The Yakama Nation Data Center Findings and Recommendations to the Washington Governor and Legislature

A Report Based on Participation on the Washington Data Center Workgroup

November 10, 2025

Contents

Findings and Recommendations on Data Centers

Executive Summary

Key Issues

The development of more data centers in Washington will create winners and losers.

The winners will be the data and artificial intelligence companies that profit from the new facilities; local and state governments that receive higher tax revenues; and construction workers that build the data centers.

There are also likely to be losers. Other businesses and consumers face risks of power blackouts and higher electricity bills; and current salmon protections are suspended during these emergencies and more migrating salmon will be killed. Additional resources and transmission lines to serve the data centers will damage tribal resources, and efforts to rebuild salmon and steelhead populations will be harder to accomplish. Water supplies for fish and wildlife and municipal systems could be affected. There may be more methane-gas power plants built and more pressure to weaken Washington's clean energy laws to reduce greenhouse gases.

The Yakama Nation signed a treaty with the United States in 1855 and reserved the rights to the salmon and other resources that have sustained our people since time immemorial. Without actions by the governor and legislature, those treaty-protected resources face grave risks.

We commend Governor Ferguson and state staff for convening the Data Center Workgroup to provide recommendations to the governor and legislature on these important issues. Given the diverse composition of the workgroup, it was difficult to get a agreement on some of controversial issues that were addressed. For example, the Yakama Nation and data center companies often took different positions on issues. We know that many of these companies are committed to protecting the environment, and we look forward to finding common ground to protect our treaty-protected salmon and other tribal resources.

The recommendations that secured a majority vote address maintaining the integrity of Washington's climate laws; strengthening ratepayer protections; incentives for load flexibility and energy efficiency; protecting community, tribal, and environmental resources; improving resource forecasting; enhancing transmission capacity; siting and permitting of transmission and clean energy generation; and accelerating existing and emerging technologies to provide clean energy.

While this was a significant accomplishment, the Workgroup recommendations are general and did not address a key concern regarding ensuring the reliability of the electric power system. The Yakama Nation was the only sovereign on the Workgroup. We are providing our own findings and recommendations to the State of Washington on issues that are essential to protect the Yakama Nation's resources and culture. We have summarized the key issues and recommendations in this executive summary and provided more details in the report.

Electric energy supply and reliability: The Pacific Northwest is facing major increases in electricity growth to serve new data centers and meet the decarbonization goals to reduce greenhouse gas emissions. Data centers could require the addition of new electricity equal to two to four cities the size of Seattle by 2029. If these data centers use conventional cooling, they could increase peak loads by 3,400 to 6,000 megawatts over the next five years. It is not realistic to assume that the region can add this much power, and a large electricity deficit is projected nationwide so market power may not be available, reliable, or affordable.

The Northwest Power and Conservation Council's most recent Electricity Adequacy Report says that the risk of annual blackouts increases from 5 percent to more than 13 percent if the region experiences the growth in data centers that utilities and the data center industry are projecting.

More migrating salmon will be killed: during these power emergencies, salmon protections, which include spilling the migrating fish over the dams, are suspended and salmon must go through the turbines. Higher loads will also put more pressure to ramp up the output from hydroelectric dams; these large fluctuations in river flows kill migrating salmon as they are delayed in the reservoirs and eaten by warm-water predators like Walleye.

Increased electricity costs: building the new resources and transmission to serve data centers will cost billions of dollars. Power developed to serve data centers over the next few years will likely utilize the most developable sites and the lowest-cost transmission upgrades. This could increase the costs for the remaining resources and transmission to meet other needs. Data centers may also be willing to pay a premium for power; this could increase the costs of market power and other new resources. These added costs could increase consumer utility bills without changes to ensure that the data centers pay all the additional costs they cause.

More pressure to weaken Washington's clean energy laws: it will be challenging to meet the near-term energy demands of data centers with renewable energy, energy efficiency, and storage. This will create more pressure to run existing coal-fired power plants and add additional methane gas-fired power plants. The Washington Department of Ecology has received applications to supply data centers with fossil-fueled plants.

Barriers to implementing the Columbia Basin Restoration Initiative: the CBRI was adopted in 2023 by the Yakama Nation, the State of Washington, and four other sovereign governments[1]. It provides a framework for a durable long-term strategy that restores salmon and other native fish populations to healthy and abundant levels, ensures a clean energy future, supports local and

[1] The CBRI was adopted by the Yakama Nation, Confederated Tribes of the Umatilla Reservation, Confederated Tribes of the Warm Springs Reservation, Nez Perce Tribe, State of Oregon, and State of Washington.

regional economic resilience, restores ecosystem functions and honors the longstanding commitments to Tribal Nations. These objectives will be more difficult to achieve without coordinated efforts by state and tribal governments to address the challenges posed by data centers.

Damage to treaty-protected resources: Meeting the data center loads risks additional harm to the tribal treaty-protected salmon and steelhead that are especially important to the tribal people that have been sustained by these resources since time immemorial. Additional resources and transmission could damage other tribal resources such as First Foods and cultural sites. The load growth also threatens the reliability of the Northwest power system, the implementation of the Columbia Basin Restoration Initiative, and additional costs for tribal and other consumers.

The development of hydroelectric dams, fossil-fuel generators, and transmission lines during the last 100 years have damaged tribal treaty-protected resources, including the loss of over 80% of the salmon and steelhead runs. It is critical that the next phase of regional energy development protects the tribes' treaty resources and rebuilds salmon and steelhead populations. Our recommendations highlight the importance of requiring consultation with tribes on energy and transmission siting.

Effects on water supplies: data center water use poses significant localized water quantity and quality impacts that could affect fish and wildlife and municipal water supplies. Water should not be allocated to data centers without analyzing the impacts to watershed conditions, including stream flows for fish, temperature, and pollution.

Summary of Recommendations

To address these challenges, we are recommending actions by the governor and legislator. A summary is provided here and there are more details in the report.

- Ensure that there are adequate electricity supplies before data centers begin operation. Data center operators and utilities need to demonstrate that there is no degradation in grid reliability or impacts on salmon protection measures.
- Ensure that the resources built for data center meet the state clean energy laws and schedules for reducing greenhouse gases.
- Protect water quality and quantity for fish and wildlife and other existing water users.
- Develop energy efficiency standards to reduce data center energy and peak loads.
- Develop programs to manage data center loads, including storage, on-site resources, and demand management.
- Work with the state of Oregon and the region's tribes to develop a comprehensive plan for locating new electricity resources and transmission facilities while protecting tribal resources.
- Ensure that laws and regulations are in place to require data centers to pay their full costs and protect other consumers from stranded costs.

We also identify additional studies and reporting requirements that will help the state of Washington make future changes as new information on the effects of data centers is available.

We are aware that several tribes, including the Yakama Nation, are evaluating the feasibility, costs, and benefits of data centers on tribal lands. We believe the conditions in this report are essential for protecting tribal resources.

State Tax Incentives

A major focus of the workgroup was whether the current tax incentives should continue, be expanded, or be conditioned on other policy objectives. The Workgroup did not have majority support for any of these actions.

The Yakama Nation has raised significant questions about whether the state tax incentives for data centers are in the public interest and whether they should be continued. We provided information that questions the need for the incentive because they are not a major factor in selecting the location of new facilities, and the data centers are very profitable. We sought independent analysis on the permanent jobs that are created and how the tax incentives per job compare to incentives for other industries. We also requested analysis of the impacts on electricity costs, Washington's clean energy goals, and water supplies. Unfortunately, state staff did not have the resources to address these important questions.

We do know that without the conditions summarized above, these incentives are clearly not in the interest of protecting our resources or tribal members. Until we receive credible information that addresses the issues we have raised, the Yakama Nation opposes the continuation of the tax incentives because we have not seen independent information that they are needed and in the public interest. Continuation of tax incentives would subsidize actions that will damage tribal resources. Any continuation of the tax incentives must be conditioned on data centers meeting the conditions in this report, including protections for: 1) the reliability of the electricity system, 2) salmon and other tribal resources, 3) Washington's clean energy laws, 4) water quality and quantity, and 5) consumers.

The Seattle Times recently reported that Washington has spent $1 billion on tax incentives for technology companies, but there is no way to determine the benefits. If the legislature continues data center tax incentives, it should set clear goals and objectives and direct state agencies to collect and analyze the information needed and regularly review the incentives to ensure they achieve those goals.

Conclusions

The Yakama Nation has proposed 36 recommendations that address conditions for new data centers and actions to: 1) protect salmon and other tribal resources; 2) meet the region's energy needs; 3) promote clean energy; 4) improve transmission and energy siting, 5) protect water supplies for salmon and municipal water systems; and 6) shield consumers from higher electricity costs. We look forward to working with the governor and legislature on these important issues.

Yakama Nation Findings and Recommendations

Introduction

The Pacific Northwest is facing major increases in electricity demand from data centers that may exceed the electricity supplies that are available. These new loads will be in addition to other electricity growth as the Northwest increases electrification to meet state laws to limit greenhouse gas emissions. Meeting these new data center loads increases the risk of additional harm to the tribal treaty-protected fisheries, including salmon, steelhead, and Pacific lamprey. These fish resources are especially important to the tribal people that have been sustained by these resources since time immemorial. The additional resources and transmission lines needed to serve these loads will also damage tribal resources that are essential for First Foods and the protection of our cultural heritage.

