Interreg CENTRAL EUROPE
European Union
European Regional Development Fund

REEF 2W

INCREASED RENEWABLE ENERGY AND ENERGY EFFICIENCY BY INTEGRATING, COMBINING URBAN WASTEWATER AND WASTE MANAGEMENT SYSTEM

TAKING COOPERATION FORWARD

Final Conference 26/6/2020

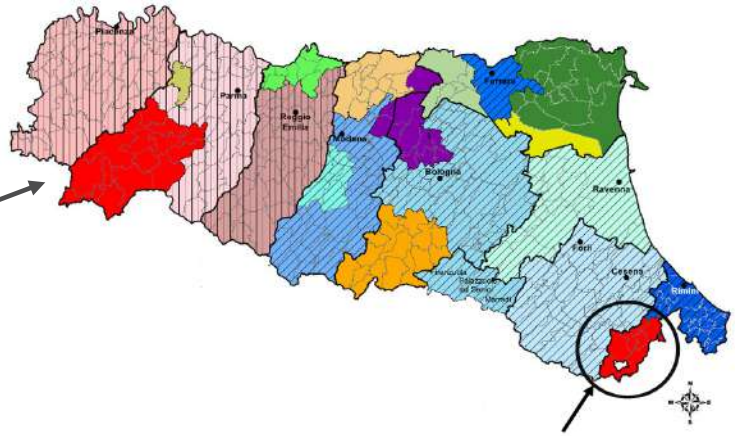
REEF 2W application (Montefeltro Servizi)

Daniel Limongi ENEA

Description of the pilot site

- Smallest company involved in the project
- Owned by the **7 municipalities** of the High Valmarecchia
- Population served is about **17.000 inhabitants** with a low density
- Solid waste management and other services
- The company is located in three different sites with some logistic and energetic inefficiency

Emilia Romagna Region



Area covered by the utility

INITIAL SITUATION

Availability of biomasses

- About **670 tons** of organic biomasses are collected each year
- **Two third** of these are OFMSW and **one third** is represented by prunes and other vegetables residues and few exhaust vegetable oil
- too limited amount of material to think a biodigester and not all adapted to this use

Identification of other biomasses

- Survey on the area to identify of other possible organic waste available
- Identification of a farm producing 864 tons of lignocellulosic litter

Energetic consumption

- The energetic consumption is also limited with a electric consumption of **17.000 kWh/year** and **80.000 MJ/year** for building and office heating

FUTURE SCENARIO

Possible scenarios

- The company is on the way to optimize the logistic situation of the infrastructures
- It will be possible to use the producible energy derived from biomasses to heat buildings and produce electricity

- On the roofs will be **installed PV** panels with an estimated production of 19 MWh/year

