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Proactive actions to prepare the grid in an era of load growth

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In the new era of load growth, there is concern about energization delays

Rapid load growth means that the electric power system will need substantial amounts of new investment in both generating resources and grid expansion. Yet, the industry's slow-moving planning processes and supply chain challenges often cause delays and sharply higher costs. The lagging infrastructure development, in turn, delays how quickly data centers and manufacturing facilities can be brought online. In short, these challenges make it seemingly impossible to serve the loads reliably in a sufficiently timely, cost-effective, and environmentally acceptable fashion.

- Brattle Group, 2025

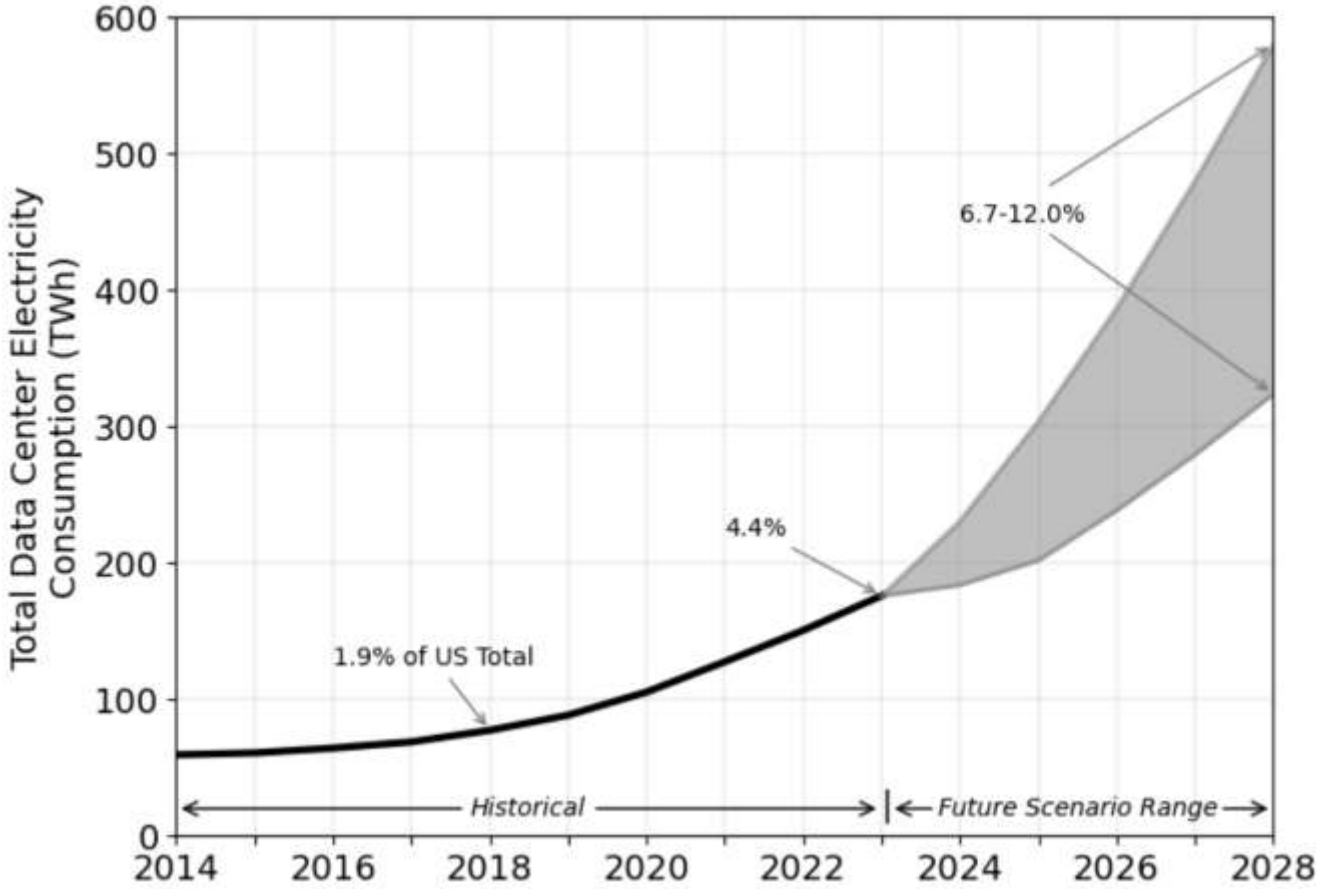
Limits on grid capacity are the most significant source of delay, especially when installing DC fast chargers. Multiple jurisdictions, both large and small, reported long delays on the part of the utility to provide adequate electricity to a site. Timeframes can be on the order of months or even multiple years for large installations. Reasons for these delays vary, ranging

