

**Group 5**

# BIOMASS AND BIOGAS ENERGY

Naiara, Lucía, Mateo and Adrián





1 2 3 4 5 6

Definition

What energy  
can it  
produce?

Items

Process

Advantages and  
disadvantages

Domestic and  
industrial uses

# DEFINITION

## **Biomass energy**

It is the energy obtained from the organic matter that constitutes living beings, their excreta and their non-living remains

## **Biogas energy**

The main sources of biogas are livestock and agro-industrial waste, that froms urban wastewater treatment plants and the organic fraction of household waste.

# What energy can it produce?

## 1 biomass



## 2 biogas





# ITEMS:¿ what is needed?

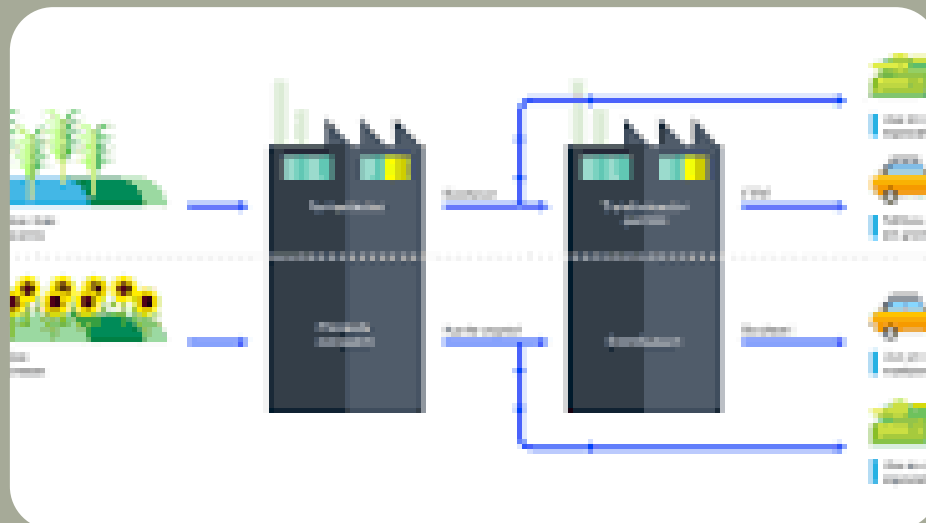
## 1 BIOMASS

- 1. FUEL .
- 2. COSMETICS AND PERFUMES .
- 3. FOOD ADDITIVES AND NUTRITIONAL SUPPLEMENTS
- 4. DETERGENTS AND CLEANING PRODUCTS

## 2 BIOGAS

The main sources of biogas are livestock and agro-industrial waste, sludge from urban wastewater treatment plants

# PROCESS



## First

It decompose the biomass using heat (at about 500°C) without oxygen.

## What is obtained through this process?

Gases made up of hydrogen, carbon oxides and hydrocarbons, hydrocarbonate liquids and carbonaceous solid residues are obtained.

## How can biomass and biogas serve?

- As fuel
- heating and air conditioning
- generate electricity
- help keep forests clean

# ADVANTAGES

## BIOMASS

Cheaper price, less dependence on fossil fuel, low polluting, renewable, cleans the mountains and yields highly

## BIOGAS

It requires and stored directly, it is cleaner than fossil fuel and it is renewable.



# DISADVANTAGES

## BIOMASS

It is lower yield, requires large areas for its production and storage, puts forest areas at risk and its residues are difficult to eliminate

## BIOGAS

Its installation cost is high, it produces carbon dioxide that is harmful to the atmosphere and is not produced in the same way, that is, in cold areas its performance is low and slow.

