AI Data Centres and the Climate Crisis

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AI DCs are a hot topic these days. Many municipalities are trying to attract these mega projects with the expectations that the money generated through jobs and resource use will stimulate their economy. Given the pressure that local governments face to try to do more while constituents are requesting lower taxes, to local governments it may seem like a reasonable activity to entertain these new facilities. However, many communities are pushing back due to the environmental impact, the lack of community participation, and the concerns around siting given their impact on communities.

What is special about AI Data Centres?

Data Centers have been around for a long time. However, building an AI data centre is unique because it is a construction project designed for extreme power density and massive cooling infrastructure, whereas traditional data centres and standard commercial buildings are built for lower, distributed energy loads and human occupancy.

AI DCs are unique among other industrial projects. For instance:

- It is estimated that 98% of all electricity delivered to them is converted to heat.
- They need to run 24/7 and so will always have back-up generation, often diesel. Diesel generators must be run monthly, or more frequently, to ensure it's available if needed.
- They use water for cooling and, even when it's a closed loop cooling system, is not just filled once.
- They consume a massive amount of electricity and in many new builds this is being supplied with fossil fuels.
- The processing chips are being replaced as frequently as 18 months but with a max lifespan of 5 years.
- The buildings are very large and require a lot of land.
- The buildings must be designed for physically heavy loads and require more concrete, steel, and specially designed flooring.
- The facilities run 24/7 and they generate noise.

What are the potential harms caused by AI DC?

Environmental impacts due to AI DCs:

- Heat islands – both land and water environments are impacted.
- The generation of electricity, both for normal operation and back-up, increases GHG emissions and air pollution.
- Water consumption competes with existing users and there is often water pollution occurring during construction and system flushing.
- Local municipalities need to deal with the increased e-waste and how to process it without contamination.
- Farmland and forests can be destroyed during the builds.
- The emissions caused by the production of all of the materials used to create the facilities.
- Noise levels of 45-55 dB adjacent to the AI DC have been reported.

Why is SCAN! interested in AI data centres?

Canada's political climate is of building infrastructure, digital sovereignty, reducing dependence on US industries and market share. These mega projects can be viewed as a quick win economically with their large size and subsequent employment in the build stage. As a result, many Canadian jurisdictions are courting owners of these facilities with the hopes of attracting the perceived economic benefit. This is happening through reducing barriers and limited environmental assessments. For instance, Alberta is requiring the new AI DCs to bring their own generation capability, which translates to on-site gas generators. This policy doesn't disrupt the existing power grid, however, this leads to increased GHG emissions and local pollution. Additionally, 12 of the 20 planned new facilities are within water-stressed regions.

Many politicians have been framing the need for the AI Data Centres as key to our nation's digital sovereignty plan. However, many of the new builds (from data in June 2026) will be foreign owned and when they are owned by US headquartered companies, the data and the technology is under the control of the US government – these new builds would do nothing to enhance our digital sovereignty.

The federal government's September 2026 *Responsible Data Centre Development Principles* *seems* to point in the right direction. However, as written it does not provide enforceable rules. The climate crisis had already reached the tipping point without all of the new AI Data Centre builds that have been proposed for Canada. It is important that we tell our friends and neighbors about the potential environmental harms so that they can participate in the calls for moratorium or other political action. It is important that we support communities in Canada as they fight against projects that threaten their local environments.

To learn more, here is a subset of the references used:

1. **Carlo, A. & Rolheiser, L. (2026).** *Data Centred: the Shifting Landscape of Canada's Digital Infrastructure.* SSRN 6464099.
2. **Government of Canada (2026).** *Canada's Responsible Data Centre Development Principles.* https://ised-isde.canada.ca/site/ised/en/data-centres-powering-canadas-digital-future-responsibly/canadas-responsible-data-centre-development-principles

To read SCAN!'s more detailed briefing paper, click here.