

🕒 13:15 - 14:45




**WORKSHOP**

Urea Plant Upset Scenarios Workshop

**Operators Only**

Looking to enhance your urea plant's operational resilience and troubleshooting capabilities? Join the workshop where you'll explore common and challenging case studies using dynamic simulation (OTS) and real-time process monitoring to learn effective strategies for handling upset conditions in the urea plant.

 Khaled Elbassyouni  
Process Engineer, [Stamicarbon](#), [Nextchem](#)

**PLANT RELIABILITY & TROUBLESHOOTING**


🕒 13:15 - 14:45




**WORKSHOP**

Plant Revamping & Decarbonisation Opportunities

The transition to low-carbon production doesn't always require starting from scratch. This workshop will explore how smart revamping strategies and advanced technologies can extend the life of existing fertilizer and methanol plants, while significantly reducing emissions. Through real project insights, the workshop will also highlight practical solutions—from blue ammonia and oxidative reforming to hybrid configurations with green hydrogen and CO<sub>2</sub> capture, to conventional revamping — showcasing how existing assets can become powerful drivers of industrial decarbonisation.

 Ermanno Filippi  
Chief Technology Officer, [CASALE](#)

 Sergio Panza  
Deputy Chief Technology Officer, [CASALE](#)

 Francesco Baratto  
Head of the SynGas Department, [CASALE](#)

**CERTIFIED OPERATOR TRAINING**

**INDUSTRY SAFETY TRAINING WORKSHOP**

🕒 15:00 - 17:00




**WORKSHOP**


CRU N+S 2026 Safety Workshop


Join us for an exclusive, interactive technical workshop moderated by UreaKnowHow and designed specifically for nitrogen and syngas operators. This specialised workshop focuses on real-world safety cases and practical risk mitigation strategies within the industry.

**Speakers: Yara, Nutrien and Badotherm**

 Mark Brouwer  
Director, [UreaKnowHow](#)

 John Oostveen  
Business Development Manager, [UreaKnowHow](#)

 Marco Van Graefscupe  
Technical Process Owner Ammonia, [Yara InternationalASA](#)

 Ricardas Razgaitis  
Business Development Manager, [Badotherm](#)

17:00 | Operator meet + greet

18:00 | End of Day 0

08:00 | Exhibition Open


08:00 | Registration open

**PLENARY SESSION**

🕒 09:00 - 09:05



In Memoriam for Umberto Zardi, Founder of Casale SA

 Lisa Connock  
Managing Editor, Communities - Nitrogen + Syngas Magazine, [CRU Group](#)



Norbert Ringer  
Global Methanol Industry Director, Global  
Industry Expert Syngas, Clariant

🕒 09:05 - 09:10



COMMERCIAL AND MARKETS SESSION

Welcome Address



Lisa Connock  
Managing Editor, Communities -  
Nitrogen+SyngasMagazine, CRU Group

🕒 09:10 - 09:40



COMMERCIAL AND MARKETS SESSION

2026 Nitrogen & Syngas Global Markets Outlook:  
Trends, Pressures, Cost, Prices and Policy Impacts

- Feedstock Volatility and Cost Projections in a Shifting Industry Landscape
- Global Trade Dynamics under Decarbonisation Policies and Regulatory Pressures
- Demand vs Supply Market Trajectories and Cost vs Price Challenges in Ammonia, Urea, and Nitrates

The presentation will provide a comprehensive outlook on the nitrogen and syngas markets heading into 2026, offering critical insights into the economic and geopolitical factors shaping the industry.



Charlie Stephen  
Head of Nitrogen, CRU

🕒 09:40 - 10:10



COMMERCIAL AND MARKETS SESSION

Navigating Global Regulatory Shifts for a Resilient Future: The Impact of EPA, CBAM, Tariff Policies and Sanctions on the Global Nitrogen and Syngas Industries

The presentation examines how evolving regulatory frameworks — notably the Environmental Protection Agency (EPA) mandates, the Carbon Border Adjustment Mechanism (CBAM), and new tariffs and sanctions — are reshaping production strategies, international trade flows, and the pace of sustainable innovation in the global nitrogen and syngas industries. The speaker will provide practical insights on compliance challenges, risk-mitigation strategies, and opportunities for differentiation in an increasingly sustainability-driven market.



Alex Tuckett  
Head of Economics, CRU

09:50 | Networking Coffee Break

🕒 10:40 - 11:30




COMMERCIAL AND MARKETS SESSION

Industry Keynote Panel


Transforming the Nitrogen and Syngas Industry:  
Economics, Sustainability, and Strategic Resilience


- The Low Carbon Transition - Navigating the global energy security space
- Deglobalisation and Trade Dynamics – Exploring how regional strategies are reshaping global trade and market independence
- Operational Risk and Resilience – Identifying limitations and mitigating risks to safeguard long-term scalable production performance


- Capital and Financing in a Volatile Market – Strategic approaches to funding innovation and capacity growth amid economic uncertainty and geopolitical tensions
- Regional Market Snapshots – Focused updates on production trends across key regions, highlighting unique market drivers and pressures


 Charlie Stephen  
Head of Nitrogen, CRU

 Narayanan Valayaputtur  
CEO, EBIC- EFC

 Syed Aamir Abbas  
Chief Technical Officer, Fauji Fertilizer Company Limited

 Ignacio Fernández  
CTO (Chief Technical Officer), FertigHy

 Torsten Brezina  
Program Manager, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

 Dr. Achim Schaadt  
Head of Department Sustainable Synthesis Products, Fraunhofer Institute for Solar Energy Systems ISE


🕒 11:30 - 12:00




COMMERCIAL AND MARKETS SESSION

Low Carbon Ammonia and Hydrogen: Navigating Cross-Border Production Economics and Market Integration

- Economics and feasibility of deploying ammonia as a hydrogen carrier
- Global distribution and outlook for low-emissions ammonia supply
- Policy drivers and key regulatory developments shaping market demand
- Economic competitiveness of green ammonia projects in China

 Rebecca Ruan  
Analyst Nitrates Market Services, CRU

 Dr. Paul Butterworth  
Research Manager, Economics & Sustainability, CRU


🕒 12:00 - 12:30



COMMERCIAL AND MARKETS SESSION

In the Spotlight: Regional Updates – Guest Country – Uzbekistan. Prospects for the Implementation of Green Ammonia Technology in Uzbekistan

This presentation examines prospects for deploying green ammonia technology in Uzbekistan, a landlocked country at the heart of the Eurasian continent and the oldest nitrogen-fertilizer producer in the Central Asian region. Key technical and system challenges are discussed, notably integration of excess renewable generation and maintaining grid balance given Uzbekistan's synchronous interconnection with Kazakhstan, Kyrgyzstan, and Tajikistan, and the practical advantages of retrofitting existing ammonia assets with electrolyzers to lower capital costs.

 Bakhtiyor Sultankhodjaev  
Deputy Head of Department, State Unitary Enterprise - Center for Comprehensive Examination of Projects and Import Contracts

TRACK ONE


🕒 14:00 - 14:30



INDUSTRY INFRASTRUCTURE ASSETS: PROJECTS SESSION

EET Hydrogen Production Plant 1

Hydrogen Power Plant 1 is the first of two large-scale, low-carbon hydrogen plants selected by the UK Government within the HyNet industrial decarbonisation cluster; located at Essar Stanlow in Ellesmere Port. The project now developed under the brand EET Hydrogen will produce blue hydrogen from natural gas with carbon capture to supply industrial businesses across the North West of England, support Net Zero goals, and is planned to deliver an initial 350 MW capacity from 2026/2027, presenting significant investment, and offtake opportunities.

 Phil Ingram  
Managing Director, Low Carbon Hydrogen,  
Johnson Matthey


🕒 14:30 - 15:00



INDUSTRY INFRASTRUCTURE ASSETS: PROJECTS SESSION

The CERES project (Australia) - Modularization of ammonia urea complexes for safe and cost-effective execution

The presentation outlines how modularisation is transforming large-scale ammonia and urea projects and highlights Saipem's modularisation experience with the EPC project CERES—the first Topsoe Ammonia SynCOR plant in advanced construction and one of the world's largest ammonia-urea complexes.

 Andrea Zambianco  
Low Carbon Solutions Product Development  
Manager, Saipem S.p.A.


