

Towards robust tradeable certification systems for hydrogen

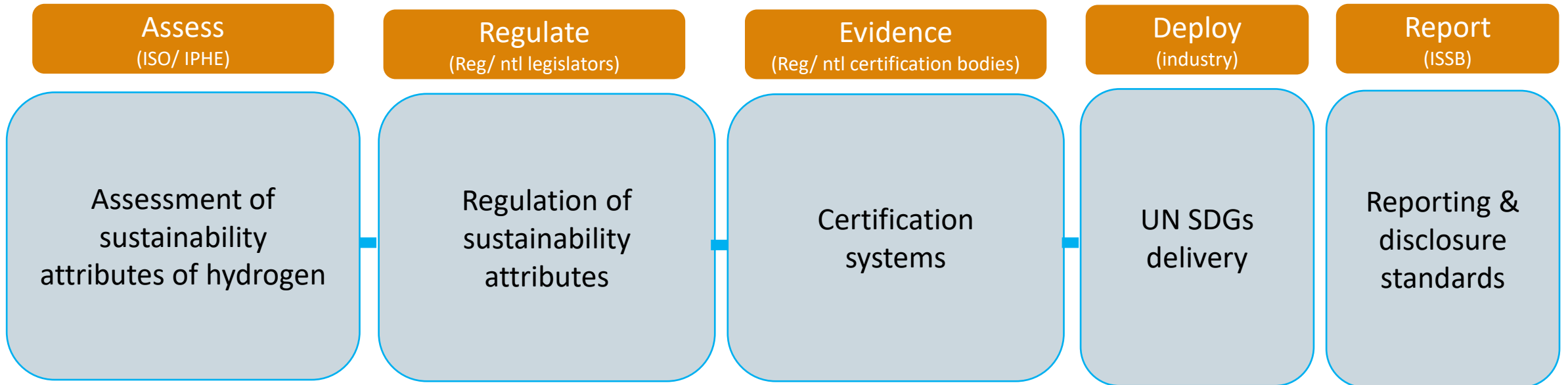
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Hydrogen |
Council

HYDROGEN SUSTAINABILITY PROGRAM

Joining forces with International Partners for global consensus-based standards, robust tradable certification systems and reporting and disclosure standards

HYDROGEN SUSTAINABILITY PROGRAM



Cross-cutting topics include guidelines for qualifying hydrogen as low carbon/renewable - e.g. creating a repository of the emerging thresholds, hydrogen definitions and potential 'corridors'

