Understanding the hydrogen rainbow, with Eduardo Famini Silva

All that glisters is not gold
– The Merchant of Venice

To make the most of this conversation, you must first understand the different shades of hydrogen production. Will blue hydrogen supplant grey? Is green hydrogen worth the cost, or should we invest in developing pink or turquoise? To get you up to speed, here is our primer on the hydrogen rainbow:

As the renewables revolution gathers steam (no pun intended!), hydrogen has become a prominent – and controversial – part of the discussion over our future energy mix. But whilst the element itself is simple – the simplest of all, according to the periodic table – the production and application of hydrogen energy is anything but. Just check out the heated (sorry!) debate in our recent Conversations on Climate *episode with* ***Director of Renewables at RBC, Eduardo Famini Silva.***

Colour	Production Method	Evaluation
White	Naturally occurring geological hydrogen	Rare in pure form, difficult or intensive to extract via fracking
Grey	Steam methane reformation	Most common current technology, but greenhouse emissions uncaptured
Blue	Steam methane reformation	As grey hydrogen but with carbon capture to mitigate emissions
Green	Renewable-energy powered electrolyzation of water	Produces no harmful emissions; but cost barriers mean it only has small share today
Brown/Black	Gasification from coal	Most polluting method
Pink	Nuclear-powered electrolyzation	Largely dependant on attitudes to nuclear power
Turqouise	Methane pyrolysis	Produces solid carbon as a by-product, so potentially low-emission. Less efficient, new and yet to be proven at scale

You can find out more about Eduardo Famini Silva here

To find out more about the debate over hydrogen technologies and their potential for decarbonisation, listen to Eduardo Famini Silva's appearance om *Conversations on Climate* here