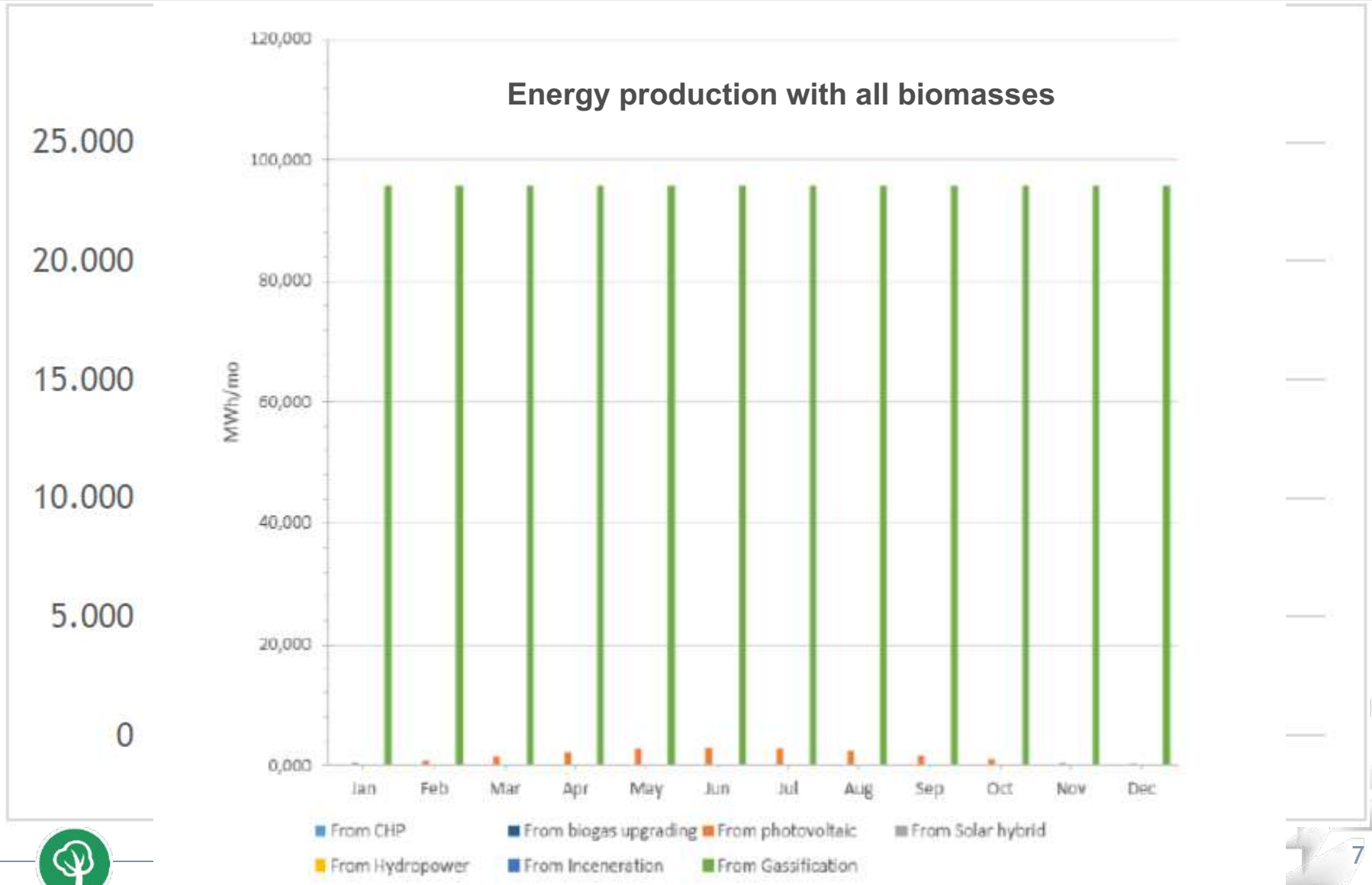
- The best solution identified to recovery heat from available biomasses will be the **gasification process**

DEVELOPED SCENARIOS

Possible scenarios - Gasification

- Three different scenarios are considered:
- first scenario: **only the biomass** already available on the treatment platform without the organic fraction of municipal waste (OFMSW) has been considered
- second scenario: available biomasses has been integrated with **exhaust mushroom litter**
- third scenario, **all available biomasses** including OFMSW were considered

ELECTRICITY RESULTS



HOW TO USE THE ENERGY

Spatial assessment

- The **thermal energy** produced by the plant at the moment it is quite difficult to use because too far away from the use point
- Excess of **electricity**, thanks of the Italian legislation, can be used in the public building of the 7 municipalities.
- The PV plant can be sufficient to cover the energy needs of the treatment plant

FINAL OVERVIEW

- Development and valorization of the society, equipping it with facilities for the management of **integrated waste cycle**
- The plan includes investments for new vehicles and facilities for about Euro 2.300.000 with **7 years** of ROI
- Considering only he electric energy produced and eventually introduced in the grid, more than **19.000 tons of CO2eq** could be removed
- This way, the Emilia Romagna pilot can represent a **sustainable model** for small multi-utilities

Contact details

Name: Daniel Limongi

www.interreg-central.eu/reef-2w

Mail to: reef2w@gmail.com

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