026 local data-center measure scorecard and November 3 analysis: primary source

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VISUAL EVIDENCE

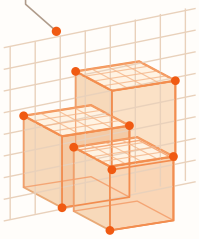
Exhibit 04 Approved limits were not all bans

48PEGASUS RESEARCH / DATA EXHIBIT

Approved limits were not all bans

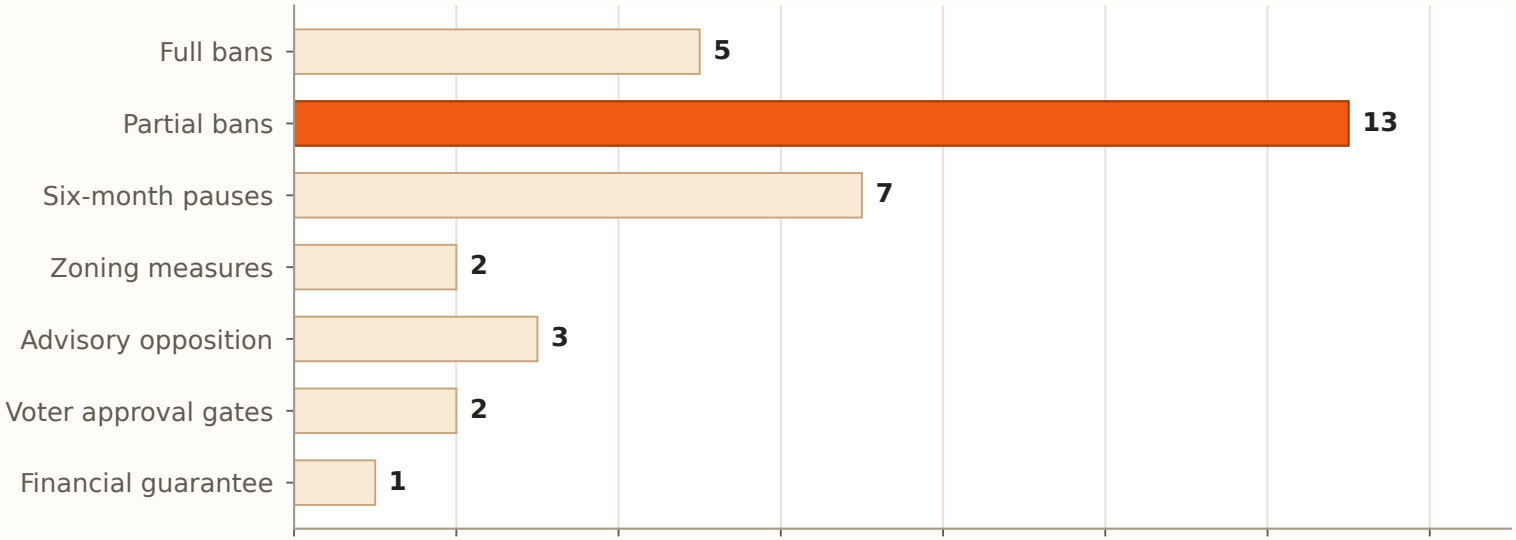
ELECTIONS

QUANTITATIVE EXHIBIT



LEGAL CATEGORIES

APPROVED LIMITS



These 33 approvals are distinct from 13 defeats of pro-development questions; both contributed to the 46 restrictive or opposing outcomes in the expanded November 3 tally.

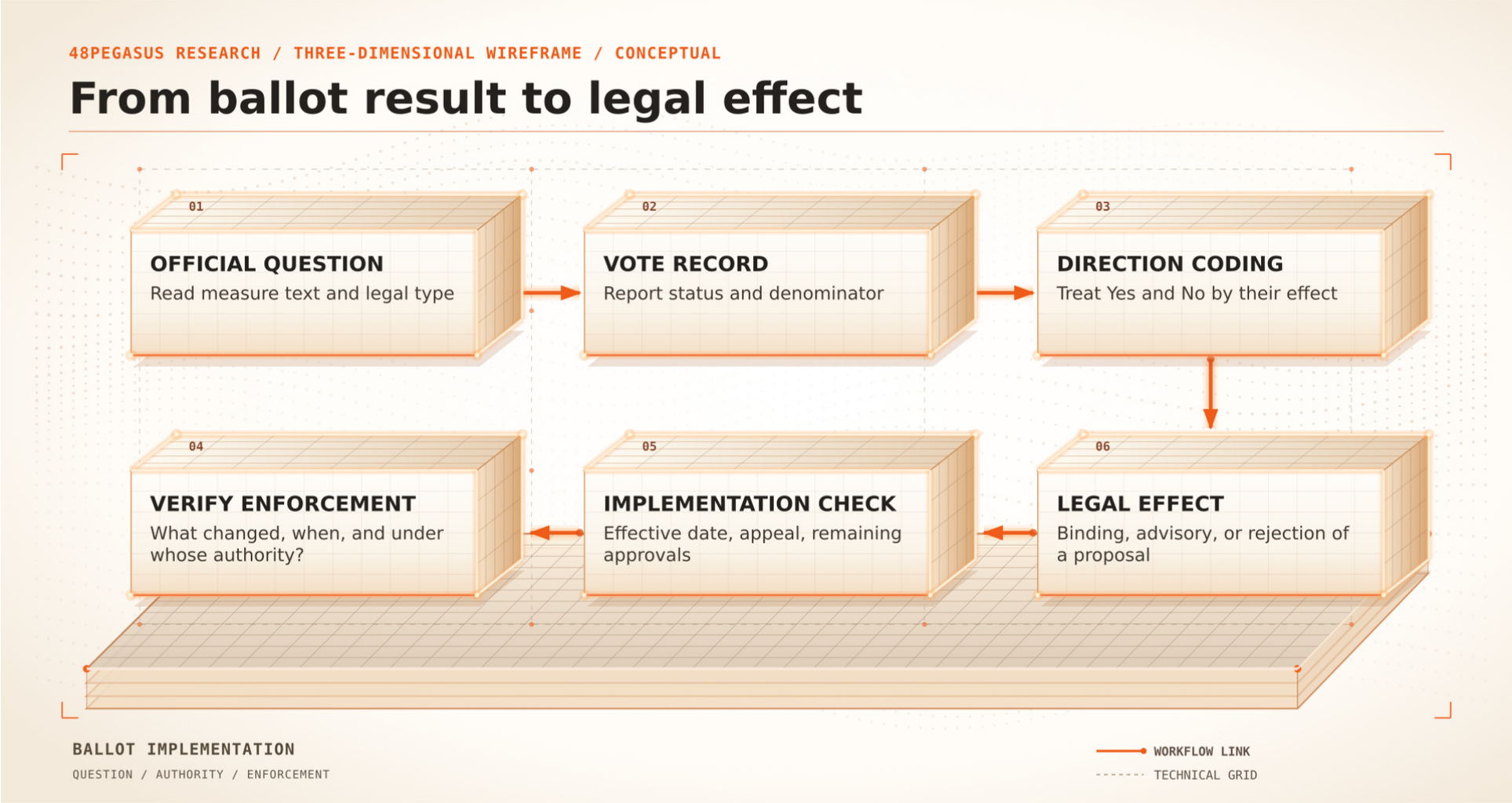
Ballotpedia, 2026 local data-center measure scorecard and November 3 analysis: primary source

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VISUAL EVIDENCE

Exhibit 05 From ballot result to legal effect



Recover the actual question and canvass, classify its direction and authority, and verify what changed afterward. An advisory vote is not a permit denial.

48PEGASUS Research original conceptual exhibit. Not empirical data.

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VISUAL EVIDENCE

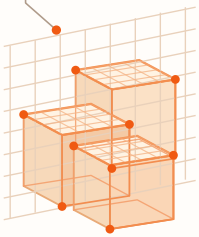
Exhibit 06 Local opposition crossed party lines

48PEGASUS RESEARCH / DATA EXHIBIT

Local opposition crossed party lines

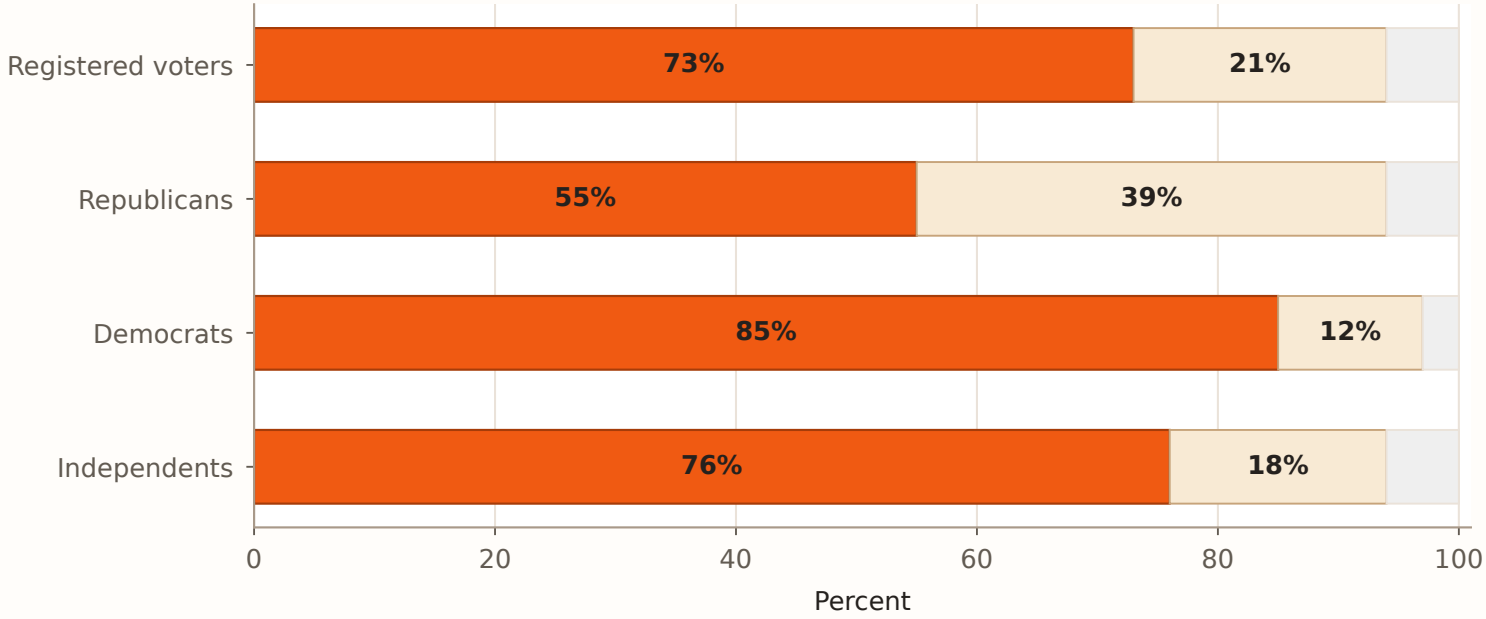
PUBLIC OPINION

QUANTITATIVE EXHIBIT



POLL RESULTS

REGISTERED VOTERS



September 24–27, 2026 national survey of 1,032 self-identified registered voters. Overall sampling margin ±3.8 percentage points; party subsamples have greater uncertainty. Question asked about building an AI data center in the respondent's community, not a specific proposal or nationwide ban. Remaining share is calculated from rounded reported percentages.

Quinnipiac University registered-voter poll, September 29, 2026: primary source

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ELECTRICITY DEMAND AND INFRASTRUCTURE

POWER DEMAND: DEFINE THE BOUNDARY

SCOPE

Data centers are not synonymous with AI.

Separate historical estimates, forecasts, and proposals.

Three different questions

Electricity analysis must distinguish how much energy a facility consumes, how much power the grid must deliver at a critical moment, and who pays for the infrastructure and services required. These questions interact, but none can be answered by a single campus capacity announcement. Annual consumption describes an energy quantity; peak demand describes a rate of use; a tariff determines financial obligations.

The IEA’s 2026 outlook covers electricity consumed by data centers, including services beyond artificial intelligence. Its central global projection is approximately 950 TWh in 2030, compared with an estimated 485 TWh in 2025.[27] Presenting the entire figure as AI consumption would misstate the boundary. Enterprise computing, storage, networking, and conventional cloud services remain part of the sector.

An evidence hierarchy

This report treats measured or modeled historical consumption separately from forward projections. A utility forecast is a planning input, not a promise that every proposed campus will operate. A developer’s announced maximum demand is not the same as commissioned load, and an interconnection request is not a completed electrical connection.

For each claim, record geography, year, publication vintage, unit, facility coverage, and status. Comparisons become meaningful only after these fields align. A global estimate and a United States forecast cannot be combined into a growth series. Nor should a server-only estimate be compared directly with a whole-facility total.

The analysis that follows uses published evidence to establish scale, then develops practical tests for forecast credibility, reliability, cost allocation. Illustrative calculations are labeled. They explain mechanisms rather than predict a particular household bill or certify a particular development as beneficial.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

MW, MWh & THE CAPACITY ILLUSION

MEASUREMENT

Power is a rate. Energy is an accumulated quantity.

Illustrative calculations use 8,760 hours per year.

Translate the announcement

A megawatt measures power at a moment; a megawatt-hour measures energy delivered over time. A hypothetical facility drawing 100 MW continuously would consume 876,000 MWh, or 0.876 TWh, in a non-leap year. At an average draw of 60 MW, its annual consumption would be 0.526 TWh after rounding. The same advertised connection can therefore support very different annual energy outcomes.

Specify whether a number refers to information-technology equipment, total facility demand, contracted service, transformer capacity, or a future campus buildout. Cooling and electrical losses make facility demand different from IT demand. Redundant equipment ratings can also exceed the actual simultaneous load. Adding every equipment nameplate can create a misleading impression of grid requirements.

Peak coincidence matters

A steady 100 MW customer and a 100 MW customer operating only during system peaks impose different energy volumes but can create similar peak obligations.

Conversely, a large annual consumer that reliably reduces demand during constrained hours may require less incremental capacity than its energy total suggests. This is why multiplying annual TWh by a retail rate cannot reveal the full cost of service.

EIA distinguishes generation, consumption, and electricity prices in its statistical products; its capacity-addition releases describe generating capability, not annual energy output.[43] The report’s practical rule is to keep separate columns for MW, MWh, and dollars, with explicit conversion assumptions.

For a campus approaching service, request an hourly ramp profile, expected utilization, contingency imports, and the contractual maximum. Record the date each phase becomes electrically usable. These details turn a publicity figure into a planning input and reveal whether the utility is being asked to reserve infrastructure long before the customer can use it.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

GLOBAL OUTLOOK: LARGE GROWTH, LOCAL CONSTRAINTS

GLOBAL EVIDENCE

2025: 485 TWh estimated.

2030: 950 TWh projected in IEA’s 2026 outlook.

Read the current vintage

The IEA’s 2026 update projects data-center electricity use roughly doubling from 485 TWh in 2025 to 950 TWh in 2030, approximately 3% of global electricity demand. It projects AI-focused data-center consumption growing faster, roughly tripling over that interval. These are different measures: the sector total includes non-AI activity, while the AI-focused category describes a subset.[27]

The earlier 2025 Energy and AI report estimated 415 TWh in 2024 and projected about 945 TWh in 2030.[28] The similar endpoint does not mean that nothing changed. The observed starting point, near-term constraints, and evidence base were updated. A chart should identify which vintage supplies each series rather than silently combining forecasts.

Global percentages do not allocate capacity

A small global share can still create a large local challenge when demand concentrates behind the same substations or transmission corridors.

World electricity supply cannot be delivered indiscriminately to any campus. The relevant constraint may be a local transformer, regional reserve requirement, construction schedule, or permission to operate backup equipment.

A useful comparison therefore has two levels. The global view establishes the scale of the industry and the range of possible growth. The local view examines the additional load on a specific network and the resources available at the hours when that network is constrained.

Neither level alone settles affordability. A globally modest load can require expensive local reinforcement; a large new customer can also contribute substantial revenue where spare capability exists. The analytical question is not whether data centers are large in the abstract, but whether their particular location, timing, and service requirements create costs that their payments cover.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

UNITED STATES: THE UPDATED REFERENCE CASE

U.S. EVIDENCE

2024: 192 TWh and 4.7%.

2030 reference: 649 TWh and 11.8%.

Replace obsolete shorthand

Berkeley Lab’s 2025 Update, published in 2026, estimates a 2030 reference case of 649 TWh, or 11.8% of total United States electricity use. A November 2026 laboratory presentation reports the historical 2024 estimate as 192 TWh, or 4.7%. The update’s scenarios span 9.5% to 15.3% of total electricity use in 2030.[29][30]

These figures should not be presented as a guaranteed outcome or a confidence interval. They reflect modeled assumptions about equipment and operation. The earlier 2024 report’s widely cited 325–580 TWh range referred to 2028, a different endpoint and forecast vintage.[31] A responsible chart retains these distinctions rather than treating every published number as an interchangeable estimate of the same future.

What the range does and does not show

Scenario variation reveals that energy demand is sensitive to assumptions, but it does not supply a probability for each outcome.

A utility may face a very different exposure depending on where the projected activity occurs. National totals do not identify which projects arrive, their hourly profiles, or the infrastructure required to connect them.

The practical implication is to use national research as a reason to strengthen regional planning, not as a substitute for project verification. Require developers to connect their requested service to phased construction, equipment procurement, and credible occupancy or computing demand.

For public discussion, keep three statements separate: the United States has already experienced substantial data-center electricity use; credible models project further growth; the magnitude and geography remain uncertain. This formulation recognizes the investment challenge without converting a scenario into an inevitability or dismissing real demand because individual projects may slip.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

AI LOAD IS NOT ALL COMPUTING LOAD

ATTRIBUTION

Separate workload, hardware, and facility boundaries.

No universal electricity-per-prompt factor is used here.

Why attribution is difficult

AI training, AI inference, conventional cloud computing, storage, and communications can share facilities and supporting systems. A building’s meter measures their combined demand, including cooling and electrical overhead. Allocating that total to AI requires additional information about equipment, utilization, workload scheduling, and the allocation of common infrastructure.

Berkeley Lab’s modeling framework estimates sector electricity demand through equipment and operating assumptions, while the IEA separately discusses AI-focused facilities within broader data-center demand.[32] These approaches are useful but do not make every campus megawatt an AI megawatt. A facility designed for accelerated computing can also operate below design load during deployment or serve several types of work.

Avoid the prompt multiplication shortcut

A fixed electricity estimate per chatbot request can be misleading when requests differ in model, output length, modality, hardware, batching, and system utilization.

Multiplying a convenient average by a speculative request count compounds uncertainty. It can also omit training, idle equipment, networking, and facility overhead, or count them twice.

For an operator, a more defensible accounting system measures facility electricity and reconciles it with equipment-level telemetry. Assign shared overhead using a stated method and show the unallocated remainder. Track changes in useful work as well as energy, because improved efficiency can coexist with higher total consumption if activity grows faster.

For a policymaker, the immediate grid question is generally the facility’s actual and contracted electrical behavior, regardless of which application caused it. AI attribution matters for industrial strategy and environmental accounting, but protection of the power system should not depend on a marketing label. Apply comparable technical and financial requirements to comparable large-load behavior.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

FORECASTING: FROM REQUESTS TO CREDIBLE LOAD

FORECAST QUALITY

An inquiry is not a commitment.

Track project maturity and actual ramps.

Build a project ledger

Large-load forecasting needs more than a list of requested megawatts. Record the customer, location, requested phases, expected energization, construction status, financial security, and whether alternative sites represent the same underlying project. Otherwise, competing location inquiries can appear as additive demand even when only one site will be built.

PJM's January 2026 forecast reduced near-term peak expectations relative to its prior forecast through 2032, citing updated economic and electric-vehicle assumptions and improved vetting of large-load adjustments.[33] This is evidence that screening changes the planning result. It is not evidence that data-center growth disappeared or that every earlier request was fictitious.

Use observable milestones

Assign project categories such as inquiry, executed service agreement, financed construction, commissioned phase, and operating load. The categories should describe evidence, not subjective enthusiasm.

Update them when deadlines slip or deposits expire. Keep the original forecast so reviewers can see whether changes reflect new information or unexplained optimism.

Avoid a single discount applied indiscriminately to all proposed demand. Two projects with identical requested capacity may have very different completion risks. A physically advanced campus with secured equipment is not equivalent to an undeveloped land option. Nor does a strong sponsor eliminate risks from unavailable transmission or uncertain tenant demand.

A credible forecast reconciles each new vintage with actual load growth. Publish aggregate additions, withdrawals, delays, and revisions without disclosing sensitive customer details. This allows regulators and communities to distinguish genuine growth from a constantly moving pipeline. The purpose is not to force certainty where none exists, but to make uncertainty visible before it becomes an irreversible infrastructure commitment.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

UNCERTAINTY: DESIGN FOR MORE THAN ONE FUTURE

SCENARIO DESIGN

Test delayed load and accelerated load.

National projections are not local probabilities.

Separate the sources of uncertainty

Demand can diverge because fewer campuses are built, because construction is delayed, or because operating utilization differs from expectations. These mechanisms have different financial consequences. A delayed project may eventually repay infrastructure costs but create years of carrying costs; a canceled project may leave an asset with little alternative use.

PJM’s 2026 forecast anticipates average annual summer peak growth of 3.6% over ten years, substantially above the approximately 0.3% projected in 2021.[34] That contrast shows how rapidly planning expectations can change. It does not establish an error distribution or justify assuming the latest forecast is exact.

