Infocus International

SAVE $200
If you book
3 persons
or more

Mastering Clean Ammonia

A business guide to ammonia production, market opportunities & deployment challenges

LIVE ONLINE COURSE OVER 3 SESSIONS

Commences: 17 September 2024

Course Sessions

1. Ammonia production pathways, current and emerging
2. The role of clean ammonia in the energy transition
3. Developing clean ammonia market demand and projects

Benefits of Attending

- Understand current & emerging methods of ammonia production
- Assess the market utilisation of ammonia today, including its linkages with other sectors (including carbon capture and utilisation)
- Identify the proposed growth paths for clean ammonia, including its expansion from chemical commodity to energy carrier or fuel
- Quantify the potential scale of the market opportunities, in energy and economic terms
- Analyse the co-existence / competition options for hydrogen and ammonia in different applications: which factors will most determine the market outcomes?
- Review project announcements from around the world, including realistic timeframes and dependencies
- Understand the practical and investment barriers to clean ammonia markets, including issues of product safety, handling and risk

Online Course at a Glance

The online course will be delivered in 3 live interactive sessions. Each session will be 3 hours, including a 10-minute break. The live online course is powered by Zoom, which can be accessed via laptops, desk-tops or mobile devices. Please refer to page 4 for more details.

BOOK NOW!

www.infocusinternational.com/ammonia

Mastering Clean Ammonia (live online course)

COURSE OVERVIEW

Ammonia is a chemical commodity with long-established supply chains from production and distribution through to utilisation. However, its current production creates substantial carbon emissions, a fact at odds with public and policy desires for cleaner economies and industrial processes.

In addition to cleaning up the processes of the ammonia used in current chemical applications, producers have new reasons to be excited by the growth opportunities for clean ammonia. These opportunities lie in its possible role within the 'energy transition'. In particular, there is much interest in the role of clean ammonia as either a carrier of hydrogen fuel, or as a fuel in its own right, in sectors such as shipping and power generation.

This time-efficient training course will provide attendees with a comprehensive and up-to-date introduction to ammonia today and its prospects in a decarbonised world. Aimed at those in commercial, business-focused roles, including business development, strategy planning and investment, attendees will gain a clear description of the key technologies in language easily accessible to non-engineers. The market will be reviewed, illustrated by project examples, policy and strategy announcements from around the world. Clean ammonia's competitive positioning will be examined and analysed from an independent, hype-free perspective, including the challenges and alternatives that it faces.

YOUR EXPERT COURSE DIRECTOR

A respected energy business analyst, consultant and energy communicator with over 25 years' commercial experience. He focuses on the interconnected clean energy transition topics of renewable power, energy storage, energy system electrification, clean hydrogen, ammonia and also on the impacts of clean energy technologies on power systems and their associated value chains, helping companies to understand and explore new business opportunities and to plan for success when developing them.

He has helped senior business-people in **over 30 countries across 5 continents**, representing a wide variety of organisations from start-ups to the world's biggest corporations. His combined academic and business expertise enables him to demystify technological and scientific issues for non-technical, business and investment-focused audiences, whilst helping technologists understand how investment decisions and business strategies are formulated, and helping senior business development executives develop a clear view of the many interconnection business variables determining market success (or failure): in particular finance, market structure, technology disruption and policy. This 'technoeconomic' focus marks him out in helping clients break away from working 'silos' and connect vital skills and pools of knowledge.

WHO HAVE ATTENDED OUR CLEAN ENERGY COURSES

ABB • Alstom • Bangkok Cogeneration • BNP Paribas • BP • Canadian Solar • Danish Energy Agency • DBS Bank • Dept. Trade & Industry South Africa • EDF • Epic Energy • Electricity and Cogeneration Regulatory Authority of Saudi Arabia • Energy Commission of Malaysia • Eskom • European Commission • European Investment Bank • GE • GIZ • Hawaiian Electric Co. • HSBC • Indonesia Investment • Japan Bank • K-Green • King Abdullah City for Atomic and Renewable Energy • Lightsource • Malaysian Green Technology Corporation • Ministry of Economic Affairs (Netherlands) • Munich Re • Ontario Power Generation • OPIC • PETRONAS • Qatar General Electricity & Water Corp. • Saudi Aramco • Schneider Electric • Siemens • Singapore Power • Statkraft • Tenaga Nasional Berhad • World Bank • Total • US Dept. of Energy • and many more...