Hydrogen certification: puzzle solving

1

**Keep the pieces
in order**

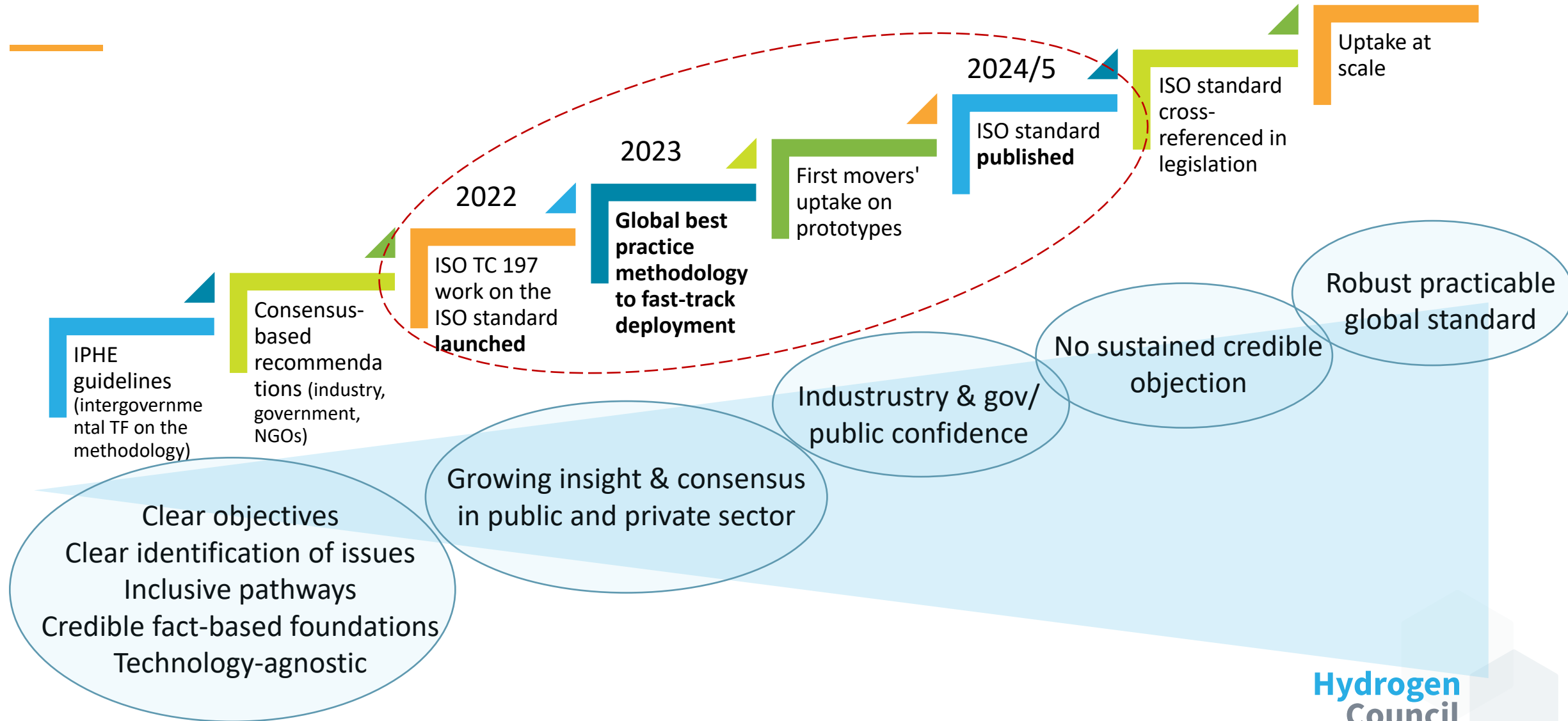
**Keep the pieces
on purpose**

2

3

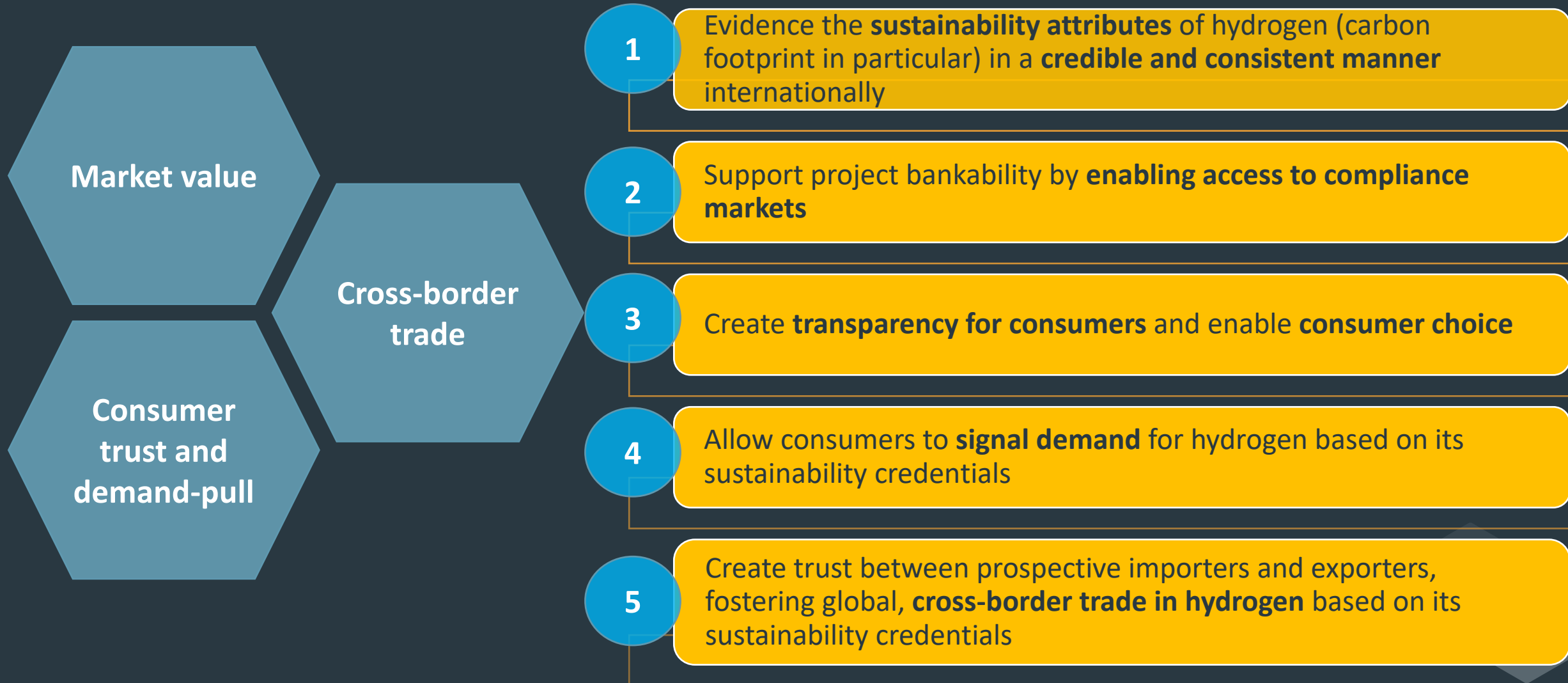
**Build consensus with
constructive action**

Towards an ISO standard methodology for assessment of GHG emissions of H2



Certification - a crucial instrument for the hydrogen economy

Unlocking market value, building consumer trust, facilitating demand creation, enabling trade



Unlocking the value of hydrogen with certification

Different sustainability attributes may need to be evidenced for different purposes/
compliance obligations






Regulatory
compliance

(mandatory)

Reporting &
disclosure

(voluntary)

Environmental attributes – key value driver for hydrogen





   EU has multiple regulations covering different end use sectors  									
Market	Transport Fuels	Maritime fuel	Aviation fuel	Renewable transport fuel: RFNBO	Renewable feedstock for industry: RFNBO	Imports	ETS: carbon intensive industry, built environment, heavy transport	JERA /JOGMEC	Imports
Physical product	H2	NH3, MeOH, e-diesel	e-kerosene	H2, NH3, MeOH, e-diesel	H2	H2, Fertilizers (incl NH3)	Any molecule under ETS	LH2, LNG, NH3	NH3
Customer	Transport Fuel Suppliers	Ship operators	Fuel suppliers	Transport fuel suppliers	Traditional Industrial H2 users:	Any conventional product off-taker	Any conventional product off-taker	Power Plant	Road Transport, Power Plant, Steel Making
Applicable regulation	Low Carbon Fuel Standard (LCFS)	EUFuel Maritime, RED2, ETS	ReFuelEU aviation, RED2, ETS	(RED II Art. 25-30)	(RED III Art. 22a)	ETS and CBAM interplay	ETS	TBD	TBD

Coverage of sustainability criteria across schemes, regulatory and compliance frameworks: a snapshot