🕒 15:00 - 15:30



INDUSTRY INFRASTRUCTURE ASSETS: PROJECTS SESSION

Modern Approach to Chemical Plant Construction: Nitric Acid Plant in Ostrava

This presentation showcases the turnkey delivery of a state-of-the-art nitric acid production plant in Ostrava, Poland executed as an EPC project by Casale. The project combines a proven, risk-mitigated EPC model with a licensed, best-in-class technology, strong cost-and-schedule control, and an integrated energy solution that lowers operating costs and improves project returns while aligning with ESG and emissions-reduction priorities.

 Zdeněk Kadlec  
Head of Project Management Department,  
CASALE


 Josef Sliva  
Head of Investment Department, BorsodChem  
MCHZ, s.r.o

🕒 14:00 - 14:15



TECHNICAL SHOWCASES

Celanese digitisation journey - with NMM's AI software "Dynamic Risk Analyzer"

 Michael Sehr  
Senior Technician Production, Celanese / Near  
Miss Management

🕒 14:15 - 14:30



TECHNICAL SHOWCASES

Successful Start-Up of a Next-Generation ATR: a Milestone for Hydrogen and Syngas Industries

 Giovanni Genova  
H2 & Syngas Technology Leader, CASALE

🕒 14:30 - 14:45



TECHNICAL SHOWCASES

Siemens Autonomous Process Operations Platform – A Response to Process Industries' Vision for AI in the Control Room

 Mayank Patel  
Industry Strategy Director, Chemicals, Siemens  
Industry Software Limited

🕒 14:45 - 15:00



TECHNICAL SHOWCASES

Case Study Summary: Risk of Tantalum Sleeve with Extended Type Diaphragm Seals


 Ricardas Razgaitis  
Business Development Manager, Badotherm

🕒 15:00 - 15:15



TECHNICAL SHOWCASES

Maximizing Hydrogen Recovery with UNICAT's PSA Technology and Adsorbents

 Xavier Llorente  
Regional Sales Manager, UNICAT Catalyst  
Technologies, LLC

🕒 15:15 - 15:30



TECHNICAL SHOWCASES

A New High-Pressure & High-Temperature Autoclave for Corrosion Testing under Real Process Conditions

 Manuel Prohaska  
CEO, MPC2 e.U.

15:30 | Networking Coffee Break

TRACK ONE

🕒 16:00 - 16:30



INDUSTRY INFRASTRUCTURE ASSETS: PROJECTS SESSION


Times, Trends and New Solutions in the Fertilizer World – The Turning Point of ATOMEs Marquee Project in Villeta

🕒 16:00 - 16:15



TECHNICAL SHOWCASES

An Integrated Approach to e-MeOH Production

 Klemens Wawrzinek  
Project Manager BD & Sales, Linde

This presentation introduces ATOME's flagship 145MW Villeta Project, a pioneering green fertilizer plant (online 2028) to produce low-carbon Calcium Ammonium Nitrate (CAN) for Latin America. With secured low-cost hydro power, completed FEED, 100% offtake with Yara International, anchor equity from Hy24's Clean H<sub>2</sub> Infra Fund, and a fixed-price EPC with Casale, Villeta offers subsidy-independent, de-risked returns and a competitive sustainable supply proposition.


 Terje Bakken  
Director Green Ammonia and Fertilizers, [Atome PLC](#)

🕒 16:30 - 17:00 ★

**INDUSTRY INFRASTRUCTURE ASSETS: PROJECTS SESSION**

Gelsenkirchen-Scholven Uniper Power Plant – Industrial Scale Ammonia-to-Hydrogen Cracker Project

The presentation introduces the strategic partnership between thyssenkrupp Uhde and Uniper to industrialise a large-scale ammonia cracker — key enabling technology for global hydrogen trading. Beginning with a world-leading 28 t/day demonstration plant at Gelsenkirchen-Scholven and progressing to a full-scale import terminal in Wilhelmshaven, Germany, the project converts imported ammonia into high-purity hydrogen for energy, steel and chemicals. It represents a scalable, market-ready route to low-cost, globally sourced hydrogen and offers significant engineering and delivery opportunities during scale-up, promising enhanced energy security and a practical pathway to decarbonisation through large-volume hydrogen supply.


 Dr. Katja Poschlad  
Lead Product Manager Grey & Blue Ammonia, [Thyssenkrupp Uhde GmbH](#)

🕒 17:00 - 17:30 ★

**INDUSTRY INFRASTRUCTURE ASSETS: PROJECTS SESSION**

First Commercial Scale E-methanol Plant: Operational performance and technical support

The Kasso e-methanol plant is a landmark—the first commercial e-methanol facility (42,000 MTPA). The presentation details the technical partnership between European Energy and Clariant, where Clariant's Advanced Catalyst Technologies (ACT) team delivered end-to-end catalyst design, loading and activation using proprietary gas analysis. Operational data demonstrate the robustness and efficiency of the MegaMax™ 900 catalyst and its implications for scaling green methanol.


 Dennis Rasmussen  
Chief specialist, [European Energy A/S](#)

 Ivan Tiunov  
Applied Catalyst Technology Engineer, [Clariant](#)

🕒 16:15 - 16:30 ★

**TECHNICAL SHOWCASES**

A non-isothermal synthesis reactor for small scale methanol plants

 Giovanni Manenti  
R&D Engineer, [ITT CH SA](#)

🕒 16:30 - 16:45 ★

**TECHNICAL SHOWCASES**


Titanium Alloys for Pressure Equipment

 Sonia Colletti  
Project Engineer, [STF Loterios S.R.L.](#)

🕒 16:45 - 17:00 ★

**TECHNICAL SHOWCASES**


Process E-heaters for Fertilizer Plants - Start-up Service

 Neerav Chaudhary  
Process & Furnace Engineering Vice President, [ITT Engineering India Private Limited \(ITTEIPL\)](#)

🕒 17:00 - 17:15 ★

**TECHNICAL SHOWCASES**

Improving Reformer Tube Heat Transfer with The Omega Inner Profile: Proven Performance Results

 Dr. Dominique Flahaut  
Group Technical Director, [PARALLOY Group](#)

🕒 17:15 - 17:30 ★

**TECHNICAL SHOWCASES**

Successful Replacement of Old MWK Bayonet Boiler with latest generation Vertical Floating Head Boiler

 Uma Sankar Khan  
Technical Professional Leader - Process, [KBR](#)

 Amarnath Chanda Roy  
Senior Technical Advisor, [KBR](#)

17:30 | Welcome Reception

**CRU Nitrogen + Syngas conference**  
11 Feb 2026

08:00 | Registration open

08:00 | Exhibition Open

**TRACK ONE**

🕒 09:00 - 09:30 ★

**AMMONIA PLANT OPERATIONS**

Enhancing Emergency Response in an Ammonia

**TRACK TWO**

🕒 09:00 - 09:30 ★

**ADVANCEMENT IN HYDROGEN PRODUCTION**

Field tests and published ASME code case for new

**TRACK THREE**


🕒 09:00 - 09:30 ★

**SUSTAINABLE FERTILIZER PLANT**

Complete in-house technology: Integrated small-


### Plant through DCS Automation


The presentation outlines Engro Fertilizers' operating experience with Yokogawa DCS-based automation implemented at the Ammonia-II plant to enhance emergency handling using existing hardware. The initiative successfully reduced manual emergency actions from approximately 100 to just 10, achieving a 90% reduction in operator intervention during total plant trip scenarios. Now in its fifth year of continuous operation, the system has significantly improved safety, reliability, and operational efficiency.

 Sannan Aleem  
Manager Operations Ammonia Manufacturing,  
Engro Fertilizers Limited

### alloy N06699


This presentation introduces N06699, a high-chromium, high-aluminium, low-iron alloy engineered for high-carbon-activity environments to combat metal dusting; tested in printed and welded forms using PBF-LB/M and field-trialed as seamless tubes in a refinery hydrogen-unit reformer for over 36,000 service hours, the material showed no metal-dusting corrosion, demonstrating robust long-term industrial reliability.


 Raquel Rodriguez  
Research Scientist, Tubacex Innovacion, A.I.E.

