

Conference Agenda

DAY ONE: Tuesday 21st June 2022

09:00 Registration

Leadership Dialogues

09:30 **Chairman's opening remarks**

Joachim Quoden, Managing Director, **EXPRA**

Opening Address: Creating a vision for a waste management sector that rises to today's challenges and is ready for the future

09:45 With an ever-expanding global population, and a consequent rising production of waste, together with the prospect of increasingly strict targets and regulations on the management of that waste, the challenge facing the sector is significant. This session will outline the main challenges and paint a positive, but realistic picture of how the sector can meet them.

Stefano Zenoni, Councillor, Environment & Transport, **City of Bergamo**

09:55 **Waste as a problem versus Waste as a resource: The EU Circular Economy Action Plan & Implementation at National Level**

Roberto Sancinelli, CEO, **Montello**

10:10 **The challenge of 'Green Deal' policies to retail and industry and the steps already being taken - and planned for the future - to reduce and manage waste**

Tanya Kopps, CEO, **METRO Italia**

Panel discussion: Waste and the energy sector: How are breakthrough technologies in the capture of fugitive waste emissions supporting the energy sector's journey to net zero?

10:40 **Stefano Cocchi**, Head of Business Development, Europe, **Circular Fuels**
Paola di Festa, Clean Industrial Power Solutions Growth Manager, **Baker Hughes**
Liran Dor, CTO & Deputy CEO, **Boson Energy**
Stefano Sassone, Technical Director, **Confindustria Cisambiente**
Sergio Stagni, Consultant - Business Development, **Tonissi Power**

11:25 Refreshments

Technical Sessions

Energy & Heat Recovery

Decentralized waste-to-energy plants based on organic rankine cycle technology

The rapid increase in waste generation exerts considerable pressure on conventional, centralized waste management systems. The waste-to-energy sector is looking continuously to develop and implement new solutions aimed at reducing CO₂ emissions, improving efficiency and lowering the environmental footprint. It has become necessary to evolve towards more decentralized systems, based on smaller EfW plants, integrated to the urban environment to minimize waste logistics.

- 12:00
- Key strategies and technologies that organizations can adopt to generate EfW effectively
 - Supporting the move to a low-carbon and circular economy; the role of decentralized WTE plants
 - What role does EfW have to play in evolving circular economy systems?
 - The advantages of decentralized WTE, and the technical and legal implications for investors
 - What opportunities lie ahead for investors?
 - Working principles and features of the organic rankine cycle
 - WTE solutions based on ORC technology
 - The benefits of thermal oil boilers in comparison to steam alternatives

Alessandro Bertacchini, Business Development Manager, Waste To Energy, **Turboden**

Improving the performance of waste-to-energy plants using shock pulse generators

Biomass and waste-to-energy plants are operated with solid fuels and therefore imply boiler fouling. Regular cleaning of all boiler heat exchanger surfaces is necessary to maintain a high efficiency and achieve long operating periods. This presentation will explain the successful implementation of shock pulse generators at the waste-to-energy plant 'KVA Bern Forsthaus', in Bern, in order to achieve a major increase in plant performance. It will show that significant improvements (capacity increase by 110%-120%) are possible with only a small investment.

12:20

- Maximal waste throughput of WtE plants is limited by plant size and operating fluctuations
- Boiler cleaning by shock pulse generators enables constant operating conditions, with minimal fluctuations
- Additional positive effects: homogeneous ash discharge, a longer operating period, and a longer lifetime of superheaters

Christian Steiner, Deputy CEO, **Explosion Power**

Waste-to-fuel technology and its application in OFMSW treatment

Waste-to-fuel technology (W2F) has been developed at the Eni Research Center for Renewable Energy and Environment in Novara. It is an alternative to traditional recovery technologies, converting the organic fraction of waste into bio-oil. A key characteristic of this patented solution is the use of hydrothermal liquefaction (HTL), without the use of a catalyser. The main product obtained through this W2F technology is a bio-oil that can be used for the formulation of fuels for marine use, with a low sulphur content in a mixture with other raw materials; or, alternatively, as a raw material used in addition to, or in partial replacement of, crude oil in the refinery processes.

