Thank you for providing this opportunity to present to the Public Utilities Board. I appreciated your stamina and dedication to this work.

My name is Shawn Kettner and I come here today as a private citizen concerned about Manitoba Hydro's Integrated Resource Plan. I have spent the last decade or so engaged in communities such as the Manitoba Energy Justice Coalition that champion a just transition to environmentally and socially responsible energy sources and the relatively newly formed Seniors for Climate MB who you heard from on Monday morning, an organization who list as one of their main messages the need to phase out the use of fossil fuels and the need to speed up the transition to renewable power and clean energy.

I am not alone in feeling concerned and anxious about Manitoba not meeting its commitments to reduce GHG by investing in gas turbines.

Over the past year I have been working with community volunteers who have been organizing informal gatherings of small groups of citizens to hear about their concerns. At over 50 gatherings in private homes, community centres and places of worship people have expressed their concern about the state of the environment, the fear for their children and grandchildren and the challenges of their own health issues related to heat, smoke and climate anxiety.

People understand that we need to diversify and adapt to meet our future power requirements, but I met no one who thought adding gas turbines and more GHG emissions to the mix as proposed by MB Hydro was a good solution.

The proposed plan to spend $3B on gas turbines leads us away from instead of towards meeting our provincial goal to become a net zero province by 2050.

As we listened to the presentations during the PUB hearings, we repeatedly heard proposals for alternative ways to meet our energy needs. We heard proposals for more economical and environmentally sustainable options. We heard about integrating more wind power, air and geothermal heat pumps, the virtues of battery storage, the economic advantages of demand-side management, energy efficiency, building code tiers and integrating solar into the mix.

As extreme weather events caused by climate change continue to become more frequent and severe, the economic, environmental and social costs continue to climb. The forests, the land and air and our infrastructures are being destroyed by severe weather events such as floods, drought and fire. And people throughout Manitoba are feeling the health effects of these extreme weather events, particularly those that have lost their homes, lively hoods and way of life, often those in the north and in smaller communities.

There is an endless barrage of information on the detrimental effects of the climate crisis and as individuals it's hard to not be concerned when crown corporations like MB Hydro propose increasing our GHG emissions that are causing the temperature rise that in turn cause the forest fires that result in the harmful smoke we all breathe. According to reports such as the Canadian Association of Physicians for the Environment article, available on their website, titled The Limits of Livability, the emerging threat of smoke impact on health from forest fires and climate change we now know the particulates in forest fire smoke are known to be carcinogenic. These are particularly harmful to human health and may affect every organ in the body; they can

penetrate the lungs, cross into the bloodstream, circulate throughout the body, and cross the blood-brain barrier. Smoke particles from forest fires along with many other reactive and irritant chemical compounds from the burned wood and foliage promote inflammation and oxidative stress in lungs and throughout the body.

Similar concerns were expressed by retired Brandon physician Dr. Scott Blyth in an August 21st article in the Winnipeg Free Press. Dr. Blyth, said there are health risks associated with long-term exposure to gas. "A simple answer, the plant should not be built because of the potential health risks,".

The dust storms in mid-May that turned into mud blocking drainage that ruined crops; the unprecedented flooding in mid-June across the southwest regions of MB that took out roads and destroyed homes; the tornadas that touched down leaving behind a trail of destruction like the approximately $30 million damage to the Selkirk industrial area; the hail that cost MPI as much as $20 million; all this while we are still recovering from last years horrendous fire season, all of these are costing us in lost biodiversity, natural habitat, millions in insurance claims and personal losses.

As drought plays havoc with hydro's ability to produce electricity and weather events take its toll on hydro lines the demand for electricity for summer cooling and for winter heating is increasing. But there are so many more cost effective and ecological responsible choices that hydro could take other than proceeding with its plans to build gas turbines.

The proposed gas turbines would add fossil fuel infrastructure at a cost of $3 billion, locking Manitoba into that investment will drive up our energy costs for decades while the climate crisis already upon us

is dramatically changing our lives and making everything more expensive.

I am also very concerned about talk of introducing nuclear power in the form of small modular reactors as a future source of energy in Manitoba. Nuclear energy is the most expensive form of energy and according to Ontario Power where units are in development in Darlington it will cost $17,417 per kwh installed versus $1,911 per kwh for utility scale solar (Source: Ontario Clean Air Alliance). From a financial perspective it just doesn't make sense.

From an environmental perspective nuclear power is a disaster in the making. Nuclear reactors produce radioactive nuclear waste making them one of the dirtiest and most dangerous forms of energy. There are no safe long-term solutions to dealing with radioactive waste. Deep geological repositories that are currently being proposed by our federal government have never been tested and we have no guarantees that this is a safe viable solution.

The SMRs require enriched uranium which is not and will not be produced in Canada. That would make us reliant on foreign providers most likely in the USA. I can't imagine why we would consider nuclear power when wind, solar, geothermal are readily available at home.

And of course, there is the unavoidable link between the nuclear industry and nuclear weapons proliferation. Manitoba was declared a nuclear free zone in 1987 a commitment we should honour.

In summary there are several reasons why I think the PUB should send Hydro back to the drawing board.

1. **Burning fossil fuels contribute to GHG emissions which we all know is detrimental to the health of Manitobans and contributes to the climate crisis.**
2. **Spending $3 Billion dollars on gas turbines is not economically viable. Distributive wind farms, air and geothermal heat pumps, battery storage, demand-side management, energy efficiency, building code tiers and solar are all proving themselves to be the better economic choices**
3. **Turbines are not readily available, there is a worldwide backlog in the supply chain and will not meet our needs in a timely fashion.**
4. **The world is transitioning away from fossil fuels and as the number of customers dwindles the cost of consumption will rise proportionally.**

Therefore, I recommend the PUB disapprove the allocation of $3B for the combustion turbines and direct MB Hydro to invest our money in renewable energy options.

Thank you for taking my concerns regarding the IRP into consideration. I appreciate your time and commitment to listening to the citizens of Manitoba.

Shawn Kettner