 Benedikt Nowak  
Project Manager, Research & Development, VDM  
Metals International GmbH

### scale urea production with green ammonia

The presentation will explore a small-scale urea solution that integrates green ammonia synthesis, urea melt and finishing under a single license to enable low-carbon, localised fertilizer production in infrastructure-limited regions; the design supports flexible CO<sub>2</sub> sourcing, redirects ammonia-loop purge gas into the urea section—eliminating a dedicated purge treatment unit—and keeps standardised low-pressure absorbers for easy scaling, while utility synergies reduce Capex/Opex and emissions, making modular, rapid deployment technically and economically attractive for fertilizer plants.

 Luca Amicucci  
Process Engineer, Stamicarbon/NEXTCHEM

 Govhar Mammadova  
Process Engineer, Stamicarbon/NEXTCHEM

🕒 09:30 - 10:00



#### AMMONIA PLANT OPERATIONS

##### Technology Assessment for World Scale BNH<sub>3</sub> Facility - A Case Study

Discover a practical roadmap to commercial blue ammonia. This presentation unveils a rigorous methodology comparing SMR, ATR and POX integrated with CCS, assessing carbon intensity (Scope 1 / Scope 2), material & energy balances, feedstock impacts, and alternative configurations (H<sub>2</sub> extraction, pre-combustion capture). The presentation showcases case studies on scalability, operability and HSE risks lead to clear recommendations for tech selection and cost-effective rollout.

 Arun Anand  
Lead Planning Engineer, Saudi Aramco


🕒 09:30 - 10:00



#### ADVANCEMENT IN HYDROGEN PRODUCTION

##### Methane pyrolysis for clean hydrogen production: A scalable pathway through the Hazer® process to clean hydrogen and graphite production

The Hazer® Process, developed by Hazer Group Limited and licensed by KBR, is a scalable methane-pyrolysis route that uses low-cost iron ore catalyst in a fluidized-bed reactor to produce low-emission hydrogen and high-quality synthetic graphite from natural gas or biogas with no direct CO<sub>2</sub> emissions; commercial demonstration results, economics and carbon intensity will be presented, along with integration opportunities for ammonia, methanol, steel and other industrial sectors.

 Liam Sheppard  
Methane Pyrolysis Technology Manager, KBR


🕒 09:30 - 10:00



#### SUSTAINABLE FERTILIZER PLANT

##### From technology supply to strategic alliance: Casale – Xin Lian Xin's partnership for sustainable fertilizers

Join this technical briefing on the decade-long partnership between Casale and Xin Lian Xin Group (XLX), which reviews ten technology contracts and spotlights a world-scale ammonia-urea complex pairing N-LOOP™ with the first commercial HYPER-U™. HYPER-U™'s self-stripping Medium-High Pressure (MHP) decomposition stage sharply reduces steam and cooling demand—lowering Opex and water use—and sets a new energy-efficiency benchmark with direct implications for plant layout, utilities integration, and lifecycle costs.

 Francesco Baratto  
Head of the SynGas Department, CASALE

 Matteo Fumagalli  
Urea Technology Manager, Casale SA

🕒 10:00 - 10:30



#### AMMONIA TO HYDROGEN

##### Hynext by T.EN™ - An update on Technip Energies ammonia cracking technology

Learn how Hynext by T.EN™ — Technip Energies' thermocatalytic ammonia-cracking technology — delivers low-energy, cost-efficient hydrogen. Pilot plant results under industrial conditions demonstrate novel reactor and catalyst performance, tested burners for ammonia and hydrogen, and a self-sustained, low-utility design (no steam) that reduces Capex and LCOH, enabling practical long-distance ammonia transport and on-site low-carbon hydrogen generation.

 Jan-Jaap Riegman  
Product Development Manager, Technip Energies


🕒 10:00 - 10:30



#### ADVANCEMENT IN HYDROGEN PRODUCTION

##### Enhancing IMSR performance through solid CO<sub>2</sub> capture using graphene-derived sorbents

This presentation previews the development of a compact, scalable Integrated Multi-Stage Reactor (IMSR) for hydrogen via reforming: an initial stage produces H<sub>2</sub>/CO-rich syngas, a dedicated oxidation section converts CO to CO<sub>2</sub> to maximize H<sub>2</sub> yield, and a final graphene-based adsorption stage removes CO<sub>2</sub> and heavy impurities to deliver high-purity H<sub>2</sub>; integrated oxidation and combustion zones provide flexible, thermodynamically efficient heat management and optimized energy recovery.

 Silvano Cimini  
Engineer, Quality Engineering srl


🕒 10:00 - 10:30



#### SUSTAINABLE FERTILIZER PLANT

##### Toward carbon-neutral urea production: A comprehensive evaluation of g-Urea™ complex

This presentation introduces g-Urea™, a compact, decentralised solution (50–500 MTPD) for green-fertilizer production using Green NH<sub>3</sub> and renewable energy — designed to meet regulatory frameworks such as CBAM and RFNBO. The speaker will compare two process routes the scaled-down ACES21™ (lower Opex) and the Advanced Total Recycle Process (lower Capex), present techno-economic evaluations and show CO<sub>2</sub>-intensity visualisations for integrated green complexes versus conventional plants.

 Hiroo Kunii  
Process Engineer, Toyo Engineering Corporation

### 10:30 | Networking Coffee Break

#### TRACK ONE

🕒 11:00 - 11:30



#### AMMONIA PLANT: CO<sub>2</sub> REMOVAL SYSTEMS

##### Successive failures of catacarb rich solution line at vintage ammonia plant

Join Engro Fertilizers Limited for a technical presentation on Catacarb-rich solution failures at its vintage Engro Base plant in Pakistan. Learn how multidisciplinary investigation, material upgrades from CS to SS, licensor-approved vendors, interim operational philosophy, and benchmarking restored reliability. Speakers will share root-cause analysis, remediation steps, outage lessons, and safety practices inspired by a DuPont Level 4 rating, practical guidance.

#### TRACK TWO

🕒 11:00 - 11:30



#### LOW CARBON HYDROGEN SOLUTIONS

##### Commissioning and troubleshooting of 5 MW off-grid alkaline electrolyser

Join this case study from Adani Group's venture Adani New Industries Limited (ANIL) under Adani Enterprises on commissioning India's first off-grid 5 MW pressurised alkaline electrolyser (1000 Nm<sup>3</sup>/hr) integrated with a BESS (Battery Energy Storage System). Running solely on intermittent RE, the fully automated system dynamically ramps to match generation and SoC, solving BESS tripping, reactive-power and synchronization issues with ramp-rate control, advanced EMS algorithms and interlocks. Measured impacts on Specific Energy Consumption (SEC) and LCOH and practical lessons

#### TRACK THREE


🕒 11:00 - 11:25



#### FERTILIZER PLANT: EMISSION REDUCTIONS

##### AI-powered Predictive Emission Monitoring System (PEMS)

Analytical sensors are vital but costly and downtime-prone — what if you could measure emissions accurately without the hardware headaches? Join the presentation to learn how Siemens' hybrid solution achieves >99% accuracy for key components, EPA compliance, and far lower cost and maintenance than traditional CEMS. Ideal for brownfield and targeted greenfield projects, PEMS delivers rapid deployment, substantial savings and a practical route to smarter emissions monitoring.

 Mohsin Mukhtar  
General Manager Production, Engro Fertilizers Limited


 Ali Haider  
Senior Process Engineer, Engro Fertilizers Limited

🕒 11:30 - 12:00


**AMMONIA PLANT: CO2 REMOVAL SYSTEMS**


Optimization potential for CO<sub>2</sub> removal units in ammonia plants through innovative BASF OASE® white low-low pressure (LLP) flash innovative process

About 70% of global ammonia is produced from natural-gas reforming, and many plants use the BASF OASE® two-stage CO<sub>2</sub> removal. Adding a Low-Low-Pressure (LLP) flash—implemented with an ejector or compressor—and modelled in BASF OASE® connect delivers major gains: case studies show up to 25% lower reboiler duty or a 115% increase in feed-gas capacity, enabling energy savings or debottlenecking for grassroots and revamp projects.

 Mohammed Grerifa  
Technical Marketing Manager, BASF

consumption (LHV) and LCOH and practical issues make this directly relevant for engineers planning gigawatt-scale electrolyser projects.