12:40

- Is OFMSW management critical in Italy?
- What are the mainstream approaches to OFMSW valorization?
- Are there specific advantages to waste-to-fuel technology?
- What development strategy is Eni pursuing?

Marco Boffa, Project Manager, Business Development, **Eni Rewind**

13:00

Q&A

13:15

Lunch

Project Management, Finance & Data Analytics

An analysis of socio-economic and urban waste generation data to estimate food wastage patterns

The fact that any given population has, with respect to others, a different waste generation profile in terms of quantity and typology, is a consequence of various factors. Between them, social and economic factors play a significant role in waste generation. Using the region of Gipuzkoa in the Basque Country, Spain as an example, this presentation will demonstrate how, and at what level, socioeconomic indicators affect the behaviour of the population in terms of urban waste generation. Key strategies and technologies that organizations can adopt to generate EfW effectively

14:15

- What are the challenges of quantifying food waste from urban waste generation data?
- What are the urban waste generation patterns in Gipuzkoa?
- How can we correlate socioeconomic factors with urban waste generation data?
- Which socioeconomic factors influence total urban waste generation rates the most?
- Which socioeconomic factors influence urban biowaste collection rates the most?
- How can we estimate the influence of socioeconomic factors on food waste generation from urban waste generation data?

Manuel Amador Cervera, Researcher, Life Cycle Assessment and the Circular Economy, Deusto Institute of Technology (DeustoTech), Faculty of Engineering, **The University of Deusto**

Case study of a biomethane biomass hub in Lombardy

In the EU, annual waste generation is estimated to be five tonnes per capita. The EU 2035 target is to reduce waste generation, improve waste management and limit the share of municipal waste landfilled to 10%. This presentation will reveal the results of two projects, funded in 2019 by the Lombardy Region, to provide solutions to this challenge, drawing synergies and connections from the perspectives of the circular economy, energy, green chemistry, and the ecosystem.

14:35

- Design processes, materials and technologies to improve the effectiveness of organic waste management, creating a set of biorefineries to produce biofuels, biomethane, hydrogen, fertilizers and biomaterials
- The energy transition in Lombardy towards renewable energy and sustainable mobility; promoting the application of the circular economy to the waste cycle, with the production of energy, chemicals, and renewable fertilizers (end-of-waste)
- Stimulating the process of decarbonization and the reduction of environmental impacts resulting from the circularity of the process and, therefore, the reduction of emissions produced

Fabrizio Adani, Professor of Soil Chemistry, Soil and Environment, Department of Agricultural Sciences and Environment, **University of Milan (LE2C)**

Giacomo Gardini, Project Manager, **Agromatrici (LE2C)**

14:55

Q&A

Ponticelle: From remediation to redevelopment

15:10 **Stefano Lifone**, Responsabile Waste Integrated Logistics Management, **Eni Rewind**
Carlo Pezzi, CEO, **HEA**

16:10 **Close of Day One**

DAY TWO: Wednesday 22nd June 2022

09:00 Registration

Leadership Dialogues

09:30 **Chairman's opening remarks**

Leonardo Brunori, Vice President, **Assorisorse**

Three years to go: Will we meet the targets for 2025?

2025 will be a critical date for the waste management industry and municipalities within the EU. The EU will be bringing in new recycling targets for all municipal waste streams; for example, the 50% recycling target for plastic packaging, measured using a new measurement point. In addition, mandatory separate collection for different waste streams, such as packaging, bio-waste and textiles will have to be implemented in real and concrete terms and not 'only' in legislation. This session will review and discuss efforts to prepare for such targets and review progress thus far.

