

ARGUS HYDROGEN TAXONOMY



Baseline

Business-as-usual steam methane reformation unit. Emissions released unabated.

BAT+

Best Available Technology, i.e. new-builds & retrofits, with Carbon Capture and Storage.

Low-C

Lowest technically achievable CO₂ emissions via fossil fuel reformation.

No-C

No CO₂ is emitted during hydrogen production.

	H ₂ Purity	Co ₂ e kg/kg of H ₂ *	Pressure	Example Colours	
Baseline	99.9%	<11.3, >8.0	30 bar	Grey	Yellow
BAT+	99.9%	<2.88, >1	30 bar	Blue (SMR+CCS retrofits)	
Low-C	99.9%	<1, >0.5	30 bar	Blue (ATR+CCS),	Turquoise
No-C	99.99%	<0.01	30 bar	Green	Purple

Source: Argus Media 2022

The collage features several documents from Argus Media. At the top left is the Argus logo and website. Below it is a document titled 'Argus Insights' with a blue and white cover. To the right is another document titled 'Argus White Paper: Hydrogen, awash in colours, in search of definition' with a cover showing colored pencils. At the bottom right is an 'Executive summary' page with a dark background and white text.

Executive Summary
 This white paper is a follow-up to H... We received extensive feedback sp... to reflect this.
 Building on the premise that hydro... Argus launched 155 costs of produc...

Executive summary
 Hydrogen (H₂) as a fuel offers a crucial decarbonisation pathway, emitting no carbon dioxide (CO₂) when burned. But while it can be produced CO₂-free, using renewable energy and water, most existing production routes entail emissions, and lots of them.
 Proper classification of H₂ is necessary to assess any relative merit over fossil fuels, as well as the decarbonisation value of H₂ from differing sources. Yet the current naming convention (green, blue, grey) and new prefixes ("clean", "sustainable") is at best unfit for purpose and at worst misleading. All fail to capture the variable that matters – carbon intensity.
 This definitional quagmire poses obstacles to market development and threatens public confidence. Argus proposes breaking the impasse, classifying hydrogen by the amount of carbon generated in its production, not its production route.