 Inderjeet Singh  
Vice President - Technology, Green Hydrogen & its Derivatives, Adani New Industries Limited

 Archit Gupta  
Manager - Technology Green Hydrogen & Derivatives, Adani New Industries Limited


🕒 11:30 - 12:00

**LOW CARBON HYDROGEN SOLUTIONS**

Syngas and hydrogen production: SCT-CPO flexibility and industrial performance

Discover SCT-CPO — a flexible, cost-effective syngas route that can be tuned by pressure, temperature and steam/oxygen ratios. Applied as a front-end for methanol and ammonia synthesis, to boost SAF via Fischer-Tropsch off-gas recycling, and to decarbonise the steel sector, it cuts external green-H<sub>2</sub> demand, enables heat recovery and CO<sub>2</sub> capture, and improves carbon efficiency. Join us to see practical integration strategies and real-world gains.

 Leonardo Falbo  
Senior Technology Process Engineer, Nextchem


 Hugo Rodrigues  
Principal Consultant, Siemens


🕒 11:25 - 11:50

**FERTILIZER PLANT: EMISSION REDUCTIONS**

Innovative ammonia scrubbing system with CO<sub>2</sub> bubbling unit : a safe and economical solution for urea granulation plants

The presentation introduces a novel, safer approach to ammonia removal in fertilizer plant exhausts using in-house CO<sub>2</sub> fine-bubble technology to boost mass transfer and replace hazardous sulfuric acid. Backed by lab tests under real plant conditions and data-driven scale-up design, this pioneering solution promises improved safety, lower costs and regulatory benefits—presenting a practical alternative to conventional acid scrubbing for full-scale pilots.

 Tetsuo Yamamoto  
Lead Process Engineer, Mitsubishi Heavy Industries, Ltd.


 Shinya Fukuzawa  
Deputy Manager, Mitsubishi Heavy Industries Engineering, Ltd

🕒 11:50 - 12:15

**FERTILIZER PLANT: EMISSION REDUCTIONS**

AN/CAN prilling tower gas combined treatment with WESP finishing

Discover WESP (Wet Electrostatic Precipitator) project, developed for Yara, a hybrid wet-electrostatic precipitator that combines optimised ammonia absorption with high-efficiency electrostatic dust removal to control emissions from ammonium nitrate production. Pilots at Sluiskil and Montoir plant exceeded targets; retrofit completed and started November 2024. The system delivers regulatory compliance, lower pressure drop versus scrubbers, and operational continuity.

 Alessandro Gullà  
Sales Coordinator, A.W.S. Corporation SRL

🕒 12:00 - 12:30

**AMMONIA PLANT: CO2 REMOVAL SYSTEMS  
CARBON CAPTURE**

Optimising CO<sub>2</sub> Stripping in Carbon Capture with Integrated Heat Pump Systems, a Focus on Regenerator Pressure Selection

 Andrea Orsetti  
Senior Technology Process Engineer, Nextchem

🕒 12:00 - 12:30

**LOW CARBON HYDROGEN SOLUTIONS**

NX eBlue™: A competitive low-carbon alternative to conventional steam methane reforming

Introducing NX eBlue™ — MAIRE's industrial-ready electrified hydrogen platform and low-carbon, high-efficiency alternative to SMR. It supports multiple feedstocks, achieves 33–45% CO<sub>2</sub> reduction with near-100% capture (recoverable for use or storage), can be net-negative on biomethane, uses only one-third the renewable electricity of electrolysis, and is scalable, CCS-compatible and ready for deployment.


 Matteo Mennella  
H2 & Syngas Process Engineer, KT Tech S.p.A.

🕒 12:15 - 12:40

**FERTILIZER PLANT: EMISSION REDUCTIONS**

Reducing moving bed heat exchanger footprints and construction material requirements in fertilizer cooling

Discover how Solex Thermal Science is reimagining Moving Bed Heat Exchangers (MBHEs) for footprint-constrained fertilizer plants. Strategic plate repositioning boosted heat flux by 50–100% in modelling and bench-scale validation, promising major reductions in equipment size, material and cost. Join this presentation to hear the first physical results and learn how a next-generation MBHE can deliver compact, energy-efficient solutions for brownfield retrofits and new builds.

 Igor Makarenko  
Chief Sales Officer, Solex Thermal Science

 Pedro Isaza  
Technology Development Director, Solex

12:40 | Networking Lunch

TRACK ONE

🕒 14:00 - 14:30

**CARBON CAPTURE**

High pressure regeneration amine system for CCUS in blue hydrogen applications

The presentation will compare three solvent-based carbon-capture routes for blue hydrogen — single-stage

TRACK TWO

🕒 14:00 - 14:25

**ASSET SAFETY: MAINTENANCE AND EQUIPMENT**

Remaining life assessment of high-pressure steam piping using API 579 creep level-II fitness for service assessment

Join us for a real-world case study on piping integrity—

TRACK THREE

🕒 14:00 - 14:25

**SYNGAS AND METHANOL PRODUCTION**

SMR reformer solutions from Uni Abex -India

Discover how to keep plants running under extreme conditions. This presentation explores Steam Methane Reforming (SMR) — the backbone

and two-stage amine versus the novel HPH amine process—using a representative syngas from autothermal reforming. Rate-based simulations, Capex/Opex estimates and sensitivity analyses show the HPR amine process delivers the lowest capture cost in all scenarios, driven by reduced compression power and smaller amine/compression capital. Join us to see which option maximizes ROI and cuts hydrogen cost.

 Jason Binz  
Application Technology Leader, [Dow, Inc.](#)

🕒 14:30 - 15:00


#### CARBON CAPTURE

CO<sub>2</sub> Specifications for CCS in ammonia plants: Impact of impurities and challenges in meeting off-taker's limits

This presentation provides actionable insights into how CO<sub>2</sub> impurities affect critical stages of the CCS value chain. It highlights the operational challenges posed by specific contaminants and explains their impact on equipment performance and safety. By deepening the understanding of impurity behaviour, the paper supports all ammonia producers in designing more robust CCS systems and aligning with evolving CO<sub>2</sub> quality requirements.

 Zubair Talha  
Senior Process Engineer-Ammonia technology,  
[YARA Belgium SA/NV](#)

pipings incidents cause 40% of major plant losses. We examine an elbow creep failure in a 40-year-old high-pressure steam line at Fauji Fertilizer Company caused by a dislodged support and creep. Using Caesar stress analysis and API 579 Creep Level-II assessments the team derived remaining-life estimates and delivered practical Fitness-for-Service recommendations and inspection strategies to avoid recurrence.


 Adil Pervaiz  
Project Engineer – Deputy Manager (Project Engineering), [Fauji Fertilizer Company Limited](#)

🕒 14:25 - 14:50

#### ASSET SAFETY: MAINTENANCE AND EQUIPMENT

Assessments of Micro Additions in Alloys for Reformer Tubes in SMR Furnaces

The presentation will focus on how micro additions (Mo, W, V, Ti, Zr) alter high-temperature behavior of HPNb. Five centrifugally cast tubes with identical base chemistry were tested at 900–1100°C in tensile and creep-rupture trials. Additions didn't change macrostructure but controlled carbide size, fragmentation, distribution and dendritic arm spacing, producing distinct mechanical responses and impacting equipment performance in SMR applications under extreme service conditions.

 Joao Guilherme Dessi  
R&D Coordinator, [ENGEMASA Engenharia e Materiais Ltda.](#)

🕒 14:50 - 15:15

#### ASSET SAFETY: MAINTENANCE AND EQUIPMENT


Managing integrity of reformer outlet components through a collaborative, proactive, and data driven approach

The presentation addresses a critical operational problem experienced by Fauji Fertilizer Company (FFC), where they discovered advanced creep damage in reformer welds. The presentation further details the solution, which FFC arrived at through collaboration with Quest Integrity, which involved testing, advanced analysis and proactive maintenance planning.

 Daniel Blanks  
Senior Structural Integrity Engineer and Team Lead, [Quest Integrity Group](#)

of hydrogen/syngas production for ammonia, methanol, refineries and DRI — and the critical role of reformer/catalyst tubes in carburising/oxidising environments. Learn why advanced alloys matter for creep, oxidation and carburisation resistance, and how Uni Abex's 50+ years deliver proven reliability and material solutions for fertilizer, refinery and DRI operations.

