

WORKSHOP

“Benchmarking and guidelines for streamlined  
authorisation processes for bioenergy installations”

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# **FARM SCALE BIOGAS PLANTS ON AGRICULTURAL WASTES PERMIT PROCEDURES IN ITALY**

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# CONTENTS

- A typical licence applicant: the PAE (Professional Agricultural Entrepreneur)
- Biomass potentially used in a farm scale biogas plant
- Description of a typical biogas plant in a dairy farm in Northern Italy
- Licensing procedures requested to build and operate the plant
- Permit procedure to sell the Energy
- Permit procedure to use digestate as a fertilizer
- Conclusions

## **A TYPICAL LICENCE APPLICANT: THE PAE (PROFESSIONAL AGRICULTURAL ENTREPRENEUR)**

- It is considered as PAE anyone whose activity is directed, at least for the 50% of his time, to the crop or forestry cultivation or animal housing;
- Anaerobic Digestion managed by a PAE is considered an agricultural activity with tax advantages and concessions in the environmental rules application.

# BIOMASS AVAILABLE FOR DIGESTION IN A FARM SCALE BIOGAS PLANT

- faecal matter (animal manure), excluded from the scope of Waste Directive (WD) to the extent it is covered by other national environmental regulations;
- non hazardous agricultural residues used in farming (crop residues, straw, et.);
- energy crops (silage mais, shorgo, etc..);
- animal by-products covered by Regulation n.1774/CE;
- agro-industrial residues.

# DESCRIPTION OF A TYPICAL BIOGAS PLANT IN A DAIRY FARM IN NORTHERN ITALY

- Farm size 110 dairy cows + heifers
- Type of housing cubicle house
- Production of slurry manure 11,5 m<sup>3</sup>/day
- Size of the Biogas plant 350 kW
- Biomass loaded to the AD plant:
  - cattle slurry 11,5 t/day
  - silage maize 7 t/day
  - vegetable residues from agroindustry 30 t/day

# BIOGAS PLANTS ON DAIRY FARMS



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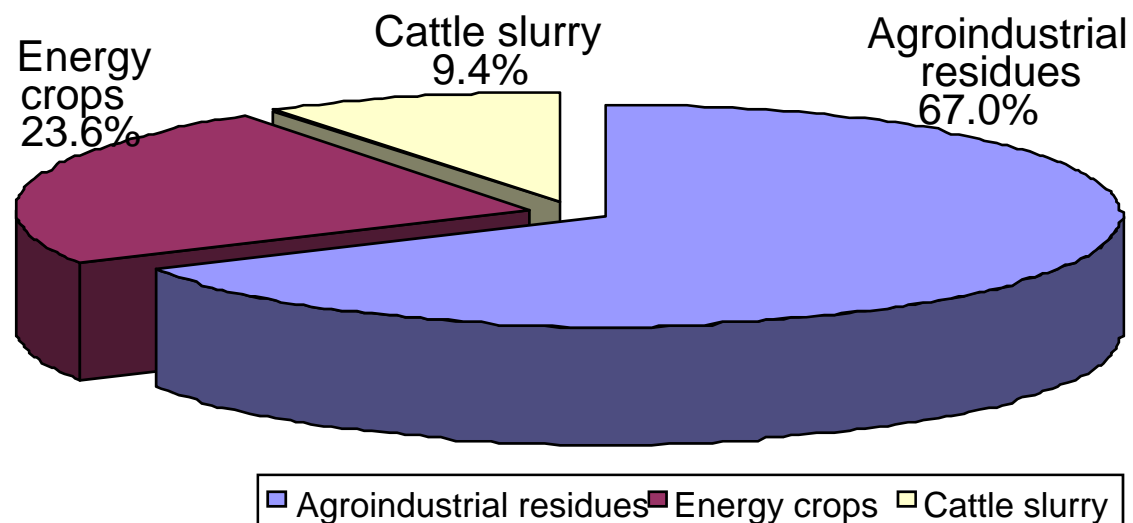


