

## 15<sup>TH</sup> CONCAWE SYMPOSIUM

# CHALLENGES AND OPPORTUNITIES TO MEET EU'S CLIMATE AND AIR QUALITY OBJECTIVES

HOW CAN THE FUEL MANUFACTURING INDUSTRY CONTRIBUTE?

# PROGRAMME

DAY 1

October 16, 2023

Moderator: Alain Mathuren, *Concawe*

09:00 - 10:00 Registration & Welcome Coffee

10:00 - 10:05 Welcome & Opening Remarks: Jean-Marc Sohier, *Concawe*

10:05 - 10:30 Challenges and strategies for refiners in a decarbonising world: Christopher J Barry, *Wood Mackenzie*

10:30 - 10:40 Q&As

10:40 - 11:00 Comparison IRA versus NZIA: Andrei Marcu, *ERCST*

11:00 - 11:10 Q&As

11:10 - 11:30 Coffee Break

## SESSION 1: CHALLENGES, ARE THERE ANY HURDLES TO DECARBONISATION SCENARIOS?

11:30 - 11:50 The Fit-for-55 package: overview of some specific results  
Jean-Pierre Debruxelles & Jean-Marie Mizzi, *FuelsEurope*

11:50 - 12:10 Batteries raw materials  
Louis-Marie Malbec, *IFP Energies nouvelles*

12:10 - 12:30 Sustainable biomass feedstock supply chains for advanced biofuels  
Ric Hoefnagels, *Utrecht University*  
Ivan Vera, *TNO*

12:30 - 13:30 Lunch Break

13:30 - 13:50 Limits to the production of renewable and low-carbon fuels: feedstock biodiversity impact assessment  
Maria Manso Martin, *AFRY*

13:50 - 14:10 Scaling-up green hydrogen – challenging ambitions  
Arend de Groot, *TNO*

14:10 - 14:30 How can Belgium become carbon-neutral between now and 2050?  
Pieter Lodewijks, *VITO*

14:30 - 15:15 Q&As/Panel discussion with participation of Alessandro Bartelloni, *FuelsEurope*

## SESSION 2: OPPORTUNITIES, HOW TO MAKE THE LOW-CARBON TRANSITION SUCCESSFUL?

15:15 - 15:35	LCA as a method and a tool (passenger cars and HDV)	Joris Melgar, <i>IFP Energies nouvelles</i>
15:35 - 16:05	Transformation of mobility in the climate-neutral and post-fossil age	David Bothe, <i>Frontier Economics</i>
16:05 - 16:35	Coffee Break	
16:35 - 16:55	Optimal vehicle electrification level in a battery-constrained future	Dieter Walter, <i>Concawe</i>
16:55 - 17:15	Waste-to-hydrogen	Giacomo Rispoli, <i>NextChem</i>
17:15 - 17:35	Why developing a robust, competitive, resilient, sovereign & sustainable battery industry is critical to succeed the Green Energy transition	Rémi Cornubert, <i>Strat Anticipation</i>
17:35 - 18:15	Q&As/Panel discussion	
18:15 - 18:20	Closure of the first day: Jean-Marc Sohier, <i>Concawe</i>	
19:00 - 22:00	Cocktail & Dinner	

### DAY 2

October 17, 2023

09:00 - 09:05	Introduction: Alain Mathuren, <i>Concawe</i>
09:05 - 09:25	Ambiant Air Quality - the EU approach: Thomas Henrichs, <i>European Commission</i>
09:25 - 09:45	Air pollution in the US - remembering, understanding, anticipating: Ann Marie Carlton, <i>University of California</i>
09:45 - 10:05	Discussion

## SESSION 3: EXPERIENCES, ACTIONS, AND FUTURE COMMITMENTS AT CITY LEVEL

10:05 - 10:25	TNO Urban Strategy: digital twins for sustainable and liveable cities, applications in ambient air quality	Jeroen Borst, <i>TNO</i>
10:25 - 10:45	Overview of the Brussels Low Emission Zone	Lucas Demuelenaere, <i>Brussels Ministry of Energy and Environment</i>
10:45 - 11:05	Coffee Break	
11:05 - 11:25	Concawe maritime study Experiences, actions and future commitments at the Port of Rotterdam	Giuseppe Valastro, <i>Concawe</i> Maaïke Dalhuisen, <i>Rotterdam Port Authority</i>
11:25 - 11:35	Road transport - future roadmap	Paul Greening, <i>ACEA</i>
11:35 - 11:50	Finding the right solutions to improve air quality	Thanasis Margaritis, <i>Concawe</i>
11:50 - 12:30	Q&As/Panel discussion	
12:30 - 13:30	Lunch Break	

## SESSION 4: SOURCE APPORTIONMENT & MODELLING: THE RIGHT WAY TO ADDRESS THE AIR QUALITY ISSUE

Introduction by Thanasis Megaritis, *Concawe*

13:30 - 14:00	The role of the source apportionment to support air quality management	Enrico Pisoni, <i>JRC</i> Philippe Thunis, <i>JRC</i>
14:00 - 14:20	Concawe source apportionment NO <sub>x</sub> /NO <sub>2</sub> viewer	Stijn Janssen, <i>VITO</i> Bart Degraeuwe, <i>VITO</i>
14:20 - 14:50	Contribution of shipping and aviation to air quality	Peter Coenen, <i>TNO</i>
14:50 - 15:10	Coffee Break	
15:10 - 15:30	The air control toolbox and other CAMS policy products for air quality	Augustin Colette, <i>Ineris</i>
15:30 - 16:10	Q&As/Panel discussion	
16:10 - 16:20	Symposium conclusions by John Cooper, <i>Concawe</i>	

