



LEG AMBIENTE
del Friuli Venezia Giulia onlus



DECISIVE

A DECENTRALISED MANAGEMENT SCHEME FOR
INNOVATIVE VALORISATION OF URBAN BIOWASTE

In which way innovation in organic waste management can promote the Circular Economy?



Winery “La Ferula”, Staranzano, 3/10/2018



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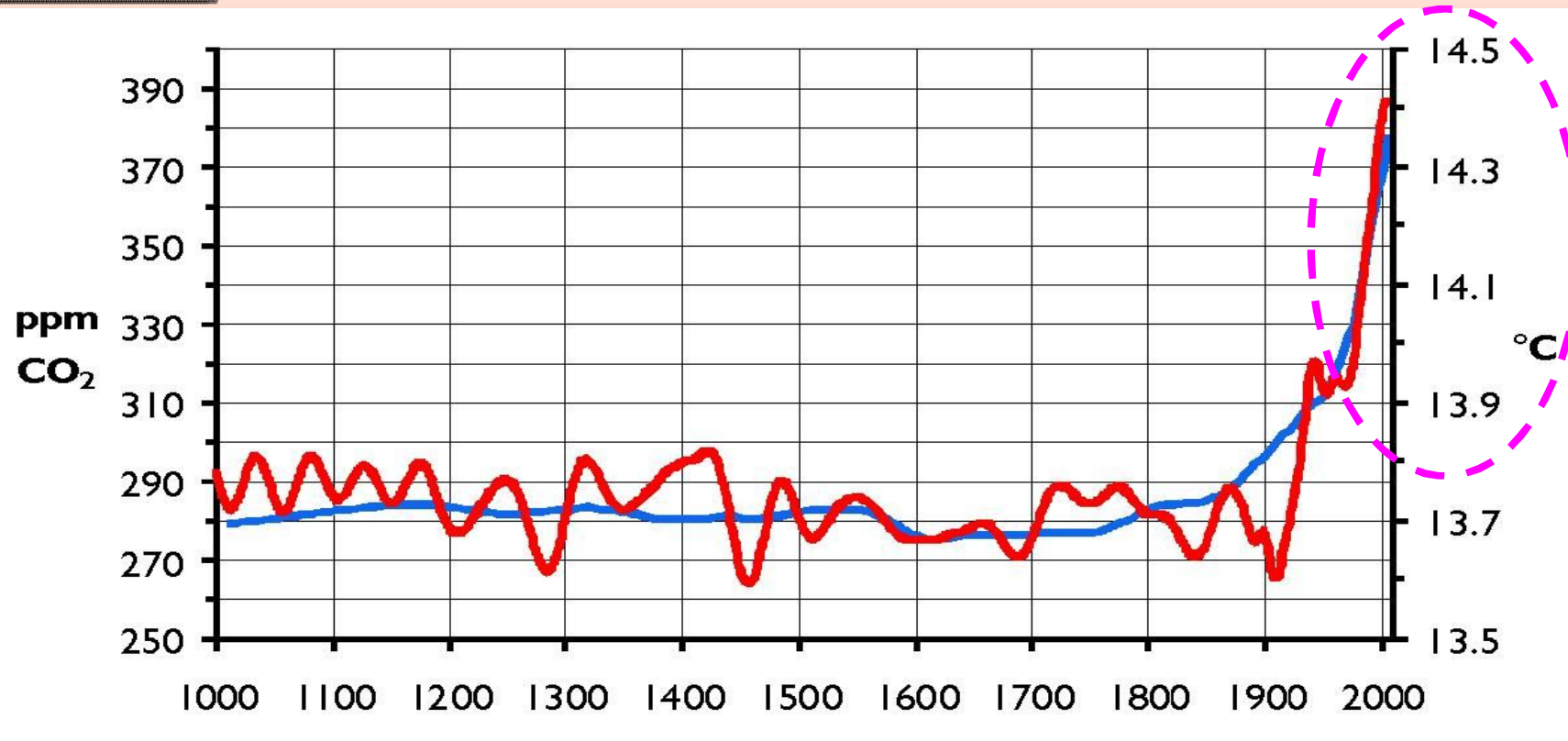
Preamble

