Public Comment on the Beacon AI Centers Indus Project

Impact Assessment Agency of Canada (IAAC)
Project Reference No. 90121

Introduction

I am submitting this comment in response to the Impact Assessment Agency of Canada's request for public input on the Summary of the Initial Project Description for the Beacon AI Centers Indus Project ("Indus"). This submission identifies material uncertainties and potential impact-assessment triggers related to project characterization, on-site power-generation assumptions, drought-stressed baseline conditions, water quantity and quality, cumulative effects, emergency management, public utility impacts, long-term liability, and sustainability. The purpose of this comment is not to prejudge outcomes, but to ensure that relevant impacts are fully assessed, appropriately scoped, and supported by enforceable mitigation and verification measures.

Project Characterization and Scale

The Indus Project is described as a large, long-lived data-centre development supported by a new on-site natural gas–fired power-generation facility, including multiple gas generators and associated infrastructure. The inclusion of dedicated on-site power generation materially alters the project's interaction with regional infrastructure, air emissions, water use, emergency response, and cumulative effects, and therefore warrants integrated assessment rather than being treated as an ancillary component. Several foundational aspects of project design — including generator configuration, fuel supply, cooling approaches, emissions controls, and water-use pathways — are described at a high level or deferred to later stages. Given the scale and duration of the project, these elements are decision-relevant and should be sufficiently characterized at the impact-assessment stage.

Water Quantity, Availability, and Cumulative Effects

The project is proposed within a region that has experienced recurring drought conditions and increasing climate-related variability. Water demands associated with both data-centre cooling and on-site power generation should be assessed together, including any water requirements for generator cooling, emissions-control systems, or auxiliary processes. Federal–provincial guidance emphasizes that cumulative impacts of water withdrawals should be assessed at the watershed scale, based on measured or reported water use rather than permitted allocations alone, and supported by monitoring, thresholds, and adaptive management. Recent groundwater–surface water modelling demonstrates that cumulative groundwater withdrawals can measurably reduce surface-water flows over time. The Indus Project should also be assessed in the context of other proposed and operational large data-centre developments within the region, given overlapping timelines and shared reliance on water resources, power infrastructure, and emergency services.

Water Infrastructure Capacity and Fire-Flow Considerations

Large data-centre cooling demand can coincide with periods of peak municipal water demand, including droughts and wildfire events. The presence of on-site gas-fired generation introduces additional fire-protection, cooling, and emergency-response considerations that should be evaluated alongside data-centre requirements, including worst-case concurrent demand scenarios. Assessment should examine whether municipal and on-site water infrastructure can reliably support both routine operations and emergency needs under concurrent stress conditions.

Water Quality, Wastewater, and Lifecycle Waste Streams

Large data centres generate ongoing streams of spent equipment and materials over the project lifecycle, including batteries, electronic components, cooling-system parts, and maintenance wastes. On-site power generation further introduces operational chemicals, lubricants, and waste streams that should be assessed together with data-centre wastes to ensure comprehensive lifecycle management. Impact assessment should examine chemical management, spill prevention, and waste-handling practices to ensure that accidental releases, equipment failures, or extreme-weather events do not result in adverse environmental effects or cumulative impacts.

Transparency, Data Gaps, and Uncertainty

Investigative reporting has highlighted that water use by AI-related data centres is often difficult to quantify due to inconsistent metering, limited disclosure, and reliance on proponent estimates. Similar uncertainty can arise with respect to fuel use, emissions performance, and operational profiles of on-site generation facilities. Uncertainty itself should therefore be treated as a factor in determining the appropriate scope and depth of assessment.

Power Supply, Grid Readiness, and Cumulative Load

While the Indus Project proposes on-site power generation, this does not eliminate interactions with regional electricity systems, fuel supply chains, or cumulative emissions profiles. Assessment should consider how on-site generation interacts with regional grid planning, fuel supply reliability, emissions management, and long-term decarbonization objectives, including scenarios in which operational assumptions change over time. Assessment of large, continuous electrical loads should also consider cumulative interactions with other regional electrification trends, including electric-vehicle adoption, building electrification, and industrial decarbonization initiatives.

Accidents, Malfunctions, and Emergency Management

Data-centre facilities involve complex, tightly coupled systems — including high-voltage electrical infrastructure, cooling systems, backup power, and continuous on-site fuel-fired generation — that are sensitive to extreme weather, system interactions, and human factors. Fire departments often have limited authority over initial building construction, and updated safety standards may not be enforceable unless formally adopted. This underscores the importance of addressing accident and malfunction risks at the impact-assessment stage.

Monitoring, Thresholds, and Follow-Up

Given the scale, complexity, and potential cumulative infrastructure interactions associated with large data-centre developments supported by on-site generation, consideration should be given to periodic independent third-party monitoring and testing of key environmental and infrastructure performance indicators, including water use, wastewater discharges, emissions performance, fire-flow availability, and system interactions.

Decision Relevance and Non-Deferral

Several of the issues identified above — particularly water availability, emergency-services capacity, emissions management, compound extreme-weather risks, decommissioning considerations, and the durability of key operational assumptions — are foundational design and siting considerations that should not be deferred to later permitting stages.

Conclusion

The Indus Project represents a class of development with long-term cumulative interactions between data-centre infrastructure, on-site power generation, shared public systems, and environmental resources. Adequate impact assessment at this stage should ensure that water, power, emissions, emergency-management, and lifecycle considerations are fully characterized, assessed at appropriate regional scales, and supported by enforceable mitigation, monitoring, and follow-up measures.