Stress the investment sequence

Test a base case, a slower-ramp case, and a concentrated high-demand case. Vary commissioning dates separately from ultimate capacity.

Examine whether the proposed network can serve existing customers if new load arrives faster than generation, and whether those customers face stranded costs if load arrives later.

The analysis should also consider common causes. Several projects may depend on the same chip supply, financing conditions, or transmission upgrade. Treating their completion probabilities as independent can understate correlated delay. Conversely, geographic substitution can reduce demand in one service area while leaving national demand unchanged.

Stage investment where technically practical. Early work can preserve options without committing every downstream asset immediately. Identify which milestones justify larger expenditures and which costs become unrecoverable. A useful decision is not simply the cheapest outcome under the central forecast. It is an investment sequence that remains acceptable across plausible outcomes while maintaining reliability obligations. The most important output may be the conditions that trigger the next stage, rather than a single precise megawatt forecast.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

LOCATION: THE GRID IS NOT A NATIONAL SOCKET

GEOGRAPHY

Study the relevant electrical boundary.

Regional averages can hide a local constraint.

The connection point changes the answer

Two identical campuses can have different system impacts because their connection points differ. One may sit near existing generation and uncongested transmission; another may require a new substation and reinforcement across several jurisdictions. Local land availability therefore says little about electrical readiness.

DOE’s transmission-needs work evaluates constraints and congestion at regional and interregional scales.[35] Its significance for data-center siting is methodological: assess the network that must actually carry the power. National capacity totals do not establish that a specific location can receive a specified quantity under stressed conditions.

Compare delivered service, not headline price

A site-selection comparison should include the timing and firmness of service, upgrade obligations, congestion exposure, and the cost of interruptions.

A low published energy rate can be outweighed by a long wait for electrical infrastructure or restrictions on operating during critical hours. Conversely, a more expensive site may provide a more credible path to usable capacity.

The developer should identify which requirements are essential and which can change. Latency, customer proximity, water availability, workforce access, and network connectivity may limit geographic flexibility. Grid planners should not assume all computing can relocate freely, but developers should not assume the grid must accommodate every preferred location on the same terms.

Communities need the same locational clarity. Separate on-site equipment, nearby network work, and broader regional upgrades. Explain which assets primarily serve the campus and which provide shared benefits. This prevents a debate about one visible building from obscuring the larger electrical footprint and makes it possible to compare alternative siting choices fairly.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

TRANSMISSION: CAPACITY, BENEFITS & TIME

NETWORK INVESTMENT

A transmission project can serve multiple purposes.

Cost allocation should follow demonstrated benefits.

Planning beyond a single customer

FERC’s Order No. 1920 framework calls for long-term regional transmission planning using at least three distinct scenarios, a horizon of at least twenty years, and reassessment at least every five years. Its cost-allocation framework connects assigned costs to estimated benefits rather than assuming every project has one beneficiary.[36]

For data-center growth, this matters because a network upgrade can address several needs at once: delivery to a new load, relief of existing congestion, replacement of aging equipment, and improved access to generation. Allocating the entire project to one customer can overstate that customer’s responsibility; allocating none can shift customer-driven costs to others.

Separate need, selection, and payment

First establish the electrical need. Then compare technically credible alternatives. Finally determine which beneficiaries should pay under the applicable rules.

Reversing this sequence can turn cost allocation into a negotiation over a project whose necessity has never been demonstrated.

Construction schedules also require scrutiny. Study completion, siting approval, land access, equipment procurement, and commissioning are separate milestones. An approved plan does not make a line immediately available, and a funding agreement does not resolve every permitting issue. Maintain a schedule with dependencies rather than one optimistic completion date.

The report’s proposed test is to ask what would be built without the data center, what changes because of it, and what benefits the changed project produces for others. Document those answers before assigning costs. Update the assessment if the campus changes size or timing. Shared infrastructure can be valuable, but the claim of shared benefit should be supported by analysis rather than used as a blanket justification for spreading costs.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

INTERCONNECTION: TWO QUEUES, ONE TIMELINE

DELIVERY RISK

Generation requests are not completed plants.

Large-load service rules remain region-specific.

Supply and demand must meet in time

A campus may obtain land and begin building before the generation and network needed to serve it are ready. Conversely, a proposed generator may spend years in studies without entering service. Berkeley Lab's Queued Up 2026 edition reports that, in regions with available data, projects completed in 2025 had a median interval of more than five years from interconnection request to commercial operation.[37]

That statistic describes completed generating projects, not data-center connections and not a guaranteed waiting time for every future plant. It nevertheless demonstrates why queued capacity cannot be treated as immediately available supply. Withdrawn projects and incomplete studies need separate treatment.

Regulatory reform is not instant capacity

On June 18, 2026, FERC issued six regional show-cause orders asking grid operators to justify or reform large-load connection rules.[38] Those proceedings should not be described as a single nationwide final tariff or as proof that every proposed customer now has accelerated service.

Current project terms depend on the relevant orders, compliance filings, and effective tariffs.

For planning, align three schedules: load commissioning, generation availability, and network readiness. Identify the earliest date all required elements are available together. If interim service is proposed, specify its restrictions, duration, and fallback when the permanent solution slips.

A credible agreement also defines what happens when only one side is ready. The operator may need to limit the campus ramp, provide conditional service, or defer energization. Those choices should be explicit before capital is committed. A faster administrative process is useful, but it does not itself manufacture transformers, complete transmission lines, or supply dependable generation during a system shortage.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

RESOURCE ADEQUACY: ENERGY IS NOT ENOUGH

RELIABILITY

Annual energy balance does not guarantee peak service.

Accredited capacity differs from nameplate capacity.

Cover the difficult hours

Resource adequacy asks whether enough dependable supply and demand-side capability will be available during periods of system risk. A system can generate sufficient annual energy yet face shortages during a cold evening, a heat wave, or an extended outage. Data-center service commitments therefore require more than an annual purchase of an equivalent quantity of renewable electricity.

PJM's December 2025 capacity auction for the 2027/28 delivery year procured 134,479 MW of generation and demand-response capacity on its reported unforced-capacity basis, with a clearing price of $333.44 per MW-day at the approved cap.[39] The auction result is a forward capacity-market measure, not an electricity-consumption figure or a retail rate.

Evaluate the portfolio

A reliable supply plan examines the joint performance of resources under stress.

Weather can affect demand, renewable output, fuel availability, and equipment outages simultaneously. Simply adding nameplate ratings ignores these dependencies. Storage duration, fuel assurance, transmission deliverability, and demand-response performance all influence the usable contribution.

For a new campus, identify the obligation imposed on the serving utility or supplier. Does the customer require uninterrupted firm service, accept curtailment, or provide resources that are recognized under the applicable adequacy rules? A private claim to be self-sufficient does not automatically reduce a public system obligation.

Treat adequacy assessments as risk analyses, not predictions of a particular blackout. A reserve shortfall signals an elevated planning concern; it does not identify the exact hour an outage will occur. Conversely, an acceptable aggregate reserve margin does not eliminate local delivery constraints. Decision-makers need both the regional supply picture and the campus-specific electrical study.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

DYNAMIC RELIABILITY: WHEN LOAD DISAPPEARS

OPERATING BEHAVIOR

Sudden load loss can destabilize balance.

Test ride-through and reconnection behavior.

A data center is an active electrical system

Large electronic loads can change demand rapidly during a disturbance. Protective equipment may transfer a facility to backup supply or disconnect it from the grid. When many facilities respond together, the power system suddenly has more generation than load. Reliability concerns therefore include abrupt demand reductions as well as insufficient supply.

NERC’s 2026 State of Reliability overview identifies a February 2025 Eastern Interconnection event involving 1,800 MW of data-center consequential load reduction following a transmission fault.[41] This is evidence of a specific operating phenomenon, not proof that all data centers behave alike or that every disturbance causes service failure.

Model the behavior that matters

Connection studies should use appropriate dynamic models and validated assumptions about protection settings, voltage response, backup transfers, and restoration.

A static hourly demand forecast cannot describe a rapid disturbance. The system operator needs to understand how much load may disappear, how quickly, and under what conditions it returns.

Reconnection deserves equal attention. Several facilities restoring demand simultaneously can create a second large change. Recovery procedures should coordinate the timing of return to normal service and verify that controls behave as expected after an abnormal event.

The report’s operating recommendation is to require evidence through commissioning tests, model validation, and periodic updates when equipment or settings change. Confidential technical information can be protected while aggregate reliability risks are communicated publicly. The central distinction is between a facility’s internal uptime and its behavior as part of the wider grid. A strategy that protects servers can still create a system-level challenge if its interaction with other facilities has not been studied.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

FLEXIBILITY: VALUABLE ONLY WHEN DELIVERABLE

DEMAND RESPONSE

Define the amount, duration, and recovery.

Technical potential is not a contracted grid service.

Identify the flexible component

Some computing work can be delayed, shifted geographically, or interrupted with limited consequences. Other work has strict response-time or continuity requirements. Cooling, networking, and safety systems also impose operating limits. A facility's theoretical ability to reduce load is therefore not equivalent to an obligation that a grid operator can rely upon.

A practical flexibility product specifies the baseline, available megawatts, response time, maximum event duration, notice period, and restrictions. It must also describe rebound demand when deferred work resumes. Without these terms, a statement that a campus is flexible is difficult to evaluate and impossible to price consistently.

Match compensation to verified service

PNNL's 2026 analysis examines battery storage as a means of reducing data-center cost shifts, emphasizing the relationship between incremental system costs and the new customer's contribution.[42] The useful lesson is conditional: flexibility can improve the economics when it changes the actual cost to serve, not merely when it moves energy behind a different meter.

Test the proposed service under realistic conditions. Confirm telemetry, dispatch authority, baseline integrity, and performance during the hours of greatest need. Avoid paying twice for the same capability through overlapping programs or counting backup capacity that cannot legally or technically operate as assumed.

A flexible tariff should allocate both rewards and consequences. If the customer receives cheaper or earlier service in exchange for curtailment, failure to curtail cannot silently become an obligation imposed on everyone else. Clear enforcement protects reliability and the credibility of the arrangement. Properly designed flexibility can create a middle ground between immediate unrestricted service and an indefinite connection delay, but only if its limits are measurable and enforceable.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

NEW SUPPLY: THE MIX AND THE MISMATCH

GENERATION PIPELINE

Planned additions are not completed additions.

Storage shifts energy; it does not create fuel.

Interpret the capacity pipeline

EIA reported that developers planned 86 GW of utility-scale capacity additions for 2026, a record if realized. Solar represented 51% of the planned total, batteries 28%, and wind 14%.[43] These percentages describe nameplate additions in that release, not dependable capacity during every hour and not the share of a data center’s electricity that each technology will supply.

The distinction matters because different technologies solve different problems. Solar adds daytime generation. Storage can move energy across time within its power and duration limits. Dispatchable plants can provide output on demand only when fuel, equipment, permits, and operating conditions allow. No single nameplate total describes all these capabilities.

Match the load profile

A continuously operating campus needs a portfolio that covers low-generation periods as well as annual energy volume.

Evaluate hourly supply, transmission access, outages, and reserve obligations. When storage is part of the plan, include charging demand, conversion losses, degradation, and the possibility of consecutive stress events.

New generation can reduce the pressure created by new load, but the relevant question is additional deliverable capability on the required schedule. A contract for an existing plant may change who pays for its output without increasing system supply. A proposed plant can add supply only after it is financed, built, connected, and available.

The report recommends comparing portfolios on delivered service and risk, not on the cheapest isolated technology metric. Include the cost of backup, balancing, transmission, and delay. A low energy price is useful, but it is not a complete cost estimate for serving a demanding customer reliably throughout the year.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

CO-LOCATION & BEHIND-THE-METER POWER

SERVICE BOUNDARY

Physical proximity does not erase grid dependence.

Specify imports during generator outages.

The connection still matters

Locating a data center beside a generator can change its electrical and commercial arrangement, but it does not automatically eliminate effects on other customers. If an existing generator redirects output to the campus, less output may remain available to the wider system. If the campus imports during generator outages, it may still require substantial network capability.

FERC's December 2025 PJM co-location action directed development of clearer service arrangements; subsequent June 2026 action modified parts of that framework and addressed compliance.[44][45] These are evolving regional rules. A project should be evaluated under its actual effective tariff and approved agreements, not a generic claim that co-location avoids ordinary system obligations.

Measure all operating states

Study normal operation, generator outage, maintenance, startup, and restoration. Specify the maximum grid import in each state and the protections that prevent unauthorized withdrawals.

A nominally self-supplied campus can create a large standby requirement if its on-site plant fails while computing continues.

Financial analysis should include standby service, fuel infrastructure, emissions controls, maintenance, and the consequences of generator unavailability. Physical separation from ordinary retail service does not guarantee economic independence. Nor does a private power contract establish that existing customers are protected from every network or market effect.

The appropriate question is what services the facility actually receives and what costs or benefits it creates. Where the arrangement genuinely reduces network requirements, charges should recognize that reduction under applicable rules. Where it continues to depend on the grid, the dependence should be visible and funded. This approach avoids treating either co-location or conventional service as inherently superior without examining the specific electrical configuration.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

RETAIL RATES: UNPACK THE BILL

PRICE EVIDENCE

Wholesale energy is one component.

A rate increase is not a complete causal explanation.

Follow the cost layers

Electricity bills recover several categories of expense. EIA identifies fuel, power-plant investment and operation, transmission and distribution, weather, and regulatory arrangements among the factors affecting prices.[46] Data-center growth can influence some of these channels, but it is not the only possible driver. Aging infrastructure, storm recovery, financing costs, and changes in fuel markets can also matter.

Separate the energy charge from capacity, network charges, riders, taxes, and fixed customer charges where the bill structure permits. A change in a wholesale auction price does not translate one-for-one into a household’s total bill. Suppliers may hedge purchases, tariffs may update with a lag, and customers have different usage patterns.

Rates and bills are different outcomes

A household bill can rise because the unit price increased, because consumption increased, or both. Weather can change usage even if the tariff is unchanged. Comparing average monthly bills without controlling for consumption can therefore confuse price pressure with a hotter summer or colder winter.

For public reporting, show the applicable tariff, a constant-usage example, and the actual average bill separately. State whether figures are nominal or inflation-adjusted and whether they include all mandatory charges. Compare the same utility, customer class, and billing period rather than mixing statewide averages with an individual supply offer.

The evidence needed to attribute an increase to data centers is more demanding than observing that both grew. Trace the approved costs, market exposure, and allocation decisions. A transparent decomposition can identify genuine cost shifts without blaming the sector for unrelated expenses or overlooking effects that arrive through regional wholesale markets rather than a nearby substation.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

CAPACITY PRICES: A SIGNAL, NOT A HOUSEHOLD BILL

MARKET EVIDENCE

2027/28: $333.44 per MW-day.

2028/29: $325.00 per MW-day.

Understand the auction unit

PJM’s 2028/29 Base Residual Auction reported a capacity clearing price of $325 per MW-day, compared with $333.44 for 2027/28.[40][39] These are prices for capacity obligations in specified future delivery years. They are not dollars per megawatt-hour of energy, not national electricity prices, and not a direct percentage increase in residential bills.

Capacity-market outcomes reflect the interaction of demand forecasts, eligible supply, accreditation, auction parameters, and administrative constraints. A price at a cap does not reveal an unconstrained market-clearing price. Comparing years requires attention to rule changes and the relevant region, not merely a line connecting headline prices.

Trace the pass-through

An illustrative customer with a one-MW capacity obligation at $325 per MW-day would have a simple annualized capacity amount of $118,625 over 365 days before other adjustments.

This arithmetic is not a retail quote. Actual obligations, allocation factors, supplier contracts, and billing treatment determine what appears on a bill.

To assess data-center effects, compare a documented counterfactual with and without the relevant load while holding other assumptions explicit. Removing load can change the clearing price paid across a market, not just the quantity purchased for that customer. Conversely, new supply or different auction rules can change the result substantially.

Report the scope of any modeled attribution. A capacity-market estimate is not an estimate of total household cost, and a result for one delivery year does not establish a permanent burden. The defensible conclusion is narrower: large-load growth can affect capacity procurement and prices, while the amount passed to each customer class depends on market design and retail recovery.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

COST CAUSATION: WHO BENEFITS, WHO PAYS?

ALLOCATION

Incremental costs and shared benefits both matter.

Dedicated assets and regional assets are different.

Start with the counterfactual

Cost causation asks which expenditures or obligations arise because a customer connects or expands. A dedicated line to a campus may be straightforward to identify. A regional upgrade that also relieves existing congestion requires a broader benefit analysis. The appropriate allocation is not always all or nothing.

FERC's long-term transmission framework emphasizes evaluating benefits and assigning costs in a manner roughly commensurate with them.[36] Retail allocation and customer-specific service terms operate through additional jurisdiction-specific processes. A federal transmission principle should not be presented as an automatic answer to every state retail-rate question.

Revenue can offset costs

A large customer can help spread existing fixed costs when spare infrastructure is available and its payments exceed incremental service costs.

The opposite can occur when serving the customer requires expensive additions, creates wholesale price pressure, or leaves stranded assets. The direction is an empirical question, not a property of the phrase data center.

Use a transparent bridge from the no-project case to the project case. Include capital costs, operating costs, energy and capacity purchases, incremental revenues, and benefits to other users. Show who bears costs during construction, during the load ramp, and after an early exit.

Do not count general economic-development claims as electricity-rate revenue unless money actually reaches the relevant utility accounts. Local tax receipts, jobs, and procurement may matter to a community, but they do not automatically compensate a residential customer for higher network charges. Keeping these ledgers separate makes both the economic-development case and the ratepayer-protection case more credible.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

LARGE-LOAD TARIFFS: PROTECTION BY DESIGN

CONTRACT TERMS

Minimum commitments can reduce stranded-cost risk.

The tariff text matters more than the headline.

Make commitments match exposure

Special large-load tariffs can address the risk that infrastructure is built for demand that arrives late, operates below expectations, or disappears. Relevant provisions include minimum billing demand, contract duration, financial security, ramp schedules, termination charges, and responsibility for dedicated facilities. Berkeley Lab's 2026 rate-design update examines evolving practices for these customers.[47]

The Ohio Consumers' Counsel reports that the July 2025 [*REDACTED*] settlement requires new large data centers to pay for at least 85% of contracted electricity capacity for up to twelve years even if they use less.[48] This is a specific jurisdictional example, not a national standard and not a requirement that every customer buy 85% of its forecast annual energy.

Test the protection in adverse cases

A minimum bill protects only the obligations it actually covers.

Determine whether it funds distribution assets, transmission charges, generation commitments, or a narrower set of costs. Examine credit support and the ability to collect after bankruptcy, project transfer, or sponsor restructuring. A long contract with weak security may offer less protection than it appears.

The customer also needs predictable terms. Define when the ramp begins, how delays caused by the utility are treated, and whether unused capacity can be released or reassigned. A tariff should discourage speculative reservations without penalizing customers for infrastructure they cannot yet access.

Assess incentives as well as recovery. If a minimum charge is poorly designed, the customer may have little financial reason to reduce peak demand after committing to capacity. Coordinate the tariff with verified flexibility benefits. The goal is to recover justified costs and reward useful behavior, not merely to create a larger guaranteed revenue stream regardless of system value.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

STRANDED ASSETS & THE FINANCING GAP

ILLUSTRATIVE ECONOMICS

No figures here describe a specific utility.

Security must cover the exposure it is intended to protect.

Costs arrive before full utilization

Consider a hypothetical dedicated network investment with a $20 million annual revenue requirement. If expected campus sales are two billion kWh annually, recovering that amount entirely through energy sales would require one cent per kWh. If sales reach only one billion kWh and the same costs remain, the required amount becomes two cents per kWh. This simplified example excludes other charges and illustrates volume risk, not a proposed tariff.

The risk is greatest when the utility commits capital early but the customer ramps slowly. A forecast can ultimately prove correct while still leaving a substantial interim recovery gap. Financing and depreciation schedules do not necessarily wait for server utilization to catch up.

Allocate delay and exit risk explicitly

A service agreement can reduce this mismatch through milestones, upfront contributions, minimum charges, or secured termination obligations.

Each mechanism transfers a different risk. An upfront payment reduces financing exposure; a minimum charge addresses utilization; collateral improves collectability; a termination payment addresses early departure.

Test the contract against a delayed opening, a partial buildout, and a complete cancellation. Calculate the remaining unrecovered obligation after applying security. Then identify who pays any residual amount. Do not assume a recognizable corporate name guarantees every project entity’s obligations.

Also consider alternative use. An asset that can serve several future customers has a different stranded-cost profile from a highly specialized facility. Crediting realistic reuse value can avoid overcharging the initial customer, but speculative reuse should not be treated as certain. The financial test should be conservative, explicit, and periodically refreshed as the project and surrounding system develop. Ratepayer protection depends on enforceable cash flows, not simply an optimistic demand curve.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

AFFORDABILITY: DEMAND A CAUSAL RECORD

PUBLIC ACCOUNTABILITY

Separate evidence from attribution.

Show the no-project case and the project case.

A useful public explanation

Communities deserve more than a claim that growth will pay for itself or that every increase is caused by AI. Publish a service-area analysis showing new investment, expected customer payments, exposure to wholesale energy and capacity costs, and the treatment of delays. Summarize uncertainty in understandable terms without disclosing confidential commercial details.

EIA makes electricity sales and price data available by state and utility.[49] These datasets can establish what happened to average prices and sales. They do not, by themselves, identify the causal contribution of a particular development. That requires utility filings, allocation decisions, and an explicit counterfactual.