# BIOGAS PLANTS ON DAIRY FARMS

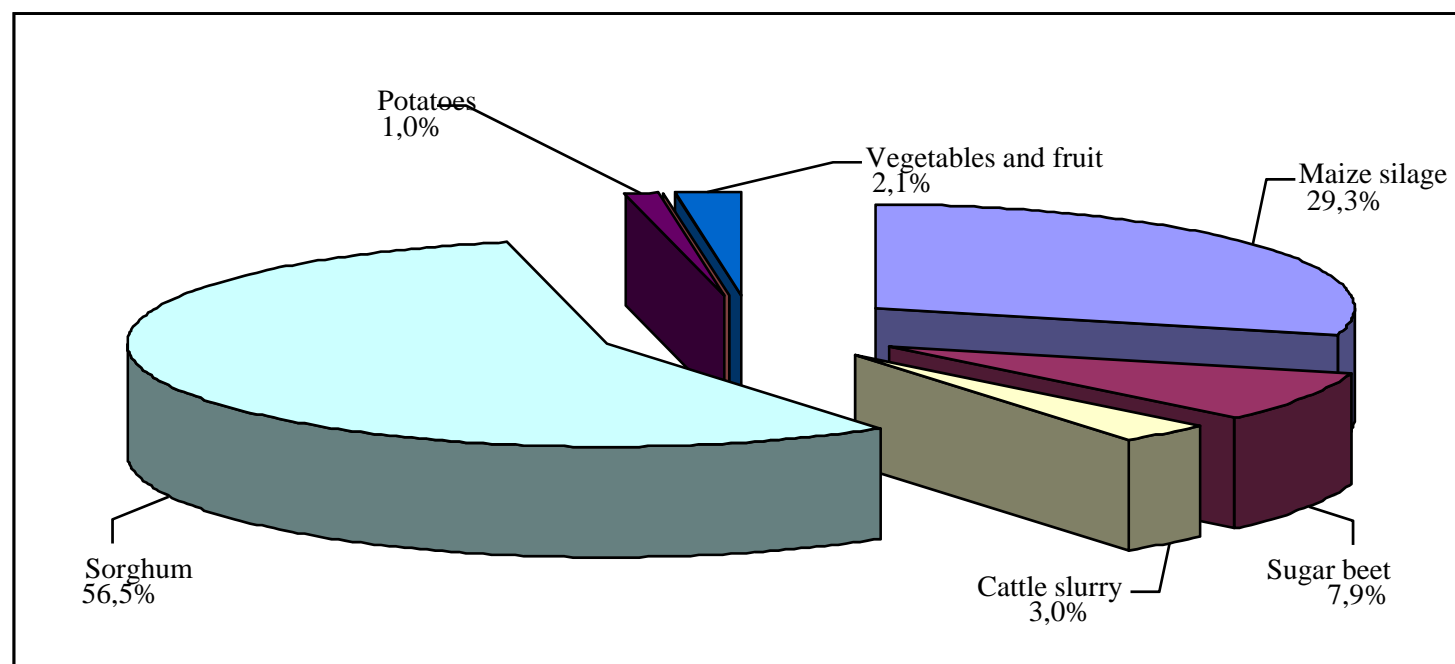


# BIOGAS PLANTS ON DAIRY FARMS





**Sub-strates  
processed:  
organic load  
(% VS from  
each sub-strate)**



## Table 1 – Licensing procedures applied in Italy to build and operate farm scale biogas plants

Common cases	Type of licensing procedure		
	NO Permit at all (only declaration of starting of construction)	Simplified Permit procedure	Complete Permit procedure
<b>Case A</b> - Plant power: < 250 kWe - Licence applicant: PAE or not PAE * - Biomass feedstock: all type, residues classified as waste included (?)	X		
<b>Case B</b> - Plant power: 250 kWe –1 Mwe - Licence applicant: PAE - Biomass feedstock: all type, exluded residues classified as waste		X	
<b>Case C</b> - Plant power: 250 kWe –1 Mwe - Licence applicant: PAE - Biomass feedstock: all type, residues classified as waste included			X

