



**Report of GWC participation at Torino, Italy 2
Meeting of MatER (WTERT-Italy), 12-14 September
2013 meeting (within ISWA Working Group Energy
Recovery meeting)**

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1. General information for WTE developing in Italy

Waste management in Italy consists 39% recycling and composting, 17% WTE and 44% landfilling. The annual generation of MSW is 31 million tpa (528 Kg/inhabitant). There are currently 50 WTE Plants in Italy (with the majority, 34 of them, situated in northern Italy. Eighteen of these plants are equipped for on-line measurement of mercury & Dioxins (on volunteer base).

The gate fees of WTE plants are in the range of 50 -110 €/ton and the price received for electricity produced ranges from 60-110 Euro/MWh. Unfortunately, the new political situation in Italy is not for development of new WTE plants and there has been a deferment of needed such plants in Naples and in Parma).

The Gasification Plant (Thermoselect) in Rome does not operate. It started on 2011 with one line, however, due to high operational cost, it stopped operating in 2013 (the other two lines did not constructed yet). There are no reliable data for the 2012 operational year. Also, the other new under development Gasification Plant in Albano is on

stand-by.

2. WGER meeting presentations and conclusions

A successful meeting of around forty representatives of all Europe, took place in Torino. The report from the General Secretariat on ISWA matters including news from the Board and Scientific Technical Committee was submitted.

The WTE market situation in Italy, from the official report of Federambiente, was presented by Christophe Cordhomme of CNIM. He also mentioned one bad experience from Anaerobic Digestion Plant in Paris with many operational problems (like explosions) which interrupted operation. He also provided updated information regarding the new Plasma Gasification by Europlasma in France, with a capacity of 50,000 tpa industrial waste (commercial & little biomass). This Plant stopped operation in July, due to serious operational problems (the Gasifier has to be replaced).

Then, an analytical presentation was made on alternative thermal treatment by Prof. Stefano Consonni (Chair of WTERT-Italy) .The main conclusions were the difficulties of cleaning the produced syngas and also relatively high cost of operation. He emphasized the two -step oxidation process coupled with the same power system like in the conventional combustion plants.

Mr. Kazuaki Sakata from KOBELCO/Japan, presented the valorisation of residues from WTE in Japan . Today there are 1200 incinerator plants in Japan (the majority of very small capacity in comparison to E.U. plants. Almost 84% of Japanese WTE capacity is based on moving grate technology

and 109 small gasification plants. In Japan the bottom ash is as low as 5% of the MSW combusted, due to the high percentage of recycling in the source (very small portion of non-combustibles ends up as WTE feedstock).

An update of the ISWA Paper "Management of Bottom Ash from WTE Plants", was presented by Bettina Kamuk, Chair of Working Group Energy Recovery/ISWA, with focus on the use in agglomerates in roads, etc. Finally Efstratios Kalogirou presented the Global WTER Council worldwide activities plus the current MSW Projects/Tenders situation in Greece.

Events and involvement of WGER: ISWA Beacon Conference WtE 2013 in Malmö, Sweden (27 – 28 November 2013), Workshop in Argentina/Brazil (autumn 2013) and ISWA/SWANA Session, 17-20 September 2013 in Long Beach, USA.

3. Visit of the TRM WTE Plant in Torino

The visited the Torino WTE Plant which was just started the first of three lines. The Plant has a nominal capacity of 526,000 tpa and treats the Metropolitan Area of Torino (equivalent for 1,750,000 people). It will produce annually 350 GWh Electricity for 175,000 families (average 3 persons/family) and in the near future 170,000 MWh district heating for 17,000 households.

The Plant has an excellent design from the famous architect Bertoli (designer of Maserati luxury cars).

Main Technical Details of TRM Plant, started operation of 1st line on 19th April 2013:

The Plant is equipped with three incineration lines of

capacity of 67,5ton/h per line (LHV 11 MJ/Kg).The total area of the Plant is 70,000 m² (17.5 acres) and the covered building area 16,000 m² (it operates 7,800 hours annually).

· Steam Parameters 450C, 65 bar, 110 MWe (55,5 MW district heating. not available yet).

- Net electrical efficiency 29% (use of cooling towers)
- The grate technology used in the plant is Martin .
- The Flue Gas Cleaning System uses dry scrubber (sodium bicarbonate and activated carbon injection system), ESP, bag filter, SCR .
- Bottom ash produced after incineration of MSW (21%) is reused as material for road activities while Fly ash (3,5%) is treated as hazardous waste (exported).

· The gate fee is 105€/ton, and the price of the produced electricity to the grid is 75€/MWh

The plant is equipped with continuous emission monitoring devices on flue gas emissions which calibrated according to the European standards (directive 2000/76).

The height of the stack is 125 meters (something usual in northern Italy).

E. Kalogirou, October 20, 2013

For plant layout and control diagram please contact Dr. E. Kalogiour at ozone.greece@gmail.com

**Photograph of participants in Torino WTE visit, October 2013
(courtesy CNIM)**