System		California	China	Europe	EU RED II		Germany	Global	Biofuels: EU voluntary schemes			EU
		LCFS		CertifHy	GO	RFNBO	H2Global	GBEP	RSB	ISCC	REDcert	Taxonomy
	GHG balance	x	x	x		x	x	x	x	x	x	x
	Renewable origin		(x)	x	x	x	x		x	x	x	
Input	Additionality					x						
	Temp. Correlation					x						
	Geogr. Correlation					x						
	CO ₂ Sources					tbd	x					
ENVIRONMENTAL SUSTAINABILITY	Biodiversity Conservation											
	Biodiversity					?	x	x	x	x	x	
	Natural Habitats, ecosystems					?	x	x	x	x	x	
	High conservation value areas					?		x	x	x	x	
	Soil conservation											
	Soil protection					x		x	x	x	x	
	Residues, wastes							x	x	x	x	
	Waste management						x	x	x	x	x	
	Sustainable Water											
	Water rights							x	x	x	x	
	Water quality					x		x	x	x	x	x
	Water management, conservation							x	x	x	x	x
	Efficient use of water						x	x	x			x
Air quality												
Air pollution						x		x	x	x		
SOCIAL/ ECONOMIC SUSTAINABILITY	Community Development											
	Local Infrastructure and services development							x	x			
	Increase in energy access							x	x			
	Local Economic development and employment						x	x	x	x		
	Local Professional skills training and education								x	x		
	Social aspects											
	Social Impact Assessment						x	x	x	x		
	Indigenous peoples' rights								x	x		
	Land right issues							x	x	x	x	
	Gender issues						x					
	Labor conditions											
Working conditions / ILO conventions						x	x	x	x	x		
Contracts								x	x	x		
Health and Safety								x	x	x		

Taking up RED II criteria soon

Insight from Phase 1: environmental attributes required across the emerging compliance and voluntary markets

							
		Low Carbon Fuel Standard (LCFS)	RED II RFNBO	CBAM	(Re)FuelEU Aviation & Maritime	H2Global	JOGMEC/ JERA
Metrics/ attributes	CFP	X	X	X	X	X	X
	Renewability		X		x for aviation	X	
	Additionality		X			X	
	Temp/Geo correlation		X			X	
	Environmental sust.		(x) Tbd			X	
	Social/Economic sust.		(x) Tbd			X	
GHG	Scope	WtG	WtW	Scope 1	WtW	WtW	Tbd
	GHG Methodology	ISO	RED2	tbd	tbd	RED2	Tbd
	Threshold		-70%		-70% for aviation	-70%	

WtG – well-to-gate
WtW- well-to-wheel

Market fragmentation – key challenge

Could multiple compliance markets be accessed with a single certification scheme?

Jurisdictions currently developing their national/ regional certification schemes for hydrogen