These higher loads could also make it more difficult to implement the Columbia Basin Restoration Initiative that was adopted in 2023 by the Yakama Nation, the Confederated Tribes of the Umatilla Reservation, the Confederated Tribes of the Warm Springs Reservation, the Nez Perce Tribe, the State of Oregon, and the State of Washington.

This document provides findings and recommendations by the Yakama Nation to the governor and legislature. They are based on the Columbia Basin Restoration Initiative, analysis by the Yakama Nation, results from a study by PAE Engineering on Energy and Water Use Impacts of Building System Design for Data Centers (https://critfc.org/documents/energy-water-use-impacts-of-building-system-design-for-data-centers/), and the Columbia River Inter-Tribal Fish Commission Energy Vision for the Columbia River Basin (www.critfc.org/energy-vision).

Data Center Impacts on Tribal Resources

In 1855, the United States signed treaties with four Columbia River basin tribes: the Yakama Nation, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation and the Confederated Tribes of Warm Springs Reservation of Oregon[2]. In those treaties, the four tribes reserved their rights to tribal resources, including the salmon that are critical to tribal communities. Federal courts have consistently upheld the obligations to honor the treaties. The scale of fish losses since treaty signing is staggering: the Northwest Power and Conservation Council estimates that 10 to 16 million salmon and steelhead returned annually to the Columbia Basin when the treaties were signed[3], while current annual runs are approximately 2 million. The hydroelectric system alone is responsible for 5 to 11 million the annual fish losses[4].

Tribes have borne the brunt of energy development throughout the basin. Dam construction decimated salmon and steelhead runs and severely impacted other treaty fisheries such as lamprey and sturgeon. The salmon losses have damaged tribal economies and culture. These communities continue to experience higher unemployment and worse health outcomes than non-

[2] The Columbia River Inter-Tribal Fish Commission (CRITFC) was created to help protect these rights and serves as a technical support agency for these Treaty Tribes.
[3] Northwest Power and Conservation Council, *1987 Columbia River Fish and Wildlife Program*.
[4] Ibid.

tribal communities. Additional data center electricity loads threaten to exacerbate hydropower's existing detrimental impacts on anadromous fish species and other tribal fishery resources. Dam passage kills salmon and steelhead, while daily reservoir fluctuations slow salmon migration and increase exposure to high water temperatures and predators. These impacts affect not only salmon and steelhead but also sturgeon, and other species critical to tribal communities.

State and tribal anadromous fish managers have developed detailed measures to increase spills at the dams and increase travel time through the reservoirs that must be part of any future energy development.

Data centers impacts need to be analyzed through federal and state environmental justice principles that require addressing energy development impacts on overburdened communities, including tribal communities. It is important that the next phase of regional energy and grid development both protect the tribes' treaty resources and actively works to rebuild the fish populations that remain vital to tribal communities. This requires comprehensive planning that considers not just the data centers themselves, but the entire energy and transmission infrastructure needed to serve them.

Data Center Effects on the Columbia Basin Restoration Initiative

The CBRI provides a framework for a durable long-term strategy that restores salmon and other native fish populations to healthy and abundant levels, ensures a clean energy future, supports local and regional economic resilience, restores ecosystem functions and honors the longstanding commitments to Tribal Nations. Those objectives include:

1. ***Interim operation to improve the survival of migrating salmon***. High data center loads would reduce the reliability of the power system and increase the chance that fish operations will be interrupted.

2. ***Enhanced fish protection operations***. Higher loads will make it more difficult to implement those improvements.

3. ***Improve salmon and steelhead habitat***. The energy resources and transmission needed to serve data centers will affect land and water resources.

4. ***Meet Oregon and Washington greenhouse gas objectives***. The CBRI calls for meeting decarbonization goals, deliver "affordable and clean power", and resiliency and adaptability to climate change. Any reductions in electricity adequacy will increase pressure to operate existing coal and methane-fired power plants.

5. ***Ensure continuity of services from the Lower Snake River dams***. projected electricity shortages could add to the time it would take to replace the energy services of these dams. Current output from the four dams is about 700 average megawatts; data center load growth is projected to range between 2,400 to 4,000 average megawatts by 2029.

6. ***Support communities and economic sectors***. Electricity shortages, brownouts, or blackouts and higher electricity costs would damage communities and other businesses.

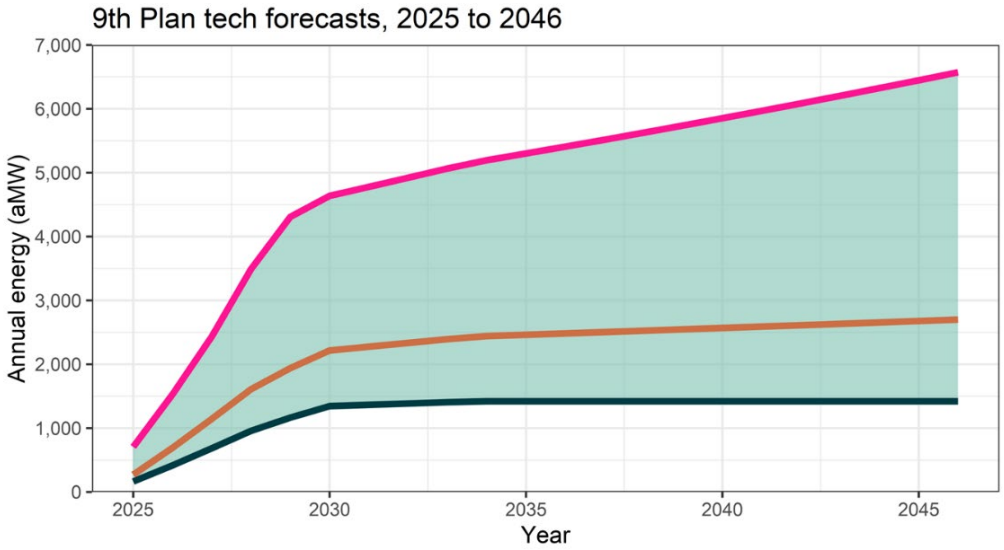
The Yakama Nation has proposed detailed findings and recommendations to the governor and legislature. The 36 recommendations address conditions for new data centers and actions to 1) meet the region's energy needs; 2) protect salmon and other tribal resources; 3) improve transmission and energy siting, 4) protect water supplies for salmon and municipal water systems; and 5) shield consumers from higher electricity costs. We look forward to working with the governor and legislature on these important issues.

Electric Energy

Findings

Data Center Will Add to Electricity Loads

The data center energy needs are likely to be significant. The Northwest Power and Conservation Council recently updated its electricity load estimates for data centers and chip fabrication[5]. It shows that if recent trends continue (including recently announced projects), these projects could increase the region's electricity demand by about 2,400 average megawatts by 2029. The Council also developed a high growth scenario (based on utility and BPA projections) that shows demand could increase by about 4,000 average megawatts by 2029 and 6,500 by 2046.



The **purple** high forecast through 2030 reflects utility and BPA growth expectations; the **brown** mid forecast is a continuation of recent trends; the **green** low forecast through 2030 has a slowing of recent trends. Post 2030 growth is at a fixed rate depending on the forecast.

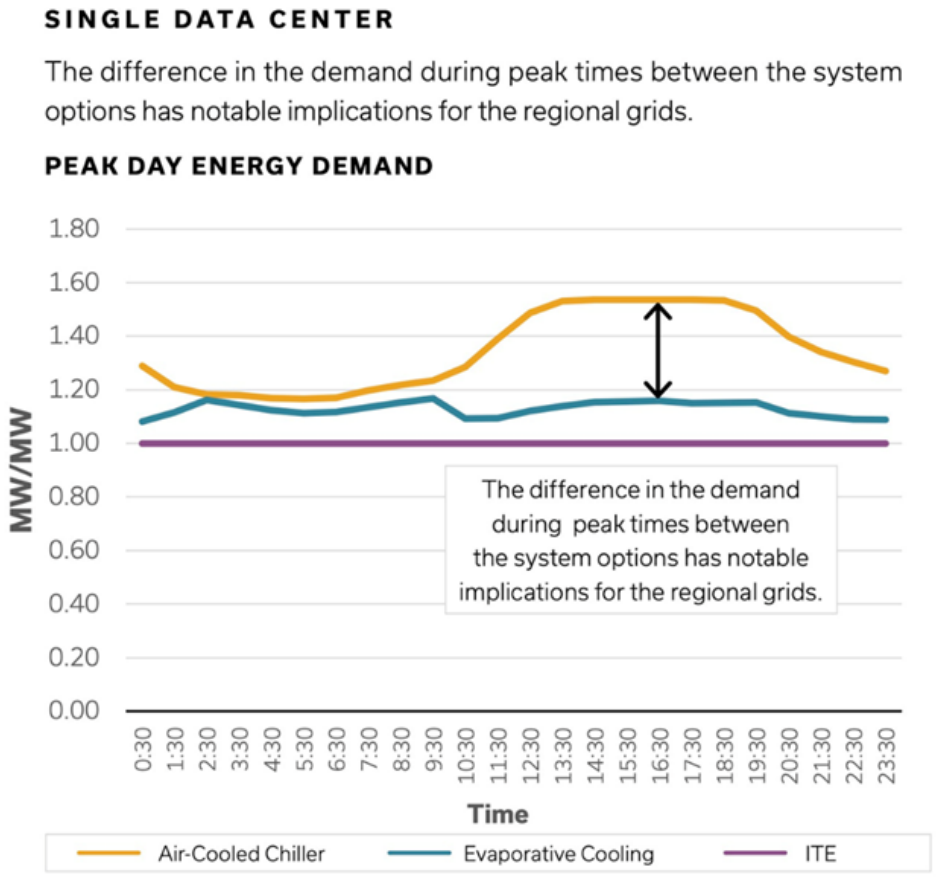
For comparison, at the medium estimate, the projected electricity use would be equivalent to adding the power used by two cities the size of Seattle during the next four years. At the high end of the range, the electricity use by 2029 would be similar to adding about four cities the size of Seattle.

