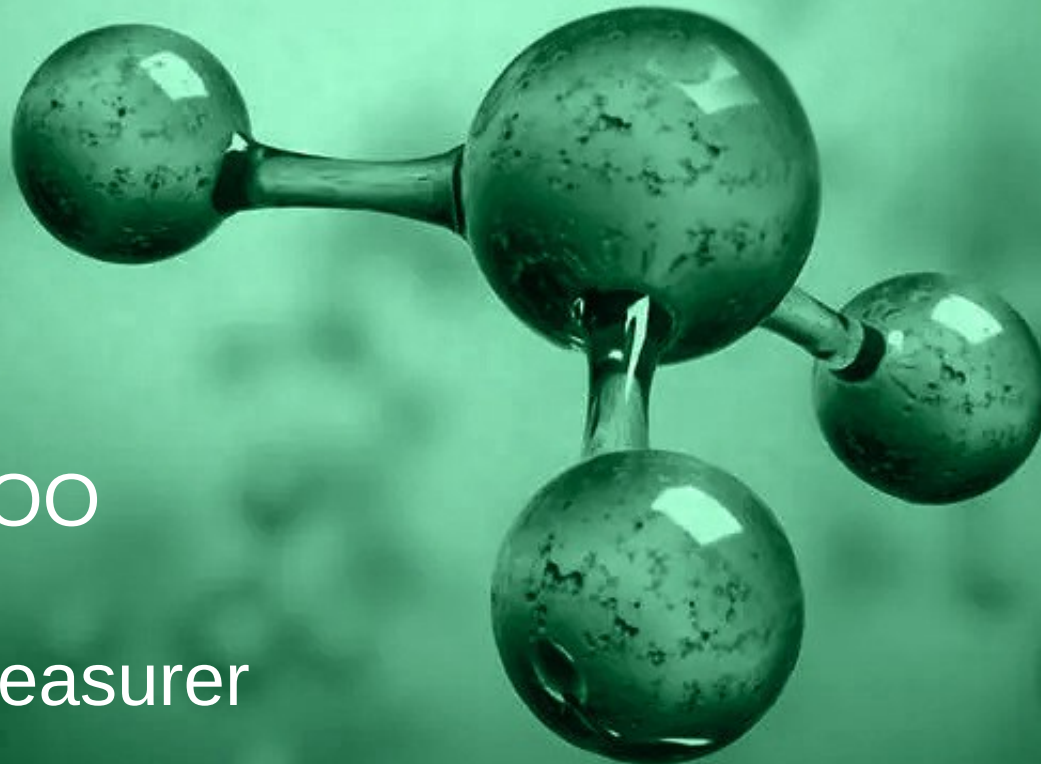


# Ensuring upstream certification data quality

## Ammonia Energy Association Annual Conference



Jennifer Beach  
Starfire Energy COO



AEA Director & Treasurer

14 November 2023

# CREDIBILITY

“The quality of being believable or worthy of trust.” dictionary.com

## Confidence in certification promotes green ammonia market



### Market Statistics

- Green ammonia market **is** happening
- Estimated CAGR of 70%, \$20B+ value by 2033
- Certification will be key to maintaining market – credibility crucial

# Current AEA certification method focuses on ammonia synthesis



## Sections that need more

- Section 7.3 – Data Quality
  - Rules and guidelines for the requirements on data quality will be added to this methodology in the future
- Section 9
  - Relevant certification systems and data sources
  - Proposed databases for default values

# All customers need to know they are getting the green product they purchased



## Upstream Inputs

- Nitrogen – 78% of earth’s atmosphere
  - Carbon comes from power to harvest it
- Hydrogen from
  - Natural gas, recently with carbon capture
  - Electrolysis
  - Bio-methane and other sources
- Power from
  - Utility companies – blend of sources
  - Onsite power from carbon-based fuels
  - Remote clean power

# Upstream data validation is complex

*Varies by upstream source*

## Natural gas and bio-methane

How do we measure upstream natural gas and give credibility to its carbon intensity as an input onto the ammonia synthesis process?

## Carbon capture & sequestration

When it comes to carbon sequestration, how do we build credibility around this? Who will validate capture throughout 100 years?

## Tracing the physical product

How can we verify the physical product purchased is the same physical product delivered?

## Electricity Certification

What is the level of detail needed, and certificate traceability necessary, to give credibility to AEA's carbon intensity certification?

# And now our panelists...

Lara Owens – MiQ

Selim Cevikel – Global CCS Institute

Jim Seely – Authentix

Rajiv Sabharwal – Bureau Veritas



# Q&A

## Panelists:

Lara Owens – MiQ

Selim Cevikel – Global CCS Institute

Jim Seely – Authentix

Rajiv Sabharwal – Bureau Veritas

## Moderator:

Jennifer Beach – Starfire Energy