Measure who is exposed

An aggregate finding of net benefit can conceal uneven outcomes. Residential customers, small businesses, industrial users, and customers on competitive supply contracts may experience different changes.

A utility’s revenue position and a household’s affordability problem are not the same measure.

Show bill effects at several usage levels and explain fixed-charge changes separately from energy charges. Identify whether protections apply to existing projects, new projects, expansions, or only a defined customer class. Track the timing of benefits and burdens; a future tax base does not necessarily help a household facing a near-term electric-bill increase.

Independent review should examine the assumptions most capable of reversing the result: customer ramp, infrastructure cost, wholesale prices, contract security, and allocation methodology. Where evidence is insufficient, present the uncertainty rather than a precise unsupported percentage. A credible public process can acknowledge substantial digital-infrastructure benefits while insisting that the people financing shared systems understand their exposure and have a meaningful opportunity to challenge it.

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ELECTRICITY DEMAND AND INFRASTRUCTURE

A DECISION STANDARD FOR RESPONSIBLE GROWTH

OPERATING STANDARD

Approve evidence-backed service, not speculative megawatts.

Review the forecast, contract, and physical system together.

Five conditions for a credible connection

A responsible large-load decision establishes a credible demand ramp, deliverable electrical service, enforceable financial responsibility, acceptable operating behavior, and transparent treatment of other customers. Failure in any one can undermine the project even if the others appear strong. A well-funded campus cannot operate without power; a technically feasible connection can still create an unfair financial exposure.

Recent federal proceedings emphasize clarity, consumer safeguards, and region-specific large-load integration.[50] Their existence reinforces the need to distinguish proposed reforms from effective requirements. Before making a binding decision, verify the applicable tariff, order, service agreement, and technical study rather than relying on a general policy announcement.

Maintain a living evidence record

Record the forecast vintage, project milestones, committed capacity, measured utilization, and infrastructure dependencies. Reconcile operating data with the forecast at regular intervals.

Escalate material changes in size, timing, financial backing, or equipment behavior before they invalidate planning assumptions.

Use staged approvals where technically and legally appropriate. Tie each expansion to demonstrated readiness and the availability of required supply and network capability. If flexible or conditional service is part of the arrangement, test it and document the consequences of nonperformance. A promise to cooperate is not a substitute for dispatchable, measurable behavior.

The central conclusion is conditional rather than ideological. Data centers can support investment, digital capability, and utility revenue, while also creating concentrated demands and material cost risks. Neither benefit nor harm is automatic. The strongest projects make their electrical requirements visible, pay for justified obligations, and remain workable under plausible delays and stress conditions. The strongest public oversight measures outcomes and updates decisions when the evidence changes.

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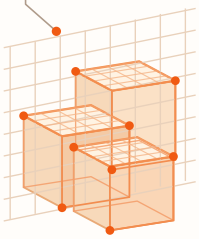
Exhibit 07 Global data-center electricity demand

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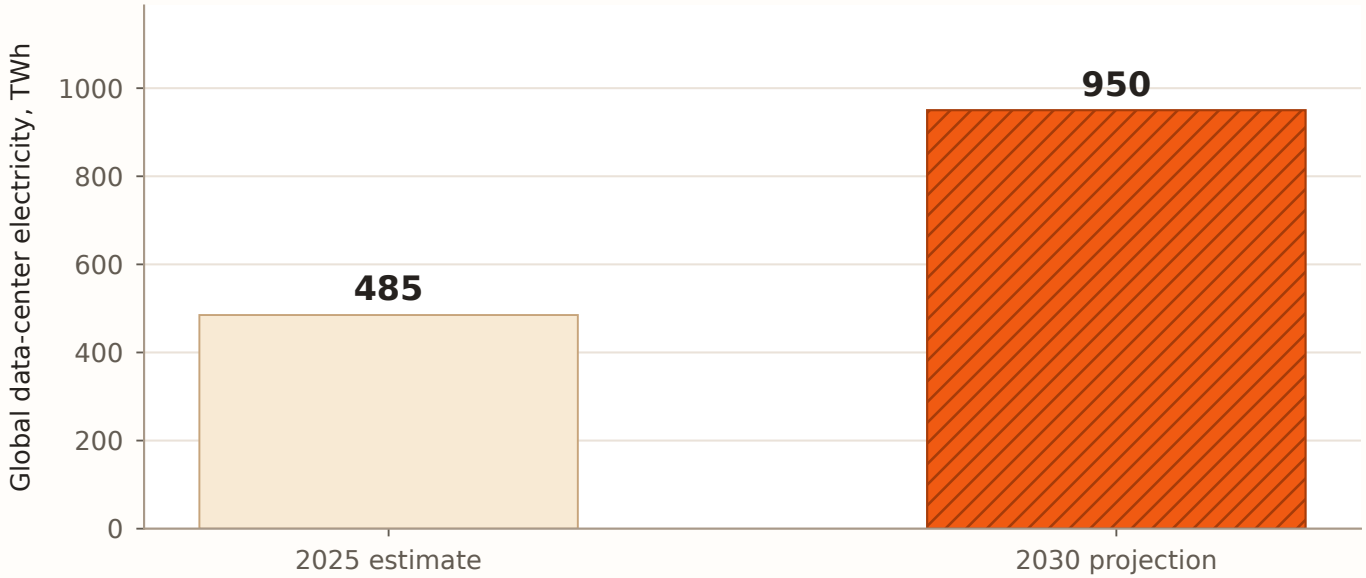
Global data-center electricity demand

POWER

QUANTITATIVE EXHIBIT



GLOBAL DEMAND ESTIMATE / OUTLOOK



The IEA's central 2030 projection includes all data centers, not AI only. The 2025 figure is an estimate, not a measured sum of every facility. The hatched bar is a projection.

IEA, Key Questions on Energy and AI: primary source

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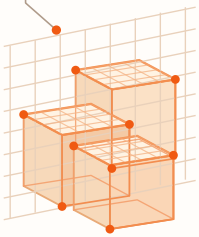
Exhibit 08 U.S. data-center electricity demand

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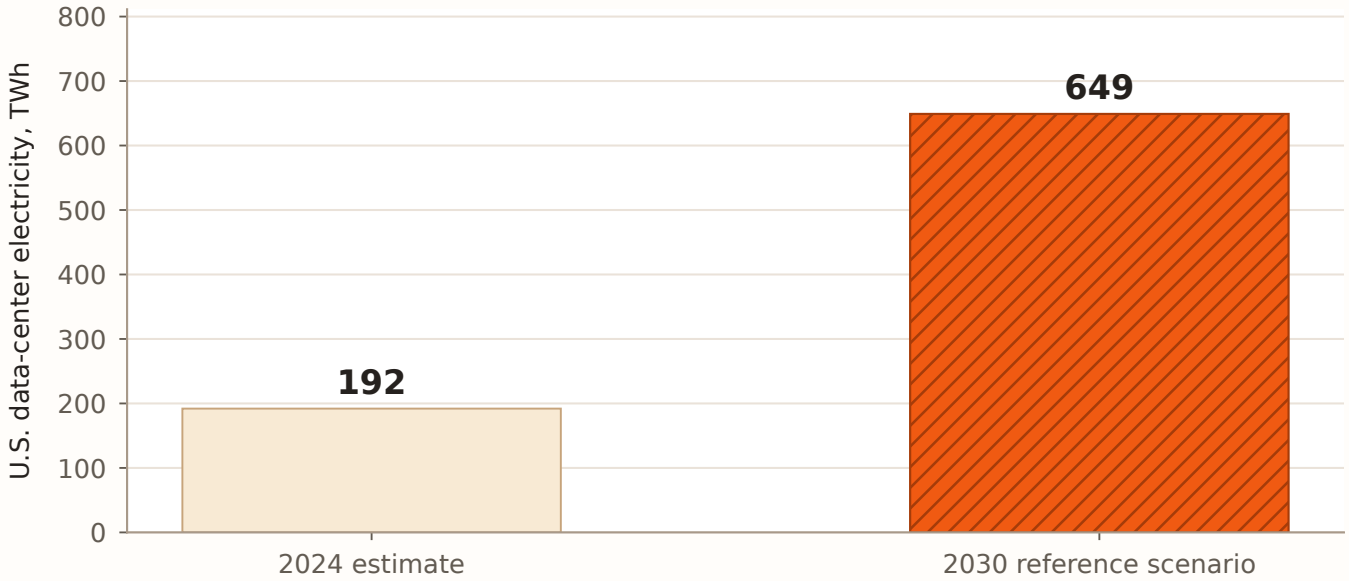
U.S. data-center electricity demand

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U.S. DEMAND REFERENCE CASE



Berkeley Lab's 2025 update estimates 192 TWh in 2024 (4.7% of U.S. electricity) and projects 649 TWh in its 2030 reference scenario (11.8%). The projection is not a committed interconnection queue or an AI-only total.

LBNL, 2025 Update; laboratory seminar, Nov. 4, 2026: primary source

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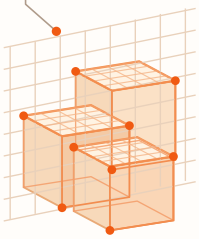
Exhibit 09 Residential electricity prices vary

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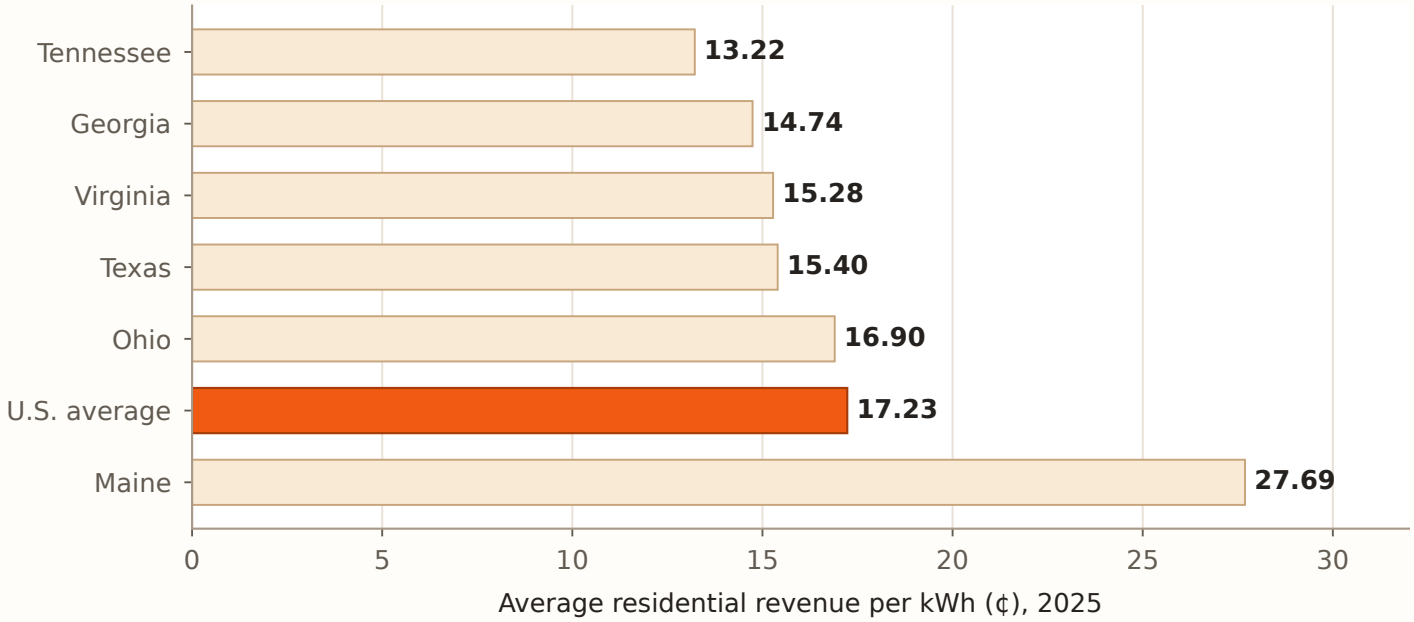
Residential electricity prices vary

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RETAIL PRICES SELECTED STATES



Selected states and national average. Average revenue per kWh is not a household bill, approved tariff schedule, or estimate of the effect of data centers. State selection is illustrative.

EIA, Electric Power Annual, 2025 state retail price table: primary source

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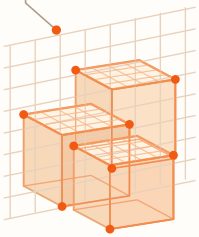
Exhibit 10 PJM capacity price is not a retail rate

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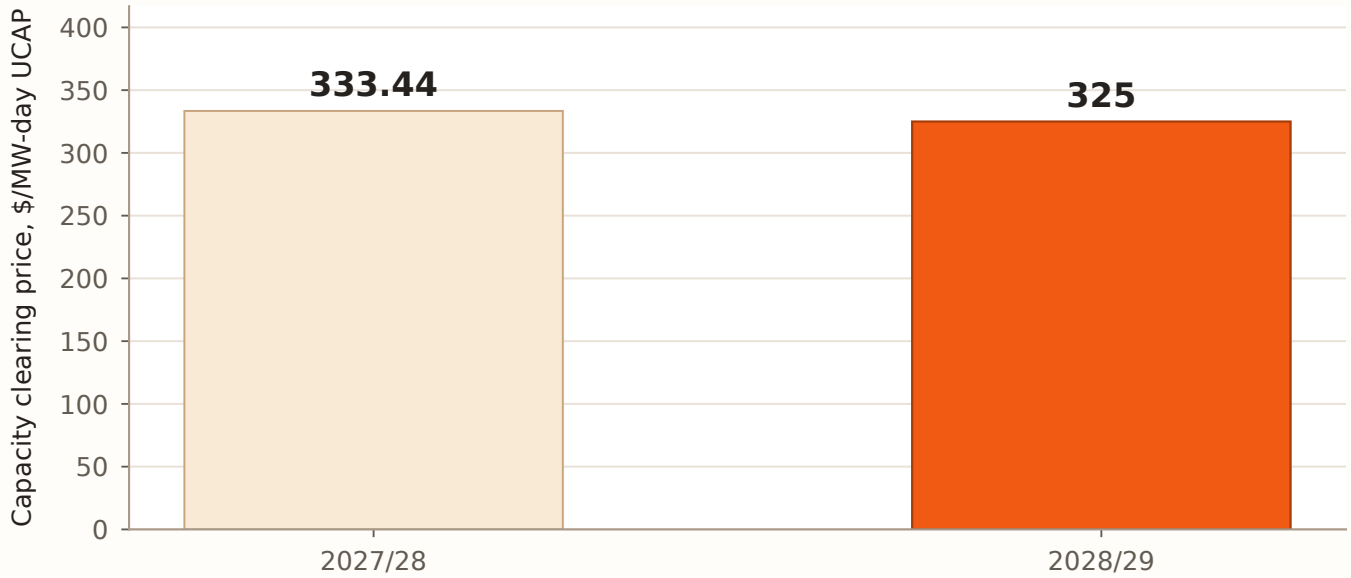
PJM capacity price is not a retail rate

POWER

QUANTITATIVE EXHIBIT



PJM CAPACITY AUCTION PRICE



Illustrative comparison of the cited Base Residual Auction RTO prices. Capacity procurement is separate from energy, retail tariffs and final utility bills; this chart does not identify how much any one data center caused.

PJM, 2028/2029 Base Residual Auction results, July 14, 2026: primary source

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WATER, LAND AND LOCAL IMPACTS

Environmental impacts: define the system before judging it

Boundary first

Site ≠ supply chain

Analysis framework

A campus is not the whole footprint Environmental assessment should distinguish the occupied building, the full planned campus, supporting infrastructure, and upstream supply chains. A server room can have little direct combustion while depending on electricity generation elsewhere. Conversely, a facility with on-site generation may shift impacts closer to neighbors without eliminating upstream fuel production. Minnesota identifies environmental review, air permitting, water discharges, stormwater, and fuel storage as distinct oversight areas rather than one interchangeable approval. [51]

Recommended assessment boundary For this report, evaluate four layers: normal operations; abnormal conditions and backup operations; construction and expansion; and purchased electricity, equipment, and materials. Record which layers each published statistic covers. Treat a corporate annual disclosure as evidence about its stated portfolio, not automatically about an individual campus. Likewise, an approved design describes permitted or proposed activity, not necessarily measured operation.

Compare like with like A useful impact register names the physical quantity, unit, geography, time interval, and evidence type. Water delivered is not necessarily water consumed. Generator capacity is not annual generator energy. A land purchase is not the disturbed area. A commissioning announcement is not proof that every planned building has reached its advertised electrical load.

Decision implication The recommended decision sequence is to identify a plausible impact pathway, request project-specific evidence, test mitigation, and assign monitoring responsibility. Neither the absence of an impact estimate nor a broad sustainability commitment should be scored as zero impact. Unknowns belong in a visible evidence queue with an owner and deadline. This makes the analysis useful for supporters, critics, utilities, and local officials without predetermining whether a particular project should proceed.

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WATER, LAND AND LOCAL IMPACTS

Water accounting: withdrawal, consumption, and return flows

Separate flows

Use a water balance

Do not compare unlike totals

Three different questions Withdrawal describes water taken from a source. Consumption concerns the portion not readily available for another local use, including evaporation. Return flow is water returned after use, potentially at another location, temperature, or quality. USGS cautions that organizations sometimes use water terminology differently and that some datasets use withdrawal and water use interchangeably. A label reading simply “water use” therefore needs its underlying definition. [52]

Recommended campus ledger Request monthly source withdrawals or utility deliveries, wastewater discharge, estimated evaporation, other losses, and storage changes. Identify whether domestic plumbing, landscaping, construction, fire testing, and humidification are included. Metered purchases alone cannot establish consumption unless the return and storage terms are reconciled. For multiple supplies, keep potable, reclaimed, groundwater, and surface water separate before calculating the total.

Illustrative arithmetic, not a project estimate Suppose a campus receives 100 units of water, returns 30 to the same local system, and has no net storage change. A simplified balance suggests 70 units are consumed or otherwise unaccounted for. That result needs investigation if leaks, transfers, or measurement errors are material. It does not justify claiming all 100 units disappeared.

What should be verified The analysis should specify where returned water goes and whether it remains usable when other users need it. A return to a downstream river is not necessarily an immediate replacement for groundwater withdrawn from another basin. Ask for meter coverage, calibration dates, estimated fractions, and uncertainty. Report withdrawals and consumption side by side rather than choosing whichever number makes the project look better or worse. Preserve the original source terminology in the evidence record.

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WATER, LAND AND LOCAL IMPACTS

Cooling architecture: follow heat from chip to atmosphere

Liquid ≠ evaporative

Trace every loop

Compare peak conditions

Two separate cooling decisions Removing heat from chips is different from releasing heat outdoors. Direct liquid cooling can move heat from processors through a closed internal circuit, while the facility rejects that heat through dry equipment, an evaporative tower, or a hybrid arrangement. DOE guidance describes both direct liquid systems and heat rejection equipment; the phrase liquid-cooled alone cannot establish water consumption. [53]

Recommended engineering evidence Request a simplified process diagram that labels the chip loop, facility loop, heat exchangers, chillers, pumps, outdoor equipment, and makeup-water connections. Ask which components operate during ordinary weather, summer peaks, equipment failure, and commissioning. This diagram should be understandable without disclosing security-sensitive control details or proprietary server specifications.

Evaluate the complete operating envelope The assessment should compare annual electricity, annual water, hottest-day demand, maintenance requirements, and redundancy using the same IT load assumptions.

A design that minimizes one metric may not minimize the others. Promotional comparisons are unhelpful when one case assumes full utilization and another assumes lightly loaded equipment.

Questions that change the conclusion Is the reported water figure measured, modeled, or a design ceiling? Does “closed loop” refer only to internal circulation? Is occasional evaporative assistance included? Are initial filling, flushing, and treatment water counted? What happens when the primary heat-rejection equipment is unavailable? These questions convert a generic technology label into a usable project assessment. The recommended finding should describe the actual architecture and operating modes, not rank every liquid-cooled or air-cooled facility as environmentally equivalent. Any claimed improvement should retain its baseline, location, load level, and weather assumptions.

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WATER, LAND AND LOCAL IMPACTS

Evaporative systems: conserve water without hiding consumption

Makeup and blowdown

Chemistry matters

Meter both sides

Why towers need replacement water Cooling towers lose water through evaporation and other pathways. Blowdown removes concentrated dissolved solids; replacement makeup water restores the circulating system. EPA guidance recommends controlling chemistry, monitoring conductivity, and measuring makeup and blowdown. Higher cycles of concentration can reduce blowdown, but feasible operation depends on incoming water quality and equipment protection. [54]

Interpret savings correctly Reducing blowdown is valuable, but it does not mean the same reduction in evaporation or net consumption. A report should identify whether an intervention lowers delivered water, wastewater discharge, evaporative losses, or all three. Avoid presenting a reduction in one stream as proof that the campus has become water independent.

Recommended operating review Ask for time-aligned meter readings, conductivity records, treatment settings, abnormal-loss investigations, and maintenance logs.

Compare performance with delivered cooling service and weather, not only the previous month. A falling water bill during reduced computing activity is not automatically evidence of better cooling efficiency.

Practical accountability Set a documented response for unexplained increases in makeup water, persistent overflows, or inconsistent readings. Require contractors to identify whether their performance claim includes all towers and auxiliary equipment. Reconcile utility bills with submeter totals and explain material gaps rather than silently allocating the difference to evaporation.

