Mainstreaming Hydrogen standards and certification

HOW TO GUARANTEE HYDROGEN‘S CARBON NEUTRALITY

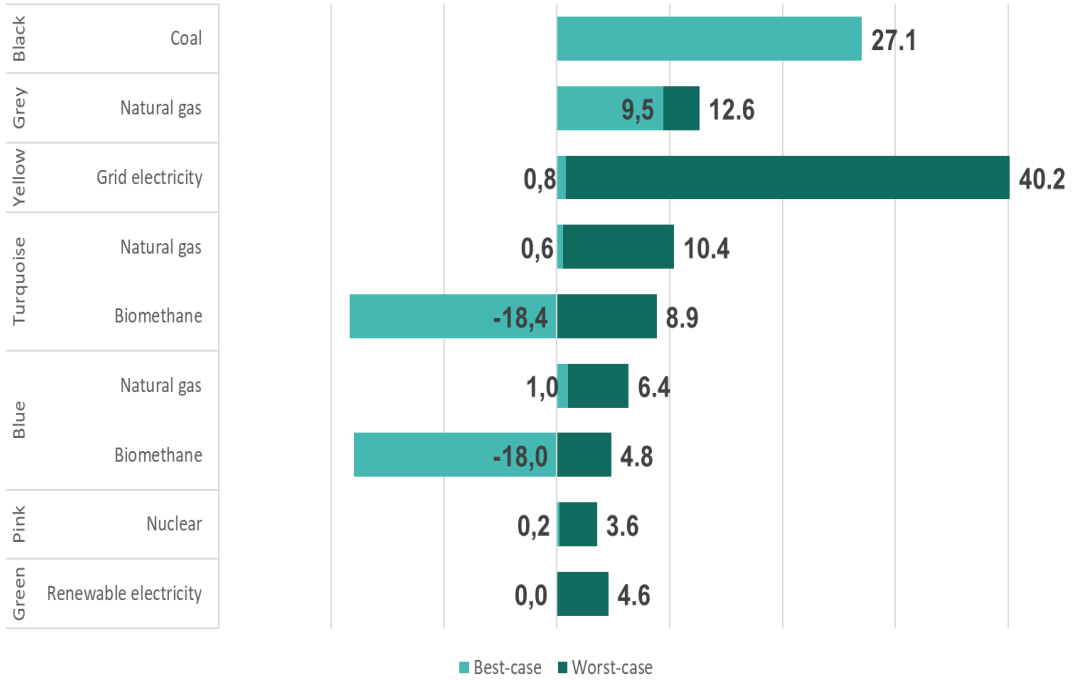
Carbon-neutrality will be hydrogen‘s license to operate

How to make certain that domestic production and imports into the EU do fulfill the criteria for clean and green hydrogen?

Without certainty, there will be no functioning market.

But: certainty requires certification.

And certification requires data.



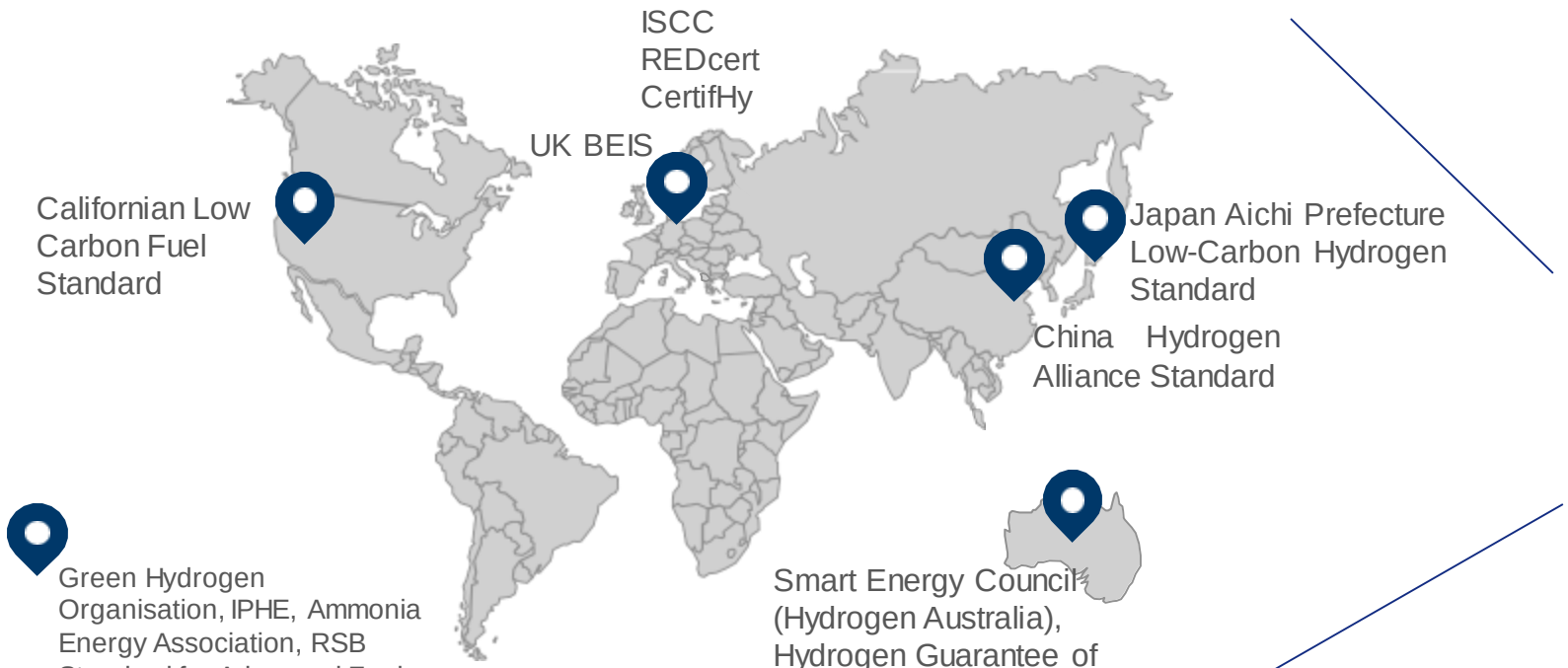
Each production pathway for hydrogen needs to proof its CO2 footprint and depending on regulatory requirements other criteria