# MODERATION

**Alain Mathuren** holds a law degree from the Université Catholique de Louvain (UCL). Alain is currently Communication Director at Concawe, which he joined in 2009. Previously, he worked for Interel PR & PA as Associate Director for the International Public Relations practice. Alain has 30 years of experience in communication. He first launched a field marketing agency in 1987, which he managed for 17 years before selling it to a French company in 2003. He subsequently joined an advertising agency as Retail Communication Manager and Brand Communication Client Director.



**ALAIN MATHUREN**  
COMMUNICATION  
DIRECTOR CONCAWE

# WELCOME AND OPENING REMARKS

**Jean-Marc Sohier** is the Concawe Director at the European Fuel Manufacturers Association. He graduated Master of Mechanical Engineering from Brussels University (U.L.B.) in 1987 and received a diploma in Management of Business Administration (V.U.B.) in 1989. He started his career at PETROFINA and has held numerous functions in the Refining and Petrochemical manufacturing of TotalEnergies among which, successively, General Manager of TOTAL Petrochemicals Feluy, a polyolefin plant, General Manager of TOTAL Antwerp Refinery, Vice President Research and Development for Refining & Marketing and Vice President Manufacturing Methods & Performance for Refining & Chemicals. In his last position, he was Vice President of Industry for Africa, Asia, and the Middle East's Refining & Chemicals. In his current position, Jean-Marc is responsible for the development and execution of the scientific program of Concawe.



**JEAN-MARC SOHIER**  
CONCAWE DIRECTOR



# KEYNOTE SPEECHES

## Challenges and strategies for refiners in a decarbonising world

**Christopher J Barry** and his consulting team have worked with a broad range of clients including oil majors, NOC's, financial institutions, EPCs, and government ministries predominantly focusing on Europe, Africa, and the Middle East. Projects have spanned the refining, renewable fuels, petrochemicals, storage, and fuels retail sectors, with a focus on buy and sell side due diligence/transaction support, government advisory, strategy development, feedstock and product market analysis, greenfield development studies, competitiveness, and opportunity screening. Chris was instrumental in developing a range of Wood Mackenzie's carbon offerings within the downstream sector including their refinery emissions benchmarking tool, and crude carbon emissions tool. Before joining Wood Mackenzie Chris gained experience within the downstream industry, working for BP and Petroplus at the Coryton Refinery in the UK. During this time Chris worked in the process engineering team holding a range of technical, operational, and project development roles. He also worked in the commercial planning team providing commercial co-ordination between trading, marketing, and operations teams. Chris holds a First Class honors degree in Chemical Engineering from the University of Bath and is a chartered member of the Institute of Chemical Engineers.



**CHRISTOPHER J  
BARRY**

WOOD MACKENZIE

## Comparison IRA versus NZIA

**Andrei Marcu** is the founder and director of the ERCST and has vast experience in managing policy-focused organisations, creating partnerships, managing stakeholder relations, and fundraising. His focus has been on sustainable development, climate change, and energy. In different capacities, he has been engaged in multilateral negotiating processes and subsequent implementation action, both at the global and sectorial level. He has acted as a negotiator for developing countries, coordinator for the G-7 and China, and as representative of the international business community. He pioneered cooperation between the UN system and multinational corporations when serving as Manager of Private Sector Cooperation in the United Nations Development Programme.



**ANDREI MARCU**

ERCST

### SESSION 1: CHALLENGES, ARE THERE ANY HURDLES TO DECARBONISATION SCENARIOS?

Europe is embarked on a transformation journey to contribute to the Green Deal's objective of reaching climate neutrality by 2050, strengthened by the Fit-for-55 proposal for 2030. What are the main challenges and hurdles to these decarbonisation goals? Thanks to the expertise of relevant academia and research institutions, the first session of the Concawe Symposium will set the scene with key examples. The speakers will provide insights regarding key challenges such as feedstock availability and its supply chain, impact on biodiversity, batteries manufacturing and their raw materials availability, renewable electricity generation, grid reinforcement, and charging infrastructure.

**Alessandro Bartelloni** joined FuelsEurope in September 2011, and is responsible for its advocacy activities. He is based at the FuelsEurope office in Brussels. After graduating in Mechanical Engineering at the University of Pisa, he joined ENI in 1986, gaining an extensive international experience in many field of the Refining & Marketing sector of the oil industry. He has been refinery technologist in Italy (Livorno) and in Germany (Ingolstadt), then Project & Investment Planner in the ENI Headquarters in Rome. Thereafter he held the position of Operating and Planning Director in the Czech Refining Company (Czech Republic). In 2000 he relocated to the USA, as CEO of American Agip, an affiliate of ENI engaged in trading of oil products and marketing of lubricants. He then covered the position of CEO in Agip Deutschland, the German commercial affiliate of ENI R&M, with activities in retail (petrol stations), wholesale and refining (as shareholder in the JV refineries of Schwedt and Vohburg/Neustadt). He then went back to ENI in Italy, first as Retail Business Development and M&A Head for Europe, and then as Chief Technical Executive in the Livorno Refinery.



