



Waste management during the Coronavirus emergency

Interview with prof. Mario Grosso, professor in «Solid waste management and treatment» at Politecnico di Milano

The emergency situation caused by the COVID 19 spread outbreak also heavily affects the management and treatment of waste at local and national level. What are the major issues that are emerging in your opinion?

The waste management system in Italy starts from a very heterogeneous state of the art of the various regions. Some of the regions have been equipped with an advanced and self-sufficient system for some time, others are still in difficulty, especially due to a deficient infrastructure of the treatment plants, which requires the use of transport of some waste streams to other regions or even abroad.

Lombardy is certainly belonging to the first group, being already aligned with all the most advanced indications and requests of European legislation, which are target for 2030.

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Air quality in Milano and Lombardy at the time of Coronavirus

Interview with prof. Giovanni Lonati, professor in «Air Pollution» at Politecnico di Milano

Air quality in Milano and the Po valley; What indications emerged? Has there actually been an improvement of the air quality in Milano?

All over the world, the areas that are affected by the measures of restriction of movement and work, have shown substantial and rapid reductions in atmospheric emissions. This concerns in particular declining emissions associated with traffic flows, industrial production and energy consumption, which, even in emergency situations due to air pollution, have never been achieved.

The only known example in the recent past, though in less tragic conditions, is the measures taken in the Beijing area on the occasion of the 2008 Summer Olympics.

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Waste management during the Coronavirus emergency

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It goes without saying that this has contributed to ensure that, at least from the point of view of waste management, the Region was not as vulnerable as it unfortunately has proven to be for many other aspects related to the current pandemic.

What emerged in any case was a general decrease in overall waste generation, due to the slowdown in production and commercial activities, with the residual waste reaching peaks of 30% less than in the pre-Covid situation. However, the management system for the separate collection of packaging waste went into crisis, as denounced by Conai since the first weeks of the spread of the epidemic. The system does not have great margins of flexibility in fact, and for some materials (plastic first of all) there was an already existing difficulties due to the large quantities of materials separated at the source, by citizens increasingly loyal to their duty. Adding that plastic unfortunately is one of the materials on which the Covid virus appears to survive the most (even a few days) and that the selection of plastic also requires manual intervention by operators, it is evident that it is precisely this material that goes suffering first. As for the residual waste in this situation, the system that gives more guarantees is direct incineration with energy recovery, without intermediate treatment steps. Contrarily, the use of alternative treatment techniques involves the inevitable manipulation of the waste, with all the consequent risks of diffusion, primarily for operators in the sector.

Finally, I believe that the material that should not suffer particularly on the impacts from this situation, is the organic waste. It is therefore good to continue to separate this waste regularly, however being careful not to add paper tissues.

The separate collection chains are in great difficulty. Would it be appropriate to throw the paper and above all, the plastic with the residual waste? Do we have to change our habits on disposing waste separately in this period?

As just illustrated, it must be clear that, especially in this emergency phase, the excess of separate collection of plastic risks harming the system. Especially where the residual waste is managed by direct waste-to-energy, it may be more appropriate to simply differentiate the most easily recyclable components (mainly bottles for food liquids and bottles for detergents) and leave the rest of the plastic in the residual waste. The latter can benefit from the reduction in the overall waste generation and should not cause crisis in the plants for the treatment of the residual waste share.

Is the COVID19 emergency going to change the future scenario of waste management?

This emergency will change everything, therefore even waste management cannot be exempt from a deep reflection. It will be appropriate to go beyond the electoral and often ideological logics that have characterized the debate of the last decades, ultimately stopping many initiatives and leaving numerous regions in conditions of non-self-sufficient waste treatment.

But first of all, this experience will have to be a further stimulus to tackle the problem at the source, strengthening waste prevention strategies at all levels. This represents and should be underlined as the top priority in waste management: bearing in mind that the best waste is the one that is not generated!



Prof. Mario Grosso

(Department of Civil and Environmental Engineering)

Air quality in Milano and Lombardy at the time of Coronavirus

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The drastic reduction in emissions has resulted in changes in local levels of air pollution, confirmed and testified by both satellite observations and ground-level monitoring networks. In the Po Valley, and in Lombardy in particular, the most significant impacts concerned nitrogen oxides (NO_x), both in terms of nitrogen dioxide (NO₂) as also for the even more significant nitrogen monoxide (NO). The lower concentration levels in ambient air of these pollutants are a direct consequence of the reduction in traffic flows, of which the urban context contributes as the main source. Similarly, and again due to the change in traffic, substantial reductions involving benzene were recorded, which in some stations was even lower than the lowest values observed in the same period of the last decade. The impact assessment with regard to atmospheric particulate matter is more complex; the levels are not only affected by the regime of primary emissions (i.e.: direct emission of particles into the atmosphere), but also by secondary formation processes in the atmosphere from gaseous precursors and by long-distance transport phenomena.

