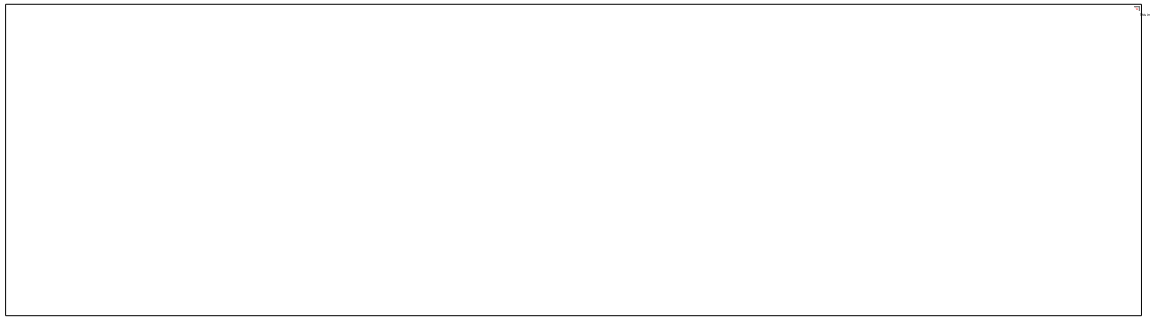

# ISWA ACTIVITY IN THE FIELD OF SRF

by
Antonio Bonomo, LEAP
Jorgen Haukohl, Ramboll
ISWA Working Group on Energy Recovery (WG-ER)

# ISWA Working Group on Energy Recovery

## Activities and discussions

- Gather and publish best available technology references within waste to energy
- Report on the State-of-the-Art on handling of flue gas cleaning residues
- Provide advices to the drafting and the implementation of EU directives on waste to energy
- Publish guidelines for waste to energy project preparation and operations
- Organisation of conferences

# The path toward sustainability

## Both **Mat**erial and **E**nergy **R**ecovery are key to Sustainability


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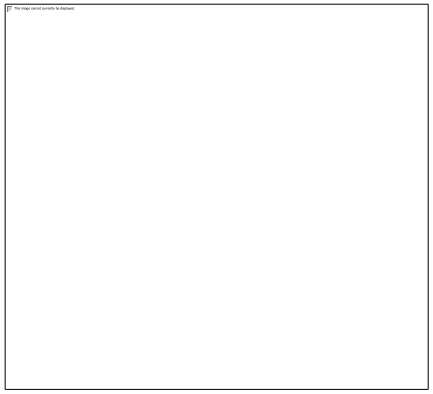
# ISWA WG-ER VIEWPOINTS
# COMPARE SRF WITH WTE
# NORMS AND STANDARDS
# REQUIREMENTS AND CONCLUSIONS



**COMPARE**

- Treatment of RDF/SRF in Power Plants

- Treatment in dedicated Waste-to-Energy Plants – (WtE)

# WHAT IS RDF/SRF?

- Mechanically sorted MSW (Municipal Sorted Waste)
- Possibly combined with Biological/Thermal treatment (like Fusina Plant in Venice)

# WHAT IS WTE?

- Direct treatment and Energy Recovery of MSW

# QUALITY OF MSW

- MSW, Municipal Solid Waste. Residual waste collected at the households and similar commercial, industrial and institutional waste. No pre-treatment – “as it is”. Calorific value (CV) typically 8-11 MJ/kg.

# QUALITY OF SRF

- SRF, Solid Recovered Fuel = Refuse Derived Fuel. Is defined as waste that has been sorted and processed to meet CEN/343 ANAS standards. CV according to CEN => SRF to have a CV > 3 MJ/kg. SRF is often (common practise) considered a high grade RDF but CEN reference is also related to Cl and Hg content. Typically SRF has a CV of 10-14 MJ/kg.

# WTE

**Emission Requirement**

| | Daily average in mg/Nm³ | |
|---|---|---|
| | Limits in 2000/76/EC | Bat |
| Total dust | 10 | 1-5 |
| Hydrogen Chloride (HCl) | 10 | 1-8 |
| Hydrogen Flouride (HF) | 1 | <1 |
| Sulphur dioxide ($SO_2$) | 50 | 1-40 |
| $NO_X$ using SNCR | 200 | 120-180 |
| Gaseous and vaporous organic substances, expressed as TOC | 10 | 1-10 |
| Carbon monoxide (CO) | 50 | 5-30 |
| Mercury and its compounds (as Hg) | 0,05 | 0,001-0,02 |
| Total cadmium and thallium | 0,05 | 0,005-0,05 [1)] |
| Sum of other metals | 0,5 | 0,005-0,5 [1)] |
| Dioxins and Furans (in ng TEQ/Nm³) | 0,1 | 0,01-0,1[1)] |
| Ammonia | n/a | <10 |

[1)] from Non-continuous samples

**Highly regulated impact**

# RDF/ SRF

**Content Requirement**

**Limited fuel composition**

# ISWA WG-ER
# CONCLUSION

- Emission Standard:
  EU Directive 2000/76 (or IED 2010/75 since 7.1.2014) has to be fulfilled when using SRF
- Dilution in co-combustion should not be accepted
- Input composition of SRF is not securing air emission quality
- Emissions can be measured continuously according to strict standard
- Emission requirements has to be included in SRF treatment

# THANK YOU

# ISWA WORKING GROUP ON ENERGY RECOVERY

Antonio Bonomo, LEAP, antonio.bonomo@polimi.it
Jorgen Haukohl, Ramboll, jh@ramboll.com