

January 11th, 2019

Dear members and friends,

The MatER Study Center, sister organization of the Global WTER Council, wishes you a Happy and Successful 2019.

2018 has been the eighth year of MatER activity, since its foundation in 2011.

We are very glad to confirm that also in 2018 the seven waste management companies (A2A, Brianza Energia e Ambiente, HERA Ambiente, IREN Ambiente, Linea Group Holding, Hest Ambiente, SILEA Spa), members of the MatER Coordinating Committee, continued to support our work guaranteeing the necessary funding for further investigation activities.

In 2018 our research activity addressed issues raised by either private companies and public authorities. Here is a short list of the main areas of investigation covered:

- Assessment of WtE plants performances, with particular attention to the calculation of the R1 Index, the design of Advanced Waste-to-Energy plants and the combustion modelling of solid waste mixes;
- Experimental High-Temperature measurements in WtE plants;
- Measurement of Ultrafine and Nanoparticles Emissions;
- Technical and economic assessment of novel technologies for the thermal treatment of waste;
- Technical-economic evaluation of the overall urban waste management system in the Puglia region (South of Italy), with a focus on the quantitative streams, on the different technologies currently used for the MSW disposal and on the critical aspects of the current planning, including some suggestions on how to improve it.

In accordance with the aim of the Study Center, the communicative aspect continued to be essential in our daily work. With the aim to reach a closer connection with the civil society, in 2018 we participated to a "work-school alternation" project with local high school students in Piacenza. The project, called "REPACK", focused on the theme of packaging and the purpose of the MatER team was to get the students closer to the complex world of packaging waste recovery. Three students were hosted at LEAP for a period of 1 month during the summer, carrying on an evaluation of possible solutions for the recovery of material and energy from poly laminated composite packaging waste. This experience resulted very productive on both sides. We were able to get a deeper insight on this problematic packaging material, that still doesn't have a proper destination for its disposal, offering at the same time the opportunity to the high school students to analyze the problem with an academic and critical approach.

As a result of this investigation we are now completing the final report that will be published soon on our website. Furthermore the local newspaper of Piacenza recently dedicated us an article over this activity and it's our intention to pursue in the future more collaborations with schools and public institutions over similar topics.

Another initiative has been the cooperation with "Amici della terra", an environmental association whose headquarter is set in Rome, for the development of a website to share best practices over the circular economy, funded by the Italian Ministry of the Environment. The MatER activity mainly consisted in the review of the contents of the web pages, as well as the support to the dissemination from a technical-scientific point of view. [At this link](#) it is possible to see some pages of the website, that contains interesting best practices and myth busters around the world of waste recovery and circular economy.

In addition, 2018 has been the first year of full activity of our new website that we completely renovated and activated in 2017, with the aim of improving our communication strategy. For this reason, we carefully monitored the accesses to our website: in 2018, we received globally 50.493 visits from users of 134 different countries, with Italy of course leading the way, followed by USA, Denmark, Switzerland and Germany.

We are very glad to announce that the number of users who visited our site in 2018 increased with respect to previous years. In particular, in November 2018 we recorded a peak of 45.499 users. However, this special interest was purely Italian: in that period the Italian political scene recalled the attention of all the national media around the world of Waste to Energy after that an Italian minister in one of his interviews mentioned the novel WtE facility of Copenhagen. Since in 2017 we published a detailed description in Italian of the functioning of the Danish plant, many people visited this specific page on our website and started to share it impressively on social networks as well. The media attention also led to some brief interviews of prof. Consonni and prof. Giugliano, directors of the Study Center, in national newspapers and at a night TV talk.

During this year, we continued to monitor and analyze the most important Italian and international updates on waste management, such as the new European Circular Economy Package, the Italian legislation over the classification of Incineration Bottom Ash and the recent final draft (FD) of the Waste Incineration BREF (Best Available Techniques REFerence document).

Our MatER researchers and collaborators published and presented contributions about waste management, residues recovery and LCA activities: a list of them can be found in the ["Our Study"](#) section of our website.

On the academic side, in the second half of 2018 we also had the possibility to enhance our collaboration inside the Global WtERT Network by hosting Maria Luisa Carneiro from the Catholic University Rio de Janeiro, Brazil, as a visiting researcher. She will stay until summer 2019 for the conclusion of her PhD thesis over the *"Thermo-economic environmental assessment and optimization of Hybrid Waste-to-Energy plants"*.

In compliance with its communication objectives, during 2018, the MatER Study Center organized and took part to some meetings and workshops on waste management for local public administrations. On April 2018 we presented at the premises of the Lombardy Region headquarters in Milan the work *"Evaluation with a LCA methodology*

of the flows and the destiny of Construction & Demolition waste in the Lombardy Region", coordinated by Lucia Rigamonti.

Moreover, our MatER researchers constantly took part all over the year to many national and international meetings, with oral presentations, posters and related full paper available in the meeting records. Here below is a short list of the most significant ones with the name of the speakers and title of the work:

- ❖ *PREWIN R&D Workshop at VTT: participation F. Viganò and F. Poretti, Espoo-Finland March 22nd-23rd.*
- ❖ *6th International Conference on Sustainable Solid Waste Management: "Advanced Waste-to-Energy plant design for the enhanced production of electricity", F. Viganò, June 2018 - Naxos Island, Greece.*
- ❖ *9th CEWEP Waste-to-Energy Congress 2018, "Waste-to-Energy Making Circular Economy Happen", 20th-21st September, Bilbao, Spain, with Mario Grosso chair of the technical session of the first day.*
- ❖ *VENICE 2018 – 7th International Symposium on Energy from Biomass and Waste: "Modelling the combustion of any solid waste mix", F. Viganò, Venice-Italy, 15-18 October 2018.*
- ❖ *ECOMONDO 2018 (November 2018- Rimini, Italy):*
 - *"Critical analysis and future perspectives for the urban waste management system of the Puglia Region" (MatER Team)*
 - *"Alternative thermal treatments and the innovation in waste to energy processes" (F. Viganò).*

Last but not least, during the year the MatER team has set up the organization of the 4th MatER Meeting on *"Innovations & Technologies in Waste Recovery"*, to be held on May 27th-28th 2019 at the Piacenza Campus of the Politecnico di Milano. The Meeting aims at being an update on latest trends in Sustainable Waste Management, dealing with regulatory, strategic and technical-scientific aspects in accordance with the previous editions.


A [dedicated page](#) in our website has been developed to collect the works of the authors and to manage all the applications through an on-line registration form. With the 4th edition of the conference it is also our ambition to strengthen the connection between the applied research and the industry. For this reason, we decided to set 2 twin calls, that will be equally evaluated but addressed to two different bodies:

1. **"scientific contributions"** dedicated to Universities, Academic Institutes, Research Centers, R&D Units, Control Authorities;
2. **"technical contributions"** dedicated to Industries, Consulting & Engineering Companies, Plant Operators, Technology Suppliers.

The 2-days Meeting will comprise oral and poster presentations over these indicative subjects: innovative Municipal Solid Waste treatment technologies, material and energy recovery from waste, bio-based industry and residual valorization, environmental sustainability and circular economy, normative and economic framework, waste

management and its sociological issues. An optional technical visit to an Italian important waste treatment facility will be also organized on May 29th, in collaboration with a MatER partner. The [CALL FOR ABSTRACTS](#) is still open and we look forward to your participation!

With the aim and the hope to reach further achievements in 2019 together,
Our Best Wishes again of a Joyful and Fruitful New Year to all WTERT sister organizations!



Prof. Stefano Consonni

Chair of the MatER Study Center