 Imtiyaz Ali  
AGM- Engineering Research & Development, [Uni Abex Alloy Products Ltd](#)


 Nilesh Patel  
Head (Business Development), [Uni Abex Alloy Products Ltd](#)

🕒 14:25 - 14:50

#### SYNGAS AND METHANOL PRODUCTION

Impact of Shifting CO<sub>2</sub> Injection Point from Synthesis Loop to Steam Methane Reformer Inlet in a Methanol Process

Cutting waste and boosting methanol yield — learn how CO<sub>2</sub> placement changes everything. This presentation compares CO<sub>2</sub> injection into the methanol synthesis loop vs upstream of the Steam-Methane-Reformer (SMR) using AspenPlus simulations. Key takeaways: shifting CO<sub>2</sub> upstream slightly reduces syngas volumetric flow to the Make-Up-Gas compressor, produces syngas richer in CO and enhances reactivity — projecting an average methanol yield gain of ~13 kta over the catalyst lifetime. Join us to hear about practical routes to energy optimisation and increased production.

 Ahmed Al-Khalaf  
Sr. Scientist, [SABIC](#)

🕒 14:50 - 15:15


#### SYNGAS AND METHANOL PRODUCTION

Operations efficiency & process improvement experience: Revamp with parallel autothermal reforming and once-through methanol converter

The presentation showcases how Sipchem (Sahara International Petrochemical Company) and IMC cut specific energy use and raised methanol output by over 25% in a 2019 retrofit. Leveraging Johnson Matthey's front- and back-end designs with heat integration, CO<sub>2</sub> utilisation and added flexibility, this presentation details commissioning, post-revamp optimisation, and lessons from a unique parallel-reforming scheme combining SMR + ATR, plus an OTR upstream of an ARC.

 Waqas Shehryar  
Senior Process Engineer, [SIPCHEM](#)

 Mark McKenna  
Process Technology Manager, [Johnson Matthey](#)


 Mohsin Ali Afzal  
Process Engineer, [SIPCHEM](#)

🕒 15:00 - 15:30

#### CARBON CAPTURE

The absorption advantage and cryogenic opportunity on carbon capture

Selecting the right post-combustion carbon-capture route is critical—and plant-specific. This talk contrasts mature solvent-based absorption with high-purity, fully electrified cryogenic capture, weighing energy, Capex and Opex trade-offs. We'll show hybrid optimization opportunities, key KPI selection for different flue gases, and practical guidance to choose the most cost-effective, scalable solution for your decarbonization project.

 Fabio Enrico Gianfranco Ferrari  
Head of Carbon and Emission Reduction,

🕒 15:15 - 15:40

#### ASSET SAFETY: MAINTENANCE AND EQUIPMENT

Strategical Spare Parts for Fertilizer Industry Using Additive Manufacturing of UNS S32906: A Breakthrough in Performance and Delivery Time

Cut spare-part lead times from months to weeks—or days—without sacrificing quality. This presentation unveils R&D breakthroughs: key process developments and performance data for WAAM-manufactured UNS S32906 parts, plus practical operational fixes. Discover how advanced additive manufacturing can redefine maintenance strategies and dramatically boost operational resilience in the fertilizer sector. Join us to see tested solutions that keep plants running and downtime shrinking.

🕒 15:15 - 15:40

#### SYNGAS AND METHANOL PRODUCTION

Balancing performance and sustainability: The importance of pigtails and their material selection in steam reforming along with decarbonisation and LCA journey

Protect your reformer — pigtail reliability under extreme SMR conditions. This presentation examines high-temperature failures in inlet/outlet pigtails, highlighting creep resistance, corrosion mechanisms, and the decisive role of grain-size control. Learn why high-alloy materials, precise grain-size characterisation (per ASTM B 407, ASTM E112, ASTM E1181), and tailored forming/heat-treatment strategies for bent pigtails extend life and enable single-stop replacements to boost plant uptime.

15:40 | Networking Coffee Break

TRACK ONE

🕒 16:10 - 16:40

BLUE AMMONIA

Ammonia plants - The transition to net-zero

The transition to net zero is driving ammonia plants to adopt revamp solutions that boost capacity, cut emissions, and improve efficiency. This presentation outlines proven decarbonization strategies, focusing on practical, proven technologies that enhance capacity, reduce emissions, and improve operational efficiency, with real examples and strong business case for sustainable ammonia production.

 Ilayaraja Karuppasamy  
Senior Technology Proposal Manager- Ammonia Technology, [Topsoe A/S](#)

TRACK TWO

🕒 16:10 - 16:40

NITRIC ACID: TECHNOLOGY AND CATALYSTS

Xtranit - Increased NH<sub>3</sub> Efficiency through Advanced Gauze Geometries

Join a deep dive into the Ostwald process, which underpins ~80 Mt/year nitric acid production and drives significant N<sub>2</sub>O emissions. Learn catalyst design challenges for ammonia oxidation and advanced characterisation needs. Discover Umicore's Xtranit gauze family – PGM-based solutions engineered for higher conversion, reduced N<sub>2</sub>O, longer life and plant-specific customisation, plus practical retrofit benefits and operational gains, delivering measurable cost, efficiency and sustainability improvements.

 Florian Knaus  
Manager Applied Technology, [Umicore AG & Co. KG](#)


TRACK THREE

🕒 16:10 - 16:40

CHEMICAL INDUSTRY DECARBONISATION

Catalytic Breakthroughs in Syngas Generation: Enabling Efficiency and Decarbonisation in Modern Chemical Operations

Discover how a novel syngas catalyst is redefining sustainable production. Operating under drier conditions than conventional steam methane reforming, it resists carbon-induced deactivation for prolonged, high-performance runs. Real-world deployments show higher efficiency, lower steam use, and reduced greenhouse gas emissions, with strong CO<sub>2</sub> uptake and conversion. Join us to see how innovative catalyst design and integration accelerate oxo-alcohols production and advance the chemical industry toward net-zero through collaborative R&D.


 Christian Schulz  
New Business Development & Sustainability Manager | Global Chemical Catalysts & Adsorbents, [BASF SE](#)

🕒 16:40 - 17:10

BLUE AMMONIA

Challenges in the Conversion to Clean Ammonia

Convert ammonia plants to clean production—practically and affordably. This presentation unpacks the reengineering needed to shift from conventional SMR to low-carbon routes, featuring a full-scale European case study on process reconfiguration, hydrogen-backbone integration and alignment with EU frameworks (ETS, CBAM). The three U.S. case studies show viable partial-decarbonisation tactics, while blue hydrogen and modular retrofits offer a phased, cost-effective pathway to decarbonise at scale.


 VK Arora  
Director- Process Tech & Projects, [Kinetics Process Improvements \(KPI\)](#)

🕒 16:40 - 17:10

NITRIC ACID: TECHNOLOGY AND CATALYSTS

Amplifying your nitric acid production

Stricter regulations, rising energy costs and sustainability targets are pushing nitric acid plants to modernise. This presentation outlines practical upgrades—technologies that increase capacity and efficiency, reduce emissions, and extend plant life—helping operators cut costs and meet compliance.

 Morteza Hadian  
Process Engineer, [Stamicarbon/NEXTCHEM](#)

🕒 16:40 - 17:10

CHEMICAL INDUSTRY DECARBONISATION

Scaling Renewable Methanol: Unlocking Clean Energy for Aviation and Maritime

Join to learn how catalyst and process innovations make renewable methanol commercially viable. Unlock methanol's potential as a low-carbon energy carrier for aviation and shipping. Produced from biomass, waste or CO<sub>2</sub> + green hydrogen, it enables Methanol-to-Jet and clean marine fuel aligned with RefuelEU Aviation, FuelEU Maritime and the IMO latest regulations. Tackle costly, intermittent electrolytic hydrogen with smarter system integration—introducing Johnson Matthey's eMERALD™: a low-risk, high-efficiency, flexible and scalable solution that cuts levelised cost of methanol.


