

Asja Group's approach to a green, energy-efficient future



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THE MISSION OF ASJA



- **Decarbonisation**

Since 1995 **Asja** has been a leader company in power generation from renewable sources and in the reduction of climate-altering gas emissions.

- **Energy efficiency**

Asja operates in the energy efficiency sector developing and marketing the TOTEM, a high-efficiency micro Combined Heat and Power unit.



ASJA WORLDWIDE 190 MW installed power

Italy
22 landfill gas plants
1 vegetable oil plant
8 wind farms
14 photovoltaic plants

China
1 landfill gas plant

Brazil
3 landfill gas plants
(1 of which under development)

581,000 MWh
green energy produced

1,560,000 tons
CO₂ avoided

940,000
oil barrels saved

860,000
people enjoying clean lighting
from our green energy

Data refer to 2015 production



The CO₂ emission reduction projects of Belo Horizonte and Uberlândia in South America have been registered under the **Gold Standard**.



Landfill gas plants

We generate energy from landfill gas



Asja is a major player in the international scenario of power generation from landfill gas generated at municipal solid waste (MSW) landfill sites.

Biomass power plants

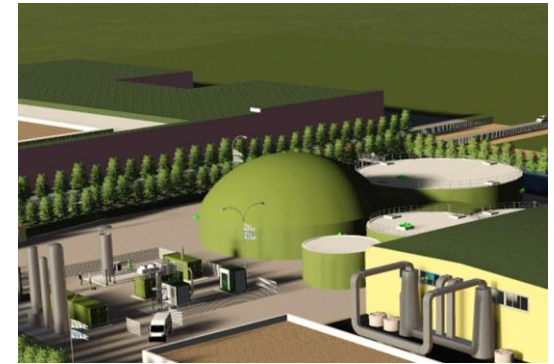
We generate energy from biomass



Asja designs, builds and manages plants that generate energy from vegetable oils or from animal fat.

Biomethane plants

Area under development



A new frontier in biogas-to-energy systems.

Two plants are presently under development for the production of biomethane from the organic fraction of municipal solid waste and from by-products from the agro-industrial sector.



ASJA FUTURE PERSPECTIVES FOR BIOGAS PLANTS



The full exploitation of the renewable resource

- Capture and bioconversion of Carbon Dioxide into biopolymers
- Valorisation of waste heat in an energy-saving perspective



8 wind farms

105 MW installed power



14 photovoltaic plants

11,6 MW installed power





ASJA FUTURE PERSPECTIVES FOR A SUSTAINABLE POWER GENERATION



Towards the integrated cloud-like smart grid

- Distributed generation
- New paradigms for efficient and low-cost energy storage systems



TOTEM | TOTAL Energy Module

The best in energy efficiency

Asja manufactures and sells the TOTEM a micro Combined Heat and Power unit having best-in-class global efficiency, which can be fueled by Natural Gas, Biomethane, Biogas, GPL.



MODEL		TOTEM 10	TOTEM 20	TOTEM 25
Rated electric power	kW	10	20	25
Rated thermal power	kW	21,6 (25,2*)	41,9 (48,5*)	50,2 (57,6*)
Net electrical efficiency	%	29,6	31,2	32,5
Total efficiency	%	93,6 (104,3*)	96,5 (106,8*)	97,8 (107,4*)
Engine		Fiat Fire 1400 cc		
Engine Control Unit		Magneti Marelli		
Fuel		Methane, bio-methane, biogas, LPG		
Methane (CH ₄)	Nm ³ /h	3,31	6,28	7,54
Emission settings (NO _x)@ 5%O ₂	Mg/Nm ³	≤ 10		
Emission settings (CO) @ 5% O ₂	Mg/Nm ³	≤ 10		

* Referred to the input water temperature 35°C.



Values are measured at Micro-Cogeneration laboratory (www.gecos.polimi.it) by Milan Polytechnic and validated by TÜV Rheinland.



FUTURE PERSPECTIVES FOR TOTEM



Bringing μ -chp to every home

- **Asja** is developing the integration of TOTEM with a Heat Pump to get a Renewable Heat Generator having a global efficiency higher than 160%.
- The challenge in μ -CHP is the “smart boiler”, producing combined heat and power for domestic use. **Asja** is evaluating the most promising technologies.



ASJA IN ASSORINNOVABILI AND RES4MED



- **assoRinnovabili**

Asja is a member of assoRinnovabili, the largest Italian association gathering the major players in the field of renewables, headed by Agostino Re Rebaudengo, founder and chairman of the Asja Group.

- **RES4MED**

Asja is a member of RES4MED, an association for the development of renewables in the Mediterranean Area, with a particular focus on the Countries of Maghreb.

green
energy
by asja

Thank you for your attention

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