**ALESSANDRO  
BARTELLONI**

FUEELSEUROPE

## The Fit-for-55 package: overview of some specific results

**Jean-Pierre Debruxelles** has been appointed Senior Policy Executive at FuelsEurope in February 2019. Jean-Pierre Debruxelles joined FuelsEurope (formerly EUROPIA) in October 2012 as a Policy Executive in charge of refinery operations and air quality. Since then he has widened the scope of his activities to energy and climate policies. Jean-Pierre Debruxelles has a University Degree in civil chemical engineering. In a major part of his career, he has been involved in the study of regulatory projects related to new environmental and climate change-related legal acts as well as their implementation in the manufacturing industry (e.g. climate change, permitting procedures, impact studies, energy, air quality, waste, water or environmental subsidies).



**JEAN-PIERRE  
DEBRUXELLES**  
FUELSEUROPE

**Jean-Marie Mizzi** joined FuelsEurope last August 2023 as Policy Executive in charge of fuels for automotive, aviation, maritime, and heating oils value chains. He is seconded from ExxonMobil where he had been appointed EAME Low Carbon Fuels Policy Advisor and had spent the last three years performing advocacy on the Renewable Energy Directive, ReFuelEU Aviation, and FuelEU Maritime, and leading the exploration of project opportunities. Earlier in his career, Jean-Marie Mizzi held a variety of business transformation and business development positions at ExxonMobil. He led the conversion of the Esso branded service station network to a distributor model in France. He was a forefront player in the centralisation of ExxonMobil's lubricants and specialties customer service activities in Europe. He also served a number of years in sales and sales leadership positions within ExxonMobil Chemicals and ExxonMobil Lubricants Divisions. Jean-Marie Mizzi has a degree in Mechanical Engineering from Arts-et-Métiers ParisTech - ENSAM.



**JEAN-MARIE MIZZI**  
FUELSEUROPE

## Batteries raw materials

**Louis-Marie Malbec** is an economist at IFP Énergies nouvelles. He holds a Ph.D. in Energy and Environment from the University of Orléans. He works on forecasting energy issues, specialising in the deployment of a hydrogen economy and the mineral resource requirements of the energy transition. He is also an expert at the Observatoire des ressources minérales pour les filières industrielles (OFREMI).



**LOUIS-MARIE MALBEC**  
IFP ENERGIES  
NOUVELLES

## Sustainable biomass feedstock supply chains for advanced biofuels

**Ric Hoefnagels** is an Assistant Professor at the Copernicus Institute of Sustainable Development, Utrecht University. He is involved in many bioenergy and biobased economy-related projects, both at the national and international levels. His research focuses on biomass potentials, trade, sustainability criteria, and sustainable biobased supply chains. Furthermore, he has experience with greenhouse gas balances of biofuels, technological learning, and CO<sub>2</sub> capture and storage. Ric is a member (NTL) of IEA Bioenergy Task 40 Deployment of biobased value chains.



**RIC HOEFNAGELS**

UTRECHT UNIVERSITY

**Ivan Vera** is a consultant at TNO, in the Energy and Materials Transition (EMT) unit. He works on topics related to the decarbonisation of the industry, circular carbon, transition in energy carriers, and strategic value chains (including critical raw materials). Ivan is an environmental engineer from Colombia with a master's in environmental sciences from Utrecht University. He also has a Ph.D. from Utrecht University in which he focused on sustainability impacts from bio-based supply chains (fuels and materials). In addition, Vera has also experience as a data analysis consultant.



**IVAN VERA**

TNO

## Limits to production of renewable and low-carbon fuels: feedstock biodiversity impact assessment

**Maria Manso Martin** is a Senior Consultant at AFRY Management Consulting specialised in Forestry and Biodiversity within the Bioindustry division. With a background in Environmental Biology and Forestry, her expertise for more than 10 years encompasses knowledge in the management of natural and semi-natural forests, resource feasibility assessments, and forest plantation due diligences in several geographies. Her work now centres on biodiversity and carbon accounting in forest ecosystems. She completed her Biology Degree at the Autonomous University of Madrid in 1999 and afterward her Forestry Degree and Ph.D. at the University of Freiburg, Germany.



**MARIA MANSO  
MARTIN**

AFRY

## Scaling-up green hydrogen – challenging ambitions

**Arend de Groot** is senior consultant Green Hydrogen at TNO where a team of 50 scientists and researchers collaborate with industrial partners to develop next-generation electrolyser technology. The team addresses material challenges to improve efficiency and recyclability of electrolysers and reduce cost and use of scarce materials. TNO has built industrial consortia to address the key challenges to building a mature electrolyser industry on topics such as material efficiency, safety, supply chain development, and standardisation. Arend has published on diverse topics such the first European hydrogen implementation scenario studies, the electrification potential of the Dutch industries, infrastructure and technology assessments of a range of hydrogen production technologies. Arend is a member of the Advisory and Programming Board of Processes4Planet and has been/is a member of several working groups of the IEA Hydrogen Implementing Agreement.