 Kathryn Coxon  
Business Development Manager, [Johnson Matthey](#)

🕒 17:10 - 17:40

CHEMICAL INDUSTRY DECARBONISATION

Revolutionising e-methanol production process: TOYO's g-Methanol™ integrates SUPERHIDIC™ innovative energy saving distillation system

Toyo Engineering presents an integrated solution for ultra-low carbon methanol: the g-Methanol™ process (powered by the efficient MRF-Z™ reactor and digital controls for flexible renewable operation) paired with the heat-pump distillation SUPERHIDIC™. A pilot at NTPC Limited (June 2025) validated scalability; commercial deployment at Maruzen Petrochemical Co., Ltd. proved energy savings. The combined process cuts indirect CO<sub>2</sub>, lowers Opex, and targets a GFI <14 gCO<sub>2</sub>/MJ under MEPC83—a ready pathway to scalable green methanol.

 Govind Murali  
Process Engineer, [Toyo Engineering Corporation](#)

TRACK ONE


08:30 - 09:00



AMMONIA TO HYDROGEN

Ru-based catalysts for ammonia cracking - High-throughput testing to advanced materials for industrial use

The presentation explores how Ru-based catalysts enable reliable, high temperature ammonia cracking for onsite hydrogen release, overcoming transport challenges. High throughput testing and accelerated ageing show that applying the proprietary impregnation and appropriate dopants significantly improve activity, stability and material efficiency. These shaped Ru catalysts maintain performance at industrial conditions, offering a cost effective, scalable pathway to deploy ammonia as a hydrogen carrier and accelerate the global energy transition.

 Dr. Christian Breuer  
Global Technology and Application Manager,  
Heraeus Precious Metals GmbH & Co. KG

TRACK TWO

08:30 - 09:00



UREA: PROCESS CONTROL AND PRODUCTS

UFT®Add for automotive grade urea

Discover how thyssenkrupp Uhde Fertilizer Technology's formaldehyde-free additive UFT®Add prevents caking—critical as the European automotive sector requires ~1.9M t/year of ultra-low-aldehyde urea. The talk covers a simple add-on plant integration and two industrial case studies: first commercial Fertiglobe production in Egypt using UFT® Fluid Bed Granulation, and production of AGU prills in an industrial prilling tower.

 Rolf Weiss  
Senior Licensing Manager, thyssenkrupp Uhde  
Fertilizer Technology GmbH

TRACK THREE


08:30 - 08:55



SYNGAS PRODUCTION

Refractory Lining Integrity Under Control: 24/7 Monitoring with Hot Spot Detection

The presentation will showcase how WIKA's Refractory Detection System (RDS) and TCC Linear Sensor transform monitoring for refractory-lined units with continuous distributed temperature measurement that forms a temporary hot junction to pinpoint hot spots in real time. Deployed in process gas coolers and reactors, the system supports zoned 24/7 surveillance, predictive maintenance, alarm triggering, simplified brownfield/greenfield installation, LoRaWAN connectivity and turnkey deployment by WIKA's service teams—preventing failures, maximising uptime and safety.

 Lukas Rothermich  
Global Market Segment Manager Chemicals &  
Petrochemicals, WIKA Alexander Wiegand SE &  
Co. KG


08:55 - 09:20



SYNGAS PRODUCTION

Air Liquide GasPOx: Driving low carbon molecules from diverse feedstocks

We will explore how Air Liquide's GasPOx technology provides the smart route to low-carbon molecules from a diverse range of feedstocks. GasPOx converts difficult off-gases with minimal pretreatment, high CO selectivity and reduced Capex/footprint, enabling high-pressure syngas and zero direct-emission options when coupled with Cryocap™ H<sub>2</sub>, Rectisol or Recticap™. The talk covers the real industry scenarios identifying the GasPOx sweet spot compared to other reforming technologies showcasing globally commissioned plants.

 Sayan Dasgupta  
Head of Syngas, Air Liquide Global E&C  
Solutions Germany

09:00 - 09:30



AMMONIA TO HYDROGEN

Advanced ammonia combustion technology for flexible low-carbon hydrogen production

Discover how ammonia cracking can unlock low-carbon hydrogen by using carbon-free trim fuels and overcoming combustion challenges. An advanced NH<sub>3</sub>-ready burner and control solution jointly developed and validated by John Zink and Johnson Matthey—leveraging PSA tail-gas recovery, heater modelling and CFD combustion studies—enables controlled, flexible ammonia combustion with minimized slip, NO<sub>x</sub> and N<sub>2</sub>O, now proven market-ready for large-scale industrial deployment.

 Dr Hadi Nozari  
Senior Process Engineer, Johnson Matthey

 Nathan Becuwe  
Process Engineer, John Zink

09:00 - 09:30



UREA: PROCESS CONTROL AND PRODUCTS

Urea-gypsum fertilizers - reducing two major environmental challenges in our industry

Discover scalable valorisation of PhosphoGypsum—produced at ~5.4 t per t of Phosphoric Acid, yielding ~225–245 million tonnes annually from IFA members—and the roadmap to 100% reuse by 2037 through international partnerships with the China Petroleum and Chemical Industry Federation. This presentation reviews urea-with-gypsum benefits (improved nitrogen use efficiency, reduced losses, enhanced soil health) and evaluates production technologies—mechanochemical, dissolution–recrystallisation, coating, thermal addition and core-granulation—for sustainable, circular fertilizer solutions.

 Mark Brouwer  
Director, UreaKnowHow.com


09:20 - 09:45




SYNGAS PRODUCTION

Combining partial oxidation and innovative carbon capture for hydrogen generation

The presentation will feature Air Products large-scale, low-carbon blue hydrogen solution combining POx syngas generation with the compact CPU CO<sub>2</sub> purification unit. The design eliminates fired heaters, minimises methane/CO slip and enables >99% CO<sub>2</sub> capture without flue-gas decarbonisation. CPU's prefabrication reduces Capex, plot area and onsite solvents. Proven to accept diverse liquid and off-gas co-feeds, the integrated suite (including PSA) delivers optimised blue H<sub>2</sub>.

 Sean Yan  
Product Manager, Blue H<sub>2</sub>, Air Products LLC

 Dave Graham  
Principal Research Engineer, Air Products

09:30 - 10:00



AMMONIA TO HYDROGEN

Ammonia cracking nitridation - Influence of the chromium content in centrifugally cast austenitic Cr-Ni-Fe alloys solutions

Understanding the mechanism and condition of nitridation degradation of the carrier material during ammonia cracking is essential to find reliable solution as

09:30 - 10:00



UREA: PROCESS CONTROL AND PRODUCTS

Cavitation damage in minimum flow valves of HP NH<sub>3</sub> pumps in Yara Belle Plaine urea plant

This case study demonstrates practical problem-solving in severe operating conditions, including the transition from globe to angle valves to prevent cavitation damage and restore full plant capacity. Discover how Hazop analysis identified critical safety risks in urea plant startup procedures, leading to innovative solutions that

09:45 - 10:10




SYNGAS PRODUCTION

SMR firebox temperature uniformity improvement

Learn how BD Energy Systems diagnoses and fixes heat-transfer imbalances in down-fired SMR furnaces that limit capacity, cause premature tube failures and reduce efficiency. Drawing on extensive design and revamp experience, BDE presents root-cause design features

it is essential to develop the right testing device, together relevant test conditions can be determined and applied on testing allowing a pertinent and accurate evaluation of material performance. This presentation will focus on evaluation of high corrosion resistant centrifugally cast austenitic alloys Cr-Ni-Fe emphasising specifically on the influence of the chromium content on the ammonia nitridation resistance


 Dr. Dominique Flahaut  
Group Technical Director, [PARALLOY Group](#)

 Mathias Galetz  
Director, [DECHEMA Forschungsinstitut](#)

eliminated backflow hazards. Learn about the implementation of high-pressure ammonia pump circulation systems with kickback valves, and the crucial lessons learned when initial valve selection caused capacity limitations.

 Lino Porro  
Technology Manager Urea, [Yara Belgium](#)

experience, BDE presents root cause design features, retrofit upgrades and field case studies that restore temperature uniformity, extend catalyst tube life and recover lost hydrogen output—practical guidance for keeping natural-gas hydrogen plants reliable through energy transition.

