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The Hidden Costs of AI Data Centers: Challenges We Must Address

The boom in **Artificial Intelligence (AI)**, like ChatGPT and other advanced systems, is revolutionary, but it comes with significant hidden costs for the planet and society that we all need to understand.

Power Demand & Climate Strain

The specialized computers that run AI (called **AI Data Centers**) are incredibly power-hungry. They can consume as much electricity as a small city, which is putting a huge strain on our power grids and infrastructure.

- **The Climate Impact:** Because power grids still heavily rely on **fossil fuels** for stable, 24/7 electricity, the rapid growth of AI is directly accelerating **climate change** by increasing carbon emissions.
- In addition, data centers can emit NOx, SO_2, PM) from fossil fuels.

The Thirst for Water

AI computers generate immense heat from all the energy they use. Data center servers, like our own personal computers, generate heat while operating. Unlike a personal computer, data center servers must operate 24/7. To stop them from overheating, they use sophisticated cooling systems, which often require millions of gallons of fresh water. This heavy water usage can drain local water supplies, putting stress on **drought-prone areas** and impacting the water available for local communities, farming, and ecosystems.

Electronic Trash (E-Waste):

To keep up with the competitive race for faster AI, companies replace their powerful, specialized hardware (like GPUs) every few years—sometimes even sooner.

- This short lifespan creates a growing mountain of **electronic waste (e-waste)**. Much of this waste is not properly recycled and contains toxic materials that pollute the environment.

Environmental impact and economic impact are disproportionate:

- Few jobs are produced per facility. A data center proposal would have to include a large heavily polluting campus to produce a meaningful number of permanent jobs.

Backup Power Generation

- Gas-powered data centers emit significant greenhouse gases (GHGs) like CO2, NOx, SO_2, and particulate matter (PM) from burning fossil fuels (coal, gas, diesel) for power and backup, contributing to climate change and poor air quality. Many of these pollutants have health impacts. The AI boom is expected to dramatically increase this demand and emissions.

Regulatory Lag

- Because AI technology is evolving incredibly fast, governments and regulators struggle to create new laws and rules to keep pace with data center proposals. This means that many areas still have few building and land use regulations in place to specifically address data center projects, thus opening the door for projects to proceed with little public input or knowledge.

If a data center is proposed for your community, contact Blue Ridge Environmental Defense League at:

Therese Vick: therese.vick@gmail.com

Or: staff@bredl.org