**AREND DE GROOT**

TNO

## How can Belgium become carbon-neutral between now and 2050?

**Pieter Lodewijks** works at VITO/EnergyVille since 2002. He is the program manager of the ‘Sustainable Energy Systems Assessment & Modelling’ team that develops techno-economic models to calculate long-term energy system scenarios and outlooks towards a climate-neutral energy system.



**PIETER LODEWIJKS**

VITO

## SESSION 2: OPPORTUNITIES, HOW TO MAKE THE LOW-CARBON TRANSITION SUCCESSFUL?

This second session will cover the opportunities related to the transformation journey of reaching climate neutrality by 2050. It will gather insights on the contribution of low-carbon fuels to achieve the transport decarbonisation, and the potential role of plug-in vehicles in a battery-constrained scenario, and it will also touch upon alternative battery technologies (e.g. without cobalt or lithium). The speakers will compare the merits of the different enabling technologies, focus on multi-contribution scenarios.

### LCA as a method and a tool (passenger cars and HDV)

**Joris Melgar** graduated from Ecole Centrale de Nantes and IFP School in 2016 and serves as a Project Manager specialising in technical and environmental analyses of transport technologies. With a seven-year tenure in IFP Energies nouvelles' Mobility and Systems division, he has worked as a powertrain engineer focusing on system modeling and simulation. His expertise encompasses characterising engine technologies, exhaust after-treatment systems, and vehicle overall energy efficiency. His work now centers on evaluating propulsion solutions' environmental impact for road, river, and maritime sectors.



**JORIS MELGAR**  
IFP ENERGIES  
NOUVELLES

### Transformation of mobility in the climate-neutral and post-fossil age

**David Bothe** is Director of Frontier's Cologne office and has more than 15 years of experience as an economic consultant. He has wide experience in the fields of energy markets (particularly electricity and natural gas) and quantitative market analysis and has advised a range of corporate clients in the energy industry (suppliers, traders, and network companies) as well as regulatory and governmental authorities. In recent years, David has increasingly focussed on projects around the re-structuring of our energy system – i.e. how the implementation of climate targets can change the fundamental economics of our energy supply or how the energy transition can be transferred to the transport and heating sectors by means of sector coupling.



**DAVID BOTHE**  
FRONTIER  
ECONOMICS

## Optimal vehicle electrification level in a battery-constrained future

**Dieter Walter** is the Science Executive for Fuels Quality & Emissions at ConcaWE. He holds a Ph.D. in Chemistry from University Stuttgart (Germany). He worked in the past for DLR Stuttgart, Shell Research UK and Ford. He started his professional career in the industry at Shell Research UK doing research projects on combustion and fuels. He thereafter joined Ford of Europe and became Head of the Fuels & Lubricants department at the Powertrain Engineering Division in Cologne. He then moved on to hold various management roles in Powertrain Engineering and Vehicle Program Management within Ford in Europe before joining ConcaWE in May 2023.



**DIETER WALTER**  
CONCAWE

## Waste to hydrogen

**Giacomo Rispoli** joined Nextchem in 2020 with the responsibility of leading the Waste to Chemical Business Unit based mainly on the valorisation of syngas production coming from waste gasification along with the chemical products that can be generated. This approach is a very innovative way to convert waste reducing significantly at the same time CO<sub>2</sub> production. This business line became at the end of October 2020 a legal entity with the name MyRechemical and he is the CEO. Previously he spent 33 years in Eni Refining Business covering many responsibilities. From 2010 to 2015 he was Executive Vice President of Research, Technological Development & Projects. He was responsible for the implementation of the first EST (Eni Slurry Technology) industrial unit in the world, in Eni Sannazzaro refinery. Rispoli was also responsible for prominent projects in the field of biofuels development, such as the conversion of the conventional oil Venice refinery into a biorefinery based on his patent.



**GIACOMO RISPOLI**  
NEXTCHEM

## Why developing a robust, competitive, resilient, sovereign & sustainable battery industry is critical to succeed the Green Energy transition

**Rémi Cornubert** has 25 years of consulting experience and he is a well-known expert in automotive, mobility, transportation, batteries, chemicals & materials as well as in electronics & IoT. In 2021, he founded STRAT ANTICIPATION, a consulting firm focused on Sustainable Mobility and Energy Transition. The firm helps its customers (corporates, investment funds) to build a profitable and sustainable growth strategy and succeed in the ecological transition. They have also developed a range of services in the fields of innovation performance, R&D, and engineering. Rémi graduated from "l'École Normale Supérieure", holds a Ph.D. and a MBA from the INSEAD Business School.



**RÉMI CORNUBERT**  
STRAT ANTICIPATION

# KEYNOTE SPEECHES

## Ambient Air Quality - the EU approach

**Thomas Henrichs** is Deputy Head of Unit for 'Clean Air & Urban Policy' at the European Commission (DG Environment). In October 2022, the European Commission put forward a proposal for an ambient air quality directive (recast), that builds on lessons learnt from an evaluation of the current air quality legislation. It proposes to revise EU air quality standards to align them more closely with the World Health Organization recommendations, and to strengthen provisions on monitoring, modelling and air quality plans to help local authorities achieve cleaner air.