09:35

- Where do the various stakeholders currently stand vis-a-vis meeting the forthcoming targets?
- Are the targets realistic in terms of them being met?
- What are the challenges facing those implementing policies to meet the targets?
- Are even more stringent targets in the pipeline?

Amanda Fuso Nerini, Head of International Affairs, **CONAI (EXPRA)**

David Lukac, Head of System Development Department, **EKO-KOM (EXPRA)**

Jaana Røine, CEO, **Green Dot Norway (EXPRA)**

10:10

A call to action for circular industries: Reimagining the value chain to hardwire co-operation between industries to eliminate waste

Juan Carlos Orozco, Chief Strategy and Sustainability Officer, **CELSA Group**

Technical Sessions

Sustainability & the Circular Economy

The circular economy for hydrocarbon residues

This presentation will explore the treatment and recycling of hydrocarbon residues, and the potential for their inclusion in the circular economy to produce new fuels with a lesser environmental impact.

10:30

- The oil industry and recycling
- How innovative solutions can bring hydrocarbon fuel into the circular economy
- The paradigm shift that will be necessary at state and industry level to speed up the transition
- How to spread new solutions to less developed countries now (and not in 20 years)

Vincent Favier, CEO, **Ecoslops**

A concrete approach to the fashion industry and the circular economy

The fashion industry contributes heavily to pollution and environmental depletion. Less than 1% of textile waste is recycled, due both to the lack of guidelines and the presence of illegal systems of collection and disposal. This causes losses of more than \$100 billion worth of materials per year. This presentation will give a brief overview of a state of the art textile waste management project in Italy, as a starting point for the implementation of virtuous solutions, based on modern technologies for waste categorization, collection, and recovery in a circular economy perspective.

10:50

- Current waste disposal methods can be very expensive, not just in terms of monetary and environmental costs, but also in terms of missed opportunities for their optimization
- The alarming state of current mass textile waste management in Italy
- Developing cradle-to-cradle solutions and a B2B 'circular' marketplace
- The contribution of AI and blockchain contribution. Moving beyond smart-sounding labels and tokenomics

Emanuele Bertoli, CEO and founder, **Berbrand**

Ermanno Camerinelli, Sustainability Specialist, **Berbrand**

11:10

Q&A

11:25

Refreshments

Sustainability & the Circular Economy

Innovative new technologies and techniques for incorporating the principles of the circular economy into waste management

Production of waste is increasing, imposing the need for companies to find more innovative and efficient ways to manage it and the need for the society to find more sustainable solutions.

Overproduction of waste leads to increasing percentages of materials sent to landfill or to incineration. A superior design of materials, product, systems and business models would support the elimination of waste and facilitate restoration, through reuse and recycling of resources. The existence of innovative tools for circular waste management can broaden the opportunities for the entire sector and for finding sustainable solutions for waste. The development of innovative technologies for waste management is fundamental for putting the circular economy into practice.

12:00

- The environmental and business problem: raw materials overuse and inefficient and nontransparent waste management
- How the circular economy aims to solve this issue
- Putting circular economy into practice: the Waste2Resource Marketplace
- Machine learning for better matchmaking among business partners
- Auctions for waste: finding the right price
- Solving the climate crisis through innovative new circular technologies

Simone Grasso, Country Manager, CYRKL Italy, **CYRKL**

Sweeping for a better future: Changing the way we clean our streets

Fossil-fuelled street sweepers are the biggest polluters in the fleets of a city's maintenance vehicles. Cities consume 78% of the world's energy and produce more than 60% of greenhouse gas emissions. It is estimated that one third of the emissions comes from traffic. Cities and facilities management organizations can play a big role in making our cities greener. This presentation will show how.