The "gift" of fossil fuels



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Blue: increasing of CO₂ concentration in atmosphere

Red: global mean temperature trend

and this is OUR Responsibility !! 2

Europe vs Greenhouse Effect

Once upon a time COP 21 in Paris (2015):
urgent and dramatic reduction of GHG within
2050

The Covenant of Mayors plans in the SEAPs
the reduction of CO₂ emissions at least of 40%
within 2030 compared to 2005



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What about *Legambiente*



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- Legambiente is a non-profit association born in 1980. The mission of the association is to make the environmental culture the centre of a new kind of development and diffused well-being.
- Important values for the association are the improvement of environmental quality, the fight against all forms of pollution, a wise use of natural resources, the construction of a more balanced relationship between human beings and the nature.
- Spreading these values can be an effective way to respond to the challenges of our time: the modernization of the economy, the commitment to beat unemployment, the struggle for peace and against all forms of discrimination and social injustice, the effort to consider globalization not only as a mere trading of goods but also as a mean to improve quality of life and to give rights to billions of people forced to live in poverty.



Legambiente



- **Our structure:**

- Legambiente is composed by a national headquarter based in Rome, 20 regional branches and more than 1000 local groups.
- The association has an unrivalled presence on the Italian territory: more than 115.000 members, 30.000 students participating in environmental education projects, more than 3.000 young people each year participating to our national and international environmental workcamps and more that 60 natural reserves and protected areas managed by Legambiente.
- In Friuli-Venezia Giulia Region there are 11 Local Clubs with more than 600 members



Legambiente



- The awareness campaigns Goletta Verde (Green Schooner), Treno Verde (Green Train), Operazione Fiumi (Operation Rivers), Carovana delle Alpi (Caravan of the Alps) and Salvalarte (Save the Art), allow Legambiente to collect thousands of data on the water and city pollution, on the alpine system and artistic heritage.
- The association supports renewable energies and GMO-free agriculture and it is committed against the greenhouse effect, the eco-mafia and illegal buildings and the protection of the artistic and cultural heritage of the Italian territories.
- Moreover, Legambiente's awareness campaigns Puliamo il Mondo (Clean Up the World), Clean up the Med, Mal'Aria (Sick Air) and thousands of workcamps in Italy and abroad, have shown the way forward for a strong and combative environmental volunteerism.



Why Circular Economy?



Highlights of the “**Comuni ricicloni**” (top in W.M. & Recycling) **Award:**

- The last European programme about Circular Economy sets, among its goals, the packaging recycling up to 70% within 2030 and up to 65% of urban waste to be recycled within 2035.
- And, at the same time, only a 10% of solid waste can be disposed of in landfills.



Legambiente for the Circular Economy



Waste Management first!

- [“Comuni Ricicloni “ Award, XXV edition \(2018 june 27th\)](#)
There are **505 Municipalities Waste-free** in 2018 (+ 19 compared to 2017)
- Veneto, Friuli Venezia Giulia e Trentino Alto Adige up to now are the Regions with the highest number of virtuous Municipalities.
- Among provincial Capitals, Treviso, **Pordenone** and Trento are steadily the winners, all in North-East, so far the part of Italy with the best performances, thanks to door-to-door system and to Consortia for waste collection and recycling supply chain.



Legambiente for the Circular Economy



- Circular economy represents an excellent chance to accomplish the longed for revolution in the maximization of natural resources use and of waste management, dismantling dumps and waste combustion for energy purpose.
- In particular, this new economic model is key to save food, for collection of urban waste organic fraction, to increase products' lifespan, to impose higher recyclability and reparability standards, to end the planned obsolescence of merchandise.
- Finally yet importantly, there is a benefit as competitively, innovation and economic saving aspect.



