




**BUREAU  
VERITAS**

# CERTIFICATION REQUIREMENT FOR GREEN HYDROGEN VALUE CHAIN FROM A LIFECYCLE PERSPECTIVE

ICGH 2024  
PANEL DISCUSSION



# BUREAU VERITAS – BRINGING TRUST TO HYDROGEN INDUSTRY




## GLOBAL LEADER IN TIC SERVICES

**CREATED IN 1828**  
Present in 140+ countries globally  
100+ years in the energy industry

**EXPERTISE & TECHNICAL KNOWLEDGE**  
Testing, Inspection & Certification  
Technical and Regulatory services

**BUSINESS TO BUSINESS TO SOCIETY**  
Our Mission : "Shaping a World of Trust"  
Quality, Safety, Sustainability & Asset Performance



## CENTERS OF EXPERTISE RENEWABLE ENERGIES & HYDROGEN



Your reliable  
global partner  
providing local  
assistance in  
**140+**  
countries



## CONTRIBUTING TO HYDROGEN ECOSYSTEM

### Hydrogen Council

- Bureau Veritas is a member of the Hydrogen Council since 2020.
- Co-chair of the Certification task team under Sustainability Program



**Technical Committee of ISO in charge of all normalisation aspects pertaining to Hydrogen**

- Part of ISO TC197 WG 34 related to safety requirements for H2.
- Contribution to New revision of ISO 22734 kick off July 2021



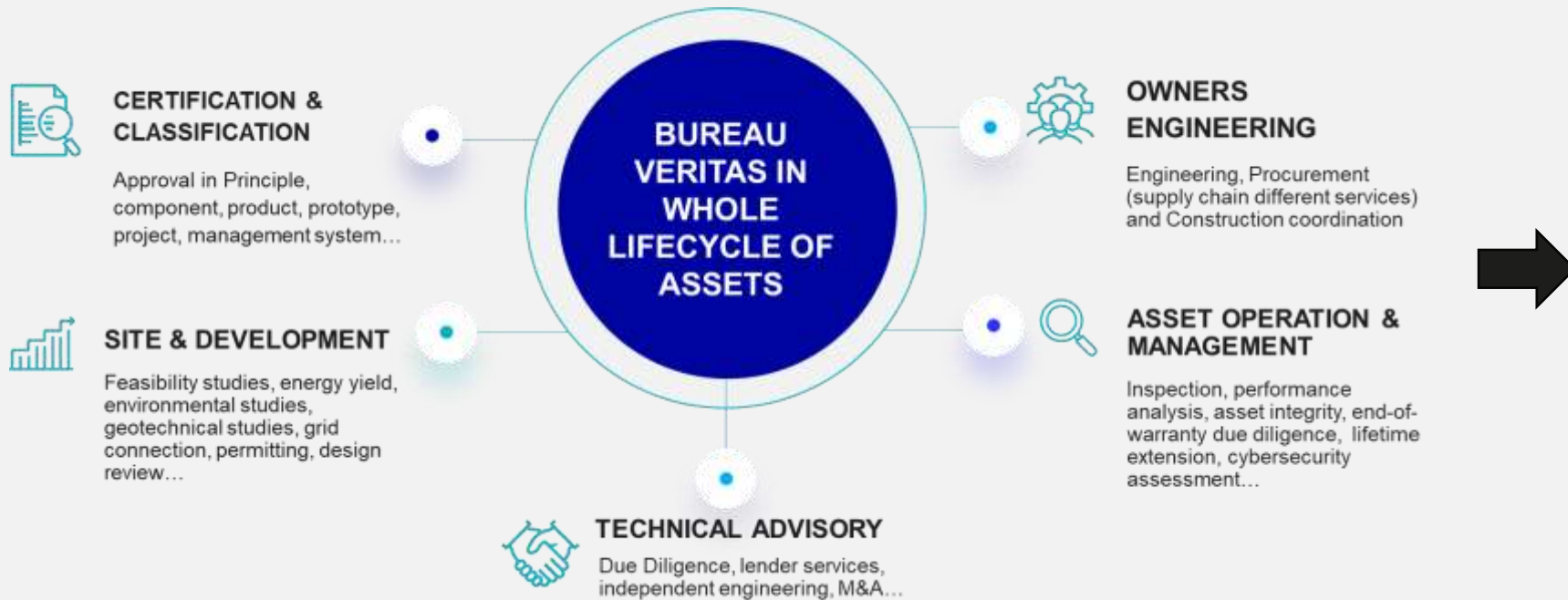
## BUREAU VERITAS HYDROGEN REFERENCES





# HYDROGEN & ITS DERIVATIVES: HOW CAN BUREAU VERITAS ASSIST?

## Services Portfolio to Support Whole Asset Life Cycle



### DEVELOPERS

- Bankability of projects
- Providing credibility

### PRODUCERS

- Securing business case
- Fostering off-take
- Retaining the 'green' value proposition

### OFF TAKERS

- Increase confidence
- Fostering the transaction
- Allowing to transfer the 'green' value proposition

### ASSETS INVESTORS / FINANCIERS

- Selecting bankable & ESG compliant projects to invest in



# ELECTROLYSER PRODUCT CERTIFICATION



## VERIFICATION AND CONTROL OF QUALITY PROCESSES DURING MANUFACTURING

- **Stack components** and assembly.
- **Manufacturing and assembly of components** (gas/liquid separators, exchangers, dryers, de-oxo, condensers).
- **Quality control of suppliers** (rectifiers, cabins, electrical equipment, piping, fittings, etc.)
- **Verification of factory tests, FAT. expediting**



**ACT AS NOBO IN  
PRESSURE  
EQUIPMENT AND  
OTHER DIRECTIVES**



**NEW SCHEMES OF  
CERTIFICATION  
QUALITY LABELS ON  
MANUFACTURING**



**BUREAU  
VERITAS**

**Shaping a World of Trust**

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# BUREAU VERITAS POSITIONING ON HYDROGEN: BRINGING TRUST AND TRANSPARENCY

With our long-standing experience in the energy industry, especially in risk & safety management and quality assurance, our overarching role is to bring trust to the hydrogen energy industry.

## FOR HYDROGEN AND DERIVATIVES ALONG THE VALUE CHAIN

### As an independent third party:

- | Certification of production assets / site
- | Label for produced molecule
- | Certification of Electrolysers
- | Independent testing & measurement

### As a technical expertise provider:

- | Owner's engineer
- | Technical & Regulatory services
- | Permitting support
- | Risk & safety management

Ammonia  $\text{NH}_3$