**THOMAS HENRICHS**

EUROPEAN  
COMMISSION

## Air pollution in the US - remembering, understanding, anticipating

**Ann Marie Carlton** is a professor and vice-chair of chemistry at the University of California, Irvine. She holds B.S. and M.S. degrees in Bioenvironmental Engineering and a Ph.D. in environmental science all from Rutgers University in New Brunswick, NJ. She has worked for the US Environmental Protection Agency and National Oceanic and Atmospheric Administration. Carlton is a scientific leader of the Southern Oxidant and Aerosol Study and served on the National Academy of Sciences panel to write The Future of Atmospheric Chemistry Research. She is a former co-editor of Atmospheric Chemistry and Physics and presently an editor of Reviews of Geophysics. She also serves on the Board of Reviewing Editors for Science Magazine. Professor Carlton received the 2021 Roger Revelle Fellowship in Global Stewardship from the American Association for the Advancement of Science and was placed in the Climate and Environment team in the White House Office of Science & Technology Policy.



**ANN MARIE CARLTON**

UNIVERSITY OF  
CALIFORNIA

## SESSION 3: AMBIENT AIR QUALITY: EXPERIENCES, ACTIONS, AND FUTURE COMMITMENTS AT CITY LEVEL

Over the past decade, air quality has significantly improved in the majority of European cities as a result of more robust air quality policies across various governance levels, the introduction of targeted measures and actions, and technological improvements that have reduced emissions from various sources. Nevertheless, many cities and regions still experience exceedances of the air quality limit values while having the ambition to align further the regulated limits with the new World Health Organisation (WHO) guidelines. In Session 3, two city representatives will share their experiences from the implementation of mitigation measures and will present potential future actions that could be effective in further improving air quality. The session will continue with two presentations that will provide insights on how new legislation concerning road transport can play a role in urban air quality planning towards compliance with air quality standards.

### TNO Urban Strategy: digital twins for sustainable and liveable cities, applications in ambient air quality

**Jeroen Borst** is the Director of the research on “Societal Impact for Accessibility and Liveability” in the unit Mobility and Built Environment of TNO, the Netherlands Organisation for Applied Research. With 25 years of experience in the field, his mission is to support the public and private sectors to manage the transitions in mobility Digitalisation, Automation, and Electrification to meet societal goals: Accessibility, Liveability, Clean Air, Sustainability, and Inclusiveness. With a background in Environmental Physics, he supervised the developed Urban Strategy, a platform to build Digital City Twins to manage urban planning, mobility planning, energy, and environmental impact. With the ambition to make the complexity of urban planning manageable for all stakeholders, the Urban Strategy team combined domain knowledge of the different fields, with state-of-the-art enabling technologies such as HPC and distributed data storage.



**JEROEN BORST**

TNO

### Overview of the Brussels Low Emission Zone

**Lucas Demuelenaere** is the Clean Air and Mobility Advisor to the Brussels Minister for Energy and Environment, Alain Maron. He oversees the implementation of the Brussels' Low Emission Zone and of its accompanying measures, as well as the roll-out of the network of electric vehicle charging points in the city. Previously, he worked for seven years on climate issues within the Belgian administration.



**LUCAS  
DEMUELENAERE**

BRUSSELS MINISTRY  
OF ENERGY AND  
ENVIRONMENT

## Concawe maritime study

**Giuseppe Valastro** is the Air Quality Science Executive at Concawe, with more than 30 years of experience in Manufacturing and EU Environmental Regulations. Giuseppe has been managing the project activities of the Air Quality Team at Concawe since 2020. Specific focus areas include sectors emissions determination and reporting, cost-benefit assessment related to air quality policy, development and implementation of air quality legislation (IED, BREF, AAQD, NECD, etc.), integrated assessment modelling, air quality impacts of vehicle emissions.



**GIUSEPPE  
VALASTRO**

CONCAWE

## Experiences, actions and future commitments at the Port of Rotterdam

**Maaïke Dalhuisen** is a corporate strategist at the Port of Rotterdam Authority. Within the Port of Rotterdam Authority, Maaïke is responsible for the Business Strategy, which targets the Port of Rotterdam's competitive position, and is an expert on several energy and feedstock transition subjects, like circular economy and hydrogen. She holds a master's degree in Strategic management at the Erasmus University in Rotterdam and has experience in transforming commercial organizations. Maaïke started her career at Allianz Netherlands, developing its insurance portfolio. Maaïke currently leads the development of a Master Plan for European Green ports (both inland and seaports) within the MAGPIE project. This project is co-funded by the Horizon 2020 program of the European Union.



**MAAIKE  
DALHUISEN**

ROTTERDAM PORT  
AUTHORITY

## Road transport - future roadmap

**Paul Greening** has a long experience working for the UK government and the European Commission on European and global regulations addressing the environmental performance of all road vehicles. In 2006, he joined the European Automobile Manufacturers Association (ACEA) where he is responsible for coordinating the European automotive industry position on emissions and the applicable testing procedures, renewable energy, and fuel quality and he is involved in assisting and influencing policymakers regarding their future legislative plans, as they will affect the European automobile industry.



