



December 7th, 2020

Ms. Mary Nichols
Chair – California Air Resources Board
1001 I Street, PO Box 2815
Sacramento, CA, USA, 95812

Dear Chair Nichols,

As a follow-up to our letter dated September 1st 2020 (*Re: Supplemental comments to California Air Resources Board request for input on the revised regulatory language regarding additional HFC regulations as presented at the workshop on July 22, 2020*) you will find attached a letter from the Government of Quebec that was sent from the Education Minister to the Leader of the Government in regards to GWP thresholds for refrigeration systems used in ice rinks on April 11th, 2017.

As you well know, the Government of Quebec has committed to prevent climate change and is a partner of California in a Cap and Trade system since 2014, as part of the *Western Climate Initiative*. As such, the Government of Quebec has taken many steps to lower its greenhouse gas emissions, including putting forth technology-forcing programs in many diverse applications, including ice rink refrigeration. In 2012, it was so decided that only ammonia and CO₂ were to be allowed in ice rink systems.

After a thorough analysis of data from 2012 to 2016, that position was overturned in 2017 in order to allow for new-generation, Low-GWP HFO-based refrigerants to be allowed, up to a GWP threshold of 750. The reasons for the change of policy are clearly mentioned in the letter, including the toxicity of ammonia, the lack of competition due to patents on CO₂ and the absence of viable options at lower thresholds due to the refrigerant and compressor technologies not available then, nor today.

That threshold still stands today, in accordance with the latest regulations from Environment and Climate Change Canada. Furthermore, the old program has been rescinded, as it was refrigerant-centric, contrary to the *Position Document on Refrigerants and Their Responsible Use* from ASHRAE. As such, chillers used in ice rinks are now held to the exact same standard as any other chiller application, and rightly so, as they have the same low-GWP refrigerants, minimal charges and low leak rates.

I would like to echo the Minister's closing statement in saying that our goal is also "*to ensure the sustainability of the facilities and allow the population to play their sports in modern and safe facilities.*" As an ice rink engineer and a hockey player, I can attest to the data that shows the decision of the Government of Quebec to reverse its initial position has resulted in the best available **system** - *not refrigerant* - being chosen for each facility, resulting in the "greening" of twice as many rinks.

Sincerely,

David Gauvin, P.Eng. LEED AP BD+C
Strategic Manager - Ice Rinks
TRANE North America