 Daniel Barnett  
Vice President of Engineering, [BD Energy Systems, LLC](#)

## 10:00 | Networking Coffee Break

### TRACK ONE

🕒 10:40 - 11:05

#### AMMONIA TO HYDROGEN

##### CASALE derisking strategy for MACH2™ technology

This presentation explains how to de-risk ammonia cracking and enable industrial-scale hydrogen reconversion with MACH2™. It details validation of critical components, rigorous performance and safety testing, and scale-up strategies that bridge the gap between proven small-scale systems and the demands of large-scale operations. The presentation will showcase evidence of reliability, efficiency and readiness positioning MACH2™ for commercial deployment within the hydrogen ammonia value chain and rapid global adoption today.

 Aurelia Pipino  
Fired Heaters Technology Manager, [CASALE](#)


### TRACK TWO

🕒 10:40 - 11:10

#### UREA PLANT: OPERATIONS AND UPGRADE

##### Integrated revamp solutions for urea plants: Saipem's approach to energy and production efficiency

Discover practical revamp strategies to cut energy use, Opex and carbon footprint in energy-intensive fertilizer (urea) plants. Building on decades of project experience, Saipem presents tailored, cost-effective solutions that tackle bottlenecks, respect site-specific constraints, and minimise downtime to restore production quickly. Case-based schemes leverage licensor and EPC expertise to improve efficiency without capacity changes, ideal for operators facing high energy costs or stricter environmental limits.

 Luca Edoardo Viganò  
Urea Technology Leader, [Saipem S.p.A.](#)


### TRACK THREE

🕒 10:40 - 11:05

#### SYNGAS GENERATION AND CATALYSTS

##### Reformer Optimisation with Hybrid Process Models: Achieving Operational Excellence with AI-based Digital Tools

This presentation demonstrates practical approaches to reformer optimisation in syngas and ammonia production, leveraging advanced analytics, machine learning, and hybrid process models. Key case studies show how adjusting firing, temperature profiles, steam-to-carbon ratios, and feed distribution can improve energy efficiency and reduce operational losses. Insights into operator integration, data requirements, and incremental improvements highlight how dynamic, data-driven optimisation enhances plant performance, lowers emissions, and extends asset life.


 Lisa Krumpolz  
Managing Director, [Navigance](#)

🕒 11:05 - 11:30

#### AMMONIA TO HYDROGEN

##### Unlocking low-carbon hydrogen: Air Liquide's breakthrough in ammonia cracking

Join Air Liquide to learn how its industrial-scale pilot in the port of Antwerp, Belgium validated ammonia-to-hydrogen equipment, proving scalability, safety and energy efficiency. The talk presents R&D results, supplier collaborations, emissions compliance and pathway to a commercial cracking process, demonstrating tangible performance gains and readiness for economically viable, large-scale low-carbon hydrogen deployment across global energy markets today.

 Laurent Prost  
Head of HyCO Process Solution Development,  
[Air Liquide Global E&C Solutions Germany GmbH](#)


 Dieter Ulber  
Hydrogen Technology Director, [Air Liquide Global E&C Solutions Germany GmbH](#)

🕒 11:10 - 11:40

#### UREA PLANT: OPERATIONS AND UPGRADE

##### Enhancing urea reactor efficiency with supercups tray technology: Operational results and economic impact

The presentation will focus on how Engro Fertilizers Daharki, Pakistan's largest urea complex, successfully modernised its single-train ammonia-urea plant during the 2024 turnaround. By installing state-of-the-art Super Cup Trays in the urea reactor, Engro achieved a 0.6% energy index reduction—surpassing projections—cutting steam use by 50 kg/ton and boosting capacity. This case study highlights engineering innovation driving operational excellence, sustainability, and global competitiveness in fertilizer production.

 Ali Haris  
Manager Process Engineering, [Engro Fertilizers Limited](#)

🕒 11:05 - 11:30

#### SYNGAS GENERATION AND CATALYSTS

##### Improving reliability and extending changeout cycles of secondary reformers with intensified catalysts

Steam Reforming drives syngas production for hydrogen, methanol, and ammonia, relying on Ni-based catalysts for efficient conversion. This presentation highlights Johnson Matthey's portfolio, including the advanced KATALCO™ 54-9Q catalyst, designed for optimised performance, durability, and reliability. Case studies show how these catalysts help operators meet production targets while mitigating risks from supply constraints in an increasingly competitive nickel market, ensuring sustainable, high-performing syngas operations.

 Timothy O'Connell  
Marketing Manager, [Johnson Matthey](#)

🕒 11:30 - 11:55

#### AMMONIA TO HYDROGEN

##### Driving the future of energy transport: BASF SYNSPIRE® ARC catalysts unlock green hydrogen via ammonia reforming

Join the presentation to explore readiness of SYNSPIRE® ARC catalysts and SYNSPIRE® ARCSim simulation for industrial ammonia cracking. Pilot deployments demonstrate high efficiency across temperature ranges, reduced Capex/Opex and critical operational learnings from startup and activation. With global projects scaling to meet RePowerEU and market needs in East Asia and Western and Central Europe, BASF's tailored catalyst portfolio accelerates reliable green-hydrogen supply via ammonia reforming and deployment.


 Marino Miccin

🕒 11:40 - 12:10

#### UREA PLANT: OPERATIONS AND UPGRADE

##### The impact of hydrogen and inert contaminated steam on the safety and process control of the urea solution process

The presentation will focus on Yara Sluiskil (Netherlands) synloop waste-heat boiler leak in 2023 that contaminated steam to Urea 7 with H<sub>2</sub>, NH<sub>3</sub> and inerts. Conductivity alarms triggered a rapid risk analysis that identified potential ATEX zones; safety measures included nitrogen blanketing, zone isolation, removal of ignition sources and suspended hot work. Discover how inerts impaired the CO<sub>2</sub> stripper, caused reactor, LPCC, LP and HP upsets with urea entrainment, the decision to vent polluted steam, and subsequent monitoring, procedural and resilience improvements.


 Pieter Vidts  
Global Process Engineer Urea, [Yara](#)

🕒 11:30 - 11:55

#### SYNGAS GENERATION AND CATALYSTS

##### Applying the novel textured sphere technology to develop a new high-performance water gas shift catalyst

This presentation introduces Magshift, UNICAT's advanced textured sphere catalyst for the water-gas shift (WGS) reaction. Engineered via proprietary gel-cast technology, Magshift offers enhanced mechanical integrity, hydrothermal stability, optimised surface area, and reduced pressure drop in the reactor. Its extensive pore network improves reactant access, heat dissipation, and limits copper sintering, extending catalyst lifetime. Building on the award-winning Magcat, Magshift solves traditional WGS limitations, delivering higher efficiency and reliable performance.

 Dr. Paul Hudson  
Regional Sales Director (Europe), [UNICAT Catalyst Technologies, LLC](#)



Sustainability Business Development Manager, **BASF**



Lachlan McKenzie  
R&D and Innovation Project Manager, **Wärtsilä Gas Solutions**



Jasper Stekelorum  
Process Engineer, **Yara Sluiskil B.V.**

🕒 11:55 - 12:20



**AMMONIA TO HYDROGEN**

The value of flexible ammonia cracking plant operation

The presentation explores how Johnson Matthey's novel ADEPT™ ammonia cracking process technology with ammonia firing can serve as an enabler for projects and can be differentiated from conventional SMR based ammonia cracking technologies offering a clean energy feedstock with the lower carbon intensity.



Priyan Mistry  
Business Development Manager, **Johnson Matthey**

🕒 11:55 - 12:20



**SYNGAS GENERATION AND CATALYSTS**

Advanced bench-scale testing of commercial catalysts for CO<sub>2</sub> conversion: Bridging lab-scale evaluation and industrial relevance in rWGS and dry reforming

This presentation showcases advanced bench-scale testing of commercial catalysts under industrially relevant conditions using hte's 4-fold parallel reactor system. By integrating high-resolution temperature profiling, the study reveals spatial thermal gradients, hot and cold spots, and reaction-zone dynamics, providing unprecedented insights into catalyst performance, CH<sub>4</sub> suppression, and time-on-stream stability. These findings enable optimised reactor design and improved industrial syngas-from-CO<sub>2</sub> processes.