[5] Northwest Power and Conservation Council, May 16, 2025.

Data centers Will Add to Peak Loads.

The PAE Study[6] identified significant peak load increases associated with data centers using conventional air-cooling systems (see below and on page 10 of the report for more details). This will be a significant challenge for the energy system. Meeting peak loads will be more expensive and stress the power system.

The chart below shows the load profile for a single data center under two technologies. The blue line uses evaporative cooling and has a relatively constant energy use with cooling loads adding about 10 to 20 percent to the computer processing load. The gold line shows the best-available air-cooling systems. These cooling loads also add about 20 percent during parts of the day, but when temperatures increase, the addition energy use for cooling adds a peak of about 55 percent above the processer loads. If this load shape is typical for 1,000 megawatts of data center load, the peak load would be about 1,550 megawatts.



Without electricity efficiency standards to reduce peak loads and clear price signals about the cost of electricity during different times of the day, the data center peak loads will adversely affect the electric power system and migrating salmon.

In the past, peak loads were served by ramping up the output from hydroelectric dams. Today, the use of dams to meet peak loads and to integrate renewable intermittent energy has

[6] https://critfc.org/documents/energy-water-use-impacts-of-building-system-design-for-data-centers/

dramatically increased the flow fluctuations in reservoirs and between dams, resulting in increased mortality for salmon migrating through the Columbia and Snake rivers. The Washington, Oregon, and tribal fish managers[7] have recommended changes in dam operations to increase water spilled over the dams to help juvenile salmon avoid being swept into the power turbines at the dams and lower reservoir elevation levels to help speed the journey of juvenile fish through slow moving reservoirs on their way to the ocean. These changes would also limit the daily river fluctuations.

Data Centers Will Reduce Electricity Reliability

Resource availability and adequacy are major issues. Meeting the data center energy needs, along with electrification of other sectors of the economy, will require significant growth in energy efficiency programs, renewable resources, demand management, and energy storage.

It is not realistic to assume that the region can add 2,000 to 4,000 average megawatts, 3,000 to 6,000 megawatts of peak, and the associated transmission system upgrades in the next five years as needed to meet the projected data center loads. Adding these large data center loads will affect the reliability of the electricity system and likely force a serving utility to increase its reliance on purchases of market power – an unreliable and price volatile resource. Nationwide, the projected electricity deficit to serve data center loads is 45,000 megawatts through 2028[8]. Market resources of this magnitude, if even available, will likely be very expensive.

The Northwest Power and Conservation Council (NPCC) updated its reliability analysis in August 2024[9]. It concluded "should data center load growth accelerate and exceed current trends to match high-end trajectories of utility projections by 2029, the resource strategy will also be insufficient to maintain adequacy as the Higher Data Center scenario violated all adequacy metrics… Shortfall risk is heightened in both winter and summer; Significant increases in duration, peak, and especially energy metrics in major winter shortfalls" (page 26). The Council seta a limit of 5 percent annual loss-of-load probability (LOLP) metric to measure resource adequacy. Under the high data center scenario, the LOLP is 13.3%[10].

An imbalance between a system's loads and its electric resources increases the frequency and duration of outages, such as brownouts and blackouts that can hurt all consumers. When such power emergencies occur, salmon protections are shut off. That means that dam operators stop spilling water over the dams for migrating salmon and the fish have to pass through the powerhouse turbines.

Challenges for Meeting Future Electricity Needs

Adding 2,000 to 4,000 megawatts of new electric energy resources and the transmission to deliver the power in the next four or five years would be unprecedented. This level of development would also adversely affect tribal resources throughout the state. This section summarizes the costs of alternative resources and challenges in accelerating their development.

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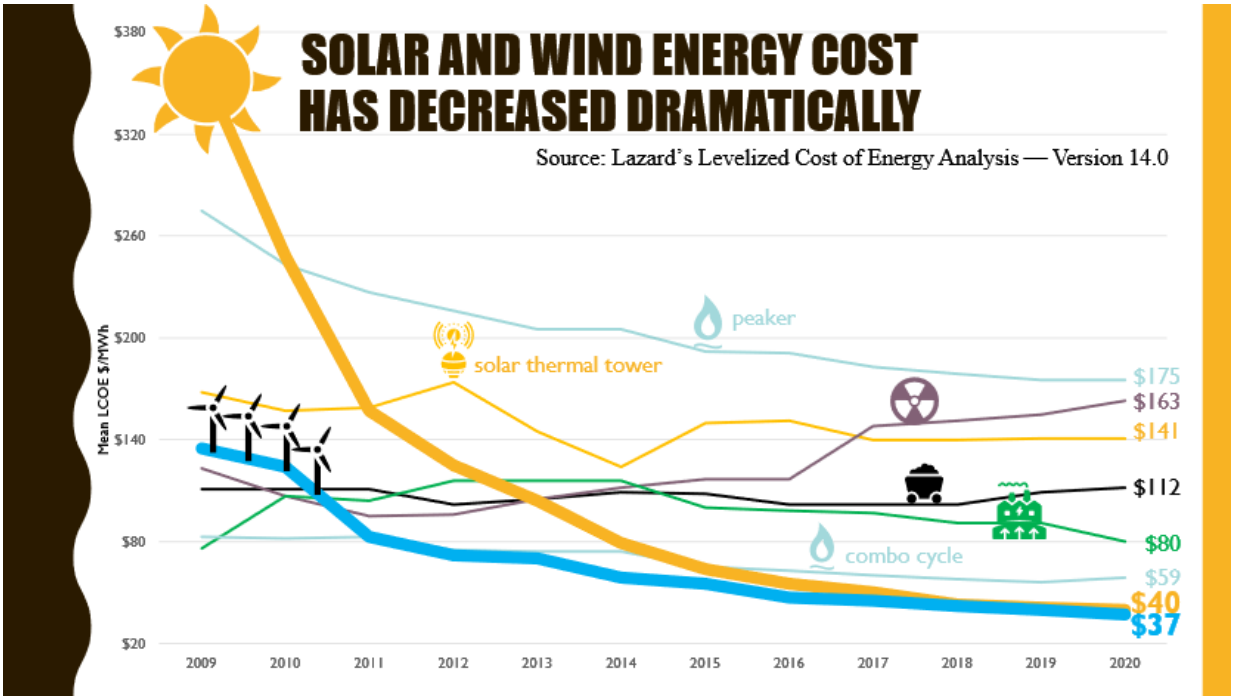
[7] Confederated Tribes and Bands of the Yakama Nation, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, and Confederated Tribes of the Warm Springs Reservation of Oregon.
[8] Morgan Stanley Research, Global Data Center Capacity Growth to Increase 6x, page 44, July 15, 2025
[9] https://www.nwcouncil.org/reports/2024-4/
[10] https://www.nwcouncil.org/reports/2024-4/, page 28. See more details in Appendix.

Costs: To develop adequate resources and ensure the reliability of the power system, the 2022 Columbia River Inter-Tribal Fish Commission's Energy Vision for the Columbia Basin energy resources recommendations were based on an analysis of alternative energy costs using data from the Lazard investment bank. Lazard publishes a yearly summary of generation costs. Their summary uses actual transaction data – not estimates – and is commonly viewed as authoritative. The chart below shows costs per megawatt hour ($/MWh). Solar and wind projects were the lowest costs at $37 and $40 per megawatt hour; combined cycle plants fueled by methane gas cost $59 per megawatt hour; geothermal power cost $80 per megawatt; all the other alternatives cost more than $110 per megawatt. The Lazard data shows the solar and wind energy costs have decreased dramatically and are lower than other generating alternatives. Energy efficiency programs were not reported by Lazard, but have lower costs than generating resources, provide energy and peak reductions, and do not require transmission or distribution upgrades.



There are significant challenges for each of these technologies:

Energy efficiency: There is potential to increase these programs, but it would require more funding by BPA and individual utilities.

Renewable resources: The recently enacted federal reconciliation law phased out the production tax credits that have been driving the recent increase in renewable resources. The loss of these credits is likely to slow wind and solar power development and increase costs. The current administration is also imposing barriers to solar and wind projects.

Demand management: The region has limited experience with these programs and would need to increase staffing and funding.

Storage: The costs of storage have declined significantly. California has added 7,000 megawatts of storage in the last few years. Storage will require significant investment and integration in grid planning.

Conventional methane gas and coal-fired power plants: These plants are more expensive and generate greenhouses gases and other emissions. Lead times for delivery of new gas turbines range from three[11] to seven years[12]. State laws in Oregon and Washington set firm limits to reduce and ultimately eliminate these resources.