The preferred public summary is a compact annual balance accompanied by peak-day demand and a plain-language explanation of treatment constraints. Detailed chemical handling belongs with trained operators and the relevant permit authorities. The environmental conclusion should be based on measured flows and demonstrated control, not simply the presence of an automated treatment system or a vendor efficiency guarantee.

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WATER, LAND AND LOCAL IMPACTS

Dry and hybrid cooling: avoid a false water-versus-energy choice

Climate-specific tradeoff

Annual plus peak

Test failure modes

Efficiency depends on the site ENERGY STAR explains that water-side economizers can bypass mechanical chillers when outdoor conditions permit, while DOE recommends climate-specific engineering evaluation of cooling options. “Free cooling” describes reduced mechanical cooling demand; it should not be interpreted as literally zero energy or zero water. [55] [56]

Recommended comparison Compare candidate systems against one common hourly weather file, one IT load profile, and the same reliability objective. Show electricity and water together for ordinary years and stressed conditions. Include auxiliary pumps and fans, not only the main chiller. Record when a hybrid system switches operating mode and what resource demand that change creates.

Look beyond annual averages For decision-making, the hottest hours may be more important than the annual mean.

Ask whether the cooling design can maintain required operation during a heat wave without exceeding water commitments or electrical service capacity. Also test the loss of one major cooling component rather than relying solely on the all-equipment-available case.

Recommendation, not a universal ranking A low-water design may be especially attractive where potable supply is constrained; another site may justify a different combination of water quality, electricity availability, and heat rejection. The report should not assign an automatic environmental winner based on technology name. Ask the engineer to present a transparent tradeoff table and a sensitivity analysis instead.

Before accepting a claimed improvement, verify that it survives plausible changes in climate, server density, and utilization. The evidence should distinguish an operating commitment from a modeled option that has not been purchased, commissioned, or tested. That distinction becomes crucial when phased expansion changes the original cooling assumptions.

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WATER, LAND AND LOCAL IMPACTS

Water geography: national totals do not decide local adequacy

Basin before nation

Seasonality matters

Competing commitments

Start with the actual water source A national consumption estimate describes scale, not whether a local supply can support another campus. Michigan's data-center guidance distinguishes direct water demand and groundwater protections, including review of potential adverse resource impacts under its state framework. That example illustrates why local hydrology and jurisdiction matter; it is not a nationwide permitting rule. [57]

Recommended geographic inventory Identify the utility service area, intake or aquifer, source watershed, wastewater destination, and any interbasin transfer. Map the project against existing users and committed future withdrawals. A nearby reservoir does not prove that its capacity is available to the project, and a municipal connection does not remove the need to understand the upstream supply.

Stress the supply, not just the campus Request normal-year, drought-year, and peak-season supply assessments.

Distinguish legal allocation, physical availability, treatment capacity, pipe capacity, and operational reserve. Each can constrain service independently. The recommended review should show who receives priority during shortage and whether campus commitments are enforceable in those conditions.

Fair comparisons Compare additional demand with the relevant basin and utility system, using the same time interval and flow definition. Avoid comparing annual campus consumption with a reservoir's total stored volume without discussing replenishment and other obligations. Likewise, national agricultural water totals cannot resolve a neighborhood's specific concern about wells or pressure.

The final finding should state the evidence needed to conclude that supply is adequate. Where the source is uncertain or confidentiality prevents verification, classify adequacy as unverified rather than assuming either abundance or depletion. Ask the public utility or responsible resource authority to document the basis for its service commitment.

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WATER, LAND AND LOCAL IMPACTS

Scale context: published water estimates and their limits

2023 US estimate

Historical benchmark

Different boundaries

U.S. historical estimate Berkeley Lab's 2024 report estimates direct U.S. data-center water consumption at approximately 66 billion liters in 2023. It attributes 84 percent to hyperscale and colocation facilities. The same report estimates an indirect electricity-related footprint near 800 billion liters. These are modeled sector estimates, not a census of every site's meters. [58]

A benchmark, not today's meter reading The report was published in 2024 and describes 2023 historical consumption alongside future scenarios. Keep those categories distinct. A forecast for a later year should never be relabeled as observed consumption just because that year has arrived. For this chapter, the historical estimate is retained as a transparent benchmark rather than presented as a current measured total. [58]

Why the numbers should not be merged When comparing this benchmark with another study, inspect its year, geography, methodology, and system boundary.

A larger or smaller figure does not by itself establish a growth rate or show that either study is invalid.

This report recommends placing them in separate labeled panels with source edition and observation year visible. A publication date is not the year being measured.

What the figures can establish They demonstrate that direct facility water is only one part of the issue and that accounting choices materially affect the result. They cannot determine the water demand of an individual proposed campus. Do not divide a national figure by a facility count and present the average as a site's expected consumption.

For project appraisal, use these totals as context and replace generic ratios with engineering forecasts and later meter readings. Preserve uncertainty and model assumptions in the evidence record. Revisit the benchmark when a revised official estimate is available rather than silently mixing editions in a trend line.

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WATER, LAND AND LOCAL IMPACTS

Municipal infrastructure: supply agreements are not complete capacity studies

Treatment plus conveyance

Who pays?

Phase-linked commitments

Separate the infrastructure questions A water-service letter can be important evidence, but the environmental review should ask what it actually commits to deliver. Iowa lists water use, wastewater construction, discharge, stormwater, and floodplain approvals among potentially relevant activities. These are separate resource and infrastructure questions rather than interchangeable assurances. [59]

Recommended utility review Request the campus's average and maximum daily delivery requirements, fire-flow assumptions, wastewater characteristics, construction demand, and expansion schedule. Match those requirements to treatment, storage, pumping, and distribution capacity. State clearly whether planned upgrades are funded, designed, permitted, or already operating. A future improvement should not appear in the available-capacity column as though it already exists.

Allocate costs and risks explicitly The recommended financial annex should identify developer contributions, utility investment, connection fees, ongoing charges, and any costs that could fall on other customers.

This is an analytical request, not a finding that a particular tariff subsidizes data centers. Also identify who bears the cost if a project pauses after infrastructure has been enlarged.

Make growth conditional Tie each expansion phase to verified service availability rather than allowing all phases to inherit an early conceptual letter. Require a clear process for revising forecasts when computing density or cooling architecture changes. Review whether sewer treatment or reuse infrastructure becomes the limiting factor even when raw water remains available.

A strong agreement should explain shortage procedures and monitoring without promising immunity from every emergency. Public reporting can summarize capacity and accountability while protecting sensitive infrastructure details. The central test is whether the proposed operating envelope fits the system that will actually be available when the facility opens.

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WATER, LAND AND LOCAL IMPACTS

Wastewater and reclaimed supplies: quality is part of quantity

Source quality

Return destination

No automatic zero impact

Reuse changes the water source Reclaimed water may reduce reliance on potable supplies, but its suitability depends on treatment, system design, and the receiving environment. Minnesota's data-center oversight explicitly includes cooling-water and wastewater discharges. A supply labeled recycled therefore still needs an account of what enters the site, what leaves, and which authority oversees the discharge. [51]

Recommended evidence Ask for source-water quality specifications, treatment responsibility, delivery reliability, blowdown destination, and discharge conditions. Determine whether the proposed reuse system is existing infrastructure or a future project requiring new capital and approvals. Separate an executed supply arrangement from a memorandum expressing interest.

Trace the counterfactual For analysis, ask where reclaimed water would otherwise go. Reusing water that previously supported downstream flows is not equivalent to creating a new resource from nothing.

This does not make reuse undesirable; it means the benefit should be evaluated against the real alternative rather than a slogan.

Operating assurance Request a contingency for periods when reclaimed supplies fail to meet specification. Does the campus switch to potable water, reduce activity, store enough water, or use a different cooling mode? Quantify that contingency in the supply assessment. A low annual potable share can conceal a large peak call on drinking-water infrastructure.

The recommended public metric set includes potable deliveries, reclaimed deliveries, consumption estimate, discharge volume, and significant quality exceptions. Avoid disclosing unnecessary treatment-security detail. A defensible conclusion explains both the avoided potable demand and the remaining water-management obligations. It does not equate reuse, recycling, replenishment, and consumption reduction as though those terms describe the same physical result.

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WATER, LAND AND LOCAL IMPACTS

Electricity-related emissions: average footprint versus added load

Location matters

Average ≠ marginal

Preserve assumptions

Two legitimate but different calculations EPA's eGRID provides generation, emissions, and emission rates across several geographic aggregations. Its guidance distinguishes annual output rates from nonbaseload rates used in certain avoided-emissions analyses. An inventory describing electricity consumption and a study asking what additional load causes are not necessarily using the same emissions factor. [60]

Recommended reporting practice Label whether a calculation is historical attribution, prospective system modeling, or a scenario sensitivity. Record electricity quantity, year, grid region, emissions factor, gases included, and treatment of losses. Do not call a national average a measurement of the power plants physically responding to one campus.

An illustrative sensitivity test At 100,000 megawatt-hours, a factor of 0.2 metric tons per megawatt-hour produces 20,000 metric tons; a factor of 0.6 produces 60,000.

These are illustrative assumptions, not observed site emissions. The arithmetic shows why regional and methodological choices can dominate a result.

Interpret procurement separately The recommended assessment should show physical electricity consumption alongside any contractual claims, with their accounting basis clearly identified. Purchasing clean-energy instruments does not by itself document the generating mix in every hour of operation. Conversely, a location-based estimate does not capture every investment effect of a procurement contract.

For a proposed facility, ask a qualified system analyst to test alternative generation and transmission scenarios. Report the range and its drivers rather than manufacturing a single precise forecast. The most useful conclusion explains which decisions could lower the footprint and what evidence would demonstrate that improvement after operation begins.

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WATER, LAND AND LOCAL IMPACTS

On-site power: classify the operating role before estimating pollution

Backup versus primary

Fuel and runtime

Permit-specific limits

The same equipment can serve different roles EPA's data-center Clean Air Act resource identifies stationary engines and turbines as potential primary and backup sources subject to applicable emissions standards. The environmental consequences depend on fuel, controls, load, operating time, and location, not simply the number of generators on a plan. [61]

Recommended equipment register For each source group, record purpose, rated output, fuel, emission-control design, anticipated operating hours, and the governing permit. Distinguish emergency operation, readiness testing, temporary construction supply, and regular generation. Do not assume a device called backup equipment operates under an emergency-only authorization.

Evaluate realistic operating cases The recommended emissions assessment should include ordinary testing, outage operation, and any planned nonemergency use. Consider simultaneous operation across the campus where relevant.

Annual totals and short-duration concentrations answer different questions, so one should not substitute for the other.

Separate proposed and demonstrated control Ask whether control equipment has been specified, installed, commissioned, and verified. Require operating records and explain how maintenance or failure affects compliance. A vendor emissions claim at one test condition is not a complete site assessment.

Public discussion should avoid two opposite errors: treating permitted maximum hours as actual historic operation, or treating low average runtime as proof that peak events are immaterial. The defensible approach presents actual records where available and explicitly labeled bounding scenarios where they are not. Changes from emergency to routine generation should trigger a fresh review of the project's environmental narrative, infrastructure needs, and applicable approvals rather than being treated as a minor descriptive update.

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WATER, LAND AND LOCAL IMPACTS

Local air quality: measure the pathway to receptors

Emissions ≠ exposure

Cumulative context

Independent review

Source totals are only the beginning The Bay Area Air District explains that its data-center role focuses on stationary pollution sources, predominantly backup generators, rather than every aspect of the facility. Its published process includes source permitting, control evaluation, and operating requirements. This is a jurisdiction-specific example of why an air permit should be read for its actual scope. [62]

Recommended technical questions Ask which pollutants are modeled, what background concentrations are used, which receptors are evaluated, and how meteorology and nearby sources are represented. Confirm that the modeled equipment layout matches the current design. A changed stack location or larger generator fleet can make an old illustration a poor description of the proposal.

Keep health claims proportional to evidence An emissions inventory does not by itself establish personal exposure or diagnose a health effect.

The recommended report should distinguish release estimates, modeled concentrations, monitoring observations, and health interpretation. Qualified specialists should address health-risk methods; public summaries should explain the limitations without dismissing concerns.

A practical verification package Request the permit application, modeling report, regulator response, final conditions, and later operating records. Summarize the applicable comparison standard and whether the result is a prediction or observation. Include a plan for investigating complaints and unusual events, with responsibilities assigned before commissioning.

Cumulative assessment should identify the relevant airshed and nearby sources instead of drawing an arbitrary circle and assuming every emission has equal effect. Where data are absent, identify the specific missing input. The objective is not to imply that every campus creates the same exposure, but to establish an auditable path from equipment and operation to the conditions experienced by nearby people.

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Baseline conditions

Tonal character

Post-opening verification

WATER, LAND AND LOCAL IMPACTS

Noise: continuous operation needs more than a single reading

Why the operating pattern matters Virginia's JLARC review identifies the constant nature of data-center noise as a problem in some locations near residences. Its findings also highlight land-use compatibility. This is evidence that nuisance can be site-specific, not a basis for claiming that every data center exceeds a universal noise limit. [63]

Recommended baseline Before construction, document representative daytime and nighttime conditions at relevant receptors. Record weather, measurement duration, equipment, and unusual background events. Preserve enough detail for a later comparison. A reading beside a busy road should not stand in for a quieter residential receptor without explanation.

Model the complete campus The recommended acoustical study should include cooling equipment, electrical equipment, generators where relevant, and future phases.

Ask how tonal or low-frequency characteristics are addressed, how nighttime conditions are evaluated, and whether barriers and building orientation are included in the model. Local standards and measurement methods must be verified rather than borrowed from another jurisdiction.

Verify after opening Require testing under a defined operating condition, not simply whenever a convenient measurement can be scheduled. Record the equipment actually running during the test. Establish complaint intake, investigation timelines, and corrective-action responsibility. Visual landscaping may improve appearance but should not be accepted as demonstrated sound control without engineering support.

The public report should present compliance findings separately from unresolved nuisance concerns. A short daytime survey cannot establish every nighttime condition, and a phone recording is not equivalent to a calibrated compliance study. Both resident observations and technical measurements can inform investigation when their roles and limits are clearly stated.

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WATER, LAND AND LOCAL IMPACTS

Land, habitat, and off-site corridors: assess the whole development

Footprint versus parcel

Avoidance first

Include utility corridors

The parcel is not the impact boundary The assessment should distinguish owned acreage, disturbed acreage, impervious area, protected buffers, and supporting corridors. A campus may require water mains, substations, transmission connections, roads, and drainage works beyond its fence. EPA's Section 404 overview describes review of dredged or fill discharges into covered waters, including wetlands, with avoidance, minimization, and compensation as key considerations. Applicability requires project-specific review. [64]

Recommended mapping Overlay the current site plan with field-verified streams and wetlands, habitat surveys where warranted, slopes, existing vegetation, cultural resources, and neighboring uses. Desktop screening is a starting point, not a substitute for the required field or agency determinations.

Test alternatives before mitigation For analysis, compare different building placements, road alignments, stormwater layouts, and infrastructure routes before assuming every disturbance is unavoidable.

Record why alternatives were rejected. A compact building footprint can still create substantial off-site effects if its utility corridors cross sensitive areas.

Keep accounting transparent Report temporary disturbance separately from permanent conversion. Identify who maintains buffers and replacement planting, how survival is checked, and what happens if promised mitigation fails. Do not treat planted acreage as automatically equivalent to mature habitat lost elsewhere.

The recommended decision package includes a map of all phases and a disturbance ledger that changes with design revisions. Photographs should carry dates and locations so they can document conditions rather than merely illustrate a preferred narrative. The final assessment should acknowledge tradeoffs between existing land uses, development benefits, and ecological constraints without inventing a universal acreage-per-megawatt benchmark. Site design and surrounding geography determine much of the actual impact.

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WATER, LAND AND LOCAL IMPACTS

Construction: temporary impacts can last through multiple phases

Dust and traffic

Stormwater controls

Cumulative schedule

Construction is a distinct operating period Clearing, grading, excavation, stockpiles, equipment movement, and deliveries create a different impact profile from an occupied data hall. EPA's construction stormwater guidance covers qualifying disturbances of one acre or more, including smaller sites within a larger common development plan. The applicable permitting authority and current permit conditions still need to be confirmed for each project. [65]

Recommended construction ledger Identify the disturbed area, work sequence, haul routes, stockpile locations, drainage controls, working hours, and responsible contractors. Include utility and road construction supporting the campus, not only the building contractor's fenced area. Separate a single building's duration from the full campus schedule.

Plan for overlapping phases A facility may begin operations while additional buildings remain under construction. For assessment, combine operational traffic and equipment with continuing construction activity.

Require a process for updating the public schedule when work slips or overlaps. A claim that impacts are temporary should state an expected period and acknowledge uncertainty.

Verification in the field Recommended evidence includes inspection logs, corrective-action closure, dated photographs, approved traffic plans, and complaint records. After major weather events, review whether controls performed as intended. Track repeated failures rather than counting every inspection as a successful outcome.

Dust, vibration, access, and noise concerns should be assigned to the appropriate authority or contract condition. An environmental discharge permit does not necessarily regulate every neighborhood concern. The strongest construction plan combines enforceable requirements with a reachable site contact and clear escalation path. This is a recommended management framework, not a claim that every listed measure is universally mandated by law.

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WATER, LAND AND LOCAL IMPACTS

Flooding and drainage: maps are a baseline, not a guarantee

Pluvial and river risk

Downstream effects

Critical equipment elevations

Screen broadly, then investigate Massachusetts' official guidance explains limitations in using Flood Insurance Rate Maps and Flood Insurance Studies as the sole estimate of flood risk. That distinction is relevant to any infrastructure screening: a regulatory map is useful evidence, but it does not answer every question about rainfall, drainage, future conditions, or site changes. [66]

Recommended site review Request current mapping, topographic survey, drainage calculations, historical flood information, and proposed grading. Identify overland flow paths and downstream receptors. Examine access roads and utility connections as well as buildings. A protected data hall can still lose support services if surrounding infrastructure floods.

Avoid transferring risk For analysis, compare predevelopment and proposed runoff characteristics using an accepted local method. Ask how detention, infiltration, conveyance, and emergency overflow are designed and maintained.

Do not infer that a pond visible on a rendering proves adequate stormwater management.

Verify the as-built condition Recommended documentation includes surveyed elevations, constructed drainage features, maintenance responsibility, inspection access, and contingency procedures. Check whether later phases alter the assumptions of an earlier drainage study. Fuel systems and other environmentally sensitive equipment deserve explicit attention in the flood assessment.

The final report should state the evaluated event, model assumptions, and residual uncertainty. “Outside the mapped floodplain” is not equivalent to “cannot flood,” and a past absence of flooding is not a complete forecast. Conversely, a broad hazard screen does not establish that a particular engineered design is unsafe. The appropriate conclusion follows from site-specific evidence and an explicit review of both campus resilience and effects on neighboring properties.

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WATER, LAND AND LOCAL IMPACTS

Fuel, refrigerants, and equipment: inventory the less visible impacts

Storage pathways

Leakage records

End-of-life evidence

Resources beyond electricity and water Backup systems and cooling equipment introduce materials that need their own controls. EPA's oil-storage compliance guidance describes SPCC applicability based on capacity and potential discharge pathways, with conditions and exclusions that require site review. EPA also publishes changing HFC sector restrictions relevant to cooling equipment. Do not substitute an old summary for the current rule and equipment classification. [67] [68]

Recommended inventory List fuel storage, major cooling-fluid and refrigerant systems, batteries, and other significant managed materials. Record responsible operators, inspection requirements, incident procedures, and disposal routes. Protect detailed security-sensitive layouts while making the accountability framework available.

Track actual losses and destinations The recommended environmental ledger includes purchases, major top-ups, recoveries, transfers, and documented disposal. Repeated replenishment without explanation deserves investigation.

A maintenance contract alone does not establish that leakage is negligible or that waste reaches an appropriate destination.

Equipment retirement EPA recommends certified electronics recyclers for unwanted electronics. The useful evidence is the actual downstream management arrangement, not a generic claim that equipment is recyclable. [69] Ask for chain-of-custody records and distinguish reuse, refurbishment, material recovery, and disposal. Include secure data handling in the operational plan without confusing it with environmental certification.

This page identifies review categories rather than prescribing chemical handling or emergency response. Qualified personnel and relevant authorities should determine technical controls. The final assessment should explain which materials are present, how releases are prevented, and what evidence supports responsible retirement. It should not assume that a facility with low operating emissions necessarily has an immaterial materials footprint.

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WATER, LAND AND LOCAL IMPACTS

Embodied impacts: construction and replacement belong in the ledger

Materials boundary

Comparable declarations

Avoid double counting

The footprint begins before operation Concrete, steel, electrical equipment, servers, transport, and construction activities belong in a broader lifecycle assessment. EPA's sustainable materials guidance emphasizes treating construction and demolition materials as recoverable resources where appropriate, reducing demand for virgin materials. That principle supports lifecycle evaluation, but it does not provide a universal embodied-carbon factor for a data center. [70]

Recommended procurement evidence Request material quantities, product-specific environmental declarations where available, transport assumptions, and the lifecycle stages included. Compare alternatives using consistent functional performance and accounting boundaries. A lower figure is not meaningful if one product excludes stages included by another.

Handle replacement honestly For analysis, identify assumed service lives for the building shell, mechanical plant, electrical systems, and computing equipment. Test how replacement cycles affect the result rather than assigning the entire campus one lifetime.

Do not count a purchase in multiple categories simply because both the owner and a tenant report it.

Separate certainty levels Classify quantities as tender estimates, installed quantities, or documented retirements. Record generic factors separately from supplier-specific data. If an environmental declaration covers a different plant, product, or production period, note the mismatch rather than treating it as a direct measurement.

