Dear ChatGPT I would like to prepare a persuasive position paper for the local Australian Liberal Party on the imperative for Australia to use nuclear energy via three streams of endeavour:

1. Initially to replace coal fire power plants with Small Modular Nuclear Reactors. This is to address immediate concerns about powering Australia’s domestic grid, develop expertise and the industrial base to support the more advanced reactor types.
2. Develop large scale molten salt fast reactors to produce electricity, industrial heat, Ammonia and U233 from Thorium as fuels.
3. Integral molten salt burner reactors for future deployed reactors.

## Reality Check

Nothing Australia does in terms of domestic emissions will, or can, make a material difference to the global climate change. Australia is simply two small.

The current internally focused exercise in replacing reliable baseload power with intermittent sources of energy will, and can only, drive up prices and causing economic damage in the process.

The current and future consumers of fossil fuels will come from third world and developing countries.

Ultimately, to end the use of fossil fuels, the fossil fuel industry must be put out of business. That is, fuels and other energy sources must be developed that are significantly cheaper than fossil fuel equivalent and able to economically be integrated into the world’s energy infrastructure. As an initial target energy price of less than US$40 a barrel of oil.

Furthermore, to be considered a viable option, must reasonably be able to achieve a high technology readiness level.

## Potential Fuels

Potential fuel that can achieve this are:

1. Nuclear fission fuels
2. Ammonia produced using advanced nuclear processes; or
3. Carbon based fuels produced from nuclear cycles.

Of these, produced carbon fuels could be excluded given a desire to remove carbon emissions from output.

## Non-Solutions

In Australia we often hear the chant “renewables are the cheapest form of energy” as if this is the full story to addressing the issue of climate change. Energy produced from renewables are intermittent, are expensive to distribute and store and bring with them a huge range of environmental impact due their low energy density.

Now one potential candidate is Hydrogen (H2), however despite decades of effort H2 is unproven to be practical to distribute and store due to its low volumetric density. Instead, it needs to be processed with a suitable carrier molecule such as Nitrogen (to make ammonia) or Carbon to be converted into a practical fuel. It is here NH3 from renewables quickly becomes uneconomic due to the intermittency and difficulty of storing H2 to support very large scale NH3 plants.

If Australia is to make a significant contribute reducing global carbon emissions it instead needs to export clean fuels that are cheaper than fossil fuel equivalent, or replace export of raw minerals with extracted raw materials.

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why Australia should a) Legalise Nuclear energy. B) Use small modular reactors to replace coal

What is the challenge

Renewables Cant Work