Real time, post-feed certification is often required

Different regulatory regime apply to domestic production [taxonomy/ GHG thresholds (all)],
RED (RFUNBO, bio etc), gas decarb (low carb) and for trade (same legis + CBAM).

Same approach for Ammonia and especially for derivatives (including carbon accounting)

Current Standards and Criteria for Hydrogen



General Criteria

- Energy Source
- Production Process
- Carbon Intensity

Advanced Criteria

- Environmental
- Social & Ethics
- Governance

Numerous standards exist, each either confined to a particular region or tailored to the specific local context.

Sustainability requirements are only partially covered by some standards

Source: TUEV Nord

Hydrogen certification, harmonisation of emission methodologies and standardization has been identified as an issue

DPP - demanded by politics... (Intention Green Deal)

- December 2019: **European Green Deal**

"[...] for example, an electronic product passport could provide information on a product's origin, composition, repair and disassembly options, and end-of-life handling."

- March 2020: **European Circular Economy Action Plan** (CEAP).
- December 2020: European Regulation on Batteries and Waste Batteries.

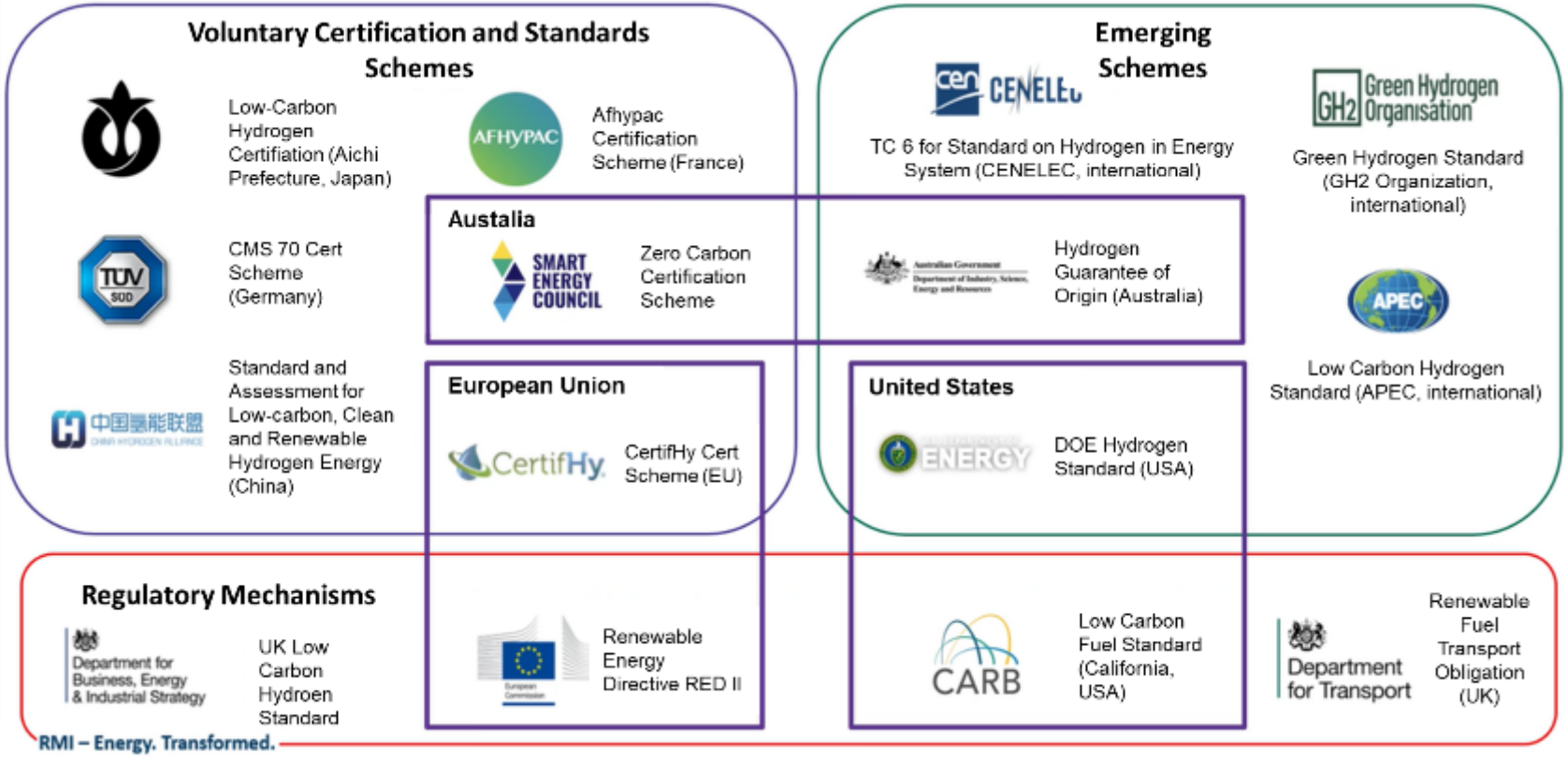
*"Each battery shall receive its **own battery passport with an individual identifier**. The battery passport shall be linked to the information on the basic characteristics of each battery type and model [...]."*