Small modular nuclear reactors: The industry has been promising this technology for more than 40 years. There are no SMRs operating in the United States. Only China and Russia have successfully built operational SMRs. There are potential projects being discussed in the United States, but it is unlikely that this technology will be commercially available anytime soon. SMR plants will be more expensive than the sources described above.

Data Center Energy Efficiency

Energy efficiency could reduce data center electricity demand. The amount of electricity needed will depend on the efficiency of the cooling systems. There is significant potential to reduce energy and peak load electricity use; this could reduce the range of energy needs. The PAE study on the potential for efficiency improvements found:

- There is a big difference between the ASHRAE national standard for data center and the best practice technologies for building cooling systems.
    - The potential savings are equivalent to 2 million to 4 million megawatt hours.
    - These savings are only from building system improvements without any reduction in data center processor quantity.

- The study identified a potential for 1,000 megawatts reduction in peak energy savings from best-practices cooling systems:
    - Evaporative cooling systems are 28% more efficient than current standards.
    - Best-practices air-cooled savings are 4% more efficient.
    - Air-cooled compressors have large peak loads, especially during summer afternoons and evenings.
    - Peak loads are expensive to serve, stress the electricity system, and hurt migrating salmon.

- Implementing the energy efficiency and peak power reductions identified in the PAE data center report would provide some of the most significant energy savings available to the region.

Washington's law that provides tax incentives for data centers does not include any requirement that data centers incorporate these energy efficiency measures. Oregon similarly provides tax incentives without energy efficiency requirements. Oregon HB 3409 does impose energy

[11] Reuters: https://www.reuters.com/business/energy/rush-us-gas-plants-drives-up-costs-lead-times-2025-07-21/
[12] S&P Glogal: https://www.spglobal.com/commodity-insights/en/news-research/latest-news/electric-power/052025-us-gas-fired-turbine-wait-times-as-much-as-seven-years-costs-up-sharply

performance standards for commercial buildings, including data centers, but does not require compliance until 2028, at the earliest.

Data Center Load Uncertainty

There is a great deal of uncertainty about how much electricity data centers will use. There is potential duplication or speculation of data center projects. It is important to improve estimates in order to clarify which of the planned projects are viable.

There appeared to be utility industry support for setting "commercial readiness" standards to get in the energy service queue. This could significantly affect projections. For example, Grant County PUD discussed policy changes on their data center queue that resulted in a reduction in service requests from 3,000 to 2,300 megawatts—a 23 percent reduction.

Recommendations

1. The NPCC should incorporate the anadromous fish managers recommendations on the spill and reservoir operations at the dams into the Columbia Basin Fish and Wildlife Program. The NPCC would then incorporate those operations in the development of the next Pacific Northwest Conservation and Electric Power Plan.

2. The NPCC and federal agencies should adopt the provisions in the Columbia Basin Restoration Initiative adopted in 2023 by the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Umatilla Reservation, the Confederated Tribes of the Warm Springs Reservation, the Nez Perce Tribe, the State of Oregon, and the State of Washington

3. To avoid a degradation in the reliability of the electricity system and avoid impacts on salmon and other tribal resources, data centers should demonstrate that they have sufficient reliable energy available before they begin operation. These new energy sources should be based on the recommendations in the Tribal Energy Vision for the Columbia Basin and the CBRI that are described in more detail below.

4. Utilities and regulatory agencies should ensure there are sufficient resources to meet the base and peak energy needs (energy and capacity) before data centers begin construction.

5. BPA and grid operators should assess the reliability risks associated with the growth in data center loads.

6. The Council, BPA, utilities, and state utility regulators and transmission organizations should incorporate the energy reliability recommendations in the CRITFC Energy Vision for the Columbia River Basin into their energy plans. A list of the relevant recommendations is provided is Attachment A.

7. The Council, BPA, utilities, and state utility regulators should incorporate the energy efficiency and development recommendations in the CRITFC Energy Vision for the Columbia River Basin into their energy plans. The recommendations are designed to ensure

that renewable resources in combination with increased storage, reductions in peak demand, and increased energy efficiency can provide clean, adequate, reliable, and affordable electricity, support the restoration of heathy, harvestable salmon populations, and prevent future damage to salmon and steelhead and other tribal resources caused by the electrical system. A list of the relevant recommendations is provided in Attachment A.

8. Data centers should be required to use the most energy efficient processing and cooling technologies commercially available at the time of construction to reduce their energy load and impact on the grid. If evaporative cooling is not feasible, the data center should mitigate energy and peak load impacts using storage or other technologies. The Washington State Energy Office should develop detailed efficiency standards based on the PAE Study recommendations:

    a. Develop a reach code for projects over a certain size that goes beyond the minimum requirements of ASHRAE 90.4 to ensure optimized systems for improved Power Usage Effectiveness (PUE)

    b. Creation and adoption of a Peak-PUE metric to encourage selection of systems with reduced peak demand impacts.

    c. Encouraging innovation in the data center industry for creative water solutions to reduce the overall water impact.

9. Any state tax incentives should be conditioned on achieving the data center energy efficiency actions in recommendation 8 and time-of-use electricity pricing.

10. BPA, federal dam operators, and utilities should avoid any impacts on anadromous species from data center loads.

11. To reduce the uncertainty of data center loads, the Washington State Energy Office should develop standards for commercial readiness to get into the queue for energy services.

12. The Washington State Energy Office should conduct a study at least every two years on the potential for on-site energy generation or storage, load management, and demand response by data centers, including any program or policy changes that may be needed to achieve the potential.

13. Data centers should report annual and monthly energy use, including peak demands, including metrics on efficiency and renewable energy use.

14. Data centers should conduct annual energy audits to identify opportunities for reducing energy consumption, improving efficiency, and minimizing peak loads.

Transmission and Siting

Findings

Transmission Access

Transmission access is constraining resource development. For example, Yakama Power is working to develop a utility-scale solar project over the canals of the Wapato Irrigation District and an energy storage system[13]. Yakama Power has not been able to secure commitments for BPA transmission access and BPA has said that Yakama Power would need to build a $130 million substation for the project. The Warm Springs Power & Water Enterprises in Oregon is also pursuing a large solar project and facing barriers to transmission access.

Need for Comprehensive Energy and Transmission Plan

The CRITFC Energy Vision called for a comprehensive energy siting program that would identify where these facilities could be developed with the least conflict and areas that should not be developed. Tribes are concerned that these facilities will damage tribal cultural, environmental, and fish and wildlife resources.

Any suggestion or recommendation to accelerate or streamline SEPA through categorical exemptions removes a Tribes ability to have meaningful engagement and consultation through the environmental and cultural review process. If categorical exemptions are going to be suggested or recommended, then language regarding engagement and consultation with Tribes needs to be strengthened to "Directed" or "Required". For example, language as recommended within the Interagency Clean Energy Siting Coordination Council offers SEPA categorical exemption incentives for utilities to complete upgrades, however, it recommends engagement with Tribes on such exemptions. As written, it engagement and consultation is discretionary, when it needs to be "REQUIRED". Furthermore, agencies should be required to consult in a manner that identifies and addresses the Tribe's concerns. This would not only ensure the required engagement with Tribes but would support the intent of recently passed Executive Order 25-10.

The energy and transmission needs of data centers will also affect local communities and grid reliability and these issues need to be addressed.

Recommendations

15. Recommendation 3.6 of the CRITFC Energy Vision says:

> CRITFC and its member tribes should work with state energy and siting agencies, federal agencies, WestTEC, the Northwest Power Pool, and others to develop a timely comprehensive plan for siting renewable resources and transmission lines that builds on efforts currently being developed in the states.

[13] https://aresnorthamerica.com/.

The comprehensive plan should identify where renewable resources should be developed, and where they should not. The plan should provide expeditious siting with clear and uniform standards across all political subdivisions that sites resources near loads and within the grid to relieve congestion, and that protects fish, wildlife, and other environmental values and tribal resources.

The section provides examples of where comprehensive siting has been done successfully.

16. Strategically locating some electricity generation closer to loads, in combination with reducing peak energy demands, will eliminate some of the planned costs and impacts associated with expanding the transmission and distribution system. Utilities should develop interconnection standards that allow for safe operation of local generators. Distributed generation can be deployed to eliminate the need for backup generation and transmission and distribution capacity.

17. Develop distributed generation resources, including fuel cells, net-metered small renewable resources, and small wind farms. Owners of net-metered small renewable resources, including solar photovoltaic applications, should be able to sell power back to the local utility at retail prices. Small wind farms of two to ten machines can be placed strategically within the grid and not necessarily where wind is the greatest, but where the combination of strategic placement and the wind resource yields the highest benefit to the electricity system. This benefit would show up as income to the wind developers and savings in transmission and distribution construction costs.

18. Developing renewable resources next to existing transmission is another siting strategy that could minimize the costs and impacts of adding new resources. For example, Montana wind is well positioned to serve westside load centers while minimizing impacts on river operations. In addition to having the highest capacity factors (40-50 percent), it generates primarily during the winter, so its generation pattern best fits PNW peak load shapes; and it can use over 1,000 megawatts of repurposed Colstrip transmission rather than needing to build new, much more expensive transmission to serve westside loads. Because of these characteristics, Montana should help meet PNW winter capacity needs while also lessening river operation and upland impacts.