It is important to remember that in many areas the main source of atmospheric particulate matter is wood biomass combustion for domestic heating. This source is not affected by restrictive measures. In addition, the last two months have been characterized by temperatures generally higher than the average climatological values of the period. Thus, the reductions in atmospheric emissions were accompanied by fluctuating trends in concentrations, which also saw episodes of particularly high concentrations, generated by meteorological situations favourable to the accumulation in the atmosphere and by long-distance transport phenomena that affected the entire Po valley. Satellite observations and ground-level measurements have identified periods with the transport of desert-origin particulates from Asian regions, which have led to increases in PM₁₀ concentrations, alongside with less evident increases in PM_{2.5} concentrations, especially in the most eastern parts of the PO valley basin in the regions of Veneto, Friuli Venezia Giulia and Emilia Romagna.

What can we learn from this experience for the future?

The exceptional impact on the emission composition realised by the measures put in place has provided an extremely useful scenario for understanding the impact of the sources and drawing indications on the effectiveness of structural interventions to control air quality. In particular, road traffic reduction has clearly highlighted the significant role of vehicular emissions on nitrogen oxide concentrations, which very often are a critical issue in terms of respecting the limits of air quality in urban areas.

The gained experiences of these days also highlight the possibility of carrying out certain types of work activities remotely, without however affecting the quality and quantity of the services and activities developed. For the future it could be useful to build on these experiences and rethink the real needs of individual mobility for work purposes. This is also an important element in the management of the so-called "Phase 2", in the light of the reduced transport capacity of public services. In fact, the reduction in public transport capacity, together with a reduced willingness of travelling with crowded public vehicles, risks generating an increase in individual mobility with private vehicles, with the consequence of a renewed increase in traffic emissions, in comparison with the preceding situation.



Prof. Giovanni Lonati

(Department of Civil and Environmental Engineering)

POLIMI4SDGs: Launch of the 2nd monitoring campaign at Politecnico

The second campaign for monitoring the activities related to the sustainable development goals defined by the UN 2030 Agenda has been launched at Politecnico di Milano on April 7th.

The first campaign was conducted in 2017 and three years later a self-mapping is meant to verify and monitor the commitment of the Politecnico di Milano towards the achievement of the United Nations 2030 Agenda for Sustainable Development (SDGs) over time.

Anyone who is part of the Politecnico community can participate in the new internal survey by reporting one or more institutional, educational or research activity that address the issues and challenges of sustainable development.

Each activity requires the compilation of a dedicated form. The campaign of collecting information will end on May 15th.

Once the collection and the analysis of the initiatives is complete, a part of the results of the mapping will be communicated through the next issue of Sustainability News, as well as through the website www.campus-sostenibile.polimi.it

For those who have not yet seen the opportunity to participate in the campaign, can fill in one or even more forms on the page: www.campus-sostenibile.polimi.it/polimi4sdgs1

For requests for clarification on the initiative or regarding the survey, you can write to: campus.sostenibile@polimi.it



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Research & Education

Higher Education4SDGs: deadline of the Unibo-Polimi MOOC has been extended

Until July 26th 2020 it will be possible to follow the first edition of the MOOC (Massive Open Online Courses) on the theme Higher Education for Sustainable Development Goals, created through the collaboration between the University of Bologna and Politecnico di Milano.

The course is fully accessible online and designed to present virtuous daily behaviours with reference to the principles of sustainability, as well as the actions implemented by the two universities. The MOOC also aims to illustrate how universities can contribute, through training and the realization of concrete initiatives and practical actions, to create awareness towards sustainable development, at global and local level, and to achieve the objectives of Agenda 2030 of the 'UN.

Registration for the MOOC Higher Education for Sustainable Development Goals, with free and unlimited access, is possible from the BOOK - Unibo Open Knowledge and POK – Polimi Open Knowledge.

Professors and experts from the University of Bologna and Politecnico di Milano take turns to present the main and most urgent challenges outlined by the 17 sustainable development goals (SDGs) established by the UN.

The activities, projects and research of the two universities are introduced to contribute to the global commitment of achieving these goals by 2030 and to develop knowledge and awareness of sustainability for the leaders of the future. Up until today, 258 people have been enrolled in the MOOC.

The course addresses the following topics:

Week 1: **Introduction** to sustainable development and SDGs.

Week 2 **People**: Illustration of the goals related to poverty and hunger eradication, improving health and well-being, promoting quality education, reducing gender inequalities and guarantying access to water resources.

Week 3 **Prosperity**: Addressing economic sustainability as a crucial issue to achieve the goals: combatting energy poverty, guaranteeing decent work and responsible growth to all, improving infrastructure and fostering innovation, as well as reducing inequalities.