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Legambiente & Circular Economy



Legambiente organized
in Bruxelles, in the
EU Parliament, the
meeting

*Circular Economy-
Made in Italy,
on 24th of April 2017.*

#circulareconomy MADE IN ITALY

La leadership europea dei campioni
italiani che chiudono il cerchio

*The european leadership of the Italian
Champions that close the circle*

24.04.2017

dalle 15.30 alle 18.30 | *from 15.30 to 18.30*

Sala ASP 5G3 | *Room ASP 5G3*

BRUXELLES | EUROPEAN PARLIAMENT

PLACE DU LUXEMBOURG | SPINELLI BUILDING



PARTECIPANO | KEYNOTE SPEAKERS

Jyrki Katainen

Vicepresidente Commissione UE / *Vice - president EU Commission*

Simona Bonafè

Eurodeputata, relatrice del Pacchetto sull'Economia Circolare / *EP Rapporteur of Circular Economy Package*

Stefano Ciafani

Direttore Generale Legambiente / *Executive Director of Legambiente*

Now: what about the topic of this workshop?

Biomass required:

- Bulk solid biomasses (2,2 kWht/kg) : 2,5 ÷ 3,5 kg/kWhe
- Biogas (5,5 kWht/m³) : 0,9 ÷ 1,3 m³/kWhe
- Bio-methane (9,2 kWht/m³) : 0,6 ÷ 0,75 m³/kWhe

***In any way We recommend waste biomass
(with a good energy potential) and not specific
crops***



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Which biomasses?



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- Pellets
- Wood chips (*)
- Other wooden waste

- Direct Combustion with fumes purification
- Pyrolysis >> (biochar)

(*) well dried, chopped & filtered

- Processing waste from agriculture and food industries
- farmhouses

- Scraps of dairies and butchering,
- meat processing waste
- restaurants leftovers

Anaerobic digester

- Biogas/Syngas
- Bio-methane

For which Users?

- Small & medium size industries as:
 - Wood processing
 - Breeders, farmers and agri-food & wine producers
- B&B, farmhouses, restaurants in small villages and countryside
- **Generally: the same producers of biomass waste**
- **Typically: where the biomass waste is not steady and available during all the year**

The Stirling technology

- **Small is beautiful?**

- Small is possible with **ITS-energy** Stirling cogenerating power units :

- From 1 to 12 kWe, and, at the same time:
- From 8 up to 70 kWt available at 600 °C

- **BUT:**

- Electric efficiency should rise up to 15 ÷ 20 %
- Reliability (useful life) should not be less than 12 years
(*running* $\approx 6.600 \text{ h/yr} = 22 \text{ h} \times 300 \text{ dd/yr}$)

Other matters

- **Other chances are:**
 - Easy & steady storage of waste biomasses (biogas recovery)
 - Energy independence (stand alone plants)
 - **Suitable for use together other RES:**
 - **PV first**, Solar thermal, etc.
 - Upgradeable and replicable

Other matters

At the same time:

- A European Environmental Legislation more stable and favourable is needed
- In Italy (*not only!*): a different approach to the climate change and to fossil-free energy is essential
- Consequently We claim:
 - a financial support, steady and connected with GHG reduction
 - bureaucratic simplification of procedures for small business in waste management

Tasks for Legambiente

- Information & Communication Campaign for citizens and entrepreneurs
- Assistance and advice to National Government and to Regional and local Authorities for:
 - Reduction/mitigation-of and adaptation-to climate changes;
 - Promoting the circular economy via a decentralized system of small installations for bio-waste converting;
 - Promoting the end of a lot of non technological barriers to the growth of these small facilities;
 - To claim economic & financial support in front of **CO₂** reduction;
 - Enhancing a common front with other environmental Associations in Europe to fight climate changes and to increase the Circular Economy.



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Thanks for Your attention!



Cristiano Gillardi, Legambiente FVG