Incompatibility of
certification design/
requirements



Lack of fungibility of
certificates



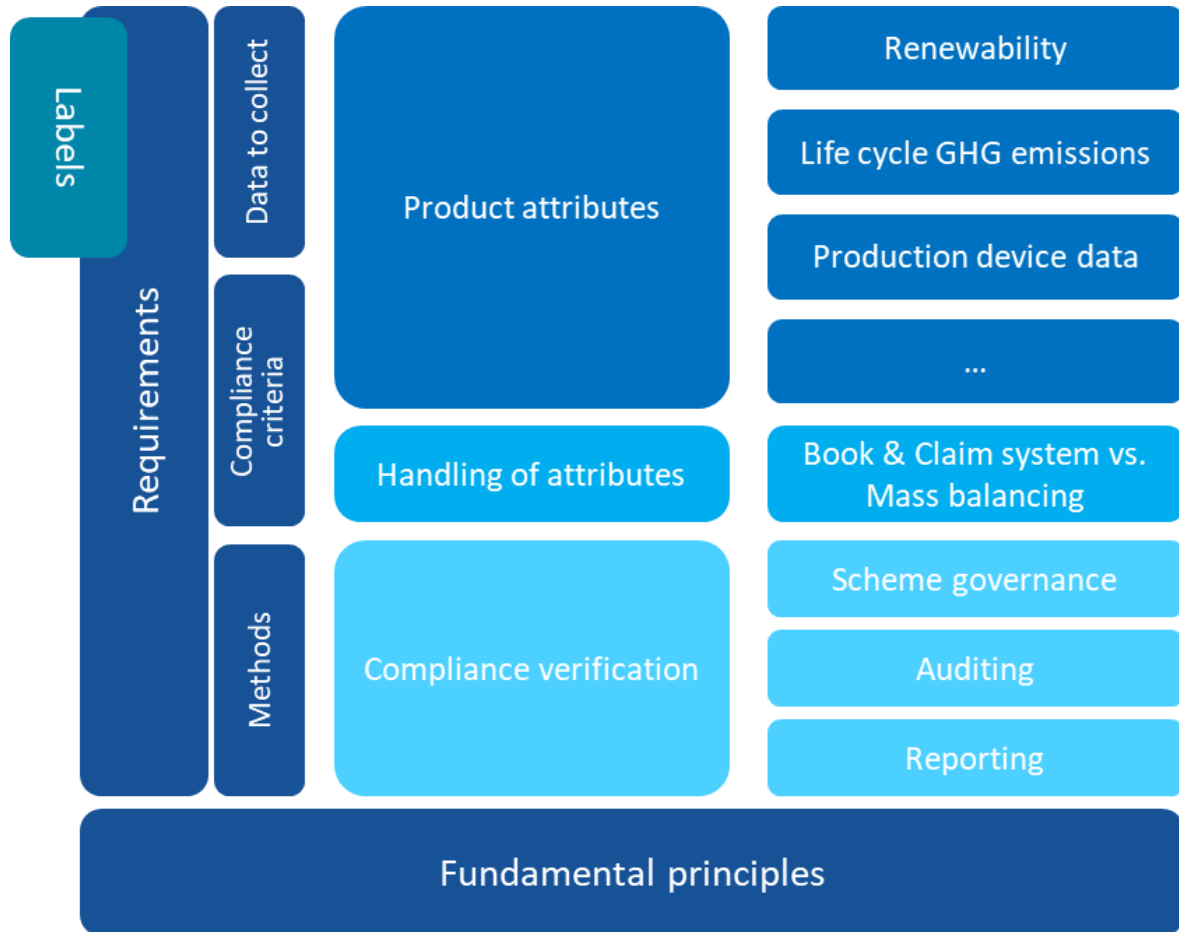
Barriers to cross-border
trade

Addressing the challenge through mutual recognition