**PAUL GREENING**

ACEA

## Finding the right solutions to improve air quality

**Thanasis Megaritis** joined Concawe in 2017. He is a Science Associate, leading the air quality technical program, which aims to better understand the impact of the fuel manufacturing industry through its operations and products on ambient air quality, as well as to identify and understand emerging air quality monitoring techniques and to develop best practices for better characterisation of source air emissions, and eventually to connect the dots between science and the development, monitoring, and implementation of air quality legislation. Thanasis has over 15 years of experience in research and industry, where he previously worked as an Air Quality Researcher for the Foundation of Research and Technology in Greece for 6 years and for a public entity of the Greek Ministry of Energy and Environment as an Environmental Compliance Coordinator for three years. He holds a degree in Chemical Engineering and a Ph.D. and Master's in Atmospheric Pollution and Climate Change.



**THANASIS MEGARITIS**  
CONCAWE

## SESSION 4: SOURCE APPORTIONMENT & MODELLING: THE RIGHT WAY TO ADDRESS THE AIR QUALITY ISSUE

Information on the origin of pollution is an essential element of air quality management and planning to identify effective mitigation measures, and over the years source apportionment has been a key research area for the air quality modelling community. The closing session of the Symposium will focus on source apportionment modelling and experts will provide insights on its role in supporting air quality assessment and assessing how air quality can be further improved. Experts from the Joint Research Centre, whose representatives chairs the Forum for Air Quality Modelling (FAIRMODE), will open the session with a presentation about the recent activities of FAIRMODE's Working Group on Source Apportionment, while scientists from some of the main research bodies working on this topic (JRC, VITO, INERIS, TNO and Concawe) will provide examples from source apportionment methodologies and recent application targeted to major air pollutants. A panel discussion will follow to discuss about each model solution, methodologies developed, and challenges faced with the modelling of some air pollutants.

## The role of the source apportionment to support air quality management

**Enrico Pisoni** works as a scientific/technical project officer in the Air and Climate Unit, Joint Research Centre (JRC) of the European Commission. He graduated in Environmental Engineering from the Politecnico Milano in 2002 and obtained a Ph.D. in Information Engineering from the University of Brescia in 2007. His research interests include modelling and simulation of nonlinear systems, system identification, and optimisation techniques. He is mainly concerned with air quality applications, considering monitoring, forecasting, and planning. He is also one of the developers of the SHERPA simplified air quality model (a model to screen the impact of emission reduction scenarios on air); and part of the Steering Group of FAIRMODE (the network of air quality modellers in Europe, in support to the Air Quality Directive implementation).



**ENRICO PISONI**

JRC

**Philippe Thunis** obtained his Ph.D. in Physics from the University of Louvain-la-Neuve (Belgium) in 1995 and has been working since at the Joint Research Centre of the European Commission in Italy. His main experience is in meteorology, emissions, air quality, and integrated assessment modeling. He co-developed the SHERPA model to support local authorities in their air quality plans. Since 2014, he has been chairing the European Forum for air quality modeling (FAIRMODE) which aims at harmonizing and improving modelling practices across Member States.



**PHILIPPE THUNIS**

JRC

## Concawe source apportionment NO<sub>x</sub>/NO<sub>2</sub> viewer

**Stijn Janssen** is currently appointed as Program Manager of VITO's Geo and Atmosphere modelling team. He obtained a degree in civil engineering and received a Ph.D. in physics in 2002. He joined VITO's Air Quality Modelling team in 2005 and built up experience in air quality and emission modelling. He and his team are using advanced air quality models to assess air quality from local to regional scale and to support the development of air pollution mitigation strategies. He is co-chair of FAIRMODE, the European Forum for Air Quality Modelling, and works in close collaboration with LiboVITO, VITO's local office in China, to bring air quality services to the Chinese market.



**STIJN JANSSEN**

VITO

**Bart Degraeuwe** is a researcher in VITO's Atmosphere modelling team. He obtained a Master's in electromechanical engineering at KULeuven, a Master's in internal combustion engines at IFP School in Paris, and a Ph.D. in combustion engines at the Polytechnic University of Valencia. He first joined VITO in 2008 as a researcher in the field of air quality and transport. In 2013 he joined the Air and Climate Unit of the Joint Research Centre of the European Commission in Ispra. In 2021 he returned to VITO. His expertise lies in local scale modelling with bi-gaussian dispersion models, regional scale modelling with source-receptor models, and source apportionment.



**BART DEGRAEUWE**

VITO

### Contribution of shipping and aviation to air quality

**Peter Coenen** graduated in 1986 from the Wageningen Agricultural University in the Netherlands in the field of air pollution, toxicology, and industrial hygiene. Peter has a background in emission monitoring and technology consulting in the industry. In 1997 he joined TNO as researcher and project manager for the TNO part of the Dutch emission inventory. In this function, he has senior expertise in the field of monitoring air pollutants and GHGs, abatement technologies, emission inventories, and (inter)national emission reporting obligations and policies. In the past decade, his emission knowledge has been incorporated into the air quality modelling at TNO and many projects in this field were performed under his responsibility. His senior expertise is deployed in international studies on emission inventory improvements, monitoring, reporting, and verification of emission data, and air quality modelling. Since 2001 he has been the National Inventory Compiler and Deputy Editor of the National Inventory Report on GHG emissions in the Netherlands to the UNFCCC. Peter works in (inter)national projects for governmental agencies and the private sector.