Recommended public reporting should show embodied and operating impacts separately before combining them. This avoids hiding a construction footprint behind an electricity-procurement claim or implying that one efficient year erases all prior impacts. The useful decision is comparative: which feasible design or procurement change reduces lifecycle burden while meeting structural, safety, reliability, and service requirements? Any savings estimate should retain the alternative baseline and the uncertainty that comes with it.

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WATER, LAND AND LOCAL IMPACTS

Heat reuse: value only the heat that has a real user

Temperature and distance

Seasonal demand

Delivered heat, not potential

A physical opportunity, not automatic credit DOE's design guidance explains that useful heat reuse depends on a nearby heat user and a suitable temperature level; backup cooling generally remains necessary when that user is unavailable. Its guidance favors evaluating actual integration conditions rather than assuming all rejected heat becomes a useful product. [56]

Recommended feasibility test Identify the heat customer, demand profile, delivery temperature, distance, pipe route, and any heat-pump requirement. Match hourly or seasonal demand with campus output. A cold-season heating market may not accept the same quantity in summer. Ask who funds and operates the connection and who takes risk if either party changes operations.

Count delivery, not a rendering For reporting, distinguish recoverable heat potential, installed recovery capacity, heat exported, and heat actually used to replace another energy input.

The EU data-center reporting framework defines reused energy in terms of heat used outside the boundary that substitutes for outside energy needs. That is a useful accounting reference, although its legal applicability is jurisdiction-specific. [71]

Evaluate the net result The recommended calculation includes additional pumping, heat-pump electricity, distribution losses, and the displaced heating baseline. Do not claim the same recovered heat twice through different credit categories. Nor should a heat-reuse plan justify inefficient computing simply because more wasted energy could be exported.

A credible project has a signed operational arrangement, a commissioned connection, measured delivery, and a clear method for estimating displacement. Before those exist, describe the proposal as potential rather than achieved benefit. The environmental conclusion should explain both the useful energy recovered and the remaining need for heat rejection when the external customer cannot receive it.

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WATER, LAND AND LOCAL IMPACTS

Verification: turn environmental promises into an auditable record

Evidence register

Phase gates

Publish exceptions

Establish who regulates what Mississippi's data-center guidance explicitly separates environmental permitting from issues such as zoning, traffic, noise, and utility rates handled through other processes. Tennessee likewise describes equipment-focused air regulation rather than a single comprehensive approval of the data center. The practical lesson is to build a responsibility matrix, not assume one permit resolves every concern. [72] [73]

Recommended evidence register For each material claim, record its author, date, boundary, unit, status, source document, and verification owner. Use distinct labels for proposed, permitted, constructed, commissioned, measured, and independently reviewed. Preserve superseded versions so a changed design cannot quietly inherit evidence from a different project.

Set review gates Before site approval, seek a credible impact baseline and alternatives assessment. Before construction, verify the required permissions and management plans.

Before operation, reconcile the built equipment with the approved design. During operation, compare actual water, energy, generation, complaints, and incidents with commitments. These are recommended governance gates, not a statement that every jurisdiction requires an identical process.

Report what went wrong as well as what improved An annual dashboard should disclose material exceptions, corrective action, unresolved uncertainty, and expansion changes alongside performance metrics. Explain missing data rather than filling gaps with unmarked estimates. Where independent review is promised, specify its scope and whether findings are public.

The final environmental judgment should be conditional on evidence: what is known, what remains uncertain, which mitigations are demonstrated, and what would trigger reconsideration. This supports accountable development without treating every campus as either inherently harmless or inherently unacceptable. Project-specific measurements, transparent boundaries, and enforceable responsibilities are more informative than a sustainability label alone.

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VISUAL EVIDENCE

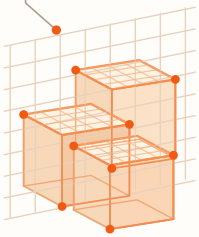
Exhibit 11 Water use extends beyond the site

48PEGASUS RESEARCH / DATA EXHIBIT

Water use extends beyond the site

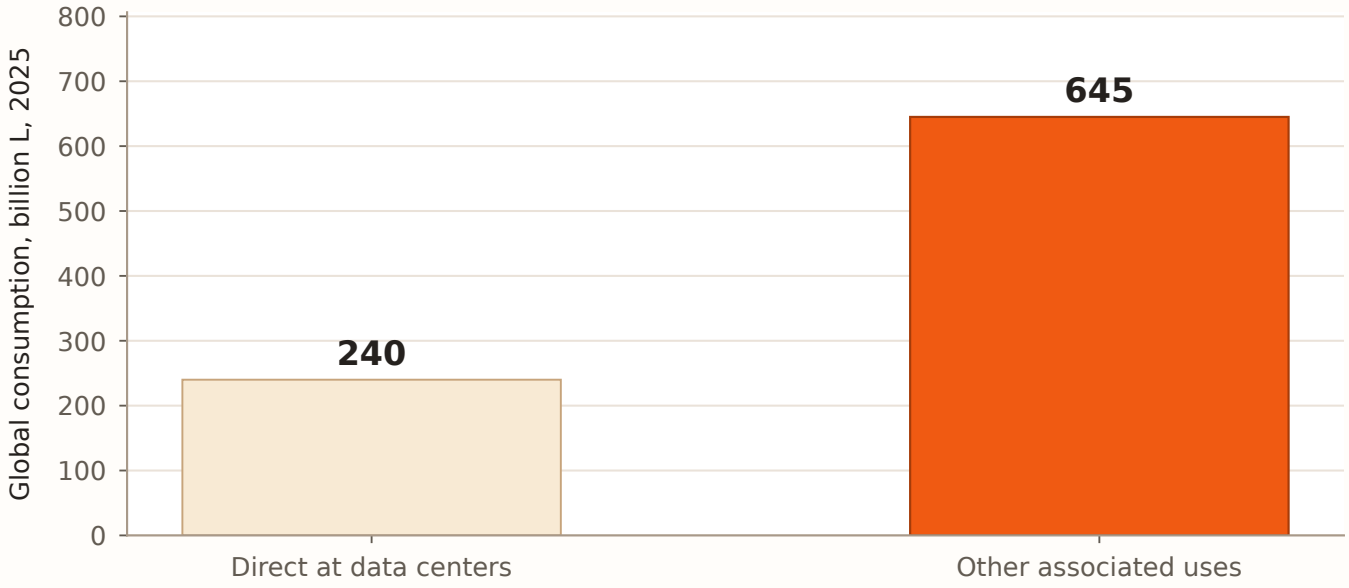
WATER

QUANTITATIVE EXHIBIT



2025 ESTIMATE

DIRECT / ASSOCIATED



IEA estimated 885 billion L of total global data-center-associated water consumption in 2025, of which 240 billion L was direct. Other associated use (645 billion L) is a residual, including electricity generation, manufacturing, and primary energy. Do not compare these totals with a local withdrawal permit.

IEA, World Energy Outlook 2026, Figure 1.39: primary source

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VISUAL EVIDENCE

Exhibit 12 Hyperscale estimates have a range

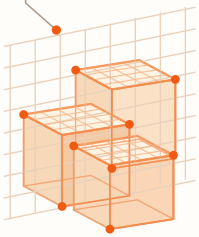
48PEGASUS RESEARCH / DATA EXHIBIT

Hyperscale estimates have a range

HYPERSCALE

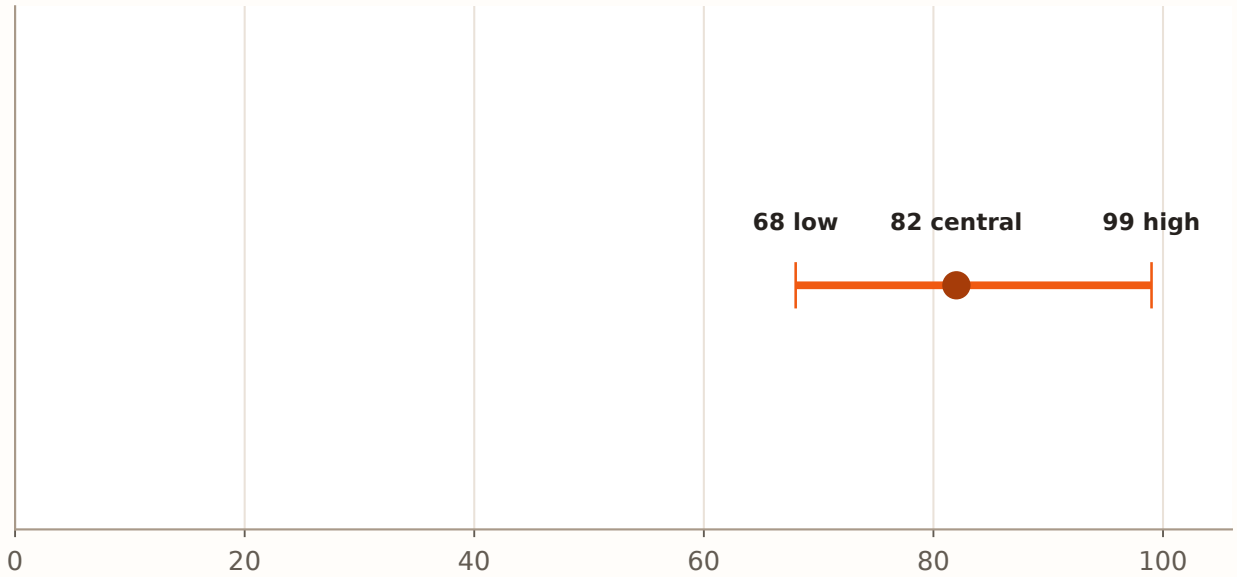
QUANTITATIVE

EXHIBIT



SCENARIO RANGE

NOT A CONF. INTERVAL



[REDACTED] and colleagues modeled 403 U.S. hyperscale data centers operating May 2024 to April 2025. The intervals shown are facility-load scenarios, not statistical confidence limits. Their central location-based emissions estimate was 25.7 Mt CO_2; scenario range about 21–31 Mt.

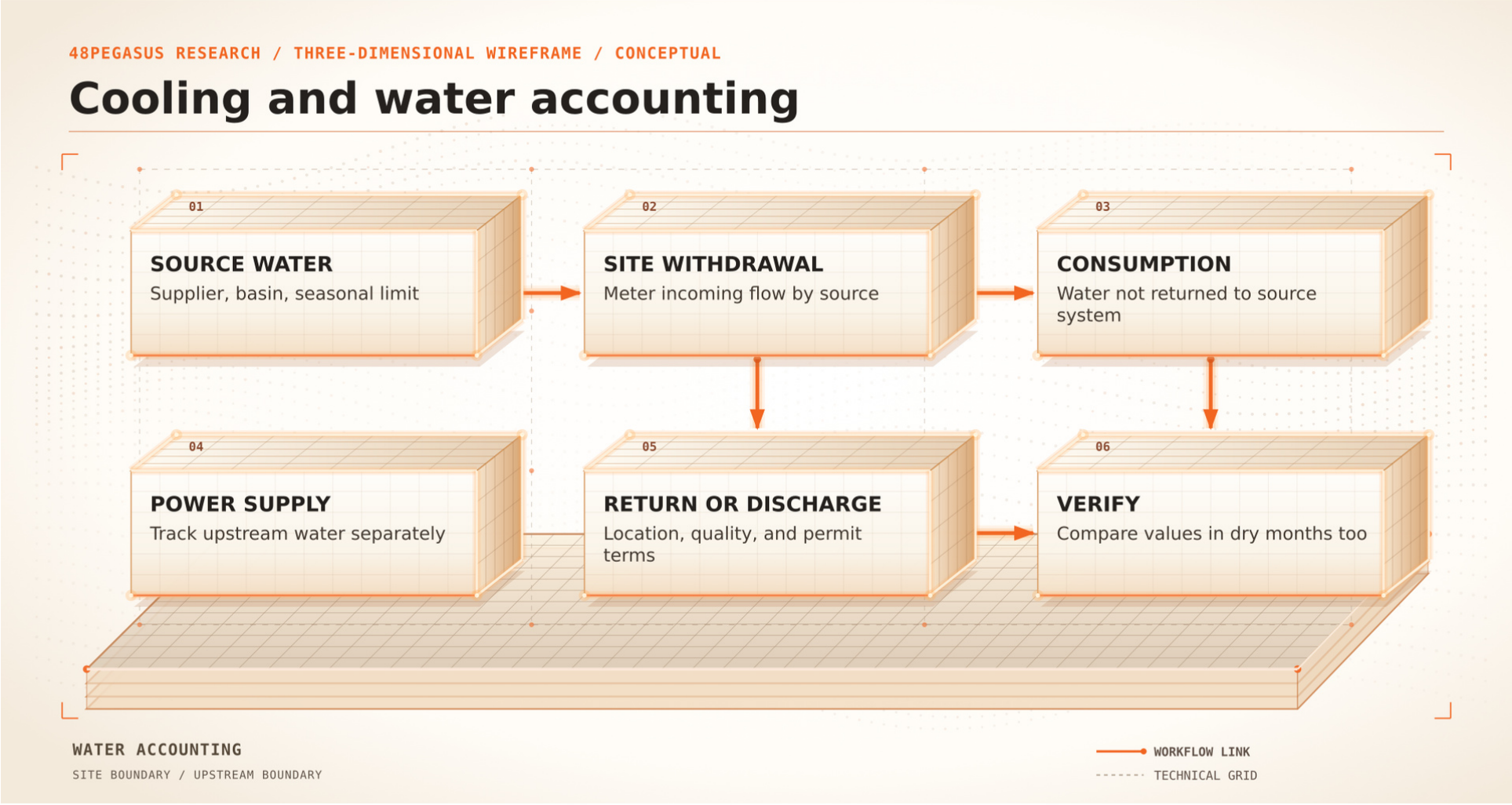
[REDACTED] et al., Nature Sustainability, November 16, 2026: primary source

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VISUAL EVIDENCE

Exhibit 13 Cooling and water accounting



Conceptual site and upstream boundaries. Withdrawal records, return flows, and consumption records answer different licensing and community questions.

48PEGASUS Research original conceptual exhibit. Not empirical data.

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PROJECT AND COMMUNITY CASE STUDIES

Loudoun County: changing the approval pathway

Virginia

Decision: March 18, 2025

Local zoning, not utility approval

Dated decision

Loudoun’s Board initiated its data-center standards review in February 2024 and divided the work into two phases that July. On March 18, 2025, Phase 1 changed areas where data centers had been allowed by right to conditional or special-exception treatment. The county also adopted transition rules allowing some applications accepted before February 12, 2025, to proceed without the new special exception. Its official guidance warns that eligibility depends on each project’s circumstances. [74]

What the case establishes

The change did not erase existing facilities or automatically invalidate every pending application. It changed the decision pathway for future development while preserving specified transition cases. Phase 2 addresses additional standards. In September 2026 the board separately began considering a pause on legislative applications; that procedural step should not be confused with an already effective blanket moratorium. [75]

Comparative interpretation

Loudoun illustrates a mature market moving from broad development permission toward case-by-case public review. The potential benefit is a clearer forum for weighing compatibility, infrastructure and community conditions. The cost is less scheduling certainty for applicants whose business assumptions were built around administrative approvals.

Neither result can be inferred from the phrase “data-center friendly.” A jurisdiction can welcome investment and still require legislative review. Conversely, a restrictive new rule may have little immediate effect on projects protected by transition provisions.

Decision lesson

For any comparable proposal, establish the application acceptance date, governing zoning edition, transition eligibility and remaining public votes before describing its status. Treat local approval, utility service and construction commencement as separate milestones. This is an analytical lesson from the dated record, not a finding that every Loudoun project has stopped or that all existing permissions have expired.

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PROJECT AND COMMUNITY CASE STUDIES

Fairfax County: measurable compatibility standards

Virginia

Adopted September 10, 2024

Effective September 11, 2024

Dated decision

Fairfax adopted a data-center zoning amendment on September 10, 2024, effective the next day. The county's summary identifies equipment screening, revised size thresholds, residential separation, distance from Metro stations, architectural standards and pre- and post-construction noise studies. Some larger developments require a special exception, with different treatment in designated industrial districts. These are land-use standards, not a judgment about the commercial viability of any particular operator. [76][77]

Why it differs from a ban

The county retained pathways for development while narrowing where and how it can occur. The adopted text also contains transition provisions for previously accepted or approved applications. A map of potentially eligible industrial land therefore cannot substitute for a project-specific review of the applicable rules. [77]

Comparative interpretation

Fairfax's approach is more operationally specific than a general statement of community concern. It creates items that reviewers can check before construction and revisit afterward. That can improve predictability for residents and developers, although a study requirement only works if its assumptions, measurements and remedies are credible.

The transit-distance provision also makes the case about competing land uses. Industrial computing space can produce investment and tax receipts, but land near transit may support housing, employment density or other planning objectives. Those opportunity costs should be evaluated openly rather than hidden inside a generic economic-development label.

Decision lesson

A balanced comparison should distinguish the value of clearer standards from the additional cost of complying with them. It should also ask who reviews post-construction evidence and what happens if actual impacts differ from the approved forecast. The transferable principle is a closed loop between approval conditions and operating performance, not an assumption that screening or a one-time study resolves every neighborhood concern.

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PROJECT AND COMMUNITY CASE STUDIES

Prince William Digital Gateway: plan designation is not zoning

Virginia

County update: August 5, 2026

Procedural status matters

Dated record

Prince William County’s August 5, 2026 update states that, following the Virginia Court of Appeals’ July 29 order, the Digital Gateway rezoning approvals were void and the properties reverted to their prior zoning. The comprehensive-plan amendment remained in place. The county said a future rezoning would require the normal application review and public hearings. This official distinction is central to understanding the project’s status. [78]

Separate decisions

The county’s record identifies the comprehensive-plan action adopted on November 1, 2022 and the subsequent rezoning applications. Those are different instruments. A planning policy can continue to support a future use while the legal permission for that use must be pursued again. The August update also described consequential changes to zoning maps and property assessments. [78]

Comparative interpretation

The case demonstrates why headline capital commitments are a poor substitute for entitlement diligence. A board vote may be significant without being the final, durable authorization needed to build. Litigation and procedural defects can alter the status of a project even when the underlying development concept remains part of the adopted plan.

This is not evidence that every contested data-center project will fail. It is evidence that public notice, hearing procedure and the distinction between policy and regulation are economically material. Both supporters and opponents benefit when status reporting identifies the specific instrument and date rather than simply calling a project “approved.”

Decision lesson

Use a milestone ledger: comprehensive plan, zoning, permit, utility agreement, construction and operation. Record court orders alongside administrative actions. For comparative analysis, separate the benefits claimed for a proposed development from benefits already realized. Do not convert an August 2026 county status update into a claim about later proceedings without checking the new record.

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PROJECT AND COMMUNITY CASE STUDIES

Virginia’s JLARC review: benefits and burdens use different denominators

Statewide evidence

Report: December 9, 2024

Economic activity is not permanent payroll

What the official review found

Virginia’s legislative audit described substantial economic contributions alongside land-use and infrastructure pressures. The University of Virginia’s summary of its economic work reports an estimated 74,000 jobs, $5.5 billion in labor income and $9.1 billion in annual state GDP associated with the industry. Those are broad economic-impact estimates, not a count of employees inside data-center buildings. [80]

JLARC also found that roughly one-third of facilities were near residential areas and described shortcomings in some local planning and noise controls. It reported $928 million in data-center sales-tax savings in fiscal 2023 and discussed alternative ways to use the exemption as a policy instrument. These are findings of the December 2024 review, not independently updated 2026 totals. [79]

Comparative interpretation

The useful lesson is not to choose the largest benefit number or the most alarming impact. Construction employment, continuing operations, indirect supplier activity and local tax receipts answer different questions. Likewise, a state-level economic benefit does not show whether a particular neighborhood bears a disproportionate burden.

A capital-intensive project can create substantial purchasing and tax activity without employing as many permanent workers as a similarly sized labor-intensive business. That does not make its benefits fictitious; it changes the appropriate comparison. Incentive evaluation should use net public returns over time, not investment announcements alone.

Decision lesson

Compare projects using consistent geography and time periods. Separate one-time construction activity from recurring revenue and ongoing service costs. State explicitly whether a number is direct, indirect or induced. For community impacts, pair aggregate findings with site-independent local indicators such as compliance outcomes and household rate exposure. This framework supports a more useful discussion than either unconditional promotion or a blanket presumption that all data-center investment is harmful.

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PROJECT AND COMMUNITY CASE STUDIES

PJM forecasting: a pipeline is not the same as delivered demand

Regional grid

2026 forecast edition

Planning projections, not metered load

Dated planning evidence

PJM’s explanation of its January 2026 long-term forecast projects average annual summer-peak growth of 3.6 percent over the following decade. It identifies data centers as the principal driver while also naming electrification, vehicles and manufacturing. PJM says it strengthened the evidence required for large-load requests, including realistic construction timing and financial commitments. [81]

Its forecast-development page publishes the report, supporting data and process materials. This matters because a regional forecast is an assembled planning product, not simply the sum of every announced campus. The published vintage and assumptions should travel with any chart based on it. [82]

Comparative interpretation

This case connects local siting decisions to regional consequences without assuming every proposed facility is inevitable. Overbuilding around speculative demand can leave costs to recover from someone; underbuilding can constrain economic activity and reliability. Forecast discipline is an attempt to manage both errors.

A planning adjustment is not the same as a final customer contract, and a contract is not the same as fully utilized equipment. Phasing, commissioning and operating utilization can materially change the timing of demand. County-level announcements and utility-level forecasts should therefore be reconciled before they are combined.

