Public Comment on the Beacon AI Centers Heartland Project

Impact Assessment Agency of Canada (IAAC)
Registry No. 90123

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 Heartland Project ("Beacon 1"). This submission identifies material uncertainties and potential impact-assessment triggers related to project characterization, power-supply 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

Beacon 1 is described as a large, long-lived data-centre facility intended to support AI-oriented workloads. Such facilities typically involve high, continuous electrical demand, substantial cooling requirements, and long operational lifespans. Several foundational aspects of project design — including power-supply arrangements, cooling approaches, 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. 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, reinforcing the importance of watershed-scale assessment and long-term monitoring.

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. Assessment should examine whether municipal 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. Impact assessment should examine chemical management, spill prevention, and waste-handling

practices to ensure that accidental releases or failures 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. 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

Assessment of large, continuous electrical loads should consider cumulative interactions with other regional electrification trends, including electric-vehicle adoption, building electrification, and industrial decarbonization initiatives, to ensure that grid capacity and reliability are evaluated in an integrated manner.

Accidents, Malfunctions, and Emergency Management

Data-centre facilities involve complex systems sensitive to extreme weather, system interactions, and human factors. Fire departments often have limited authority over initial construction, underscoring the importance of addressing accident and malfunction risks at the impact-assessment stage.

Monitoring, Thresholds, and Follow-Up

Given the scale and complexity of large data-centre developments, consideration should be given to periodic independent third-party monitoring of key environmental and infrastructure performance indicators to support long-term operational transparency.

Decision Relevance and Non-Deferral

Several of the issues identified above are foundational design and siting considerations that should not be deferred to later permitting stages.

Conclusion

Beacon 1 represents a class of development with long-term cumulative interactions with shared public infrastructure and environmental systems. Adequate impact assessment should ensure these interactions are fully characterized and supported by enforceable mitigation, monitoring, and follow-up measures.