- Stanford Institute for Economic Policy Research, 2024

Delays can be costly

- For utilities
  - Load may go elsewhere
  - Existing customers who cannot expand service may be unhappy
- For utility customers
  - Usage limitations
  - Volumetric rates may rise more as load takes longer to come online
- For states and municipalities
  - Delayed or lost economic development

Utilities and grid operators face great uncertainty



- Uncertainty is larger moving further into the future
- Uncertainty for individual load-serving entities is often far larger given the size of individual projects

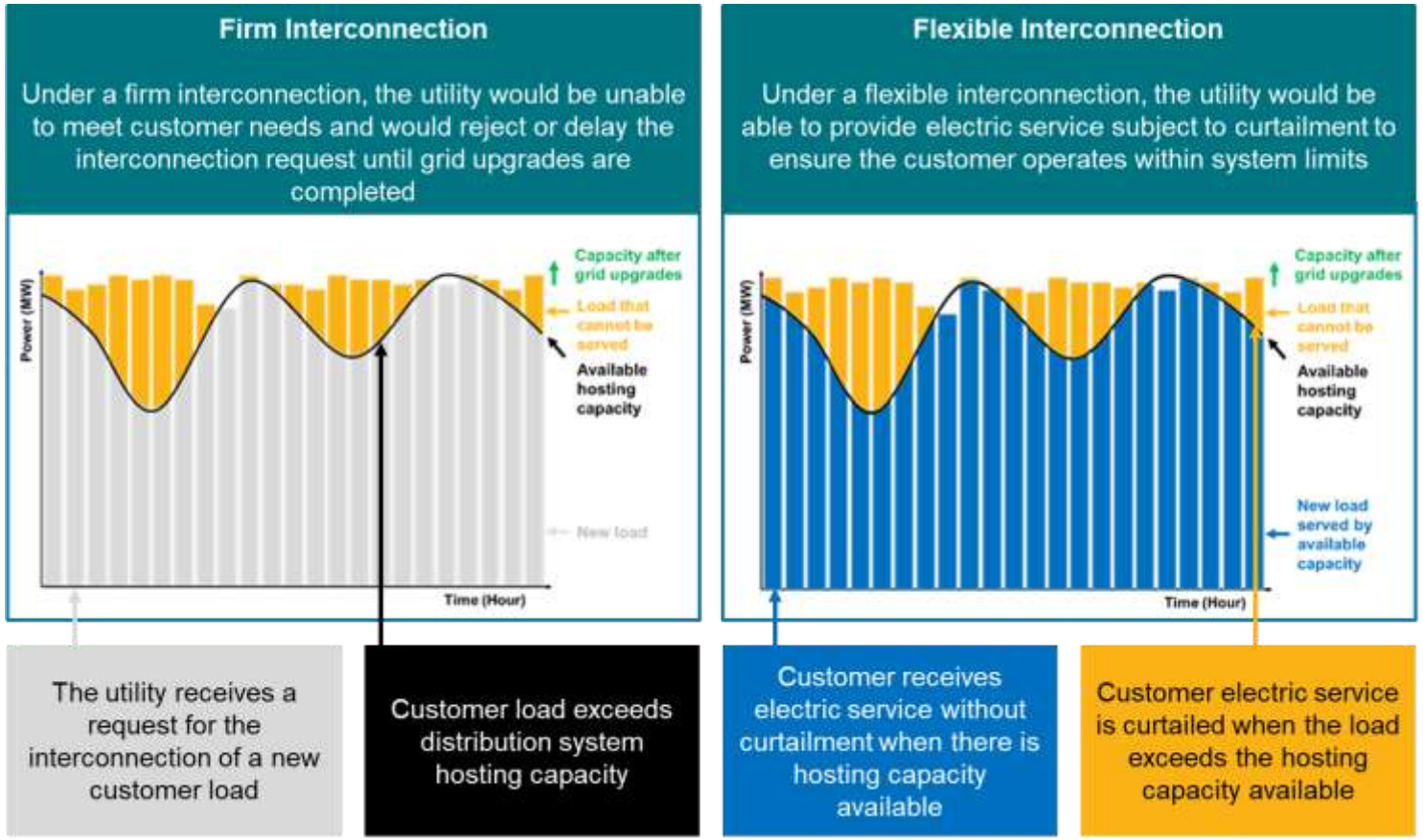
Source: Lawrence Berkeley National Lab

Utilities are already taking a variety of actions to respond to load growth

- LBNL is reviewing proactive actions states and utilities are taking related to generation, transmission, distribution, and customer assets to accelerate interconnection of large loads. We are organizing these actions as illustrated below.
- The actions we have found track closely with Goal 1 (*Strengthen, enhance, and expand the electric system's capacity to reliably and affordably meet growing demand*) in the Office of Electricity's Strategic Plan released in March 2026

Taxonomy (*preliminary*) *Illustrative sample of proactive actions identified*	**Maximize existing investments**	**Accelerate project development for new investments (permitting and licensing)**	**Modify investment and procurement frameworks**	**Reform system planning and interconnection**	**Promote technology development**
Generation	*Extend resource operation; replace retiring assets with new generation*	*Expedite the permitting process*	*Provide low-cost loans for new generation assets, enable cost recovery for investing ahead of load*	*Fast-track generation interconnection, increase planning reserve margin to manage uncertainty*	*Utility partnerships to develop advanced nuclear technology*