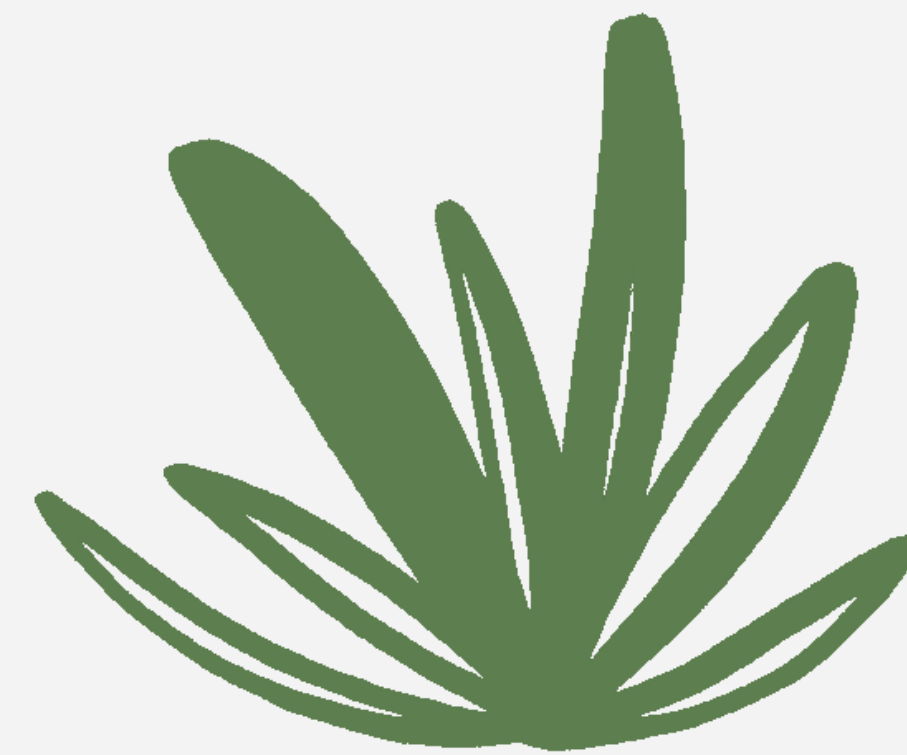
# DOMESTIC AND INDUSTRIAL USES

## INDUSTRIAL USE

Drying operations,  
production of hot water,  
thermal oil, air  
conditioning in industrial  
buildings, transforms  
energy into heat by  
biological and  
thermochemical  
procedures.  
Produces ecological  
fertilizer.

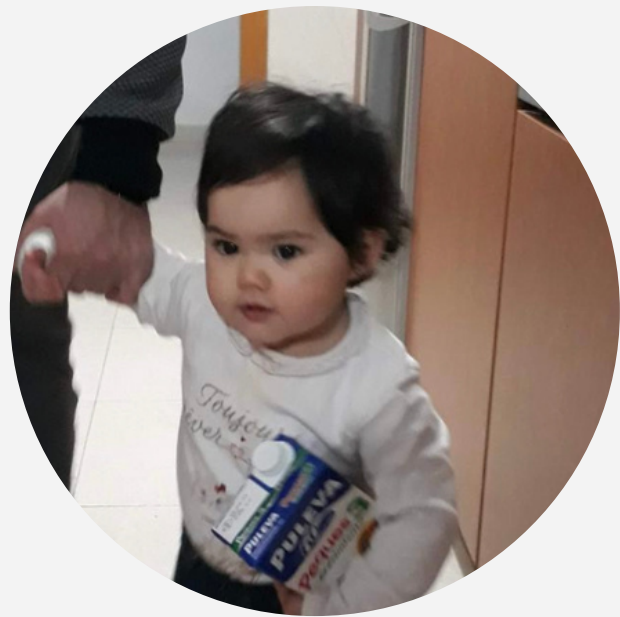
## DOMESTIC USE

Generate heating,  
gas, refrigeration  
and produce hot  
water.

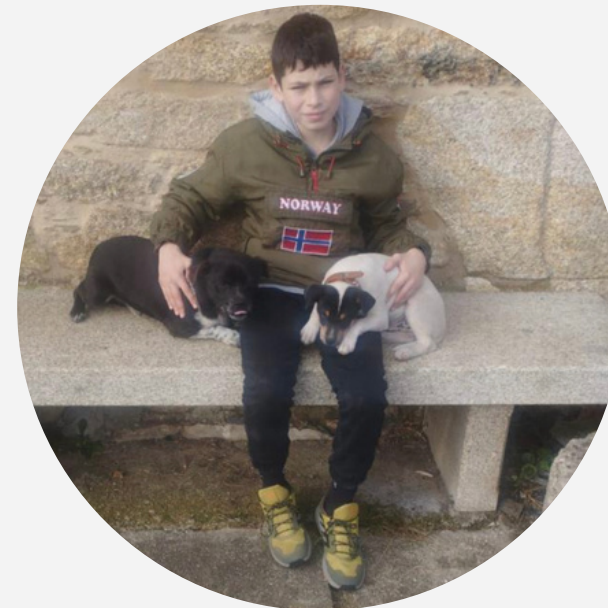
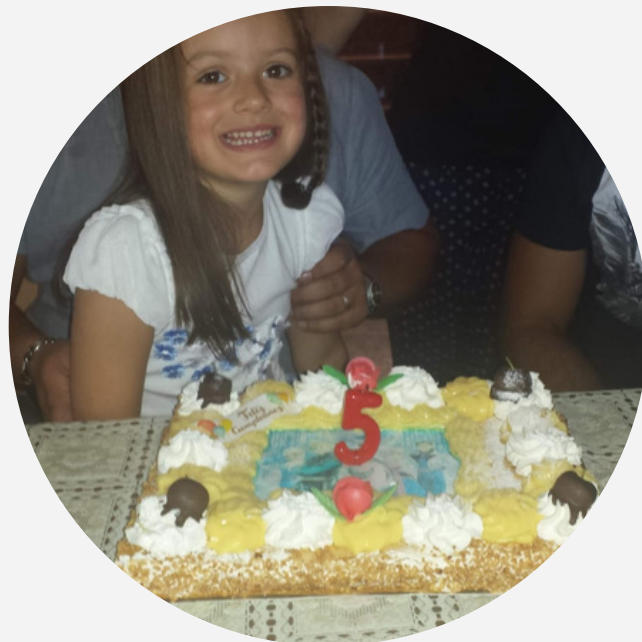




# Thanks you so much



Lucía Espasandín  
Naiara García



Mateo Rodríguez  
Adrián Sánchez