Decision lesson

For each forecast, record its date, horizon, geography, peak-versus-energy metric and treatment of uncommitted projects. Track revisions rather than treating a single release as permanent truth. For energy-market discussion, distinguish electricity requirements from the fuel mix used to meet them. Even strong regional load growth does not by itself prove a specified increase in oil consumption or oil prices. The analytically defensible claim is that credible large-load growth changes planning requirements and the value of timely supply, transmission and demand-side options.

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PROJECT AND COMMUNITY CASE STUDIES

[*REDACTED*]: financial commitments before infrastructure expansion

Ohio

PUCO approval: July 9, 2025

Tariff effective July 23, 2025

Dated decision

[*REDACTED*]'s official tariff page states that PUCO adopted its data-center settlement on July 9, 2025 and that the resulting tariff became effective July 23. The Ohio Consumers' Counsel describes minimum capacity-related payments for new large data centers over a term of up to twelve years. The utility's implementation page also organizes new projects into study tranches rather than treating every request as immediately serviceable. [83][84]

Continuing contest

The Consumers' Counsel reports that industry groups appealed in November 2025. An adopted tariff and an unresolved challenge can coexist. The public record supports describing a specific approval and implementation pathway; it does not support treating the policy as permanently uncontested or applicable to every Ohio utility. [84]

Comparative interpretation

The economic objective is to align infrastructure commitments with credible customer obligations. Minimum payments, credit support and exit provisions can reduce the risk that infrastructure is built for a customer that does not arrive or leaves early. They can also make marginal projects less financeable and reduce flexibility for customers whose demand develops slowly.

That tradeoff should be acknowledged rather than characterized as simply pro-growth or anti-growth. Stronger obligations may shrink a speculative queue while improving the credibility of the remaining projects. Conversely, a shrinking queue is not direct proof of weaker underlying demand for computing services.

Decision lesson

A community should understand the serving utility's tariff before assuming a rezoning will translate into construction on a promised schedule. A developer should distinguish reserved electrical capacity from actual consumption, including any ramp-up period. A consumer advocate should examine which costs are assigned to the customer and which remain shared. Ohio provides a concrete case for evaluating allocation rules, not a universal percentage that can be transplanted unchanged into other states.

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PROJECT AND COMMUNITY CASE STUDIES

New Albany, Ohio: approval must be followed by operating accountability

Municipal implementation

Complaints documented 2025–2026

City FAQ accessed November 19, 2026

Evidence after construction

New Albany’s official FAQ acknowledges resident complaints involving operating data centers, including concerns reported near [*REDACTED*]’s campus in September 2025 and [*REDACTED*]’s campus in July 2026. The city describes ongoing mitigation and communication with the companies. The current FAQ gives a December 2026 target for [*REDACTED*]’s permanent solution; that is a scheduled remedy, not evidence of completion. [85]

A differentiated record

The same resource explains the city’s land-use framework, business-park planning and the division of responsibility among local government, utility providers and environmental regulators. The case therefore contains both an affirmative development strategy and evidence of impacts requiring follow-through. Neither side should be omitted from a fair account. [85]

Comparative interpretation

This case is useful because a project can comply with its original approval process yet still generate issues that need attention as equipment and operating conditions change. Community acceptance is not a one-time asset acquired at a hearing. It depends on response time, credible measurement and visible resolution.

Public FAQs can improve access to information, but they should distinguish company explanations, city findings, future schedules and completed work. A promised fix should not be reported as an achieved result. Similarly, the existence of complaints alone does not establish a violation; it establishes a need for examination through the applicable standards.

Decision lesson

For comparable communities, maintain a public record of complaint categories, response dates, measurement findings and closure status without exposing sensitive facility details. Specify which office owns each issue so residents are not redirected indefinitely between entities. Evaluate construction-phase and operating-phase effects separately. This gives developers a predictable accountability process and residents evidence that conditions attached to growth remain meaningful after the initial investment announcement.

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PROJECT AND COMMUNITY CASE STUDIES

Georgia: special contracts as a cost-allocation tool

State utility regulation

Rules adopted January 2025

Implementation reported September 2026

Dated regulatory approach

Georgia’s PSC reports that January 2025 rules enabled minimum billing requirements and longer contracts for new large-load customers. The commission requires new data-center contracts to be provided at least thirty days before execution, and it approved related pricing changes in April 2025. Its annual report describes the rule’s application to new customers above 100 MW and the intention to address costs beyond the customer’s immediate site. [86][87]

What the record does not say

These protections concern ■[*REDACTED*]■’s regulated service arrangements. They are not a statewide local-zoning approval and do not establish that every proposed campus will be built. Nor does the regulator’s stated purpose, by itself, prove the realized financial result for every future household bill.

Comparative interpretation

Georgia’s case places the utility contract between the investment announcement and the expensive infrastructure commitment. The potential advantage is that the customer’s obligation can reflect its scale and timing. The potential drawback is that complex special contracts are harder for the public to compare than a simple published rate.

A useful review separates customer-specific facilities from shared system costs, identifies the duration of protection and asks what happens if the customer reduces demand. Contract review should also be understood alongside planning approval: a financially strong contract cannot resolve a local land-use dispute, while a local approval cannot determine utility rates.

Decision lesson

Compare this approach with Ohio’s separate tariff class rather than assuming one mechanism is inherently superior. The questions are similar: credible demand, payment responsibility, early departure and transparency. For reporting, keep the commission’s policy objectives distinct from measured outcomes. The strongest public assurance is a documented allocation mechanism with enforceable obligations and periodic reporting, not a general statement that growth will necessarily lower bills for everyone.

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PROJECT AND COMMUNITY CASE STUDIES

Atlanta: preserving transit-oriented land for other uses

Municipal land use

Council vote: September 3, 2024

Location restrictions, not a regional prohibition

Dated decision

Atlanta's City Council announced approval of two ordinances on September 3, 2024. One defined data centers and prohibited them within 2,640 feet of a high-capacity transit stop; the other prohibited them within the BeltLine Overlay District. The council identified the measures as 24-O-1222 and 24-O-1218. [88]

The relevant geography

This was an action by the City of Atlanta, not a prohibition covering the entire metropolitan market or Georgia. It concerned the suitability of certain urban locations, rather than a conclusion that data processing has no economic value. A regional inventory should not label every surrounding community as subject to the same municipal restriction.

Comparative interpretation

Atlanta makes the opportunity cost of land explicit. A facility can be economically productive while still being a weak fit for land intended to support transit ridership, mixed-use activity or walkable development. Comparing capital investment alone can miss those alternative uses.

The decision also shows why development may be redirected rather than eliminated. Restricting one location can shift proposals to other industrial areas or jurisdictions. That can protect a specific planning objective while moving infrastructure and environmental questions elsewhere. Whether the regional result is better depends on the receiving location and its own standards, not just the departure from the restricted district.

Decision lesson

A sound comparison asks what public objective the land is supposed to serve and what alternative development is reasonably feasible. It should distinguish a broad industrial district from a transit-focused location and apply those distinctions consistently. For developers, the lesson is to screen municipal use definitions early. For elected officials, it is to explain why the rule follows adopted planning priorities rather than presenting every restriction as opposition to technology. The case supports targeted spatial policy, not a claim that all cities should use Atlanta's exact distances.

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PROJECT AND COMMUNITY CASE STUDIES

Georgia’s generation decision: commitments, backstops and revisions

[redacted] service territory

Commission vote: December 19, 2025

Approximately 10 GW in the announced package

Dated decision

On December 19, 2025, Georgia’s PSC announced unanimous approval of an agreement for a major generation expansion serving large-load growth. The announcement describes a utility financial backstop for 2029–2031 and notes that staff had questioned the risk of building before all anticipated customers had signed. It expressly says the PSC does not approve data-center locations or construction. [89]

Keep source versions visible

The December release states 9,885 MW, while the commission’s September 2026 fact sheet states 9,985 MW. This report therefore describes the package as approximately 10 GW rather than silently selecting or reconciling the figures. The later fact sheet also reports additional contractual developments. These different dated documents should not be treated as identical snapshots. [86][89]

Comparative interpretation

The policy problem is how to build ahead of demand without placing all forecast risk on existing customers. A financial backstop can help allocate that risk, but its duration and conditions matter. Protection through a specified year is not equivalent to protection over an asset’s entire useful life.

The growth case is that timely resources may allow new economic activity and spread some fixed costs across more usage. The caution is that customer contracts, resource construction and realized demand do not necessarily proceed at the same speed. An approval is a commitment to a regulated pathway, not proof that every projected benefit has already occurred.

Decision lesson

For comparable cases, report approved capacity separately from operational capacity and forecast consumption. Identify who bears shortfall risk and for how long. Keep annual updates versioned so revised figures are not blended into a misleading trend. This approach preserves the legitimate scale of the decision while avoiding false precision about its ultimate delivery or effect on rates.

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PROJECT AND COMMUNITY CASE STUDIES

Texas SB 6: making large-load growth a system-planning issue

Texas / ERCOT region

Enrolled legislation: 2025

Implementation requires rules and procedures

Dated legislative framework

Texas Senate Bill 6's enrolled text addresses planning, interconnection, operation and costs for certain large electrical loads. It directs the Public Utility Commission to establish large-load interconnection standards, includes customer contributions to interconnection costs and creates mechanisms for large-load demand management. The House Research Organization's May 26, 2025 analysis explains the bill's development rationale and concern about stranded infrastructure. The enrolled act, rather than that earlier analysis, is the controlling legislative text. [90][91]

Scope matters

The legislation addresses the ERCOT region and specified customers; it is not a municipal rezoning approval or a guarantee of service to every announced project. It also should not be read as a blanket ban on data centers.

Comparative interpretation

Texas illustrates a shift from treating each load request as a bilateral development opportunity toward assessing its wider system consequences. The balancing act is familiar: preserve investment opportunities while establishing commitments sufficient to support reliable, economical planning.

Growth supporters can reasonably value clearer interconnection processes and more credible project queues. Other customers can reasonably seek protection from speculative requests that prompt costly work and then disappear. These objectives are not inherently incompatible, but the implementation details determine how much risk and flexibility each party retains.

Decision lesson

For project comparisons, distinguish the law's enactment from the adoption of implementing rules and from an individual project's completed study. A campus described as "announced" may still face several independent gates. Public reporting should identify those gates without exposing operational details. The useful analytical comparison is with Ohio and Georgia's customer-commitment mechanisms: all address allocation and credibility, although their market structures and legal instruments differ. It would be misleading to copy a tariff percentage from one state and assume Texas uses the same model.

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PROJECT AND COMMUNITY CASE STUDIES

ERCOT: why preliminary demand figures need a qualification

Texas grid planning

Forecast release: April 15, 2026

Methodology update: May 2026

Dated forecast process

ERCOT’s April 15, 2026 release describes a preliminary 2026–2032 outlook assembled from its base economic forecast and information from transmission and distribution companies working with medium and large customers. ERCOT explicitly presented the results for further discussion and refinement. [92]

Its May 2026 CEO update describes a request to adjust the forecasting method, including an approach that discounts utility-reported figures using historical realization rates. The document also discusses timing implications for the capacity-demand-reserves reporting process. This is evidence that forecast quality and realization assumptions were active policy questions, not that every reported load had become a firm operating requirement. [93]

Comparative interpretation

The distinction between a request, a commitment and an operating load is particularly important when the proposal pipeline grows quickly. Raw requests can be useful signals of interest while still being unsuitable as a one-for-one forecast of future consumption. Alternative sites, phased construction and changing customer plans can produce divergent outcomes.

The opposite error is to dismiss all proposed load because some portion will not materialize. Forecasting is a decision under uncertainty, and the public needs to see both the range and the method used to convert project information into planning assumptions.

Decision lesson

When comparing ERCOT with PJM, align the forecast vintage, horizon, definitions and treatment of project maturity before comparing headline numbers. Do not present a preliminary pipeline total as an observed peak. Track later revisions as new evidence rather than as automatic proof of institutional failure. For an investment presentation, the defensible conclusion is that demand growth is large enough to require revised planning processes; the amount, timing and resource response remain conditional on projects reaching their successive milestones.

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PROJECT AND COMMUNITY CASE STUDIES

Chandler: a local ordinance built around notification and sound

Arizona

Unanimous adoption:
December 5, 2022

Effective January 5, 2023

Dated local action

Chandler’s January 11, 2023 announcement documents a unanimously approved data-center zoning amendment. It defines data centers as a primary use permitted through planned-area-development zoning and distinguishes smaller ancillary uses. The city also introduced neighborhood communication, pre-construction sound studies, mitigation obligations and annual sound reviews during the first five operating years. [94]

Why the sequence matters

The announcement links the rules to changes in the industry and growing neighborhood concerns. Its significance is the combination of land-use classification and post-approval follow-through. The dated ordinance should not be represented as the complete current code without checking subsequent amendments, and this historical case does not establish the outcome of a later individual application.

Comparative interpretation

Chandler’s approach resembles Fairfax’s emphasis on measurable compatibility but gives particular weight to communication over time. The pre-construction baseline creates a reference point; the later reviews ask whether actual performance matches the intended standard. Those steps are stronger together than either a public meeting without measurements or a technical report that residents cannot access.

For developers, a defined process can clarify expectations and reduce disputes about what was promised. For neighbors, its value depends on the quality of evidence and the credibility of enforcement. A communication protocol is useful only if there is a responsible party and a practical route to resolving problems.

Decision lesson

Evaluate the complete cycle: baseline, design, approval, operation, measurement and remedy. Keep public summaries understandable and avoid implying that any one cooling approach universally eliminates environmental impacts. The transferable lesson is that a locality can permit a specialized industrial use while requiring a specific accountability framework. It is not evidence that all data centers in a desert climate have identical water, noise or electricity profiles.

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PROJECT AND COMMUNITY CASE STUDIES

Arizona’s commission workshop: discussion is not an adopted tariff

Arizona utility policy

Public workshop: April 16, 2026

Distinguish options from final decisions

Dated regulatory record

The Arizona Corporation Commission held a large-load and data-center workshop on April 16, 2026 under Docket E-00000A-25-0069. Its official notice established an open-meeting forum, and its subsequent summary discussed a possible hybrid approach using a universal large-load tariff and customer-specific energy-service agreements. The commission described the importance of assigning costs to large customers while supporting economic development. [95][96]

What is established

The record verifies a public regulatory discussion and the options considered. It does not, by itself, verify that a universal tariff was adopted at that workshop. The distinction is essential when a policy proposal is repeated in market summaries as if it were already enforceable.

Comparative interpretation

Arizona highlights the choice between standardization and tailoring. A common tariff can make requirements easier to compare; a special agreement can reflect unusual project characteristics. Either can be protective or inadequate depending on its terms. The instrument’s name does not answer questions about stranded costs, duration or reporting.

The public forum also creates a place to distinguish utility questions from municipal ones. City officials can influence land use, but a local development agreement does not necessarily govern a regulated utility’s recovery of system costs. Conversely, a satisfactory power arrangement does not settle whether a particular use fits a community plan.

Decision lesson

Build policy-status tables with separate fields for proposal, hearing, adoption, effective date and judicial review. Attach the relevant document to each change. This avoids overstating certainty and lets businesses plan around genuine regulatory progress. The case is valuable precisely because it captures a decision-making stage: it shows the questions a growing market must resolve, rather than providing a finished answer that can be generalized to every Arizona service territory.

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PROJECT AND COMMUNITY CASE STUDIES

Oregon POWER Act: a distinct class for large computing loads

Oregon

Legislation: HB 3546, 2025

Utility-by-utility implementation

Dated state framework

Oregon's Department of Energy describes HB 3546 as requiring new terms and a separate service classification for qualifying large energy-use facilities. The law's definition includes facilities able to use at least 20 MW and primarily engaged in the specified computing-infrastructure category. The department identifies cost shifting and related risks as the policy concern. [97]

In a November 2026 release, the Oregon PUC reported approval of a ■■*REDACTED*■■ framework under the law. That implementation record is distinct from the statute itself and from other utilities' proceedings. The threshold does not mean every commercial electricity user is placed in the same class. [98]

Comparative interpretation

Oregon offers a useful comparison with the Ohio tariff case. Both use classification and service terms to recognize that very large computing loads can differ from ordinary commercial customers. Oregon's legislative route, however, establishes a statewide framework implemented through utility proceedings rather than a single utility case standing alone.

The benefit of classification is analytical clarity: regulators can examine the costs and risks of a defined group instead of hiding them in a broad average. The limitation is that classification is only the beginning. The allocation method, contract terms and exceptions determine the practical result.

Decision lesson

Report the statute, utility proceeding and approved schedule separately. Do not apply one utility's rate impact to customers of another utility or to every facility in the state. For local leaders, an electricity policy is also not a substitute for evaluating land-use, water or fiscal effects. A balanced assessment recognizes that additional demand can help spread some existing costs while new infrastructure can add others. The central question is whether the approved mechanism assigns those effects transparently and withstands changing utilization over time.

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PROJECT AND COMMUNITY CASE STUDIES

Port Washington: zoning and fiscal agreements are separate gates

Wisconsin

Zoning step: April 15, 2025

Fiscal record: November 2025

Dated municipal sequence

Port Washington's April 23, 2025 FAQ states that its Common Council approved a new zoning district on April 15 to establish a framework for a potential data-center development. Its November 4 fact sheet states that a development agreement with [*REDACTED*] had been approved and describes further annexation, zoning and tax-incremental-district actions. The city characterized the district as a way to deliver infrastructure benefits while shielding taxpayers from project costs and risk. [99][100]

The TID No. 5 resolution is a separate official fiscal instrument, including statutory findings and intergovernmental arrangements. That separation matters: a new zoning category, a development agreement and a financing district are not interchangeable approvals. [101]

Comparative interpretation

The case shows how a large development can require a sequence of coordinated public decisions. Supporters may view that package as a way to capture investment and improve infrastructure. Skeptics may focus on whether the financial commitments are enforceable if growth, valuation or timing falls short.

A city's statement that an arrangement protects taxpayers should be reported as its policy position, not as a guarantee that no risk exists. The economic evaluation depends on the actual agreement, the timing of revenue and expenditures, and the obligations that survive a delay or ownership change.

Decision lesson

Review the development agreement and financing plan together. Separate projected assessed value from collected revenue and distinguish a tax increment from unrestricted revenue available for other services. Publish understandable milestone updates so residents can see which decision is before the council and which has already occurred. The transferable lesson is neither that tax-increment financing is always beneficial nor that it is automatically a subsidy without return; it is that the complete contractual and fiscal sequence must be examined.

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PROJECT AND COMMUNITY CASE STUDIES

Northern Indiana: large investment announcements need performance accounting

Indiana / New Carlisle region

State announcement: April 25, 2024

Planned investment and jobs

Dated economic-development record

Indiana’s Economic Development Corporation announced on April 25, 2024 that [REDACTED] planned an $11 billion data-center campus in north-central Indiana and at least 1,000 new jobs. The state described a package including data-center sales-tax exemptions and performance-based credits tied to investment and employment. These were announcement-stage commitments, not a contemporaneous statement that all capital had been spent or all positions filled. [102]

Why the case matters

The size of the announcement made it important to state and regional development policy. It also creates a need for careful longitudinal reporting. A later operating milestone at part of a campus does not necessarily establish completion of the entire announced program.

Comparative interpretation

The case illustrates the difference between an incentive offer and a realized public return. Performance-based provisions can improve accountability, but the relevant questions are what triggers the benefit, how performance is verified and what happens if commitments are missed. An exemption’s nominal duration is also not the same as its present-value cost.

Construction, continuing operations and supplier activity should be tracked separately. Local communities may value the addition of a large taxpayer and associated work while still questioning land-use change, public infrastructure commitments or the number of durable jobs relative to capital intensity.

Decision lesson

Create a scorecard that follows the project through actual investment, employment, tax payments, incentive use and publicly funded services. Keep company, state and county measures distinguishable so numbers are not counted twice. Compare the result with plausible alternative development rather than with vacant land forever. This framing neither discounts a major investment nor assumes that a headline dollar figure proves the package’s value. It converts the announcement into a set of measurable commitments that can be assessed over the years in which the project develops.

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PROJECT AND COMMUNITY CASE STUDIES

Louisiana: keep separate utility applications separate

Richland Parish / [*REDACTED*] [*REDACTED*]

Initial approval: August 2025

Additional docket: 2026

Dated approvals and applications

[*REDACTED*]'s August 20, 2025 release reports LPSC approval of an agreement for generation and transmission investments connected to [*REDACTED*]'s Richland Parish development. The utility presented the agreement as supporting both the customer and the wider system. That is an identifiable approval milestone, not proof that the approved resources were already operating. [103]

The commission's Order U-37882-A, decided August 12, 2026, concerns a different proceeding. It describes a March 2026 application for additional resources associated with [*REDACTED*] subsidiary [*REDACTED*] and refers separately to the earlier U-37425 approval for Laidley. The August order addresses a procedural document dispute; it should not be misreported as final approval of every resource sought in the newer application. [104]

Comparative interpretation

Louisiana demonstrates how a single corporate brand can sit over multiple legal entities, phases and utility dockets. Treating them as one undifferentiated "approved campus" can materially overstate progress or double-count capacity. Conversely, continuing review of an expansion does not negate a prior authorization.

The economic attraction is a potentially large addition to regional investment and demand. The public-interest question is how costs, timing and benefits are divided when utility assets serve a very large customer. A utility's promotional account is primary evidence of its position, but not independent proof that every promised benefit will occur.