12:20

- Modern street cleaning and waste management has to address not only the aesthetics, but also the finest PM dust and silica dust particles surrounding modern cities and industrial sites
- To cut down the CO2 emissions of cleaning equipment, we need to rethink the technologies in use
- A major aspect is also considering the noise pollution created in modern suburbs by cleaning technologies - often in excess of 100 decibels
- More than electrification is needed for energy-cutting technologies
- The need for an overall review of the effectiveness of the cleaning fleets we use

Antti Nikkanen, CEO, **Trombia Technologies**

The "pay as you throw" pricing model

This session will illustrate how a pricing model for waste management as a service and not as a tax can be realized to help the environment, save money and make waste management more sustainable.

12:40

- Why is it important to apply a 'pay as you throw' pricing model?
- What is the problem we are expected to solve and the purpose we are trying to achieve?
- Realizing a model of measurement that works
- Which strategies are most suitable to which situations?
- Which are the technologies and methods to be adopted and which should be avoided?

Pier Luigi Fedrizzi, CEO & founding partner, **I&S Informatica e Servizi**

13:00

Q&A

13:15

Lunch

Skills & Project Management in the Waste Management Sector

Health and safety in the workplace and the importance of an adequate and specialized training

An introduction and overview of Assoreca's guidelines for health and safety in the workplace

- 14:15
- The concept of HSE training identified in Article 2 of Legislative Decree 81/2008 shows how the training itself must aim to modify the behaviour of those to whom it is addressed
 - HSE training, in practice, must be always consistent, adequate, continuous, specific and effective
 - Assoreca has drawn up specific guidelines to emphasize how HSE training is aimed at responding to learning needs in different areas: the cognitive area ('knowledge'); the operational area ('know-how skills'); the behavioural area ('knowing how to act in the workplace')
 - Adopting a common language and identifying a shared path; and adopting tools in compliance with regulations that are also efficient and user-friendly
 - Defining practices that are designed to protect the employer, managers and HSE managers; and defining a process which guarantees the accountability of training paths

Giovanni Finotto, Professor of Safety and Health, **Ca' Foscari University of Venice (Assoreca)**

Angelo Merlin, Partner, **Merlin & Tonello (Assoreca)**

Lisa Pelenghi, Founder and Expert in Health and Safety, **Soluzioni (Assoreca)**

A national challenge with local solutions: Integrated waste management in the Berat region

This session will explore an integrated solid waste management project designed to increase the quality of municipal infrastructure services in the Berat region of Albania. The approach consists of four interrelated pillars that encompass the ISWM system in the following main areas of intervention:

- 14:35
- What are the core institutional and organizational competencies required?
 - How can comprehensive planning be aligned and harmonized across all levels?
 - What is needed to motivate and sensitize the local community and how can they be involved and committed in the long term?
 - What short-term measures will improve the disposal of municipal solid waste on landfills that do not comply with the EU Landfill Directive?
 - And how can these results be embedded in the national policy dialogue on Integrated Waste Management in Albania?

Alba Dakoli Wilson, Deputy Team Leader, ISWM Berat Project, FLAG, **Infrastruktur & Umwelt, and Sehlhoff**

MSW bags distribution and collection: An innovative and successful case study from the City of Bergamo

The City of Bergamo has an effective door-to-door separate waste collection system that has been active for many years: in 2010 it already reached a separate collection rate higher than 50% and, in 2015, Bergamo was the second Lombard capital city exceeding 65%. In 2020, the separated collection rate rose to 73%. Discover the secret to this success in this local case study from Bergamo.