*segue*

Common cases	Type of licensing procedure		
	NO Permit at all (only declaration of starting of construction)	Simplified Permit procedure	Complete Permit procedure
Case D - Plant power: >1 Mwe - Licence applicant: PAE - Biomass feedstock: all type, residues classified as waste included or not			X
Case E - Plant power: >250 kW <sub>e</sub> - Licence applicant: not PAE - Biomass feedstock: all type, residues classified as waste included			X

\* PAE: Professional Agricultural Entrepreneur

# PERMIT PROCEDURE TO SELL THE ENERGY

- One year or more is requested to apply for the connection to the electricity grid, to obtain the authorization, to make the connection, to have the contract to sell electricity, to activate the connection;
- Other permissions are:
  - Classification as renewable energy producer;
  - Certificate of fire prevention.

*(Permit procedure to use digestate as a fertilizer)*

## **Case 1: only animal manure as organic load to the biogas plant**

Application of the digestate to the fields according to the mandatory measures of the Action Plans for the NVZ, to the National Decree 07/04/06 for the Other Zones (OZ).

Main measures:

- maximum dose of N from digestate in NVZ: 170 kg N/ha/a;
- maximum dose of N from digestate in OZ: 340 kg N/ha/a;
- a Fertilization Plan (FP) is requested in NVZ; in OZ only for IPPC animal farms.

*(Permit procedure to use digestate as a fertilizer)*

## **Case 2: only energy crops as organic load to the biogas plant**

Application of the digestate to the fields according to the mandatory measures of the Action Plans for the NVZ, to the National Decree 07/04/06 for the OZ.

Main measures:

*In Nitrate Vulnerable Zones (NVZ)*

- maximum dose of N from digestate: according to a FP.

*In Other Zones*

- maximum dose of N from digestate: according to the crop demand. FP not requested.



*(Permit procedure to use digestate as a fertilizer)*

### **Case 3: mix of animal manure, energy crops and by-products from agro-industry as organic load to the biogas plant**

Application of the digestate to the fields according to the mandatory measures of the Action Plans for the NVZ, to the National Decree 07/04/06 for the OZ.

Main measures:

*In NVZ*

- maximum dose of N from digested manure: 170 kg N/ha/a;
- N dose from other dig. biomass according to a FP.

*In Other Zones*

- maximum dose of N from digestate in Other Zones: 340 kg/ha/a. A FP is requested for higher doses.

*(Permit procedure to use digestate as a fertilizer)*

## **Case 4: mix of animal manure, energy crops and animal by-products as organic load to the biogas plant**

Application of the digestate to the fields according to the mandatory measures of the Action Plans for the NVZ, to the National Decree 07/04/06 for the OZ.

Main measures:

*In NVZ*

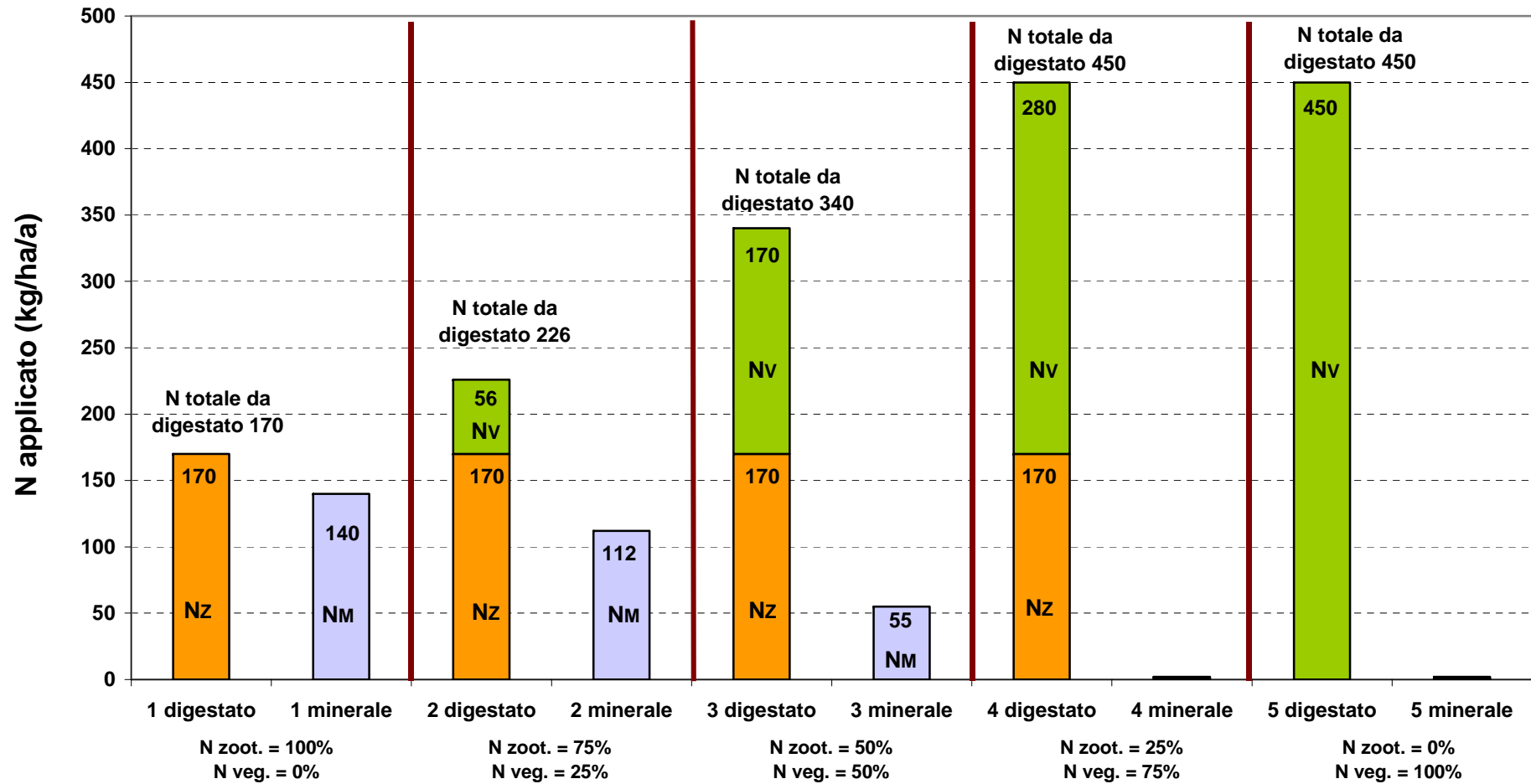
- maximum dose of N from digested manure: 170 kg N/ha/a;
- N dose from other dig. biomass according to a FP.

*In Other Zones*

- maximum dose of N from digestate in Other Zones: 340 kg/ha/a. A FP is requested for higher doses.

## Fabbisogno 250 kg N/ha/a

NZ = N zootecnico NV = N vegetale NM = N minerale



# CONCLUSIONS

- Many barriers occur in Italy in permitting process, mainly due to different interpretation of procedures and the overlapping of different regulations;
- the exclusion of agricultural wastes from the scope of the Waste Directive is commonly disputed by the licensing Authorities, even in the case of evident interpretation;
- a recent position of the Council of the European Union on the legislative framework for the handling of waste is not in favour of the exclusion of biomass for energy from the scope of WD;
- contracts to sell the energy produced to the electric stock exchange are difficult to sign;
- procedural aspects in energy from biomass should be greatly simplified to increase the green energy quota produced, having regard to avoid any negative impacts for the environment.

*... Thanks for your attention*