Decision lesson

Maintain a docket-level crosswalk identifying the customer entity, requested action, decision date and decision type. Separate application, procedural order, settlement approval and operation. Avoid adding capacity numbers from related announcements until overlap has been resolved. This discipline is especially important for a staged development whose energy arrangements evolve over several years, because the same brand name can appear in records describing materially different commitments.

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PROJECT AND COMMUNITY CASE STUDIES

Saline Township: conditional service approval and contested public trust

Michigan

MPSC decision: December 18, 2025

Utility authority differs from land-use authority

Dated decision

Michigan’s PSC reviewed [REDACTED]’s request for special contracts with [REDACTED] for a proposed Saline Township data center. Its December 18, 2025 order addressed a 1.383 GW service arrangement. The commission’s issue brief distinguishes its authority over utility rates and terms from other approvals associated with the development. [105][106]

A documented disagreement

On the same day, Michigan’s Attorney General criticized the expedited, ex parte process and the limited public visibility of contract details. That statement is evidence of a public official’s objection, not a judicial finding that the order was unlawful. The approval and the criticism should both be represented accurately, without treating either as the other’s final resolution. [107]

Comparative interpretation

The case exposes two different meanings of protection. Regulators can conclude that contractual conditions protect other customers while critics argue that the review process does not provide enough access to test that conclusion. The disagreement is partly about economics and partly about the legitimacy of the procedure.

Speed has real value when equipment, financing and construction schedules must align. Transparency and a credible opportunity to challenge assumptions also have value, especially where commitments are large and long-lived. A balanced account should not imply that expedited review is automatically reckless or that a conditional approval eliminates all legitimate questions.

Decision lesson

Identify exactly what was approved, the conditions attached and the forum responsible for other permissions. Separate public comments, agency findings and later legal actions. For communities evaluating similar projects, accessible explanations of risk allocation are important even when some commercially sensitive details remain confidential. The lesson is to make the reasoning inspectable enough to sustain public confidence, while avoiding claims that utility-service approval alone demonstrates local consent or completed construction.

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PROJECT AND COMMUNITY CASE STUDIES

Susquehanna and PJM: a specific rejection can lead to broader rulemaking

Pennsylvania / PJM

FERC actions: November 2024 and December 2025

Co-location is not exemption from cost allocation

Dated regulatory sequence

FERC's November 1, 2024 Susquehanna proceeding addressed proposed changes to a particular interconnection agreement for co-located load. The disposition should not be reduced to a permanent national prohibition on pairing generation and data centers. The specific filing and its governing requirements were the issue. [108]

On December 18, 2025, FERC unanimously directed development of new PJM transmission-service pathways for co-located arrangements. Commissioners' official explanations emphasize flexibility alongside reliability and protection against unjustified cost shifts. They also identify further compliance and rate-development work rather than suggesting every implementation detail was already settled. [109][110]

Comparative interpretation

The attraction of co-location is understandable: customers seek timely power and generators seek durable demand. But physical proximity alone does not determine whether other users provide services, bear costs or lose access to output they previously relied upon. The commercial arrangement and the regulated service framework must be considered together.

This is a useful counterexample to simplistic claims that private power arrangements sit entirely outside public review. It also cautions against assuming that regulatory uncertainty means the idea is impossible. A rejected filing can prompt a clearer framework, while a framework can still require individual compliance and approvals.

Decision lesson

For comparative project reporting, distinguish a bilateral supply contract, a grid-service agreement and a final regulatory determination. Specify the decision date and avoid carrying a 2024 outcome forward as if later actions did not exist. The defensible economic conclusion is that access to suitable power is a central development constraint and that clear allocation rules can influence investment timing. It does not follow that any particular fuel, generator or campus has an automatic entitlement to favorable treatment.

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POLICY CHOICES AND IMPLEMENTATION

A permission framework, not a blanket verdict

Policy design

Proposed framework

Local authority varies

Separate the decisions A data center is simultaneously a land-use proposal, a major utility customer, a construction project, and an ongoing industrial operation. Permission in one arena should not be represented as approval in every other arena. A locality can approve a site without promising electric service; a utility study does not establish compatibility with neighboring homes.

Establish the public objective The recommended objective is development that pays its attributable costs, fits the location, and operates within measurable limits. This is different from either maximizing announced investment or prohibiting a technology category. DOE identifies cost allocation, stranded investment, resource adequacy, and technology risk as distinct large-load rate-design issues. [111]

Use a decision ledger For every proposed campus, maintain a ledger identifying the approving body, governing standard, evidence received, unresolved issue, and next decision date. Classify commitments as legally binding, conditional, voluntary, or aspirational. A press release, a utility reservation, and an enforceable permit condition should never receive the same status.

Assign the burden of proof Require applicants to demonstrate feasibility with project-specific studies before receiving irreversible commitments. Give agencies enough resources to evaluate those studies independently. Applicants should know the evidence requirements early, while residents should be able to see what remains uncertain and what would cause approval to be withheld.

Adopt gates rather than promises Recommended gates are site suitability, utility readiness, construction authorization, commissioning, and operating compliance. Each gate should have an accountable decision-maker and documented completion criteria. Expansion should reopen affected gates when electrical demand, water demand, generation equipment, or neighboring exposure materially changes. These are proposed governance practices, not a claim that every jurisdiction already requires them.

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POLICY CHOICES AND IMPLEMENTATION

Moratoria versus targeted siting controls

Choice architecture

Time-limited pause

Predictable exit

What a pause can accomplish A temporary moratorium can create breathing room when existing ordinances do not address the scale or characteristics of incoming projects. It is most credible when tied to a defined information gap, a funded work program, and an end date. An indefinite pause without deliverables can preserve uncertainty rather than resolve it.

What targeted rules can accomplish Siting controls can distinguish locations and operating designs instead of treating every facility identically. Loudoun adopted changes in March 2025 moving certain previously by-right data-center uses into conditional or special-exception review. Its ongoing standards project separately addresses use-specific requirements. That is an example of procedural restructuring, not a nationwide template. [112]

Compare the risks A pause may prevent commitments before a community understands consequences, but it can also delay compatible projects and displace demand elsewhere. Immediate permissive zoning may shorten development schedules while exposing residents to poorly characterized impacts. Neither approach removes the need to resolve electric capacity, water supply, or enforceable operating conditions.

Recommended pause protocol If counsel confirms authority, define covered applications, treatment of existing rights, essential exemptions, the study schedule, and objective expiration criteria. Publish interim findings. Avoid implying that a local pause suspends separate state or federal proceedings. Reconcile the measure with statutory deadlines and vested rights before adoption.

Recommended exit protocol Replace a pause with mapped suitability criteria, complete-application requirements, measurable performance conditions, and a review pathway for modifications. Evaluate success by whether decisions become better supported, not whether the pause produces universal approval or rejection. Local counsel should assess the specific ordinance, procedural requirements, and challenge risks.

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Land-use screening

Cumulative effects

Alternatives

POLICY CHOICES AND IMPLEMENTATION

A siting screen that includes the whole system

Screen before negotiating Begin with a spatial screen of residential receptors, schools, water constraints, flood exposure, habitat, cultural resources, transportation access, and existing industrial uses. Add substations, transmission corridors, fuel infrastructure, and potential expansion parcels. A campus boundary is too narrow if its enabling infrastructure creates substantial impacts elsewhere.

Avoid false precision A suitability score is a screening aid, not a substitute for judgment. Distinguish exclusion criteria from issues that can be mitigated and from preferences that merely improve a proposal. Publish data dates and missing layers. Do not turn an unknown water constraint into a favorable score simply because the database lacks an entry.

Require genuine alternatives Ask applicants to compare a smaller first phase, different equipment placement, alternative cooling, and alternative access routes. The objective is a feasible lower-impact configuration, not an exercise proving that the preferred design is inevitable. Describe costs and residual impacts rather than asserting that every mitigation is free.

Make setbacks functional Use buffers to achieve a documented outcome, supported by acoustic modeling, visual analysis, fire access, and maintenance needs. A setback alone may not control elevated equipment or transmission impacts. Loudoun's standards initiative includes both data centers and utility substations, illustrating why related uses belong in the same planning conversation. [112]

Decision deliverable The recommended staff report should identify suitable, unsuitable, and conditionally suitable elements; summarize alternatives; and show the remaining impact envelope at full approved buildout. Record why the selected configuration is preferable. Where material evidence is missing, defer that decision rather than masking uncertainty with a generic condition to study the issue later.

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POLICY CHOICES AND IMPLEMENTATION

Protecting households through utility cost recovery

Affordability

Cost causation

Commission jurisdiction

Separate the bill components Electric affordability analysis should distinguish customer-specific facilities, shared distribution, transmission, generation or purchased power, and administrative costs. A developer paying for a substation does not establish that all other customers are protected. Conversely, every system investment near a project is not automatically caused exclusively by that project.

Establish a counterfactual Ask the utility to compare a documented no-project case with staged project cases. Show timing, capacity, financing assumptions, and the allocation of residual value. DOE's large-load guidance explicitly identifies fair cost allocation and underutilized infrastructure risk as policy questions. The recommended response is transparent analysis rather than a universal surcharge chosen without evidence. [111]

Test departures from plan Model cancellation before construction, delayed occupancy, partial utilization, early closure, and successful full operation. Include a case in which other customers later use some infrastructure. A defensible agreement should recover attributable costs without charging the departing customer twice for assets whose value has already been recovered elsewhere.

Use the proper forum Local governments should participate in relevant commission proceedings and obtain independent technical advice rather than promising retail rates through zoning. The regulator, utility, and applicant must establish which tariff and contractual instruments can implement protections. Municipal or cooperative arrangements may follow different governing structures.

Public-facing test Publish a plain-language bill-impact assessment showing assumptions and uncertainty, alongside protected confidential exhibits where necessary. State what the mechanism protects against and what it does not. A minimum bill can address underutilization risk without guaranteeing that fuel prices, regional capacity prices, or every household bill will remain unchanged.

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POLICY CHOICES AND IMPLEMENTATION

Large-load tariffs: commitments that survive a slowdown

Contract design

Collateral

Exit protection

A concrete precedent Ohio's consumer advocate reports that the July 2025 [REDACTED] settlement required large new data centers to pay for at least 85 percent of contracted capacity for terms reaching twelve years. It also notes subsequent industry appeals. The example illustrates the direction of risk protection; it should not be copied without checking the current approved tariff and case status. [113]

Match commitment to exposure The recommended contract term should reflect the life and recoverability of investments actually undertaken for the customer. Evaluate minimum billing demand, ramp schedules, credit support, cancellation payments, and termination obligations together. A long nominal term offers little protection if the obligor is an inadequately capitalized subsidiary with broad escape clauses.

Define milestones Specify when capacity becomes reserved, when deposits become nonrefundable, and what evidence confirms readiness. Distinguish utility-caused delays from customer-caused delays. Avoid spending ahead of credible construction and financing milestones merely because a customer has announced a large campus.

Make collateral usable Require periodic review of guarantees, letters of credit, or other approved security. Assign responsibility for monitoring expiry, downgrades, and corporate restructuring. The agreement should explain how additional security is requested, what happens during a dispute, and how recoveries interact with subsequent use of the assets.

Preserve proportionality Size thresholds and aggregation rules should prevent strategic fragmentation while recognizing that smaller or genuinely flexible customers may impose different risks. Publish the rationale for distinctions. The goal is adequate protection and fair treatment, not punitive pricing based on a company's visibility or a presumption that every data-center load has identical characteristics.

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POLICY CHOICES AND IMPLEMENTATION

Queue discipline and staged energization

Readiness evidence

Avoid double counting

Phased service

Treat announcements as a pipeline An announced campus, a signed service agreement, a funded construction program, and energized load are different states. Maintain separate totals rather than adding them into one demand forecast. EPRI's 2026 assessment explains that nominal IT capacity requires assumptions about ancillary loads, utilization, and ramp rates before it becomes a peak-demand forecast. [114]

Verify commitment Recommended readiness evidence includes site control, credible financing, a realistic equipment schedule, permit status, and a load profile that distinguishes initial operations from ultimate buildout. Require periodic confirmation and identify related applications that might represent alternative sites for the same underlying demand. Avoid publishing commercially sensitive details unnecessarily.

Reserve in increments Offer phased capacity where technically and legally feasible. Tie subsequent increments to demonstrated utilization or binding commitments, not automatic calendar dates alone. A smaller first stage can reduce speculative infrastructure exposure while preserving a credible route to expansion.

Explain queue consequences Transparent rules should describe study charges, deposits, withdrawal treatment, restudies, and the effect of a major design change. Readiness-based sequencing may improve planning, but criteria should be objective and consistently administered. Otherwise, discretion can advantage sophisticated applicants and undermine confidence among smaller customers.

Decision checkpoint Before each major utility expenditure, reconcile the forecast with current project evidence and disclose material changes to the relevant decision-maker. Do not silently replace withdrawn demand with another speculative project to preserve a capital plan. A forecast revision is useful information, not necessarily a planning failure; the failure is refusing to update commitments when evidence changes.

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POLICY CHOICES AND IMPLEMENTATION

Flexibility must be measurable, not promotional

Demand response

Verified delivery

No double counting

Identify the actual resource A promise to be flexible can mean delaying computing work, moving work to another site, using batteries, reducing noncritical cooling, or starting generators. These mechanisms have different reliability and environmental consequences. LBNL's DOE workshop summary identifies flexibility opportunities alongside cost and regulatory barriers; it does not establish that every workload can be interrupted. [115]

Specify the service Recommended contracts should state reducible megawatts, notice time, duration, event frequency, seasonal availability, rebound behavior, and the measurement baseline. Identify which operations remain critical. A commitment that is valuable for a short peak may not address a multiday shortage or a local transmission contingency.

Test before crediting Require commissioning demonstrations and periodic performance tests before counting flexibility as dependable capacity. Account for simultaneous failures and correlated demand across campuses. A customer should not receive multiple credits for the same reduction unless the market rules explicitly permit that treatment.

Keep environmental accounting intact Track whether demand reduction shifts electricity consumption to another time or place, or substitutes on-site combustion. Report generator operation and emissions under applicable permits. A reduction at the utility meter is not automatically a reduction in total energy use or pollution.

Reward real value Compensation should reflect demonstrated system benefit and the customer's actual obligations. Include nonperformance consequences, baseline dispute procedures, and a process for revising commitments as workloads change. Where service is interruptible, make the limitations clear to the operator and to affected public agencies. Do not promise firm reliability while planning around an interruption right that cannot practically be exercised.

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POLICY CHOICES AND IMPLEMENTATION

Noise conditions built around lived exposure

Acoustics

Commissioning

Enforcement

Measure the right problem Persistent mechanical sound can be intrusive even when a single headline decibel figure looks acceptable. Require qualified analysis of operating conditions, background levels, tonal characteristics, low-frequency components, and nearby sensitive receptors. The test should consider the approved equipment configuration and cumulative operation, not only a single isolated machine.

Use an established procedural model Loudoun describes preconstruction noise studies and postconstruction testing within a specified period after initial occupancy. It also identifies tonal and low-frequency noise as subjects of further policy work. These practices illustrate the importance of both predictive review and field verification, without establishing a universal numerical standard. [116]

Write executable conditions Recommended conditions should specify measurement locations, instruments, weather constraints, operating states, averaging periods, reporting format, and who resolves disputed results. Limits need a legally grounded acoustic rationale. A condition to avoid unreasonable noise is harder to administer than a measurable standard with a defined test method.

Test realistic operating modes Include normal cooling, hot-weather operation, generator testing, phased expansion, and combinations of equipment likely to run together. Differentiate lawful emergency operations from routine maintenance. Inspect barriers and silencers as installed, not merely as drawn. Require corrective action where equipment changes invalidate the approved model.

Provide a remedy pathway Create a complaint channel with response deadlines and independent verification where warranted. Protect residents from having to finance technical proof themselves. Fund enforcement capacity through legally available mechanisms, and establish escalation procedures before operation begins. Do not promise that vegetation alone will control industrial sound or that a compliant model guarantees no resident will notice the facility.

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POLICY CHOICES AND IMPLEMENTATION

Water conditions that survive drought

Water accounting

Cooling choice

Seasonal limits

Ask for a water balance Require estimates of withdrawals, consumptive use, discharge, source quality, and seasonal peaks. Separate potable supply, reclaimed water, and other sources. Identify the operational assumptions behind each figure. A facility's annual average can obscure its impact during the hottest period, when community demand and cooling needs may rise together.

Compare designs honestly DOE's federal data-center cooling guidance explains how evaporative systems remove heat and identifies water-efficiency opportunities. Policy should evaluate the entire cooling design rather than assuming liquid cooling necessarily means high consumptive water use, or that a closed internal loop eliminates water used elsewhere in heat rejection. [117]

Establish a drought hierarchy Recommended supply agreements should define drought stages, reporting triggers, conservation obligations, curtailment expectations, and the authority to activate them. Test whether the operator's proposed backup strategy is practical. Switching abruptly to another source can transfer rather than solve the community's constraint.

Price infrastructure transparently Identify treatment, storage, pipeline, pumping, and wastewater investments attributable to the project. Separate capacity reservations from actual consumption charges. Evaluate who pays if demand never materializes and whether other users benefit from the upgrades. Reclaimed water may be useful, but its availability, treatment requirements, and conveyance cost require evidence.

Verify performance Install appropriate meters and report seasonal totals alongside operating load so comparisons remain meaningful. Require a review when equipment, water sources, or approved demand changes substantially. Avoid an unconditional water guarantee based only on current average supply. The defensible condition is a source-specific operating envelope supported by utility and environmental review, not a generic promise to be water positive.

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POLICY CHOICES AND IMPLEMENTATION

Air permitting and backup power choices

Source inventory

Emergency distinction

Cumulative operation

Inventory all combustion The permit review should identify every proposed engine, turbine, fuel source, exhaust location, operating mode, and expansion stage. Include temporary equipment where relevant rather than assuming its label determines regulatory treatment. Coordinate the inventory across building, land-use, and air-permitting records to prevent inconsistent descriptions of the same project.

Keep operating categories distinct EPA maintains data-center-specific Clean Air Act resources addressing stationary engines and related permitting questions. Emergency operation, routine testing, demand-response participation, and continuous generation can have different regulatory implications. The applicable air authority should confirm the authorized operating envelope; a commercial contract cannot independently make a use legally emergency operation. [118]

Evaluate the alternatives Compare battery duration, cleaner engines, fuel choice, dispatch restrictions, and workload flexibility against reliability requirements. Do not call an alternative emission free merely because it moves combustion off site. Distinguish local pollutant exposure from broader greenhouse-gas accounting and identify the uncertainty in both.

Coordinate local exposure review Recommended analysis should consider exhaust dispersion, nearby receptors, simultaneous testing, and other permitted sources using the standards required by the responsible regulator. Establish who reviews modeling changes when the equipment count grows. A campus may be built in phases while the surrounding community experiences the combined operating effect.

Monitor the permitted reality Retain equipment identifiers, maintenance and testing logs, fuel records, operating hours, and required emissions-test results. Define incident notification and corrective-action responsibilities. Enforcement should follow applicable permits and law, with clear escalation for repeated violations. Avoid treating the existence of an air permit as evidence that nuisance, noise, water, or land-use questions have also been resolved.

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POLICY CHOICES AND IMPLEMENTATION

The permit stack and its critical path

Agency coordination

No implied approval

Record discipline

Build one coordinated register List land-use approvals, building and fire requirements, utility agreements, air permits, stormwater coverage, water and sewer authorizations, and any aquatic-resource approvals. Record which agency decides each issue, the prerequisites, public participation opportunities, and expiration or renewal requirements. The register is a management tool, not a claim that every project requires every listed authorization.

Separate concurrency from dependence Some studies can proceed concurrently; others depend on a stable site plan or equipment specification. Recommended scheduling should identify decisions that would become invalid if the design changes. Starting earthwork before resolving a consequential constraint can create sunk-cost pressure that distorts later review.

Preserve agency responsibilities USACE describes separate Clean Water Act Section 404 permitting and public notice processes for regulated aquatic impacts. Local zoning approval does not substitute for those determinations. Similarly, federal involvement and environmental-review requirements depend on the particular authorization, funding, and project circumstances, not simply the presence of a data center. [119]

Create a modification rule Require the applicant to notify the coordinating office when load, footprint, water demand, generation equipment, or access changes materially. The office should route the change to affected authorities rather than deciding outside its expertise that it is harmless. Maintain previous versions so reviewers can reconstruct the decision record.

Close the loop before operation Use a commissioning checklist that records required inspections, executed agreements, monitoring installation, emergency coordination, and unresolved conditions. Distinguish permission to occupy a building from authorization to operate every proposed system. Publish an understandable status summary while protecting genuinely sensitive security information. A green status should mean the specified requirement is complete, not that someone expects completion soon.

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POLICY CHOICES AND IMPLEMENTATION

Construction impacts deserve their own playbook

Sediment control

Roads and access

Temporary impacts

Plan for the disruption period Residents experience truck traffic, grading, dust, lighting, and noise before a campus begins operation. Require a construction logistics plan identifying haul routes, delivery windows, worker parking, emergency access, and responsibilities across contractors. Consider overlapping construction projects rather than reviewing each schedule as if it were the only activity in the area.

Control runoff early EPA explains that construction stormwater permitting generally applies to qualifying discharges associated with disturbance of at least one acre, including smaller sites within a larger common development plan. Determine the responsible permitting authority and coverage requirements for the actual project. Do not divide phases on paper to avoid evaluating the common plan. [120]

Establish a baseline Recommended preconstruction documentation should record relevant road conditions, drainage features, sensitive access points, and agreed monitoring locations. Use dated photographs and a complaint log. Baselines help distinguish project damage from preexisting problems and make restoration obligations less contentious.