19. Reconductoring existing lines should be a priority. This technology is likely to be less expensive and have fewer adverse impacts on land and water resources than new transmission lines.

20. The state should not support or permit transmission projects that directly impact tribal treaty-protected fishery resources and fish habitat. This includes avoiding new transmission infrastructure such as underwater cables that place additional burdens on fish resources already stressed by existing hydropower operations. Transmission planning must prioritize routing that avoids critical fish habitat, spawning areas, and migration corridors. When transmission projects are proposed that could affect treaty fisheries, they must undergo comprehensive environmental review that includes meaningful consultation with affected tribes and demonstrates no net loss to fish populations. Alternative transmission routes and

technologies should be evaluated to ensure that the infrastructure needed to serve data centers does not further compromise the salmon, steelhead, sturgeon, and lamprey populations that are central to tribal treaty rights. The cumulative impacts of transmission projects, combined with existing dam operations and new data center loads, must be assessed to prevent additional degradation of already imperiled fish runs.

21. State and federal environmental laws, and all laws that protect riparian areas, critical areas and historical and cultural areas are necessary statutes to follow and monitor environmental protection. In order for Tribal resources to be protected, these laws must stay in place and not exempt any permit reviews or regulation of activities related to the building out of data centers, data cables, or energy and transmission facilities to serve them. We strongly oppose categorical exclusions because they eliminate meaningful consultation with Tribes.

22. Tribes are the experts on natural resource restoration and protection and must be involved in data center permitting processes, serving as experts on data center impacts to natural resources and how impacts could be avoided. Therefore, it is essential to engage with tribes early and often to address potential impacts on tribal resources. Furthermore, engagement with tribes should be required and guided by Executive Order 25-10.

23. If data centers seek expedited interconnection, they should prepay for necessary grid infrastructure.

24. Data centers should develop community benefit programs to address local impacts.

Water Use

Findings

Direct Impacts

Data center water use could be a significant issue, especially in areas with low water supplies or salmon and steelhead listed under the Endangered Species Act. Data center water use poses significant localized impacts that could impact fisheries. Water withdrawal reduces availability for other uses including fish flows, while decreased water volumes reduce cooling capacity and increase heat loading in waterways. Water quality issues arise from discharge, and reliance on municipal systems may not adequately address these concerns. Specific concerns include:

- Thermal Pollution: data centers often return heated water to municipal or natural systems, potentially stressing ecosystems. Higher risk in sensitive or low-flow waterways.
- Water availability: Water availability for data centers is limited by seasonal shortages and over-allocated watersheds, particularly during late summer when additional withdrawals could reduce instream flows below levels necessary for fish survival. Many locations cannot guarantee year-round water availability, and new withdrawals would compound existing stresses on treaty-protected fish populations.
- Chemical Contaminants: Cooling towers may involve biocides, anti-scaling agents, and corrosion inhibitors. Improper discharge can introduce these into receiving waters.

- Destination of Discharge: Could go into municipal wastewater system (possibly requiring pre-treatment) or directly into surface water bodies, depending on permits and infrastructure.
- Stormwater & Spill Risks: Data center sites can generate stormwater runoff and may handle fuels or chemicals (e.g., for generators), creating potential for site contamination. See The Dalles/Google data center.
- Regulations: NPDES in some jurisdictions.

Local water resources are being stressed and this increase given on-site water usage is expected to increase with hyperscale data centers. Climate change and the decline in water, all communities will ultimately have less water to compete over.

Indirect Impacts

Data centers also have indirect effects on water-- 75% of the water footprint of data centers is offsite associated with fossil-fired electricity generation. The CRITFC study analyzed the water use of data centers and alternatives energy sources to serve them. For more information, please see pages 12 and 13 of the PAE study.

Evaporative cooling systems use more water than air-cooled systems. The total projected use of evaporative cooling is a small percentage of total water use; however, the local effects on salmon and steelhead need to be avoided.

Recommendations

25. No water resources should be allocated to data centers, unless it can be demonstrated that such use would not affect watershed conditions, including stream flows for anadromous species, temperature, and pollution.

26. No water resources should be allocated to data centers, unless it can be demonstrated that such use would not affect local municipal water sources.

27. Water allocation decisions for data centers must account for existing over-allocation, climate change projections showing reduced snowpack and earlier runoff, and the cumulative impact of all water uses on treaty-protected fishery resources.

28. Data centers should report water use to the Washington State Department of Ecology. The reporting should include daily quantities (total and peak uses), any effluents that are discharged outside the data center, any impacts on existing water systems (for example, data center discharges that cause a municipal water system to exceed its capacity resulting in untreated water entering streams or rivers, or adverse impacts on ground water).

Effects on Consumer Electric Costs

Findings

Increases to Consumer Utility Bills

Cost protection for consumers is a significant issue. This is especially important in tribal communities where average incomes are below other communities. Building new energy and transmission facilities will cost billions of dollars and could directly increase consumer electricity costs. There are also potential indirect impacts. If the data centers use the most developable new generation sites and significant portions of the lowest-cost transmission upgrades, it would increase costs to other consumers even more. Some data centers may be willing to pay a premium for electricity[14]. This could also increase the cost of resources for other consumers.

Consumers and other industries may also pay more under the clean-energy programs. For example, if utilities develop fossil-fueled resources to serve the data centers they would receive no-cost allowances under the Climate Commitment Act. This would reduce the revenue the state generates at auctions and could drive up prices of allowances for other industries. Data centers using fossil fuels as the main source of power would need to buy allowances and that could also increase the price of allowances. Utilities developing methane-gas powerplants would need to purchase offsets. An increase in fossil fuels could also add to the costs of natural gas.

Investor-Owned Utilities: The Washington Utilities and Transportation Commission and the Oregon Public Utility Commission regulate how a utility's costs are allocated to its customers. The utility's rate design captures the unique costs that a utility must incur to serve a particular class of customers or special customers in a class. Equitable and effective rate design will ensure that the utility's costs to serve a particular customer class (e.g. residential, commercial, industrial, or data centers) will be allocated to that class in rates. Given the size of data centers, a separate customer class will be needed.

The utility commissions also address stranded asset risks. If investments are made to serve a data center that does not get built or shuts down, there needs to be mechanisms in place to protect other rate payers from these costs and ensure that data centers pay the stranded costs of the energy and transmission facilities built to serve them.

The Oregon POWER Act (House Bill 3546), creates a new customer rate class for data centers and cryptocurrency within Oregon's investor-owned utilities, allowing the OPUC to ensure these large customers pay for their fair share of the energy infrastructure costs in Oregon. The act aims to prevent residential and small business customers from subsidizing these large energy consumers. The legislation also requires large energy users to sign a 10-year contract that commits them to pay a minimum amount for energy used as well as pay for adding new transmission.

Publicly Owned Utilities: Each public utility sets its own rates. Several of the Mid-Columbia

[14] Morgan Stanley Research, *The Overlooked Value of Power,* October 10, 2024, pages 2, 7, and 20.

utilities reported that they have served data centers from excess generation produced by the dams they own. As those supplies are fully committed, these utilities will need to add new resources to serve additional data center load. Other public utilities will also need to arrange for new resources or purchase electricity from BPA. Like the customers of investor-owned utilities, the rate payers of consumer-owned utilities should be protected from the capital and operational costs associated with acquiring these new resources.

Data centers served by BPA customers would be considered a "New Large Single Load[15]" as defined in Section 3(13) of the Northwest Power Act. As such, the "average system cost" for electric power sold by the Administrator cannot include the "cost of additional resources in an amount sufficient to serve any new large single load of the utility." See 5(c)(7)(A). That means loads over 10 megawatts will not have access to BPA's low-cost power and would be served from BPA's new resources pool.

To avoid rate impacts to other customers, all utilities will need to ensure that cost causers pay their costs.

Recommendations

29. State utility commissions and public utilities should ensure that the cost causer pays the cost of services provided and load growth due to data center development should be attributed to data centers when making rates to ensure equity and fairness to existing consumers.

30. The WUTC and public utilities should adopt additional tools to address data centers, for example:

    a. A separate customer class for very large new loads or a separate data center tariff to ensure proper cost allocation.

    b. Mechanisms to address stranded costs if a data center leaves the service territory or goes out of business.

    c. Mechanisms to address any unused capacity that was built to meet a data center's estimated peak capacity requirement but never fully used by the data center due to customer loss, a slower business cycle, or just slower than expected growth.

31. The WUTC should evaluate investor-owned utility plans to serve data centers to ensure that they fully address the state climate and energy goals and policies. Consumer-owned utilities should conduct similar evaluations.

32. Utilities should regularly conduct a cost-of-service study to ensure that rates are designed to only recover the costs caused by each customer class.

[15] 3(13). "New large single load" means any load associated with a new facility, an existing facility, or an expansion of an existing facility– which will result in an increase in power requirements of such customer of ten average megawatts or more in any consecutive twelve-month period.

33. Data centers should be required to enter into long-term, binding contracts to cover generation, transmission, and distribution costs, with provisions for exit fees and insurance bonds to mitigate the financial risks if they cease operations or underutilize investments that were made to serve them.

34. To address the potential that data centers could increase costs for other consumers by utilizing the most developable or lowest-cost resources and transmission expansions, the Washington State Energy Office should prepare an analysis of these issues and prepare recommendations to address them.