- 14:55
- Establishing the most suitable approach for the City of Bergamo? Is a 'PAYT' (Pay As You Throw) scheme the only way to meet EU standards?
 - The adoption, by the Municipality of Bergamo, of an innovative 'KAYT' (Know As You Throw) scheme, based on the usage of dedicated bags, supplied through a number of vending machines, where citizens can instantly check their consumption of waste bags
 - How Aprica, a waste management company, can collect and analyse data that can be helpful in assessing and modelling the habits of citizens to improve the service level
 - The results of the application of the KAYT scheme in the City of Bergamo show some evidence of positive feedback from the population, including higher levels of involvement and engagement amongst certain demographics. This also impacts the performance of the MSW system in terms of the sorted collection rate (+4%)

Gianluca Conforti, Head of Control, Performance Analysis and Contract Management, **Aprica**

15:15 **Q&A**

IWE industrial water evaporators

15:30 Integrated multi-process circular economy solutions for the valorization of the liquid fraction of digestate and the total recovery of resources in biogas or biomethane plants.

Pierluigi Berna, Marketing Manager, **IWE**

16:15 **Close of Day Two**

DAY THREE: Thursday 23rd June 2022

09:00 Registration

Leadership Dialogues

09:30 **Chairman's opening remarks**

Vanya Veras, Secretary General, **Municipal Waste Europe**

Panel discussion: How industry is already making a difference by reducing waste

Senior industry figures will discuss areas in which their companies are already making strides in reducing waste and what plans are in place for the future.

09:35

- Exploring programmes and initiatives that are already making a difference
- Challenges and trade-offs: what are the practical limits to reducing packaging and other product waste?
- How co-operation throughout the supply chain can assist in waste reduction
- Plans for the future
- What government assistance do industry leaders need to meet strict targets?

Valentina Coletta, Quality Director, **Ferrarelle**

Alain Dedieu, President, Water & Waste Water, **Schneider Electric**

Fabrizio Labatessa, Sustainability Project Manager, **Novo Nordisk**

Alessandra Teruggi, Head of Corporate Communication and PR, **METRO Italy**

Technical Sessions

Chemical, Medical & Hazardous Materials Waste

An environmental and economic sustainability assessment of on-site sterilization

This case study will illustrate the economic and environmental benefits of on-site sterilization.

10:15

- What is the definition of a potentially infectious medical waste?
- What are the best available technologies and/or practices for treating potentially infectious medical waste? And, Why should countries adopt them?
- Overview of the medical waste management programme adopted by this case study
- The impact of developments in the Italian legislative framework in the field of potentially infectious medical waste management
- What are the main features of Newster's Integrated Hospital Waste Management Solution?
- A comparison of two different medical waste management scenarios
- How on-site sterilization can be an effective solution to reduce both a hospital's environmental impact and costs in managing medical waste

Benedetta Copertaro, Research & Development Scientist, **Newster System**

Improving safety and efficiency in the storage, collection and transportation of lithium batteries through purpose-built IoT

Cities are turning to smart energy management to meet rising energy demands and de-carbonization. We're heading towards an age of smart cities, with buildings, vehicles and devices needing quick access to power in response to the fluctuating power demands of their inhabitants.

10:35

- Lithium batteries are playing an ever-increasing role in our everyday life and, globally, we are evolving towards an electrified society, with the rise of EV's, home batteries, battery powered home appliances, and battery-powered tools for tradesmen like carpenters or gardeners
- With the growing use of batteries comes the growing responsibility of collecting and recycling batteries
- This is important not only from an environmental point of view, but also from an economic one
- What will be the solution?

Jan Bogaert, Business Unit Lead, **UnitronConnect**

An innovative technology, based on laser pyrolysis, for the effective treatment of tire, bitumen, rubber and plastic waste

Tires, bituminous roofing, cable coatings and plastics constitute categories of waste that are problematic to process all over the world. Despite the many efforts to dispose of them, there is still no established technology that can be considered fully satisfactory. This presentation will reveal the results of joint research between the private technology sector and European universities on the design and testing of an innovative technology which promises to be revolutionary in the treatment of this waste.