Consensus-based global industry recommendations

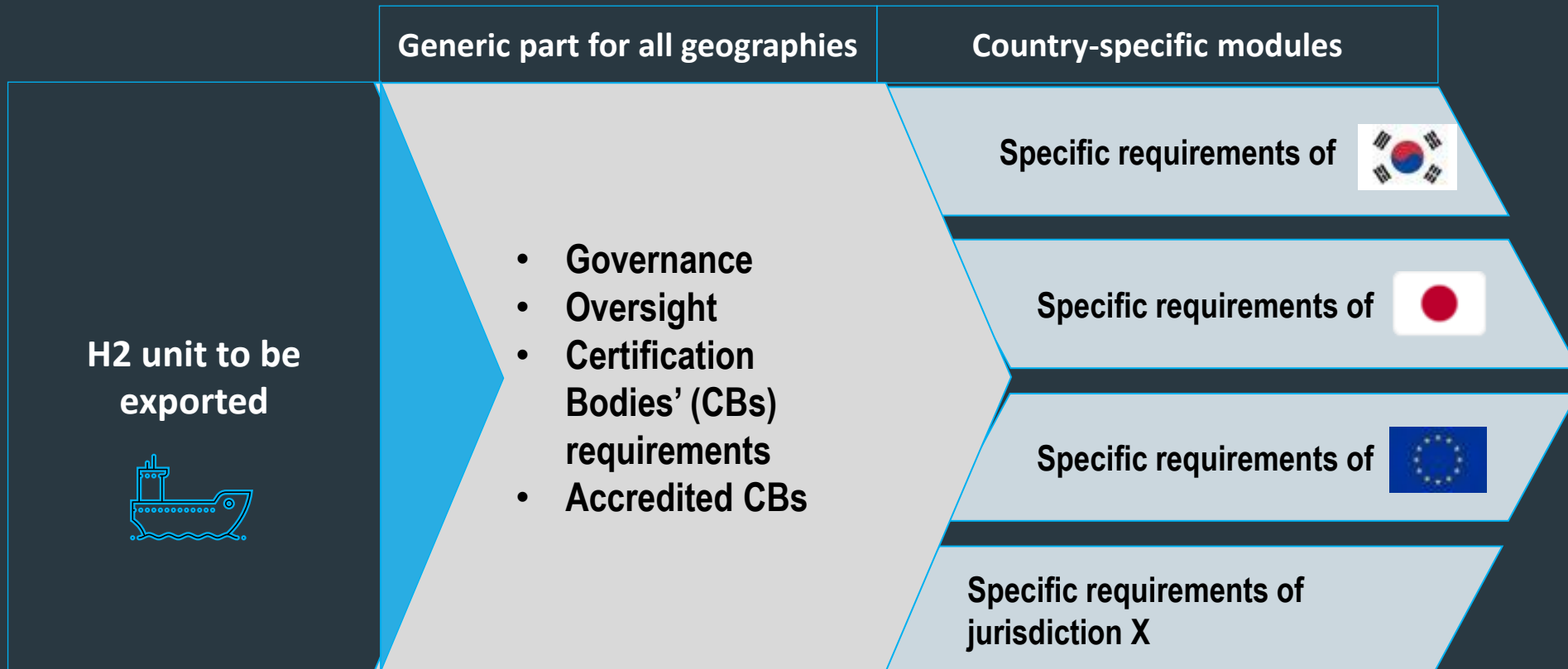
Certification system design: key elements



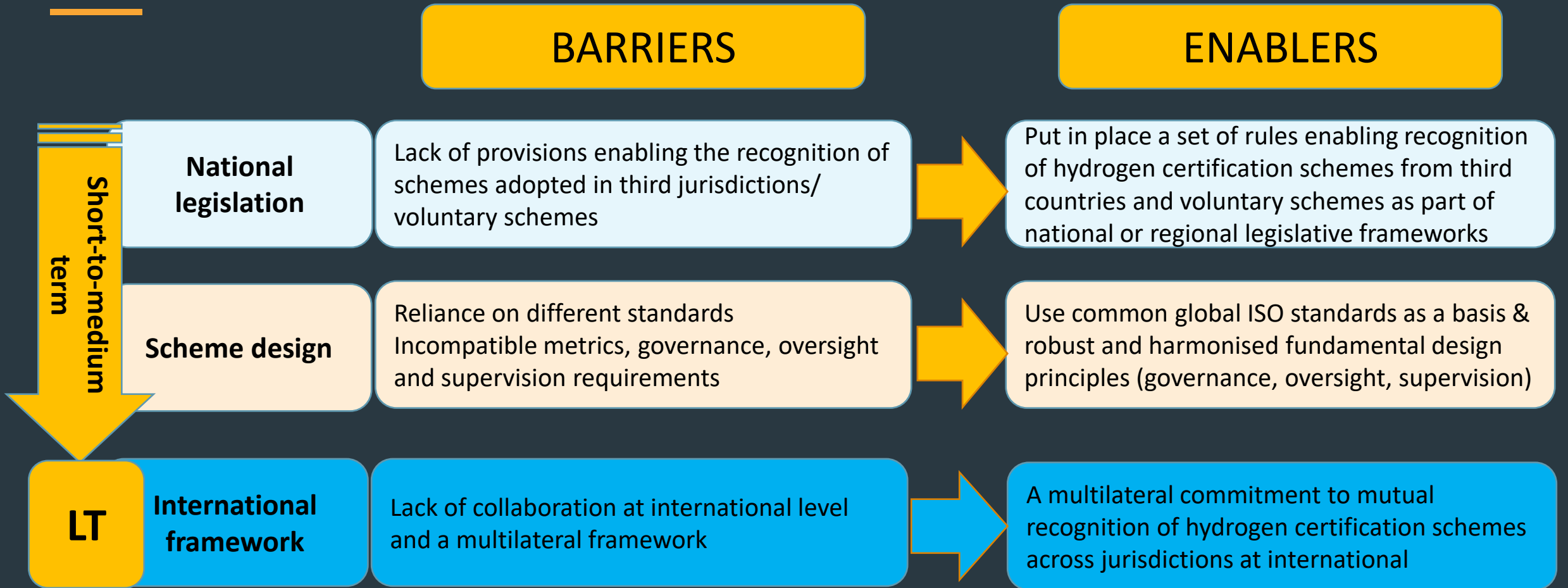
Ensuring certification schemes are credible and fit for purpose