Tax Incentives

Findings

A major focus of the workgroup was on the tax incentives. As discussed below, the Yakama Nation had concerns about continuing the tax incentives. The Yakama Nation, NGOs, and state agencies proposed new conditions that could address some of the impacts of new data centers. The data center industry and labor supported expanding the program to the entire state but had concerns about additional conditions. After extensive discussion, the Workgroup did not have majority support for any of these actions.

According to Department of Revenue's Annual Tax Preference Performance Report data, the tax incentives to data centers and data center tenants were $584 million over the last decade (2012-2023). In 2023, the most recent data available, tax exemptions totaled over $118 million. If the state experiences significant data center growth, the impact of the tax incentives will increase. The Yakama Nation has raised a number of questions about the costs and benefits of the tax incentives in the Data Center Workgroup.

The Seattle Times reported recently that Washington has spent $1 billion on tax incentives to encourage high technology companies to locate in this state, but there is no way to determine the benefits.[16] The current tax incentives for data centers will soon exceed $1 billion. The current program has some requirements for employment and other goals, but the state cannot currently report on whether those goals are being achieved.

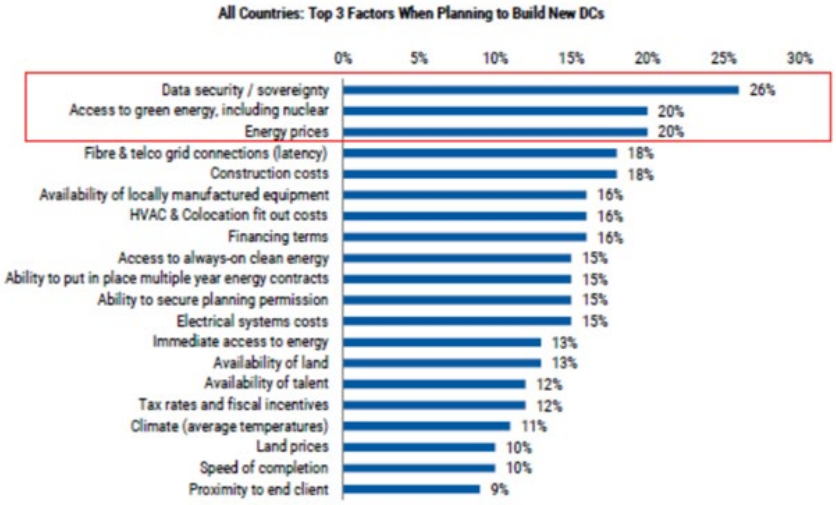
Do Tax Incentives Affect Where Data Centers are Located?

A key question raised by the Yakama Nation is how important are the tax incentives to the decisions on where they are located? Based on the independent research we have found data security, energy prices, access to energy, and speed to completion are the most important factors.

The Exhibit below is based on two surveys that were conducted for Morgan Stanley Research by AlphaWise in March 2025. The first was based on 239 interviews with senior procurement and sourcing decision makers for data center operators. The second survey interviewed 234 senior sources decision makers at data center builders and suppliers. Based on the survey, tax rates and fiscal incentives were 16th on the list of factors when planning to build data centers[17].

[16] *WA spent a billion in tax breaks to help tech dominate. Was it worth it?* Seattle Times, November 2, 2025.
[17] *Global Data Center Capacity Growth to Increase 6x*, Morgan Stanley Research, page 7.

Exhibit 8: Top 3 factors when planning on building DCs (US, UK, Italy, Spain and Norway)



Please see attachment C for more details.

Are Tax Incentives Needed to Make Data Centers Profitable?

The Yakama Nation representatives also raised questions about economic importance of tax incentives for the economics of data centers. An analysis by TeraWulf showed potential illustrative business models for financing data centers. The summary appears to show that data centers could be very profitable. The margins (profits) range from 65 to 90 percent and the Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) range from valuation of 7 to 20 times EBITDA. This information indicates that data centers are very profitable. The companies building data centers have some of the highest valuations in the world (see attachment C for more details).

How do Data Center Jobs and Economic Benefits Compare to Other Tax Incentives?

The Yakama Nation has sought information on the number and type of permanent jobs provided by data centers. Staff at the Department of Revenue have indicated that this information is not available and a change in state law would be needed to provide the data.

The staff cited RCW 82.32.330. A Yakama Nation consultant reviewed of the provision and assumed that the number of jobs created by data centers are part of their tax return or in the report to the Department of Revenue as required by the tax incentives. The consultant raised a question about Section (3) which says"

> (3) This section does not prohibit the department of revenue from:"
>
> (d) Publishing statistics so classified as to prevent the identification of particular returns or reports or items thereof;…

We sought clarification on whether DOR could provide data on the aggregate total number of

jobs created under the tax incentives for data centers and any other industries that receive tax incentives. The aggerate data would be very useful in addressing the effectiveness of the tax incentives for data centers compared to those offered to other industries. We also asked for clarification of the specific legal barrier and what the legislature would need to do to allow reporting of aggregate jobs data. As of the deadline for this report, we have not received a response to these questions.

A similar question exists for reporting aggregate information on the taxes paid by data centers and the economic contributions to the economy from the data centers and how they compare to other industries receiving tax incentives. The Data Center Coalition provided a report to the workgroup on the industry's jobs and economic impacts but no comparison to other industries. The state staff did not have the resources for an independent evaluation of the Data Center Coalition report.

Recommendations

35. Until we receive credible information that addresses the issues we have raised, the Yakama Nation opposes the continuation of the tax incentives because we have not seen independent information that they are needed and in the public interest. Continuation of tax incentives would subsidize actions that will damage tribal resources. Any continuation of the tax incentives must be conditioned on data centers meeting the conditions in this report, including protections for: 1) the reliability of the electricity system, 2) salmon and other tribal resources, 3) water quality and quantity, and 4) consumers.

If the Washington Legislature continues the data center tax incentives:

36. The legislature should set clear goals and objectives for what the tax incentives are intended to achieve and direct state agencies to collect and analyze the information needed to ensure the programs achieve those goals. The legislature should regularly review this information and adjust the program. Specific actions should include:

    a. The governor and legislature should make changes that would allow the Department of Revenue to report on the aggregate economic activity (including taxes paid and economic benefits) and number of permanent jobs (professional and janitorial) that are created by data centers.

    b. The Department of Revenue should be directed to prepare an analysis on the economic activity and jobs that result from the data center tax incentives compared to tax incentives for other activities.

    c. The governor and legislature should review whether the protections for the electrical grid, salmon and tribal resources, water, and consumers are sufficient and whether the data center tax incentives are in the public interest every two years and adjust these programs as necessary.

Attachment A: 2022 Energy Vision for the Columbia River Basin: Energy Efficiency and Development Recommendations

Summary

The CRITFC Energy Vision for the Columbia River Basin includes 43 recommendations that are designed to ensure that renewable resources in combination with increased storage, reductions in peak demand, and increased energy efficiency can provide clean, adequate, reliable, and affordable electricity, support the restoration of heathy, harvestable salmon populations, and prevent future damage to salmon and steelhead and other tribal resources caused by the electrical system. For more information see www.critfc.org/energy-vision. The recommendations address these nine major activities.

Improve River Configuration and Operations: The region needs to plan for changes to reduce the damage to migrating salmon and steelhead caused by the Columbia Basin dams, including breaching the four lower Snake River dams.

Amend the Columbia River Treaty: Amend the treaty to include protections for fish and wildlife and expand the scope to include win-win opportunities to integrate renewable resources.

Reduce Peak Loads: The Energy Vision details actions to reduce peak demands that can save salmon and money.

Maximize Energy Efficiency: Maintain and expand energy efficiency targets and work to exceed them. Energy efficiency measures are positive for fish and wildlife.

Harness Renewable Resources: Renewable resources in combination with storage and electric load management can create an environment that is better for fish and wildlife and other tribal resources.

Strategically Site Renewable Resources: Develop a regional plan for where renewable resources should be developed, and where they should not, and to provide expeditious siting with clear and uniform standards across all political subdivisions.

Increase Resource Adequacy: Electricity shortages have reduced protections and funding for fish and wildlife; Section 3 details actions to improve this problem.

Minimize Transmission and Distribution Systems: Load management, energy efficiency, and strategic siting of resources will reduce costs for consumers and the damage to tribal resources.

Address the Climate Crisis: Reduce greenhouse gas pollution and continue to increase energy efficiency to try to avoid the devastating effects we are facing.

CRITFC Energy Vision Recommendations

The Energy Vision for the Columbia River Basin includes detailed findings, rationales, and recommendations that are available at www.critfc.org/energy-vision. This section summarizes the relevant recommendations.

Reduce Peak Loads

Recommendation 4: The Council, BPA, and utilities should include the peak savings and reductions in transmission and distribution benefits in calculating the capacity value of energy efficiency programs.

Recommendation 5: Northwest public utility commissions should implement time-of-use rates to send an appropriate price signal that captures the dramatically different costs of using electricity during different times of the day.

Recommendation 6: Utilities should use demand response to manage system loads, reducing peak loads, ensuring reliability by encouraging customers to reduce demand during peak periods or shift loads from peak to off-peak hours.

Recommendation 7: Automobile manufactures should include systems that allow electric vehicles to schedule charging during off-peak periods.

