

Nickel-Cobalt-Copper Opening Address

NICKEL: CRITICAL TO A SUSTAINABLE FUTURE

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ABSTRACT

With recent announcements from the Biden Administration we now see all major economies moving to a low carbon future. Investment is rapidly changing to support low carbon policies and technologies.

Nickel has a key role to play in almost all technology moving us to renewable energy production and use. Nickel provides cost effective corrosion resistant alloys for solar and geothermal energy production. It enhances toughness and strength in alloys for wind generation and for decades has been an important component in hydropower generation at the heart of turbines. Biomass and other biofuel substances require nickel in either their manufacture, use, or both. In hydrogen production and use nickel has key functions in for instance electrolyzers, storage and handling. And, of course, there are mitigating technologies like carbon capture and storage which are also rich uses of nickel.

Whether maturing or in their infancy, all these technologies are undergoing rapid development to reduce cost and extend life, typically fertile ground for increased use of nickel. In this talk we will explore how much and where nickel is currently used in the renewables sector. Importantly, many properties that nickel imparts on its own or in the alloyed or other materials being used are critical to the success of the technologies. The talk will focus on criticality and possible future applications as the needs of low carbon production drive towards lower overall cost and a more sustainable future.

Keywords: Sustainability, Low Carbon, Criticality, Renewable Energy, Batteries, Hydrogen, Carbon Capture, Nickel