10:55

- High temperature pyrolysis in a cold chamber with a high conversion capacity
- Distributed hydrogen and methane, for LCOH and LCOE
- Short and continuous cycles, ready in few seconds
- Safe installation for condominiums and boats
- Reuse of materials such as carbon fibres
- Gas and energy produced by rubber, cable sheaths, etc.
- The zero KM circular economy and high profitability

Paolo Peri, CEO, **Kima Eko Engineering**

11:15

Q&A

11:30

Refreshments

Recycling & Reclamation Technology

An environmental evaluation of a new treatment for tire fibres

End-of-life tires constitute a major component of end-of-life vehicles. Textile fibres represent about 10% by weight of the end-of-life tyres and, every year in Europe, about 320,000 tons of dirty fibrous material must be disposed of as special waste. This results in the negative impacts of increased GHG emissions, pollution, economic losses and public costs. This presentation will be a comparative evaluation of the environmental impacts related to different end-of-life scenarios for textile fibres.

12:00

- Research context and the 2030 agenda for sustainable development
- The waste problem in Italy, in Europe and the world
- The involvement of academic research in waste valorization and reduction
- The analysis of the product life cycle and the Life Cycle Assessment (LCA) approach
- A successful project for transforming the waste fibre of end-of-life tires into secondary raw materials

Daniele Landi, Assistant Professor, Department of Management, Information and Production Engineering, **The University of Bergamo**

Using an evaporation technique to make the digestate produced from anaerobic digestion reusable

A case study of an anaerobic plant in Belgium using innovative methods to safely re-use polluted wastewater by-products instead of drawing on clean local fresh water sources. This session will present a successful case study of how waste can be converted into a resource.

12:20

- What is the typical feature of a waste treatment facility?
- What are the possibilities for reuse and recoveries in a wastewater treatment plant?
- What are the advantages and drawbacks of a closed loop in water recovery? What technologies can help to overcome them?
- What are the evaporation technologies available on the market?
- How do they apply to the different scenarios in a wastewater treatment plant?

Cristina Del Piccolo, Process & R&D Manager and Chief Technical Officer, Evaled Division, **Veolia Water Technologies**

The recycling of sports equipment

This session will explore eleven years of study and investment to reach and develop know-how and the technology machinery to save thousands of tons of sports waste from going to landfill. How we can extend the system in our daily life

12:40

- Sports equipment in numbers
- Sports industries and their waste
- A new way to deal with sports waste

Nicolas Meletiou, Managing Director, **Eso Recycling**

13:00

Q&A

13:15

Lunch

Plastic Waste

Beyond traditional mechanical recycling: Proposals for upcycling, waste to chemical, pyrolysis and depolymerization

The energy transition path requires, amongst other things, new technologies and processes for mechanical and chemical recycling, allowing the replacement of feedstocks of fossil origin with waste. This presentation will explore the development of innovative technologies and processes for mechanical and chemical recycling, including pyrolysis, depolymerization and chemical conversion.

14:15

- What are the main features of upcycling technology?
- Why upcycling is so innovative and how it departs from traditional mechanical recycling
- What is the type of waste treated with waste-to-chemicals technology?
- What is the difference with the combustion process?
- What is DEMETO?
- What future developments are in store for SAF?

Daive Tresoldi, Head of Business Development, **NextChem**

New routes and business models for plastic recycling

Global plastic production continues to increase year after year, despite the pandemic and fluctuations in crude oil prices. Since these products are very valuable and durable, the challenge of identifying proper disposal routes for plastic wastes will remain critical for years to come. This presentation will outline the challenge facing society and review the technological and logistical options currently available, finally looking to the future and emerging technologies.

14:35

- Overview of the factors that currently limit the overall capacity of recycling plastics
- New technologies available to tackle the issue and the role of various stakeholders in the value chain
- The technical and macro-regulatory challenges that lie ahead in order to fully implement a new market for the recycling of plastics
- Financial analysis of a project applying a chemical recycling technology, with particular attention to the roles and the importance of the several players in the value chain

Tommaso Rossetti, Product Lead, Petrochemicals, **Saipem**

14:55

Q&A

15:10

Close of conference