- December 2021: German coalition agreement
- Circular economy *"We introduce **digital product passports**, support companies in the implementation [...]."*
- March 2022: Draft **ESPR (Ecodesign Requirement for Sustainable Products**).
- RED III (13)

(…) *Furthermore, to provide access to appropriate supporting evidence for persons concluding renewable power purchase agreements, it should be ensured that any associated guarantees of origin can be transferred to the buyer. In the context of a more flexible energy system and growing consumer demands, there is a call for a more innovative, digital, technologically advanced and reliable tool to support and document the increasing production of renewable energy. To facilitate digital innovation in this field, Member States should enable issuing guarantees of origin in fractions and with a closer to real time timestamp.*

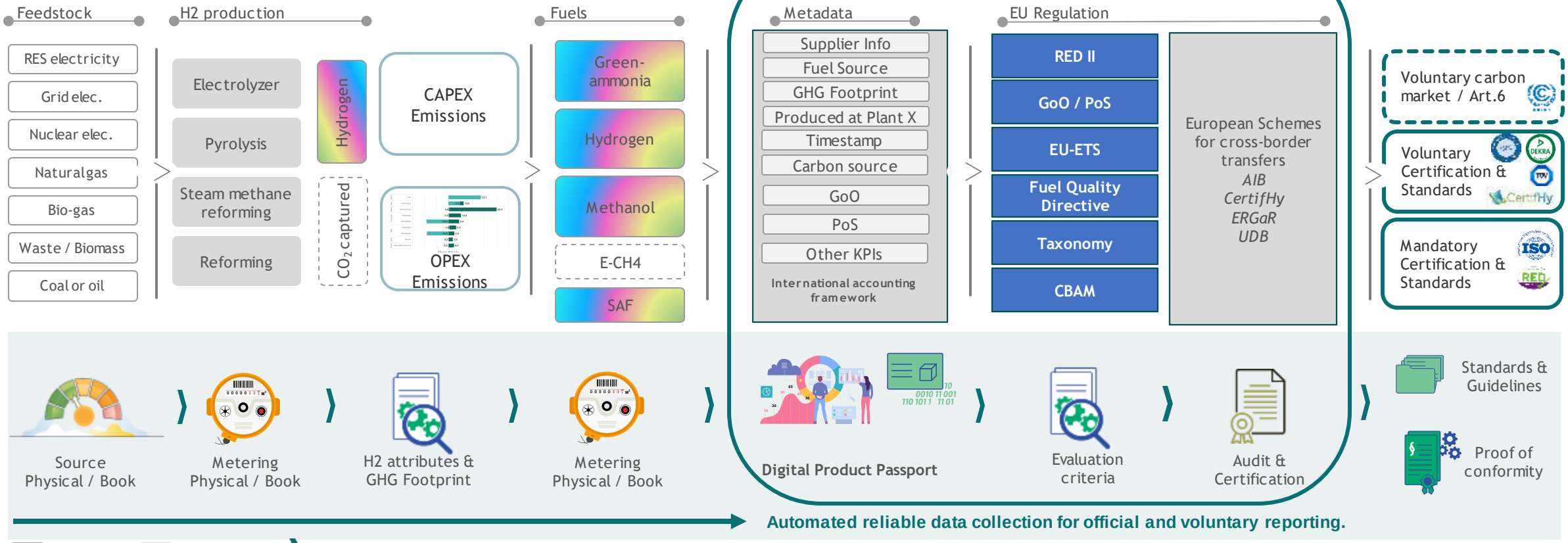
- New Legislative Framework

Issue – Global "Zoo" of Standards, Schemes and Regulations



From problem to solution

Harmonization & automated validation



Source: HyStandards

Unifyed digital product passport for hydrogen