Process Heat in New Zealand: Opportunities and barriers to lowering emissions

As an individual I am deeply concerned by NZ's level of greenhouse gas emissions, and I make this submission on the basis of that concern.

Process heat makes up one-third of New Zealand's overall energy use and contributes approximately 9% of gross emissions.

Of concern to me is that 60% of process heat is supplied using fossil fuels, mainly gas and coal.
I gather that 78% of New Zealand's process heat is used in industry, 10% used for space heating in the commercial sector and 7% is used in the public sector.

I therefore submit that:

1. There is an urgent need to replace all plants burning fossil fuels with ones using renewable sources of energy.
2. Fossil fuels are are a big source of methane, a greenhouse gas which is 25 to 34 times more dangerous within a short time frame than carbon which is also emitted by burning fossil fuels.
3. Replacing one form of fossil fuel energy source with another is completely unacceptable. In particular, the idea that natural gas is a "transition fuel" away from coal is nonsense. Natural gas is a large source of uncontrolled methane and carbon emissions due to surges at extraction. It is still a 'fossil fuel", left underground for eons. Fossil fuels should be replaced by renewables, not other fossil fuels.
4. NZ stop new investment in fossil fuel plants. All new plants should be renewably fuelled, nothing else can reliably reduce fuel plant emissions.
5. The Government should put legislative and regulatory changes in place to ensure that, as an existing heat plant reaches the end of its economic life, it is replaced by heat plant that is not fuelled by fossil fuels, but is powered from renewable energy sources. Ensure that existing fossil fuel powered heat plants are absolutely not run beyond the end of their economic life.
6. No fossil-fuel powered heat plant should run past 2030.
7. If hydrogen is used as an energy source for process heat, it must be generated by renewable means, not derived from fossil fuels
8. Introduce a mandatory carbon price of at least $50/tonne, raised at regular and pre-announced intervals to reach $100 within a couple of years, to drive the urgent and significant emissions reductions that must be made.

I look forward to your response to the above points

Caz Sheldon