Transmission	*Invest in grid-enhancing technologies, locate areas with surplus capacity*	*Expedite environmental review*	*Expedite state commission review for new infrastructure*	*Adopt long-range planning methods*	
Distribution			*Provide an incentive rate of return for proactive investments*	*Implement proactive planning processes, establish energization timelines*	
Customer			*Adapt procurement processes to leverage load management*	*Facilitate flexible interconnections in constrained areas*	

Load flexibility may be a powerful vehicle for speed to power



Source: Adapted from Camus

- Flexible interconnections can bring load online sooner, accommodating customers and helping defray rate impacts of infrastructure investment as it happens
- These arrangements may also serve as market-makers for procuring cost-effective flexibility

Load flexibility may be a powerful vehicle for affordability

- Very roughly:

$$\text{Electricity rate (\$/kWh)} = \frac{\text{Revenue requirement (\$)*}}{\text{Sales (kWh)}}$$

- If a utility's revenue requirement increases by more than its electricity sales do, then rates rise. If sales increase by more than the revenue requirement, rates fall.

- *By managing new (and existing) load such that consumption occurs at times and places where the electricity system has available capacity, load management can contain electricity rate growth or even reverse it.*

Regulators play a critical role in aligning incentives for proactive investment

- *Cost recovery*
  - Providing clear guidance around the appropriate level of risk utilities should take on when acting in advance of load
  - Exercising appropriate oversight of costs while recognizing uncertainty
- *Cost allocation*
  - Ensuring cost causers (e.g., new large loads) substantially bear the risk of stranded costs should projects not proceed
- *Rates*
  - Providing appropriate incentives for both temporal (time-varying) and spatial (grid opportunity zones?) flexibility

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