PROGRAMME SCHEDULE (GMT+0)

Applicable to all 3 sessions

7:00 am	Session starts
8:30-8:40 am	Break
10:00 am	End of session

TESTIMONIAL

"A very clear and well explained presentation of the current state on clean ammonia. Process was described very objectively and from many different angles."
past participant, ILF Beratende Ingenieure GmbH

IN HOUSE TRAINING (SAVE UP TO 40%)

Interested in this course for a group of at least 15 people? Contact Ms. Jessie Ang on +65 6325 0218 or email jessie@infocusinternational.com to discuss your training needs.

COURSE CERTIFICATE

Upon the successful completion of this course, you will receive a Certificate of Attendance to testify your endeavour and serve towards your professional advancement.

THE ADVANTAGES OF LIVE ONLINE LEARNING

Until now if you wanted to experience one of Infocus International's world leading courses, you would either have to travel to the training location, or your organisation would sponsor an in-house training programme. Now, regardless of your geographical location, you can experience the same level of quality as a public or in-house course and learn from office, home or even on the move. There's also the huge savings of cost and time by not having to travel to the training location.

We all face more pressure in our business lives. Finding time to attend courses can prove very difficult and plans are too often put aside. If you've had to put training on the back burner due to other commitments, our online learning course is what you've been waiting for.

Through live online learning you can enjoy the full benefits whilst minimising disruption to your professional commitments. The course is accessed online, giving you the flexibility and freedom to participate from anywhere in the world as long as internet access is available.

If you miss out a session or two, you can access the playback video recording available up to a week after the live session.

ABOUT THE ORGANISER

Infocus International is a global business intelligence provider of strategic information and professional services. We provide worldwide participants with intensive technical training programmes designed to help them succeed on the global stage.

Our ever-expanding portfolio of face-to-face courses, conferences, and live online courses range in complexity from introductory programmes for new market entrants, through to the most complex subjects in the industry.

SESSION 1 — 17 September 2024, 7am – 10am GMT+0

Ammonia Production Pathways, Current and Emerging

- Ammonia production today (Haber-Bosch): inputs and outputs
- The scale of ammonia production: today, trends, forecasts
- Where and why does ammonia production happen today?
- 'Green' and 'blue' ammonia production (linkage with clean hydrogen)
- Ammonia and CCUS (carbon capture, utilisation and storage)
- Emerging and potentially disruptive clean ammonia production methods
- Quantifying key figures in ammonia production (energy utilisation, resource needs, efficiency and more)
- Key variables in the economics of clean ammonia production
- Proposed clean ammonia projects and players: what, where, and who?
- Identifying the key technological challenges and barriers to clean ammonia scale-up

SESSION 2 — 18 September 2024, 7am – 10am GMT+0

The Role of Clean Ammonia in the Energy Transition

- Identifying current and future markets for clean ammonia: segmenting the market
- The properties of ammonia: storing and moving it, including over long distances
- Clean ammonia as a hydrogen carrier: pros and cons, and competition
- The challenges and status of ammonia 'cracking' (ammonia-to-hydrogen)
- The properties of ammonia as a direct-use fuel, by combustion or fuel cell
- Proposals and examples of ammonia in transport (with particular focus on shipping)
- Proposals and examples of ammonia in large-scale power generation (coal or natural gas replacement), including blending
- Proposals and examples of ammonia in distributed, small-scale power generation
- Other potential 'fuel' applications of ammonia, including energy storage
- A critical review of the status and availability timeframes of ammonia end-use equipment (including engines, turbines and fuel cells)

SESSION 3 19 September 2024, 7am – 10am GMT+0

Developing Clean Ammonia Market Demand and Projects

- Reviewing market activity in clean ammonia: where and how is it concentrated, and what are the realistic timeframes for commercialisation?
- Examining studies and forecasts which see a growing role for clean ammonia: what are the common themes?
- A rational view of the barriers to growth for ammonia in new market applications
- Examining toxicity, corrosiveness and other handling hazards
- Project planning, permitting and environmental impact considerations
- What might expanded ammonia supply chains look like (infrastructure, investments and impacts)
- Conversions and the end-to-end efficiency problem of ammonia in energy supply chains: how might it find a role?
- Regulatory environments and policy mechanisms which impact clean ammonia
- Local market conditions and their impacts on the development of clean ammonia, including: available resources, energy needs, geography and stakeholders
- Summary: the competitive environment for clean ammonia

WHAT EQUIPMENT DO I NEED?

- A laptop / desktop PC / tablet / mobile phone
- Internet connection – wired or wireless broadband
- Speaker and microphone
- Webcam

HOW DOES IT WORK?