Week 4 **Planet**: How to safeguard our biosphere: achieving sustainable cities and communities, assuring responsible consumption and circular economy, contrasting climate change, assuring life on land and under water.

Week 5 **Peace**: fostering global peace and the third mission of university.

Week 6 **Partnerships**: global and local partners working for the Agenda 2030.



MOOCs For Citizens

Social Sciences
HE4SDGs

Higher Education for
Sustainable Development
Goals

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Short News

EU circular economy action plan

On March 11th 2020 the European Commission adopted a new action plan for circular economy, one of the main pillars of the European Green Deal, the new European agenda for sustainable growth. The new action plan includes initiatives along the entire life cycle of products, from their design to promoting circular economy processes, and for a sustainable consumption. The main aim is to ensure that raw materials are used most enduring way possible for and in the EU economy. For further information:

[Circular Economy Action Plan](#)
[European Green Deal](#)



On the subject of circular economy, we remind you of the possibility to bring your empty batteries, inner tubes or outer tires of the bicycle to one of the Milanese campuses and dispose them in the dedicated containers. Their locations can be found on the links below.

A small gesture capable of generating a virtuous circle of possibilities

http://www.campus-sostenibile.polimi.it/pile_scariche
<http://www.campus-sostenibile.polimi.it/-/un-progetto-di-economia-circolare>

Politecnico students receive the Amazon Innovation Award 2020

With the 'PrimePeerz' project, a group of students from the Polytechnic of Milan has won the first prize in the Amazon Innovation Award 2020. The project introduced by our students consists of a new delivery option that will allow Amazon couriers to travel less km during deliveries. The project is aimed at customers of the Amazon Prime service who, when completing the order, will be able to indicate a list of reliable and convenient addresses. In this way Amazon will be able to select the address that allows you to minimize the environmental impact of delivery, through aggregation with other orders or by optimization of the route proposed to the courier.

The team of Politecnico di Milano - consisting of Simona Esposito, Fulvio Gargiulo, Giorgio Damuzzo, Romain Lerouge and Nicola De Giusti - won a trip to Seattle, together with the French winners, where they will have the chance to visit the Amazon headquarters and present the project to the top management of the company. Along with the students, Tareq Rajjal, Head of Amazon Transport Services for Southern Europe, and the teachers responsible for the project in the three involved universities attended the 'virtual' prize-giving event via videoconference.

For further information:

<https://www.polimi.it/dettaglio-news/article/10/team-di-studenti-polimi-vince-lamazon-innovation-award-2020-8526/>



Politecnico winning Team



Opportunities

The Sustainable Development Festival 2020

As a consequence of the health emergency, the 2020 edition of the Festival scheduled for May-June was rescheduled from September 22nd to October 8th 2020, in line with government directives. Established in 2017, the Sustainable Development Festival, to which Politecnico di Milano immediately started to participate, as an event designed to raise awareness amongst an ever increasing share of the population on the topics of the 2030 Agenda for sustainable development.

As for the previous editions, different types of events can be submitted. They should be registered on the SD Festival platform by the individual organizers, at least 10 days before the date of the event and in any case no later than September 18th 2020. Each proposed initiative must have an explicit relevance to the topics of the 2030 Agenda and be related to one or more of the 17 Sustainable Development Goals.

Applying is possible for events that take place during the Festival period: 22 September-8 October and that do not have commercial purposes.

After approval by the FSS Committee, the contact person of the event will receive an e-mail (within 10 working days from the date of submission of the application) and subsequently the guidelines relating to the graphics of the Festival which should be adopted for all the promotion of the event (posters, programs, etc.).

Anyone who would like to participate, can send also the event to the Sustainability Service (serviziosostenibilita@polimi.it) so that it can be published on the university's sustainability website: www.campus-sostenibile.polimi.it

Further information available on the dedicated page:

<https://festivalsvilupposostenibile.it/2020/proponi-evento/>

Sustainability Unit remains available for any clarifications.



Within September 18th 2020 you may submit events for the next edition of the Festival:

<https://festivalsvilupposostenibile.it/2020/proponi-evento/>

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Amazon Innovation Award 2020 winning team photo by the students.

Sustainability News has no regular publication.

It is therefore not a periodical publication, in accordance with Law n. 47/1948 and Law n. 62/2001.

For the next issue of Sustainability News in preparation, we kindly ask you:

to send and share information to announce events or opportunities with a specific focus on themes concerning the sustainability in its broadest sense, before 22/05/2020.

Each text, possibly accompanied by an image, should not exceed 700 characters including spaces, and with explicit reference to one or more SDGs.

Material must be sent to: *Maria Licia Zuzzaro*

Sustainability Unit - Campus Life Division (serviziosostenibilita@polimi.it - tel: 022399.2232).

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