1. Put in place **robust governance and oversight structures**
2. Ensure **double counting** is avoided
3. Use **well-established global ISO standards** as the basis to assess sustainability attributes
4. Prioritise/ have a merit order of the **sustainability attributes to evidence in the near term** to stimulate the development of the hydrogen market

Modular approach to certification scheme design: one scheme - multiple compliance markets



Mutual recognition: key enablers



Deliverables: roadmap and checklist for national authorities seeking to develop certification schemes



Roadmap
advancing mutual
recognition
for existing schemes



Checklist
for governments seeking
to (further) develop
certification schemes



Overview of **international good practices** on how to set up certification schemes and achieve mutual recognition



Identified **opportunities to harmonise key design features** of certification schemes, e.g. carbon footprint methodologies, approaches to governance and supervision.



Harmonised **terminology** (standards, certificates, labels)

THANK YOU

Daria Nochevnik
Director for Policy and Partnerships

daria.nochevnik@hydrogencouncil.com

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International certification schemes and policy instruments: a snapshot

Scheme / System	Nature	Geographical scope	Purpose	Scope (Fuel/carrier)	Set up for international trade
LCFS	Certification standard	California	Compliance	Carbon intensity of the transportation fuel pool in California	No
CertifHy	Certification standard	EU + EEA + Switzerland	Consumer & Corporate reporting	Hydrogen production in Europe	No(t yet)
GBEP	Certification standard	International	Consumer & Corporate reporting	Environmental, social and economic impacts of bioenergy production	Yes
ISCC	Certification standard	International	Consumer & Corporate reporting	Targets various markets including biomass, raw materials and aviation fuels	Yes
		EU	Compliance		EU import only
EU Taxonomy	Legislative classification system	EU	Compliance	Classification system, establishing a list of environmentally sustainable economic activities in various areas	No
H2Global	National funding project	DE / International	Compliance	Production and use of renewable hydrogen and its derivatives	Yes

Examples of divergent requirements across compliance markets

	California, USA	European Union		Japan (JOGMEC guideline)		Korea
	LCFS	RED II	CBAM	fossil	renewable	
Metrics	CFP (GHG)	CFP (GHG), ADD/TEMP/GEO, further depending on Voluntary Scheme	GHG	GHG	GHG	undefined
Data & documents for CFP	According to § 95488.7a (Tier 2 pathway): CA- GREET3.0 spreadsheet with 24 month op. data	TBD	According to CBAM (in legislative process)	Primary data recommended	Primary data recommended	undefined
CFP methodology, scope, chain of custody	CA-GREET3.0 model (based on ISO) Well-to-tank, mass balancing	TBD, Well-to-tank, mass balancing	CBAM methodology Production only, or well- to-gate (tbc)	Based on ISO, specific guideline on CCS, well-to- gate	Based on ISO, Well-to-gate	undefined
Certification System	LCFS-specific	Voluntary schemes (RED II-specific)	CBAM authority (tbc.)	Not covered	Not covered	to be established by 2024/25
Conformity Assessment Body	LCFS-recognized (3 rd party)	RED II-recognized (3 rd party)	Accredited verifiers (3 rd party)	Not covered	Not covered	undefined