Exhibit 12.b. EMF and any possible effects on health from Data Centers

Are there any studies that show data centers create electro-magnetic radiation that is harmful to residents outside the data center facility

Short answer: Current research does **not** show that data centers emit electromagnetic radiation (EMR/EMF) at levels harmful to people living outside the facility. Studies consistently find that EMF levels at data center perimeters are comparable to ordinary residential or office environments. The documented health risks around data centers come instead from **diesel generator emissions, particulate pollution, noise, and electrical grid impacts**, not EMF.

What the science says about EMF from data centers

1. EMF levels outside data centers are low and within safety guidelines. Measurements at the perimeter of data centers show EMF levels similar to those found in typical office environments and far below levels emitted by personal devices like mobile phones. These EMFs are **non-ionizing**, meaning they do *not* have enough energy to damage DNA.

2. No studies show harmful EMF exposure to nearby residents. Research examining community exposure near data centers finds **no evidence** that EMF from data center equipment or power distribution systems poses a health risk to people living nearby. One review explicitly states that **living close to data centers does not pose electromagnetic field risks.**

3. EMF sources at data centers are similar to common electrical infrastructure. Data centers generate:

- **Extremely Low Frequency (ELF)** fields from transformers, switchgear, and power lines
- **Radiofrequency (RF)** emissions from networking equipment

These are the same categories of EMF produced by household wiring, appliances, and Wi-Fi systems. None of these are known to cause harm at the exposure levels measured outside data centers.

What *has* been linked to EMF health risks?

Some studies link **high, chronic exposure** to ELF magnetic fields (e.g., directly under high-voltage transmission lines) to childhood leukemia. But these exposure levels are **far higher** than those measured around data centers. The concern applies to **power lines**, not the data center buildings themselves. – see second link below.

What *is* harmful near data centers (and well-documented)?

While EMF is *not* a demonstrated risk, several **other** impacts are:

- **Diesel generator emissions** (PM2.5, NOx) → linked to respiratory disease and increased cancer risk. One model estimates **1,300 premature deaths annually** in the U.S. by 2030 from data-center-related air pollution.
- **Fine particulate exposure** near clusters of diesel generators → associated with asthma and cardiovascular disease.
- **Noise** from cooling systems and generators
- **Electrical grid harmonics** causing equipment damage and fire risks
- **Water consumption impacts** on local wells

These are the real, evidence-supported community health concerns—not EMF.

Links

Do Data Centers Cause Cancer? The Scientific Evidence - Biology Insights

Is it Safe to Live Near a Data Center? EMF Radiation Risks Explained - Environmental Health Sciences – This is likely the discussion the lady presented at the last supervisors meeting.

Frontiers | Health implications of the rapid rise of data centers in Virginia: an exploratory assessment

Electromagnetic Fields and Cancer - NCI

The following is the most important aspect in the above link we should look at. It does not seem to relate to the Data Center itself, as much as to the increase in transmission.

Why are non-ionizing EMFs studied in relation to cancer?

Power lines and electrical appliances that emit non-ionizing EMFs are present everywhere in homes and workplaces. For example, wireless local networks are nearly always "on" and are increasingly commonplace in homes, schools, and many public places.

No mechanism by which ELF-EMFs or radiofrequency radiation could cause cancer has been identified. Unlike high-energy (ionizing) radiation, EMFs in the non-ionizing part of the electromagnetic spectrum cannot damage DNA or cells directly. Some scientists have speculated that ELF-EMFs could cause cancer through other mechanisms, such as by reducing levels of the hormone melatonin. There is some evidence that melatonin may suppress the development of certain tumors.

Studies of animals have not provided any indications that exposure to ELF-EMFs is associated with cancer (10–13). The few high-quality studies in animals have provided no evidence that Wi-Fi is harmful to health (8).

Although there is no known mechanism by which non-ionizing EMFs could damage DNA and cause cancer, even a small increase in risk would be of clinical importance given how widespread exposure to these fields is.

What have studies shown about possible associations between non-ionizing EMFs and cancer in children?

Numerous epidemiologic studies and comprehensive reviews of the scientific literature have evaluated possible associations between exposure to non-ionizing EMFs and risk of cancer in children (13–15). (Magnetic fields are the component of non-ionizing EMFs that are usually studied in relation to their possible health effects.) Most of the research has focused on leukemia and brain tumors, the two most common cancers in children. Studies have examined associations of these cancers with living near power lines, with magnetic fields in the home, and with exposure of parents to high levels of magnetic fields in the workplace. No consistent evidence for an association between any source of non-ionizing EMF and cancer has been found.

Exposure from power lines. Although a study in 1979 pointed to a possible association between living near electric power lines and childhood leukemia (16), more recent studies have had mixed findings (17–25). Most of these studies did not find an association or found one only for those children who lived in homes with very high levels of magnetic fields, which are present in few residences.

Several studies have analyzed the combined data from multiple studies of power line exposure and childhood leukemia:

- A pooled analysis of nine studies reported a twofold increase in risk of childhood leukemia among children with exposures of 0.4 μT or higher. Less than 1% of the children in the studies experienced this level of exposure (26).
- A meta-analysis of 15 studies observed a 1.7-fold increase in childhood leukemia among children with exposures of 0.3 μT or higher. A little more than 3% of children in the studies experienced this level of exposure (27).
- More recently, a pooled analysis of seven studies published after 2000 reported a 1.4-fold increase in childhood leukemia among children with exposures of 0.3 μT or higher. However, less than one half of 1% of the children in the studies experienced this level of exposure (28).

For the two pooled studies and the meta-analysis, the number of highly exposed children was too small to provide stable estimates of the dose–response relationship. This means that the findings could be interpreted to reflect linear increases in risk, a threshold effect at 0.3 or 0.4 μT, or no significant increase.

The interpretation of the finding of increased childhood leukemia risk among children with the highest exposures (at least 0.3 μT) is unclear.

report_powerline_electric_mg_predates_508.pdf

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