Benjamin Mutz  
Segment Lead Carbon Management & Renewables, **hte GmbH**

12:20 | Networking Lunch

**TRACK ONE**

🕒 14:00 - 14:30



**AMMONIA SYNTHESIS: CATALYSTS**

Decoding industrial NH<sub>3</sub> synthesis catalysts: From fundamental insights to AmoMax™ 10 Plus

The presentation focuses on groundbreaking insights into the structural evolution and functional mechanisms of complex, multi-promoted iron-based catalysts used in industrial ammonia synthesis plants. It highlights the Clariant's Wustite-based AmoMax 10 Plus catalyst and its proven performance in large-scale ammonia plants. Real-world plant data demonstrate consistent high performance over four years, showing how optimised promoter synergies, controlled reduction, and tailored porosity translate fundamental insights into reliable, efficient industrial ammonia production.



Rene Eckert  
Lead Scientist, **Clariant**

**TRACK TWO**

🕒 14:00 - 14:25



**DIGITAL AND AI POWERED SOLUTIONS**

From data to decisions - Unlocking industry 4.0: AI-ready historian and digital twin driving efficiency & reliability at Engro Fertilizers

This presentation details Engro Fertilizers' digital transformation of its nitrogen operations using a centralized Aspen IP:21 and real-time Digital Twin via Aspen Online. Covering 17 plant units and 20,000+ process variables, the system enables faster fault detection, predictive maintenance, and enhanced decision-making. Integration with ERP and LIMS, secure data exchange, and scalable architecture for improved energy efficiency, plant reliability, and operational transparency, demonstrating a pathway for brownfield plant digitalisation.



Ahmad Hussain Iqtidar  
Lead Process & Analytics, **Engro Fertilizers Limited**

**TRACK THREE**

🕒 14:00 - 14:25



**GREEN AMMONIA**

Capitalising on New Economic Opportunities through Flexible Operation Using Advanced Process Control (APC)

The presentation demonstrates how the European Union's ambitious decarbonisation plan, geared towards accelerating the transition while ensuring energy supply security in Europe, can gain substantial support from recently established fertilizer facilities powered by green hydrogen derived from renewable energy and electrolyzers. As grids need flexibility, plants can earn value by adapting consumption. Advanced Process Control solutions like Linear Model Predictive Control (LMPC) enables safe flexible operation without disturbance. Siemens showcases an LMPC deployment for a producer that shifts energy use in real time to capture grid-responsive revenue and market opportunities.



Jorge Aguerrevere Clements  
Technology Manager, **Siemens**

🕒 14:30 - 15:00



**AMMONIA SYNTHESIS: CATALYSTS**

New methods for faster and safer ammonia catalyst loading and activation

This presentation will cover advanced methods for ammonia synthesis catalyst handling and activation. CATMASTERS' Hyperloader™ enables faster, safer catalyst loading, while D-Duster™ removes dust in-line, and Catoscop™ minimises reactor entry. Topsoe's FastAct™ service ensures optimal catalyst activation through precise online monitoring of water and ammonia concentrations. We will focus on how when combined these approaches improve operational efficiency, enhance safety, and maximise the long-term performance of magnetite-based catalysts.



Emir Zahirovic  
Chief Technology Officer, **Catmasters, LLC**



Rishika Chatterjee  
Senior Solution Specialist, **Topsoe A/S**

🕒 14:25 - 14:50



**DIGITAL AND AI POWERED SOLUTIONS**

Advanced optimization and control for emerging ammonia plants -Addressing volatility and complexity with AI-powered plant automation

This presentation introduces an AI-powered predictive control model, previously implemented in industrial gas plants, now applied to green ammonia production. The technology addresses the challenges of optimising product yield, energy efficiency, Opex, and plant reliability. By managing the complexity of green ammonia operations, this advanced automation approach enables cost-effective production, supporting market adoption and demonstrating how AI can transform efficiency and operational performance in sustainable ammonia production.



Michael Kiesel  
Senior Implementation Manager Advanced Automation, **Linde GmbH, Linde Engineering**

🕒 14:25 - 15:50



**GREEN AMMONIA**

Economic viability of small-scale green ammonia plant paired with renewable energy trading

Facing on high green ammonia costs, KBR presents an integrated solution combining renewable feedstock sourcing, ammonia production and power trading. Securing competitive power via PPAs enables dynamic trade-offs between production and spot trading. Using KBR's proprietary optimisation model, operational windows and optimal plant capacity to minimise production costs are identified. Join the discussion to hear a methodology that optimises capacity, operational modes and power trading to reduce risk.



Raimon Perea Marin  
Technology Manager, **KBR**

🕒 14:50 - 15:15



**DIGITAL AND AI POWERED SOLUTIONS**

Case Study - Optimum and Advanced Process Automation Solutions Based on AI and IIOT for Erecting Leak Detection Systems (LDS) on New

🕒 14:50 - 15:15



**GREEN AMMONIA**

Mastering design challenges in green ammonia plants

Fluctuating renewable energy supply is a primary

## HPCC in Fertilizer Plant

The case study highlights advanced optimisation and AI-powered predictive control in nitrogen fertilizer production, focusing on a 1,750 TPD urea plant in Egypt with a new High Pressure Carbamate Condenser (HPCC). Enhanced leak detection, prefabricated piping, and integration with AI-driven DCS reduce downtime by 68% and maintenance costs by 75%. The study demonstrates how AI, deep learning, and real-time process analytics improve safety, efficiency, and operational profitability in dynamic ammonia and urea processes.



Dr. Mohamed Harb  
General Manager, Abu Qir fertilizers and Chemicals Industries Co.

challenge in ammonia plant operations, raising concerns about synthesis-loop pressure swings (risking fatigue per ASME Section VIII Div.2) and catalyst damage. Uhde and JohnsonMatthey present a solution: advanced controls and bypasses managed by a master controller tuned with dynamic simulations to maintain constant pressure and catalyst temperatures. The results prove load changes can be safely accommodated without compromising equipment integrity or catalyst performance.



Marlen Weiß  
Senior Process Engineer, [thyssenkrupp Uhde GmbH](#)

🕒 15:00 - 15:30



### AMMONIA SYNTHESIS: CATALYSTS

Synloop Savings Based on Copernic's Neptune Ammonia Synthesis Catalyst: Updated Sensitivity Analysis and Scale-up/Pilot Plants

This presentation introduces Neptune™, Copernic Catalysts' base-metal drop-in replacement for the standard Haber-Bosch ammonia synthesis catalyst. Neptune™ demonstrates higher activity across a wide range of conditions, enabling up to 21% Opex and energy savings in modern plants and significant Capex reductions for new installations. The talk will present sensitivity analyses using Aspen models and outline plans for multi-ton scale production and pilot demonstrations in 2026–2027.



Aruna Ramkrishnan  
Chief Technology Officer, [Copernic Catalysts Inc.](#)

🕒 15:15 - 15:40



### DIGITAL AND AI POWERED SOLUTIONS

UHPT smart valves: Advanced sensor technology and self-energized sealing concepts for high-pressure urea valve monitoring

The presentation will introduce the innovative sensor-integrated smart valve technology tailored for high-pressure urea applications providing continuous tensile, bending, stem-temperature and rupture detection plus packing preload and leakage monitoring. Self-energised adaptive packing minimises fugitive emissions and extends intervals. Seamless retrofit to existing valves with handheld or DCS visualisation, optional cloud analytics and manufacturer remote diagnostics. Enables predictive maintenance, reduces lifecycle costs, improves safety and regulatory compliance. Patent-pending innovation validated in field trials today.



Bernhard Druffel  
Product Manager, [Uhde High Pressure Technologies](#)

🕒 15:15 - 15:40



### GREEN AMMONIA

Flexible low-load operation of Brownfield NH<sub>3</sub>-plants – Simulations and industrial validations

Green ammonia's future depends on flexible operation of NH<sub>3</sub>-plants to cut Capex, save space and enable brownfield retrofits. Learn how simulation-driven control strategies and converter design enable deep turn-down and reliable flexible operation. The presentation will focus on the results of a test campaign at a brownfield LAC plant with Casale converter showing that the plant can be stably operated at roughly 10 % load for more than 24 h at high pressure. Dynamic simulations and CFD predicted no catalyst maldistribution; industrial tests confirmed results.



Robert Kender  
Senior Process Design Engineer, [Linde GmbH, Linde Engineering](#)



Davide Carrara  
Ammonia Technology Leader, [CASALE](#)