



WCCE11 - 11th WORLD CONGRESS OF CHEMICAL ENGINEERING

IACCHE - XXX Inter-American Congress of Chemical Engineering
CAIQ2023 - XI Argentinian Congress of Chemical Engineering
CIBIQ2023 - II Ibero-American Congress of Chemical Engineering
Buenos Aires - Argentina - June 4-8, 2023

"The global chemical engineering working for a better future world"

CIBIQ PLENARY 3 (Wednesday, June 7th, 11:30-12:30 h)

Auditorium "Dr. Francisco Valsecchi"

“An Industrial Perspective on the Development of Green Hydrogen Ecosystems”

Canada is a major per-capita emitter of CO₂ (19 T per year per person) mostly due to our industry structure where oil & gas production and transportation play a significant role. Our country has joined a growing list of countries in pledging to reach net-zero carbon emissions by 2050, with intermediate objectives in 2030. In practice, this means switching our fossil-based energy system to a zero-carbon mix where green hydrogen plays a significant role.

The decarbonization of transportation is a top priority for Canada, especially freight transportation which represents a significant share of our emissions. The presentation will focus on the development of green hydrogen ecosystems dedicated to heavy duty transportation and how to cope with the “chicken and egg” conundrum. It will be shown that the main difficulties are related to the simultaneous deployment of hydrogen production, hydrogen offtake by the transportation operators, and an appropriate distribution infrastructure. To be successful, several cross-cutting issues need to be addressed, namely:

- Rate of adoption depending on industrial sectors (risk aversion)
- Technology and market readiness (supply value chain, scale)
- Competitiveness of clean hydrogen (economy vs. environment conciliation)
- Shortage of qualified manpower (technicians, engineers)
- Legal and regulatory framework, international standards
- Poor public awareness (economic advantages, risk perception)
- Lack of energy global picture and systemic vision in policy-making



Philippe Tanguy
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Philippe Tanguy is the Chief Strategy Officer - Quebec for HTEC, a clean energy and technology company offering net-zero hydrogen supply solutions. Philippe's mission is to accelerate the development and adoption of green hydrogen in Quebec. Prior to joining HTEC, he was the 15th President of Polytechnique Montreal, a top research university in Canada. Under his leadership, Polytechnique has undergone remarkable growth, paving the way to increased visibility and influence worldwide. Philippe previously served as the Deputy CTO for Total (now TotalEnergies), contributing to the corporate growth opportunities brought by the energy transition and the hydrogen economy. He also pursued a successful academic career in several universities in Canada as well as global consultant activities on process R&D, design, and operation optimization.

Philippe is a fellow of the Canadian Academy of Engineering, a founding member and fellow of the Hassan II Academy of Sciences and Technologies (Morocco), an honorary fellow of the Institute of Chemical Engineers (UK), and an adjunct professor of chemical engineering at Polytechnique Montreal. He is a board member of the World Council of Chemical Engineering and served as chairman for six years. Philippe's education background includes an undergraduate education (eq.to B.Sc.) in mathematics and physics, a doctorate degree in physics (Paris), a Ph.D. in chemical engineering (Laval), and an executive management training (MIT Sloan). Philippe is a registered professional engineer in the Province of Quebec.