Give residents usable notice Publish major delivery windows, road closures, blasting proposals where applicable, and a staffed contact route. Notification is not permission to exceed a condition. Require contractors to escalate safety incidents and repeated nuisance complaints to an accountable owner representative, not merely another subcontractor.

Tie completion to restoration Inspect stabilization, drainage performance, road repairs, removal of temporary installations, and unresolved damage claims before releasing relevant securities where lawful. Preserve inspection access and documentation after contractors demobilize. A construction bond should have an identified beneficiary, trigger, and renewal process. Its amount should reflect a defensible scope of remaining work rather than an arbitrary percentage of the project's headline investment.

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POLICY CHOICES AND IMPLEMENTATION

Community benefits without buying permission

Benefits agreement

Measurable delivery

Independent oversight

Keep obligations separate A community benefit should not be used to excuse an unacceptable impact or replace an obligation already required by law. Separate mitigation, infrastructure cost recovery, taxes, and genuinely additional benefits in public materials. This prevents the same expenditure from being counted several times as a generous contribution.

Learn without importing obsolete rules DOE's 2024 community-benefits cost guide addressed particular federal financial-assistance programs and emphasized defined commitments. It is a historical design reference, not proof that its federal priorities remain a universal current requirement. Local agreements need their own authority, enforceable terms, and fair process. [121]

Prioritize durable public value Potential commitments include workforce training, independently administered community grants, emergency-service capacity, or infrastructure that also serves residents. Evaluate the recipient's ongoing operating costs. A donated building or technology system can become a liability if there is no sustainable budget to maintain it.

Write an auditable agreement Recommended terms identify the payer, beneficiary, amount or service, schedule, performance evidence, ownership of improvements, and remedy for nonperformance. Include assignment obligations so a sale does not erase commitments. Distinguish a binding agreement from a memorandum expressing intentions.

Protect the process Disclose negotiations and conflicts according to applicable law. Include affected neighborhoods, not only established organizations or the easiest representatives to reach. Benefits should not require residents to surrender legitimate complaint rights or suppress evidence. Report delivery publicly against the original promises. A modest, reliable commitment is more useful than a large announcement that cannot be enforced or evaluated.

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POLICY CHOICES AND IMPLEMENTATION

Fiscal realism: taxes, incentives, and downside cases

Net public value

Replacement cycles

Incentive discipline

Start with net revenue Estimate property and equipment taxes, fees, abatements, public infrastructure spending, administration, and service costs across time. Keep local revenues separate from state revenues. Virginia JLARC found substantial potential local tax benefits alongside economic activity concentrated in initial construction; that combination supports a multiyear fiscal assessment rather than a headline investment comparison. [122]

Model uncertainty explicitly Recommended cases should vary buildout timing, assessed values, equipment replacement, tax treatment, and operating continuity. Show how much of the budget depends on a single taxpayer. Do not present projected tax receipts as guaranteed cash before the facility exists or assume a construction job remains after commissioning.

Ask the incentive question What additional public benefit does the incentive purchase compared with the project proceeding without it? Identify the evidence for relocation or cancellation risk. An incentive should have a purpose beyond matching another jurisdiction's offer, particularly when electric or water capacity is already scarce.

Condition rather than prepay Where authorized, tie incentives to verified investment, operation, and specific deliverables. Include reporting, recovery provisions, sunset dates, and treatment of ownership changes. Counsel should assess enforceability and statutory constraints. Avoid promising clawbacks that the locality has neither the authority nor practical ability to collect.

Protect the budget Consider reserving part of unusually concentrated revenue for stabilization and infrastructure replacement rather than immediately funding permanent recurring obligations. Publish the net present-value assumptions and a plain-language downside case. A project can still be attractive under conservative assumptions; disciplined analysis makes that conclusion more credible and exposes proposals whose apparent benefit depends on unrealistic optimism.

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Construction versus operations

Skills pipeline

Local access

POLICY CHOICES AND IMPLEMENTATION

Jobs and procurement: count the right outcomes

Distinguish workforce categories Report construction job-years, peak on-site workers, permanent employees, contractors, and indirect estimates separately. Explain whether a number describes people, positions, or cumulative labor over several years. JLARC's Virginia assessment emphasizes construction as a major source of economic activity, so permanent-employment expectations should not be inferred from construction spending. [122]

Connect training to actual roles Recommended workforce agreements should identify occupations, qualifications, training providers, expected openings, and employer participation. Avoid enrolling residents in expensive programs based on vague assurances of future technology jobs. Electrical, mechanical, controls, safety, and facilities skills may be useful across employers even if a particular campus expands more slowly than expected.

Remove procurement friction Publish realistic opportunities for local firms, including bid timing, insurance requirements, bonding, payment terms, and qualification assistance. Break opportunities into accessible packages where practical without compromising quality or safety. A local-spending target is not meaningful if only firms already able to navigate complex prime-contractor systems can compete.

Verify rather than advertise Collect evidence of hiring, retention, wages where disclosure is appropriate, apprenticeships completed, and payments to local suppliers. Define the geographic meaning of local before announcing results. Prevent double counting through multiple subcontracting tiers and distinguish a branch mailing address from substantive local economic activity.

Balance ambition with fairness Hiring or purchasing preferences must be evaluated under applicable law and contract requirements. The objective is broader access and durable skills, not unsupported guarantees that every job will go to a nearby resident. Establish a corrective process when commitments fall short, and report explanations honestly rather than substituting new metrics that make the original promise disappear.

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POLICY CHOICES AND IMPLEMENTATION

A defensible public process

Early disclosure

Accessible evidence

Reasoned findings

Engage before the deal hardens Publish the proposal, the decision pathway, and the major unresolved questions while alternatives remain possible. A public meeting held after infrastructure commitments and private negotiations are effectively complete may satisfy a calendar requirement without providing meaningful influence. Explain which decisions the locality controls and which belong to other bodies.

Make technical evidence usable Recommended materials include a plain-language summary, maps, assumptions, study versions, and a question register. Provide accessible meeting formats and enough time to review consequential revisions. An executive summary should identify adverse findings and uncertainty, not function solely as a promotional introduction.

Support independent review Use qualified reviewers with disclosed conflicts. Applicant-funded review can be structured through a public agency where authorized so that the applicant does not control the reviewer's conclusion. Technical disagreement should be documented and resolved through evidence, not a vote on whose credentials appear more impressive.

Respond on the record Maintain a response matrix linking substantive comments to analysis, design changes, conditions, or reasons for disagreement. USACE's individual permitting framework illustrates the role of public notice in evaluating project impacts; local procedures must independently follow their governing requirements. Participation should inform the record even when it does not produce consensus. [119]

Explain the final judgment The recommended decision document should state findings, alternatives considered, conditions imposed, residual risks, and appeal or review routes. Avoid claiming unanimous support or zero impact when the record shows otherwise. A defensible process makes the basis of the decision understandable and contestable; it does not promise to eliminate political disagreement or immunize the decision from legal challenge.

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Public dashboard

Thresholds and remedies

Data quality

POLICY CHOICES AND IMPLEMENTATION

Monitoring that changes decisions

Build a compliance register For each binding condition, identify the metric, measurement method, responsible party, reporting frequency, reviewer, and response to failure. Separate compliance indicators from contextual information. A dashboard can show useful trends while still making clear that an attractive chart is not a regulator's formal compliance finding.

Use a compact core Recommended indicators include authorized and actual electrical demand, agreed water measures, generator operation, acoustic test status, construction incidents, and delivery of community commitments. Add project-specific indicators only when someone will use them. Excessive reporting can hide important failures in a mass of low-value data.

Preserve comparability Record units, time zones, equipment boundaries, missing intervals, revisions, and operating conditions. Compare similar periods and configurations. When a campus adds buildings, distinguish changes in total impact from changes in efficiency. A lower intensity metric can coexist with a higher total burden on the community.

Design the escalation ladder Set warning thresholds, investigation triggers, corrective deadlines, retesting requirements, and referral to the responsible authority. Reserve sanctions for the authority empowered to impose them. Loudoun's pre- and postconstruction noise-study approach illustrates why predictive commitments need operational verification rather than remaining one-time application exhibits. [116]

Keep public reporting credible Publish validated summaries and describe suppressed or unavailable data. Protect security-sensitive details through proportionate controls rather than blanket confidentiality. Fund review and field verification, not just data collection. Conduct periodic independent audits of a sample of records. The test of monitoring is whether a material deviation produces a documented response, not whether the website displays an uninterrupted row of green symbols.

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POLICY CHOICES AND IMPLEMENTATION

Expansion, transfer, and closure

Lifecycle obligations

Financial security

Change control

Plan beyond opening day Approval should anticipate equipment replacement, ownership transfer, tenant changes, expansion, prolonged vacancy, and closure. A facility's operating characteristics can change without a dramatic alteration to its exterior. Recommended change-control conditions should identify which modifications require notice, updated studies, amended agreements, or a new approval.

Preserve obligations on transfer Require clear treatment of permit responsibilities, monitoring records, community commitments, utility liabilities, and financial security when ownership changes, subject to governing law. Do not assume an asset sale automatically carries every private promise. The public record should identify the responsible operating entity and an accountable contact after each transition.

Estimate closure costs Consider removal or stabilization of hazardous materials, fuel systems, batteries, abandoned structures, and temporary installations as applicable. Determine which assets may reasonably be reused and which create residual public exposure. Avoid a generic assurance that valuable equipment makes abandonment impossible.

Secure the obligations Where legally authorized and warranted, use financial assurance matched to a defined decommissioning or restoration scope. Review the estimate periodically and after material changes. Ensure the instrument names the correct beneficiary, survives foreseeable corporate events, and can be drawn under clear conditions. Do not confuse a parent's current credit rating with permanent protection.

Coordinate with utility exit terms Closure planning should reconcile physical restoration with outstanding service commitments and infrastructure recovery. DOE identifies stranded utility investment as a distinct large-load concern; local closure security should not be mistaken for a substitute for regulated cost-recovery protections. [111] A complete exit plan identifies separate obligations, avoids double recovery, and explains who remains responsible when the project no longer produces revenue.

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POLICY CHOICES AND IMPLEMENTATION

A ninety-day implementation playbook

Recommended schedule

Institutional capacity

No rushed approvals

Days one through thirty Assign a lead coordinator and inventory legal authority, current applications, existing approvals, utility constraints, and staff capacity. Publish a simple map of decision responsibilities. Assemble planning, utility, environmental, emergency-service, finance, and legal expertise. Identify imminent deadlines that cannot safely wait for a broader policy exercise.

Establish the evidence package Prepare proposed application requirements covering phased load, cooling, water balance, generation equipment, acoustics, construction logistics, and fiscal assumptions. Ask the relevant authorities to identify gaps and duplication. Use a common project identifier across agencies. This is a recommended work program, not a substitute for statutory review procedures or a promise that permits can be decided within ninety days. The evidence package operationalizes DOE's distinctions among cost, capacity, and stranded-investment risks. [111]

Days thirty-one through sixty Test the proposed framework against a representative project and a cancellation scenario. Identify which conditions are enforceable, who would inspect them, and what monitoring would cost. Consult residents and applicants separately as needed, then disclose substantive concerns and proposed responses.

Days sixty-one through ninety Finalize the policy package for the legally required adoption process. Deliver a permit register, model study scopes, an affordability-review checklist, a public reporting template, and a funded enforcement plan. Separate immediately usable administrative improvements from ordinance or tariff changes requiring a longer process.

Define success conservatively The initial outcome should be better questions, clear accountability, and fewer unsupported commitments. Do not measure success solely by approvals issued or investment announced. Review the framework after its first applications and correct requirements that produce little decision value. Retain safeguards for unresolved high-consequence risks rather than allowing the schedule itself to become the reason for approval.

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POLICY CHOICES AND IMPLEMENTATION

Decision matrix: approve, condition, defer, or reject

Explicit findings

Residual risk

Review triggers

Approve when the record supports it Approval is most defensible when the location is suitable, required studies are complete, service arrangements are credible, cost responsibilities are defined, and operational limits can be monitored. The recommended finding should explain why residual impacts are acceptable under the applicable standards, not merely repeat that the project has economic value.

Condition what can be controlled Use conditions for specific, feasible measures within the approving body's authority. Identify performance evidence and a remedy. Conditions should not postpone resolution of a fundamental feasibility issue until after irreversible construction. A promise to obtain water later is different from an enforceable limit within an established water-supply plan.

Defer genuine uncertainty A deferral should identify the missing evidence, who must provide it, and what decision it will inform. Avoid endless requests unrelated to governing criteria. Conversely, do not treat a consultant's unsupported confidence as a substitute for the study needed to resolve a consequential uncertainty.

Reject with reasons Where the record demonstrates an unacceptable location, unresolved essential capacity, or inability to meet governing standards, explain the basis and alternatives considered. Distinguish a rejection of this configuration from a judgment about every data center. Applicable notice, findings, and appeal requirements still matter when opposition is strong.

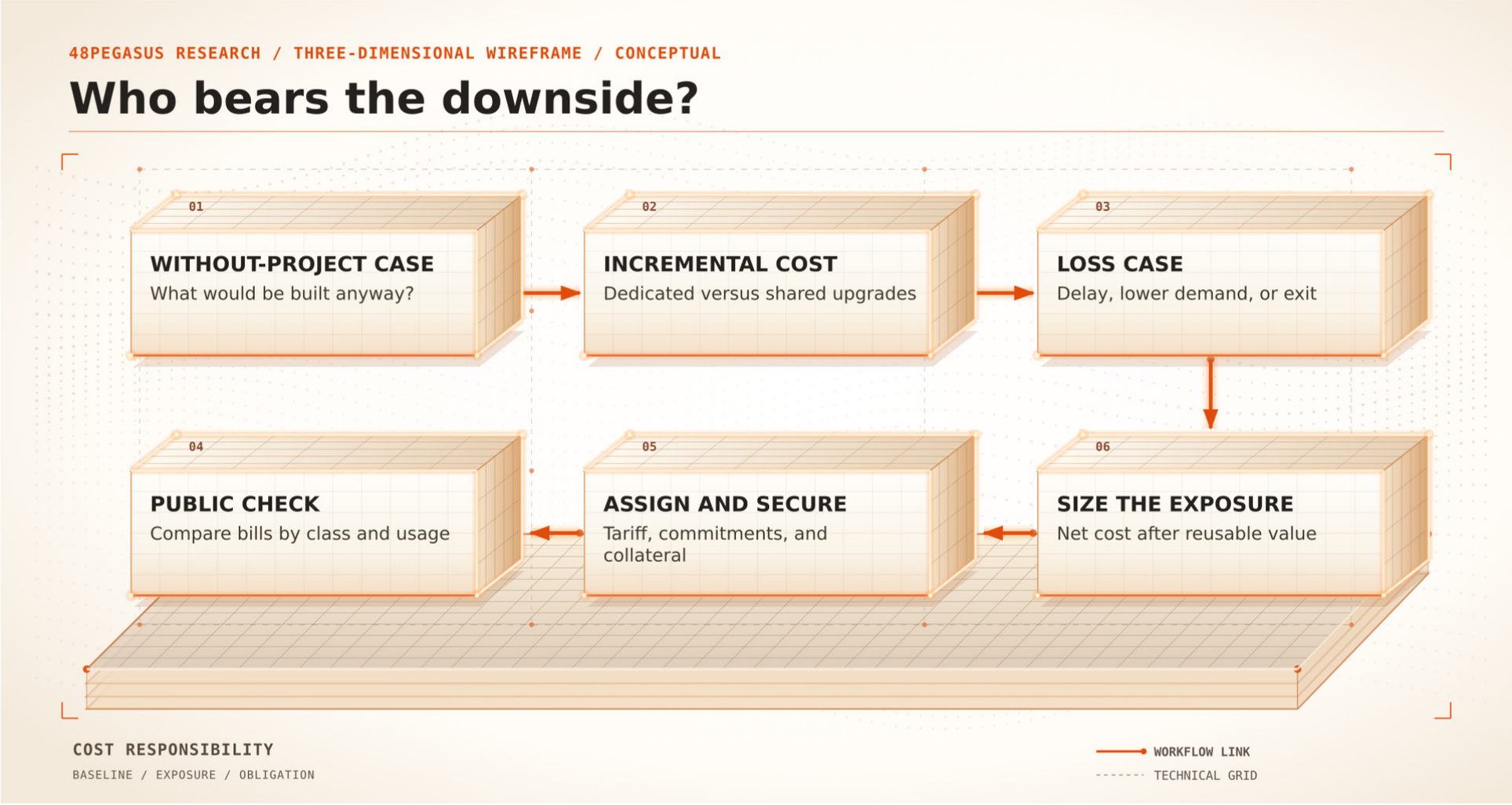
Revisit material changes Set review triggers for major expansion, altered generation, water-source changes, persistent noncompliance, and ownership events where relevant. Maintain a clear boundary between enforceable conditions and voluntary aspirations. The overall policy position is neither automatic permission nor automatic exclusion: authorize only the development whose costs, impacts, and obligations can be understood and responsibly managed over its full life. This is an analytical synthesis, not an adopted regulatory standard. [111] [112]

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VISUAL EVIDENCE

Exhibit 14 Who bears the downside?



Distinguish estimates from enforceable obligations. This workflow begins with costs that do not arise in the without-project baseline, then tests the cost if demand fails to arrive.

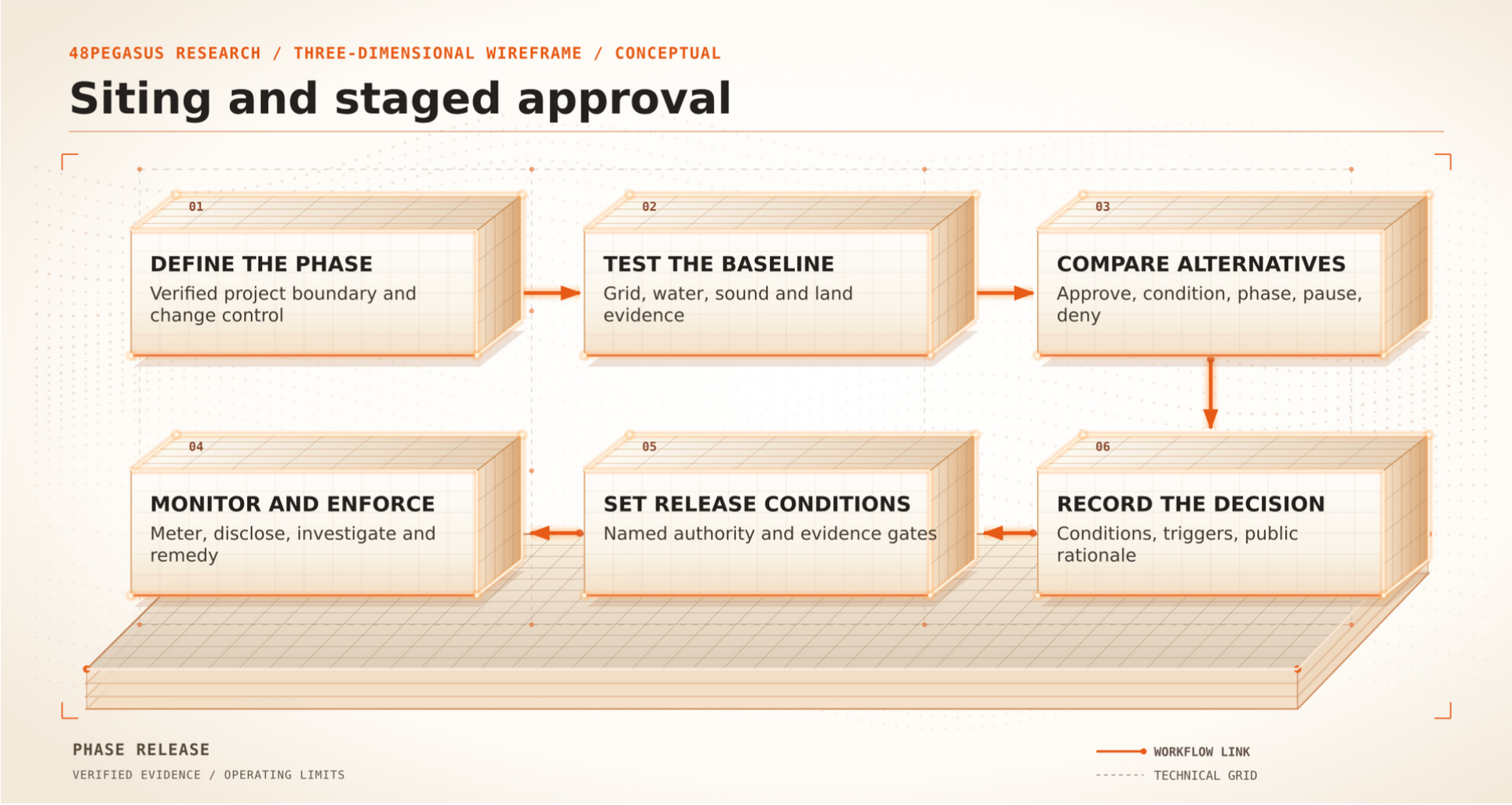
48PEGASUS Research original conceptual exhibit. Not empirical data.

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VISUAL EVIDENCE

Exhibit 15 Siting and staged approval



Advance a phase only when its verified infrastructure, permits and monitoring can support it. A materially changed scope returns to the applicable review process.

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AI disclosure and reader guide

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No model fine-tuning was performed.

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