Recommendation 8: Utilities should integrate electric vehicle charging and batteries into the power system to reduce costs to consumers and the power system and improve salmon migration.

Recommendation 9: BPA and utilities should work to improve the efficiency of electric vehicles.

Recommendation 10: The Council, BPA, and utilities should fund the incremental costs of heat pump water heaters to stimulate the adoption of this technology.

Recommendation 11: Utilities and BPA should develop and fund programs to schedule when water heaters operate.

Increase Electricity Storage

Recommendation 12: BPA and utilities should implement utility-scale battery projects.

Recommendation 13: BPA and utilities should implement incentive programs to expand the use of on-site batteries.

Recommendation 14: BPA and utilities should fund programs to reduce peak loads using the thermal mass of buildings.

Recommendation 15: The Council and utilities should not pursue potential pumped storage sites unless they are consistent with the siting criteria described in Section 3.6.

Recommendation 16: Utilities and the Council should continue to monitor green hydrogen technologies.

Maximize Energy Efficiency

Recommendation 17: The Council should increase the conservation targets in the 8th Power Plan to maintain at least the level of activity called for in the 7th Plan and work with BPA and utilities to try to exceed the targets.

Recommendation 18: The Council should monitor the implementation of energy efficiency programs to ensure that utilities meet the conservation targets.

Recommendation 19: All tribal homes and businesses should be fully weatherized by 2025 and all tribal homes and businesses should receive solar panels and battery systems that provide zero net energy by 2030.

Recommendation 20: Utilities should weatherize and achieve net zero energy for all low-income homes by 2035.

Recommendation 21: Utilities, the Northwest Energy Efficiency Alliance, and other organizations should implement comprehensive programs to improve energy management practices in the commercial and industrial sectors.

Harness Renewable Resources & Integrate/Synergize with Electricity Storage

Recommendation 22: Congress, state legislatures, the Council, and public utility commissions should review programs to reduce greenhouse gases to avoid unintended consequences.

Recommendation 23: The Council should analyze the integration of renewable resources under a range of scenarios for river operations.

Recommendation 24: Utilities and BPA should continue to pursue wind, and the associated efforts to integrate wind power, consistent with the tribal concerns and protections for fish, wildlife, and cultural resources.

Recommendation 25: The region should expand its efforts to promote utility-scale solar energy.

Recommendation 26: BPA and utilities should fund proof of concept projects for dual use solar.

Recommendation 27: States, local governments, and utilities should expand policies to promote on-site solar systems.

Recommendation 28: The Council, Northwest legislatures, energy regulators, and utilities should consider adopting zero net energy building standards.

Recommendation 29: State and local governments should adjust building codes to ensure that they can accommodate on-site batteries.

Recommendation 30: The Council, BPA, and utilities should continue to monitor and support other promising renewable resources.

Strategically Site Renewable Resources

Recommendation 31: CRITFC and its member tribes should work with state energy and siting agencies, federal agencies, Northwest Grid, the Northwest Power Pool, and others to develop a comprehensive plan for siting renewable resources and transmission lines that builds in efforts currently being developed in the states.

Increase Resource Adequacy

Recommendation 32: The Northwest Power Pool Resource Adequacy Program should address fish and wildlife protections by increasing electric system reliability while minimizing pressure on the existing hydroelectric system as the *de facto* fallback. In the near term, these reserves are likely to require having combustion turbines on standby. There may be opportunities to fuel these plants with biofuels that reduce their net carbon footprint. While CRITFC strongly supports the long-term elimination of all fossil fuels to address the climate crisis, in the near term, there may be circumstances where the choice is burning some natural gas or shutting down river operations and killing migrating salmon. CRITFC supports rate treatment for the costs associated with maintaining, staffing, fuel contracts and fuel storage, and other costs for these resources.

Recommendation 33: The California Public Utilities Commission and the California Independent System Operator should address reliability issues in California that could affect the Northwest.

Recommendation 34: BPA and Congress should address repayments to the Treasury to avoid curtailment of fish and wildlife protections.

Recommendation 35: The Pacific Northwest utilities, states, and federal agencies should closely monitor West Coast energy market developments to ensure that they address impacts on Columbia Basin Fish and Wildlife and other tribal resources.

Attachment B: Statutory References

Northwest Power Act Provisions

The Northwest Power Act of 1980 (Public Law 96-501, 16 USC 839) defines a new large single load as anything over 10 average megawatts for any 12-month consecutive period. NLSL must be served by BPA's new resources pool of resources—more expensive than the low-cost power pool that comes from the federal dams.

Section 3 of the Act's provision states:

> 3(13). "New large single load" means any load associated with a new facility, an existing facility, or an expansion of an existing facility–
>
> 3(13)(A). which is not contracted for, or committed to, as determined by the Administrator, by a public body, cooperative, investor-owned utility, or Federal agency customer prior to September 1, 1979, and [Northwest Power Act, §3(13)(A), 94 Stat. 2699-2700.]
>
> 3(13)(B). which will result in an increase in power requirements of such customer of ten average megawatts or more in any consecutive twelve-month period. [Northwest Power Act, §3(13)(B), 94 Stat. 2700.]

Under Section 5, BPA is authorized to purchase power;

> 5(c)(7). The "average system cost" for electric power sold to the Administrator under this subsection shall be determined by the Administrator on the basis of a methodology developed for this purpose in consultation with the Council, the Administrator's customers, and appropriate State regulatory bodies in the region. Such methodology shall be subject to review and approval by the Federal Energy Regulatory Commission. Such average system cost shall not include–
>
> > 5(c)(7)(A). the cost of additional resources in an amount sufficient to serve any new large single load of the utility; [Northwest Power Act, §5(c)(7)(A), 94 Stat. 2714.]
> >
> > 5(c)(7)(B). the cost of additional resources in an amount sufficient to meet any additional load outside the region occurring after December 5, 1980; and [Northwest Power Act, §5(c)(7)(B), 94 Stat. 2714.]
> >
> > 5(c)(7)(C). any costs of any generating facility which is terminated prior to initial commercial operation. [Northwest Power Act, §5(c)(7)(C), 94 Stat. 2714.]

Northwest Power Act prohibits new direct service customers: Section 5(d)(2). The Administrator shall not sell electric power, including reserves, directly to new direct service industrial customers. [Northwest Power Act, §5(d)(2), 94 Stat. 2714.]

5(d)(4)(B). The term "new direct service industrial customer" means any industrial entity other than an existing direct service industrial customer. [Northwest Power Act, §5(d)(4)(B), 94 Stat. 2715.]

The NWPA has several provisions relating to rate design:

> 9(j). Retail rate designs which encourage conservation and efficient use of electric energy, installation of consumer-owned renewable resources, and rate research and development
>
> > 9(j)(1). The Council, as soon as practicable after December 5, 1980, shall prepare, in consultation with the Administrator, the customers, appropriate State regulatory bodies, and the public, a report and shall make recommendations with respect to the various retail rate designs which will encourage conservation and efficient use of electric energy and the installation of consumer-owned renewable resources on a cost-effective basis, as well as areas for research and development for possible application to retail utility rates within the region. Studies undertaken pursuant to this subsection shall not affect the responsibilities of any customer or the Administrator which may exist under the Public Utility Regulatory Policies Act of 1978. [Northwest Power Act, §9(j)(1), 94 Stat. 2734.]
>
> > 9(j)(2). Upon request, and solely on behalf of customers so requesting, the Administrator is authorized to (A) provide assistance in analyzing and developing retail rate structures that will encourage cost-effective conservation and the installation of cost-effective consumer-owned renewable resources; (B) provide estimates of the probable power savings and the probable amount of billing credits under section 839d(h) of this title that might be realized by such customers as a result of adopting and implementing such retail rate structures; and (C) solicit additional information and analytical assistance from appropriate State regulatory bodies and the Administrator's other customers. [Northwest Power Act, §9(j)(2), 94 Stat. 2734.]

Washington Statutory Provisions on Rate Equality

Public-Owned Utilities

RCW 54.16.040
Electric energy.
A district may purchase, within or without its limits, electric current for sale and distribution within or without its limits, and construct, condemn and purchase, purchase, acquire, add to, maintain, conduct, and operate works, plants, transmission and distribution lines and facilities for generating electric current, operated either by water power, steam, or other methods, within or without its limits, for the purpose of furnishing the district, and the inhabitants thereof and any other persons, including public and private corporations, within or without its limits, with electric

current for all uses, with full and exclusive authority to sell and regulate and control the use, distribution, rates, service, charges, and price thereof, free from the jurisdiction and control of the utilities and transportation commission, in all things, together with the right to purchase, handle, sell, or lease motors, lamps, transformers and all other kinds of equipment and accessories necessary and convenient for the use, distribution, and sale thereof: PROVIDED, That the commission shall not supply water to a privately owned utility for the production of electric energy, but may supply, directly or indirectly, to an instrumentality of the United States government or any publicly or privately owned public utilities which sell electric energy or water to the public, any amount of electric energy or water under its control, and contracts therefor shall extend over such period of years and contain such terms and conditions for the sale thereof as the commission of the district shall elect; such contract shall only be made pursuant to a resolution of the commission authorizing such contract, which resolution shall be introduced at a meeting of the commission at least ten days prior to the date of the adoption of the resolution: PROVIDED FURTHER, That it shall first make adequate provision for the needs of the district, both actual and prospective.