**PETER COENEN**

TNO

## The air control toolbox and other CAMS policy products for air quality

**Augustin Colette** is head of the Atmospheric Modelling and Environmental Mapping Unit (MOCA) of the French public Institute INERIS (Institut National de l'Environnement Industriel et des Risques). He holds a PhD in Atmospheric Sciences from Sorbonne University and worked in the past for UNESCO, Stanford University, Ecole Polytechnique, and the private sector for Meteorological Risk Assessment. He has co-authored 95 peer-reviewed articles in the field of atmospheric chemistry and physics. The MOCA Unit of INERIS focuses on short-term air quality forecast at national and European scale (Copernicus Atmosphere Monitoring Service), air quality management in support of policy decision-making, and local scale air quality modelling including for emergencies. The modelling expertise of the Unit serves the three missions of Ineris: research, consulting, and policy support (in particular through the French National Reference Laboratory for Air Quality, LCSQA).



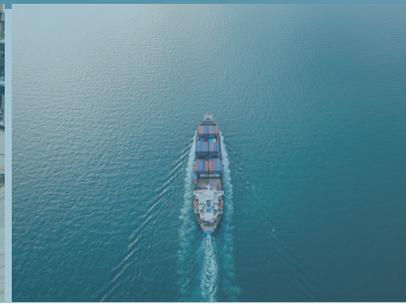
**AUGUSTIN COLETTE**  
INERIS

## SYMPOSIUM CONCLUSIONS

**John Cooper** was appointed Director General of FuelsEurope and Concawe in April 2015. He started his career in the motor industry working on future powertrains, and after three years moved to BP Downstream where he has 27 years of experience. His previous role was as Director of Renewables Strategy Downstream, leading BP's commercial compliance strategy for renewables regulation. He has also had business leadership roles in aviation fuels and lubricants, transport energy policy, and fuels technology, in the UK and US, and has represented the UK fuels industry at the UK Automotive Council Technology Group. He holds a BA in Engineering from Cambridge University.



**JOHN COOPER**  
CONCAWE DIRECTOR  
GENERAL



# 15<sup>TH</sup> CONCAWE SYMPOSIUM

16<sup>TH</sup> October

## Where?

Museum of Natural Sciences  
Rue Vautier 29, 1000 Brussels

## At what time?

19:00 Cocktail - 20:00 Dinner

## How to get there by public transport?



- From the DoubleTree by Hilton Brussels City, walk for about 4 min, (270 m) to metro station Rogier (Direction Roi Baudouin);
- Four metro stops until Trone (5 min trip);
- Leave the metro station and walk to the bus station Trone (2 minutes);
- Get bus 34, direction Sainte-Anne
- Three stops until Idalie (about 4 min trip);
- Walk for about 4 min (300 m) to the Museum of Natural Sciences.



- From DoubleTree by Hilton Brussels City, walk for about 9 min (650 m) to Gare du Nord;
- In Gare du Nord take the train to Gare Bru-Luxembourg (10 min trip);
- Walk for about 8 minutes (550 m) to the Museum of Natural Sciences.

Total approx. time 27 minutes

Total approx. time 20 minutes

## Are you coming by car?



If you are coming by car, the closest parking is at the Sofitel Brussels Europe (Pl. Jourdan 1, 1040 Brussels), located 10 minutes away by foot from the Museum of Natural Sciences. Please kindly note that this parking is paid.



# LIST OF ATTENDEES

- Riccardo Altissimi, Italiana Petroli - Gruppo api
- Myrto Apostola, Concawe
- Lars Bach, Danish Oil Pipe
- Anders Backman, Preem
- Chris Barry, Wood Mackenzie
- Alessandro Bartelloni, FuelsEurope
- Peter Bogman, TEIMAS GLOBAL
- Peter Bohacek, Slovnaft
- Johanna Boogaard, Health Effects Institute
- Alessia Borgogna, NexTChem
- Jeroen Borst, TNO
- David Bothe, Frontier Economics
- Triantafyllia Boultouka, HELLENiQ ENERGY
- Ann Marie Carlton, University of California - Irvine
- Christophe Chaillou, Aramco
- Fotios Christodoulopoulos, HELLENiQ ENERGY
- Inneke Claes, FuelsEurope
- Augustin Colette, INERIS
- John Cooper, Concawe
- Rémi Cornubert, STRAT ANTICIPATION
- Claire Couet, SGS
- Alessandro Crespiatico, FuelsEurope
- Gloria Crichlow, Concawe
- Federico Cristofoli, Topsoe
- Borja Cuesta, FuelsEurope
- Peter Czaga, European Commission
- Emile Dalebout, Shell Downstream Services International
- Maaïke Dalhuisen, Port of Rotterdam
- Mieke Dams, Enersangi
- Aleksandar Damyanov, Belgium
- Georgios Daskalakis, Motor oil (Hellas) Corinth Refineries
- Arend de Groot, TNO
- Victoire de Marans, Concawe
- Didier De Vidts, European Fuel Manufacturers Association
- Jean-Pierre Debruxelles, FuelsEurope
- Bart Degraeuwe, VITO
- Johan Dekeyser, Concawe
- Valérie Demangel, City of Pau Béarn Pyrénées
- Joachim Demuynck, AECC