A unique meeting ID and password will be provided to the participants to enter Zoom virtual meeting room and to take part in the interactive live course. You can choose to download the Zoom software, or simply access via web browser. Ask live questions or utilise Chat feature to interact with the trainer and fellow participants. You can also use Whiteboard and Screen Sharing features. Just like in a physical workshop, Whiteboard allows trainer and all participants to write on a blank screen for everyone to see. Our event coordinator will be there to guide you if you need any assistance.

WHAT IF I MISSED A SESSION?

Participants who miss a session may contact our dedicated course coordinator to request the video recording, which is available up to one week after each session. Note that the video will not be downloadable.

WHO WILL BENEFIT?

Any stakeholders seeking to cut through the hype and get to the reality of the clean ammonia sector, including:

- Power generation utilities
- Natural gas producers
- Industrial ammonia users
- Electrolysis technology developers
- Fuel cell developers
- Industrial gas providers
- Policymakers
- Low-carbon heat developers
- Shipping and transport OEMs
- Private equity & institutional investors

Event Code: 240917OC

REGISTRATION FORM

Mastering Clean Ammonia

LIVE ONLINE COURSE OVER 3 SESSIONS

Commences: 17 September 2024

DELEGATE DETAILS

1
Full Name Mr/Ms _____
Job Title _____
Tel/Mob _____
Email _____

2
Full Name Mr/Ms _____
Job Title _____
Tel/Mob _____
Email _____

3
Full Name Mr/Ms _____
Job Title _____
Tel/Mob _____
Email _____

4
Full Name Mr/Ms _____
Job Title _____
Tel/Mob _____
Email _____

5
Full Name Mr/Ms _____
Job Title _____
Tel/Mob _____
Email _____

6
Full Name Mr/Ms _____
Job Title _____
Tel/Mob _____
Email _____

ORGANISATION DETAILS

Company _____
Address _____
_____

AUTHORISATION

Full Name Mr/Ms _____
Job Title _____
Email _____
Signature _____

Registration & Enquiries

Infocus International Group Pte Ltd
143 Cecil Street #25-02, Singapore 069542

Contact : Ms. Jessie Ang
Tel : (65) 6325 0218
Main : (65) 6325 0210
Email : jessie@infocusinternational.com
Web : www.infocusinternational.com/ammonia

YOUR INVESTMENT

	For 1 or 2 persons	For 3 persons or more
FEE PER PERSON	USD 1,750	USD 1,550

PAYMENT METHOD

Payment is required within 5 working days upon receipt of invoice.

☐ By Credit Card: ☐ VISA ☐ MasterCard ☐ American Express

Note that the credit card will be charged in Singapore Dollar currency (SGD). We will quote the SGD amount and send credit card payment instruction prior to the charge.

☐ By Telegraphic Transfer (USD)

Account name: Infocus International Group Pte Ltd
Account number (USD): 017–025866–1
Swift code: SCBLSG22
Bank name: Standard Chartered Bank
Bank address: 6 Battery Road, #01-01, Singapore 049909

OTHER COURSES

Mastering Clean Hydrogen
Green Hydrogen Projects, Economics & Finance
Carbon Capture, Utilisation & Storage (CCUS)
Mastering Solar Power
Mastering Wind Power
Offshore Wind
Energy Storage
Energy Transition
Electric Vehicles & the Grid
Electricity Economics in Changing Electricity Markets
Power Purchase Agreement
EPC Contracts for Energy Industry
LNG: Supply, Demand, Pricing and Trading
Project Finance & Project Financial Modelling
Public-Private Partnerships

www.infocusinternational.com/public-courses

CANCELLATION POLICY

Should you be unable to attend, a substitute delegate is welcome at no extra charge. If this is not suitable, cancellations must be made in writing (letter or fax) at least 30 days before the program commences. A full refund less an administration charge of 10% will be given. Registrations cancelled less than 30 days before the event must be paid in full and a credit voucher equivalent to the full amount will be issued for you to attend any Infocus International Group events for up to 18 months. Credit vouchers will not be issued for no-shows without cancellation. Infocus International Group will provide full course documentation to a delegate who has paid, but is unable to attend. Infocus International Group reserves the right to change the content of the program without notice including the substitution, alteration or cancellation of speakers and/or topics and/or the alteration of the dates of the event. Infocus International Group is not responsible for any loss or damage as a result of a substitution, alternation, postponement or cancellation of an event under any circumstances.

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