Investor-Owned Utilities

RCW 80.28.100 - Rate discrimination prohibited—Exception.
No gas company, electrical company, wastewater company, or water company may, directly or indirectly, or by any special rate, rebate, drawback or other device or method, charge, demand, collect or receive from any person or corporation a greater or less compensation for gas, electricity, wastewater company services, or water, or for any service rendered or to be rendered, or in connection therewith, except as authorized in this chapter, than it charges, demands, collects or receives from any other person or corporation for doing a like or contemporaneous service with respect thereto under the same or substantially similar circumstances or conditions.

RCW 80.28.090
Unreasonable preference prohibited.
No gas company, electrical company, wastewater company, or water company may make or grant any undue or unreasonable preference or advantage to any person, corporation, or locality, or to any particular description of service in any respect whatsoever, or subject any particular person, corporation or locality or any particular description of service to any undue or unreasonable prejudice or disadvantage in any respect whatsoever.
Washington Statute Regarding Obligations of Public Owned Utility on Provision of Water

RCW 54.16.030
Water and irrigation works.
A district may construct, purchase, condemn and purchase, acquire, add to, maintain, conduct, and operate waterworks and irrigation plants and systems, within or without its limits, for the purpose of furnishing the district, and the inhabitants thereof, and of the county in which the district is located, and any other persons including public and private corporations within or without the limits of the district or the county, with an ample supply of water for all purposes, public and private, including water power, domestic use, and irrigation, with full and exclusive authority to sell and regulate and control the use, distribution, and price thereof.
Emphasis added to all statutes cited above

Oregon Statutory Provisions

Oregon POWER Act (HB3546, 2025) - New customer rate class for data centers and cryptocurrency within Oregon's investor-owned utilities

OR HB3409 (2023). Sections 8& 9 address commercial building energy efficiency standards. Building Energy Performance Standard are codified as Oregon Revised Statutes (ORS) 469.275 - 469.291

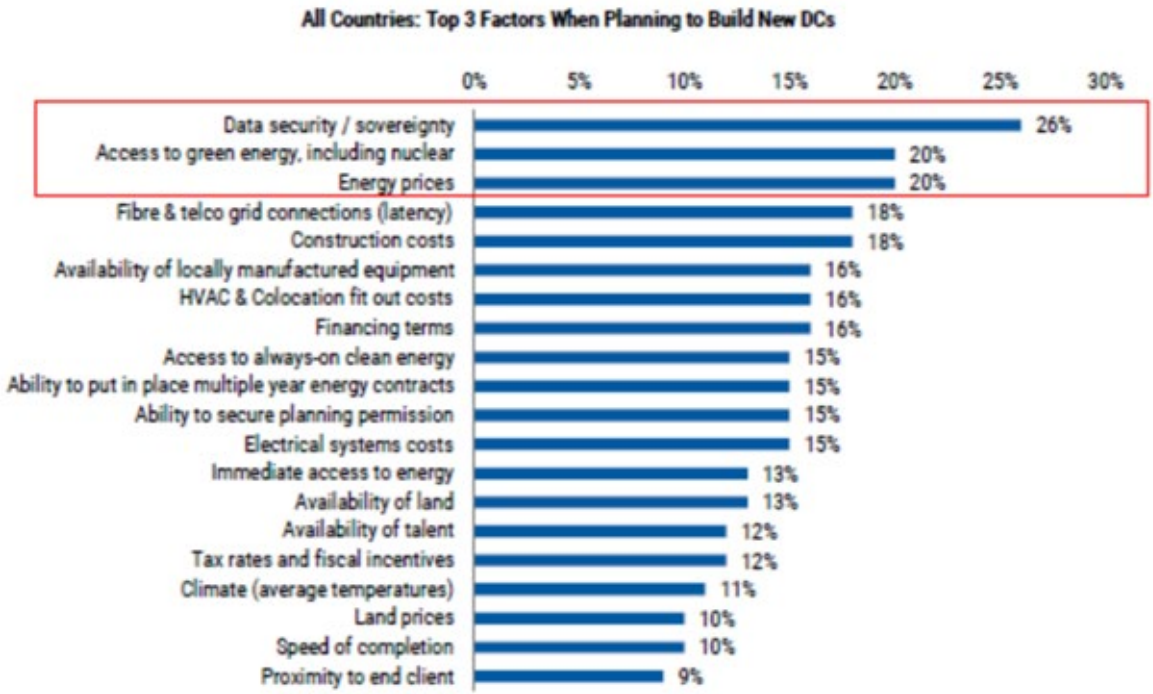
Attachment C: Factors Affecting Decisions on Location and the Profitability of Data Centers

Decisions on where to locate data centers. The key factors in the United States were:

1. data security,
2. energy prices,
3. access to energy,
4. and speed to completion are the most important factors.

A report by Morgan Stanley Research showed that tax incentives were 16th on the list of factors when planning to build data centers[1].

Exhibit 8: Top 3 factors when planning on building DCs (US, UK, Italy, Spain and Norway)



The Exhibit above is based on two surveys that were conducted for Morgan Stanley by AlphaWise in March 2025. The first was based on 239 interviews with senior procurement and sourcing decision makers for data center operators. The second survey interviewed 234 senior sources decision makers at data center builders and suppliers.

[1] *Global Data Center Capacity Growth to Increase 6x*, Morgan Stanley Research, page 7.

Survey Details

Primary Research

See what others don't.

1) Data security/sovereignty, access to green energy and energy prices are the most important considerations for operators when building new DCs. Over the next 2 years, operators believe the main bottlenecks will be: securing primary or back up power generation, availability of chips/GPUs and speed of access to electricity. 2) Capacity has increased by an average of 5% over the last 12 months and could increase by 9% in the next 2 years. In the next 2 years, 34% of operators say they will invest more in the US, followed by the UK (29%), Spain (27%), Italy (26%) and France (23%). 3) In the next 2 years, operators believe that total DC costs will increase by an average of 11.48%, with electrical systems most responsible for total DC cost increases, followed by cooling technology and grid connection. For builders & suppliers, DC related building & supply costs are expected to increase by an average of 14% in the next 2 years.

Methodology

In March 2025, we carried out 2 surveys (with a total sample size of 473) to understand DC expansion over the next 2 years in the US and Europe.

DC Operator Survey

We carried out a total of 239 online interviews with senior procurement & sourcing decision makers at data center operators.

Sample size by country: US: 52, UK: 54, Italy: 52, Spain: 52 & Norway: 29

Sample size by procurement responsibility: DC builders: 136, Construction materials: 96, Electrical systems: 122, HVAC/Mechanical systems: 133 & Colocation fit out: 89

DC Builders & Suppliers Survey

We carried out a total of 234 online interviews with senior sourcing decision makers at data center builders & suppliers for data center operators.

Sample size by country: US: 57, UK: 48, Italy: 48, Spain: 49 & Norway: 32

Sample size by supplier type: DC builders: 134, Construction materials: 118, Electrical systems: 134, HVAC/Mechanical systems: 129 & Colocation fit out: 77

Team behind the analysts.

AlphaWise Primary Research gathers alternative data and generates unique insights via an innovative analytical and visualization platform.

Source: AlphaWise

Economic importance of tax incentives: An analysis by TeraWulf showed potential illustrative business models for financing data centers. The summary appears to show that data centers could be very profitable. The margins (profits) range from 65 to 90 percent and the Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) range from valuation of 7 to 20 times EBITDA. Attachment B provides more detail on the factors affecting decisions on where to locate and the profitability of data centers.

Potential HPC Data Center Construction Financing Structures

WULF Compute – Potential Illustrative Business Models

Maximizing land, megawatts, and capital for optimal long-term value creation

WULF Compute's Core Business

	Cloud Service Provider (CSP)	Colocation – Whitespace & Rack Ready	Build to Suit
Description	Shell data center and GPU clusters; space, power, cooling, fiber/internet, security, compute, storage and environment.	Shell data center; lease rack ready whitespace including redundant power, cooling, fiber/internet, and security	Data center built to spec; lease space, redundant power, cooling, fiber/internet, and security
Customer	Multiple – Managed through cloud partner	Multiple – Enterprise and well funded startups	Single – Hyperscaler
Contract Size	0.1 – 50 MW	0.5 – 100 MW+	100+ MW
Contract Term	1 – 36 months	5 – 15 years	15+ years with renewals
O&M	WULF managed	WULF managed	Tenant managed
Build Cost per MW	$27 – 30 million (1)	$6 – 8 million (1)	$2 – 4 million (4)
Financing	Equity & Debt	Equity (initially)	Highly Bankable
Revenue per MW	$11 – 18 million (2)	$1.3 – 1.8 million (3)	$0.2 – 0.5 million
Margins	70 – 80%	65 – 75%	90% +
Valuation Range	7-12x EBITDA	10-15x EBITDA	15-20x EBITDA

TERAWULF

(1) Build cost for CSP and colocation model reflect liquid cooling infrastructure.
(2) Low end of range based on long-term reserve contract at $2.1/GPU/hr with 100% rental utilization, high end of range represents $4.50/GPU/hr of on-demand revenue at 80% rental utilization.
(3) Does not include customer pass-through energy expense. Subject to term length and payment terms.
(4) Based on air cooled powered shell infrastructure. NNN Rent Structure; customer pays all OpEx directly.

16

Source: TeraWulf.