- Snezana Djordjevic, Shell
- Clotilde Dupré, TotalEnergies
- Simon Edwards, Ricardo
- Sophia Fehri, Schneider Electric
- Alessandro Ferrari, Haltermann Carless
- Renato Finol, Schneider Electric
- Christoph Gatzen, Frontier Economics
- Chris Gould, UKPIA
- Liana Gouta, Concawe
- Patrícia Gouveia, Concawe
- Paul Greening, ACEA
- Pietro Guarato, CO<sub>2</sub> Value Europe
- Gustavo Guerrero-Limon, Concawe
- Bertrand Gyselynck, Energia
- Julien Harquel, Concawe
- Hitoshi Hayashi, Toyota
- Toshikatsu Hikida, Japan Petroleum Energy Center
- Ric Hoefnagels, Utrecht University
- Alessandro Iannotta, Italiana Petroli - Gruppo api
- Kazuhiro Inamura, Japan Petroleum Energy Center
- Jaroslaw Jablonski, ORLEN
- Stijn Janssen, VITO
- Michael Jensen, Danish Fuel Supplier and Charging Association
- Eric Johnson, Chemistry & Industry
- Dhanisha Juleemun, SGS
- Jean-Thomas Kirsch, ExxonMobil
- Jofrid Klokkehaug, Equinor ASA
- Eric Koenig, Schneider Electric
- Mamix Koopmans, VEMOBIN
- Gustav Krantz, Concawe
- Dorothee Lahaussais, Toyota
- Dimitris Leventos, HELLENiQ ENERGY
- Alessandro Liburdi, ENI
- Alessio Lilli, Società Italiana per l'Oleodotto Transalpino
- Elizabeth Lindstad, SINTEF Ocean
- Pieter Lodewijks, VITO/EnergyVille
- Jack Lonsdale, AFRY Management Consulting
- Roland Lord, Aurobay
- Louis-Marie Malbec, IFP Energies nouvelles
- Sofia Manca-Liaci, Concawe
- Alessia Mannella, FuelsEurope
- Maria Manso Martin, AFRY Management Consulting
- Andrei Marcu, European Roundtable on Climate Change and Sustainable Transition (ERCST)

- Gabriela Martin, TotalEnergies
- Alain Mathuren, Concawe
- Thanasis Megaritis, Concawe
- Joris Melgar, IFP Energies nouvelles
- Joris Mertens, KBC Process Technology
- Carlo Alberto Miani, ePURE
- Jean-Marie Mizzi, FuelsEurope
- Gladys Moréac-Njeim, Renault
- Antonis Mountouris, HELLENiQ ENERGY
- Matthias Müller, University of Stuttgart
- Laura Murtinha, APETRO
- Pinelopi Mylona, HELLENiQ ENERGY
- Kristin Bremer Nebben, Drivkraft Norge
- Themistoklis Neokosmidis, Concawe
- Antonios Nestoras, European Liberal Forum
- Björn Niggel, en2x
- Anders Norén, Drivkraft Sverige
- Nikolay Novachev, LUKOIL Neftochim Burgas JSC
- Theofano Ntaflou, Motor oil (Hellas) Corinth Refineries
- Remco op het Veld, Port of Rotterdam
- Sami Pastila, AFRY Management Consulting
- Riccardo Petrelli, ENI
- Antonio Pires da Cruz, IFP Energies nouvelles
- Enrico Pisoni, European Commission, Joint Research Center
- Alexander Plougmann, Danish Industry Association for Fuels and Charging
- Cristina Pucal, OMV Downstream
- Marie-Louise Risoud, BP
- Andrew Roberts, Fuels Industry UK
- Alexis Roca, ExxonMobil
- Anders Roj, Consultant
- Rafael Roldan-Mesa, Repsol
- Claudia Rompineve Sorbello, FuelsEurope
- Silvia Rosellini, IPLOM
- Zissis C. Samaras, Aristotle University
- Freya Santana Cubas, AFRY Management Consulting
- Peter Sauermann, BP Europa
- Leslie Saunders, Concawe
- Wolfgang Schöffmann, AVL
- Gideon Simmelink, ExxonMobil
- Jean-Marc Sohier, Concawe
- Lutgart Stals, ExxonMobil
- Daniel Steinert, BP
- Nicholas Synhaeve, Concawe

- Marine Teixidor, Concawe
- Philippe Thunis, European Commission, Joint Research Center
- Bernard Turi, De Nora
- Evangelia Tzoumani, Concawe
- Eleni Vaiopoulou, Concawe
- Giuseppe Valastro, Concawe
- Damien Valdenaire, TotalEnergies
- Eddy Van Bouwel, EvBo
- Youri Van den Eeckhout, Concawe
- Philippe Van Exem, NATO
- Jeroen van Gent, Hoover CS
- Steven Van Gulck, ExxonMobil
- Maarten Van Haute, Kuwait Petroleum Research and Technology
- Ivan Vera, TNO
- Luc Vinckx, Elephant Consult
- Minique Vrins, Q8
- Dieter Walter, Concawe
- Uta Weiss, Mabanaf
- Norman Wendt, en2x
- Steve West, Coryton Advanced Fuels
- Jonas Wilden, FuelsEurope
- Tim Williamson, Logika Group
- Alex Woldhuis, Petrogenium
- Sarah Zitouni, Aurobay



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