



RENDERING

ENVIRONMENT

In Europe since 2002, the law requires a site to specialize in the treatment of Animal byproducts (ABPs).

RENDERING CENTER

- **Category 1** : material that is considered as a TSE risk (Transmissible Spongiform Encephalopathies), such as Specified Risk Material.
- **Category 2** : includes fallen stock, manure and digestive tract content.

BY-PRODUCTS INDUSTRIES

- **Category 3** : includes parts of animals that have been passed fit for human consumption in a slaughterhouse but which are not intended for consumption, either because they are not parts of animals that we normally eat (hides, hair, feathers, bones etc) .

› APPLICATIONS :

- Transfer of animal fat (liquid) throughout the process (see schema).



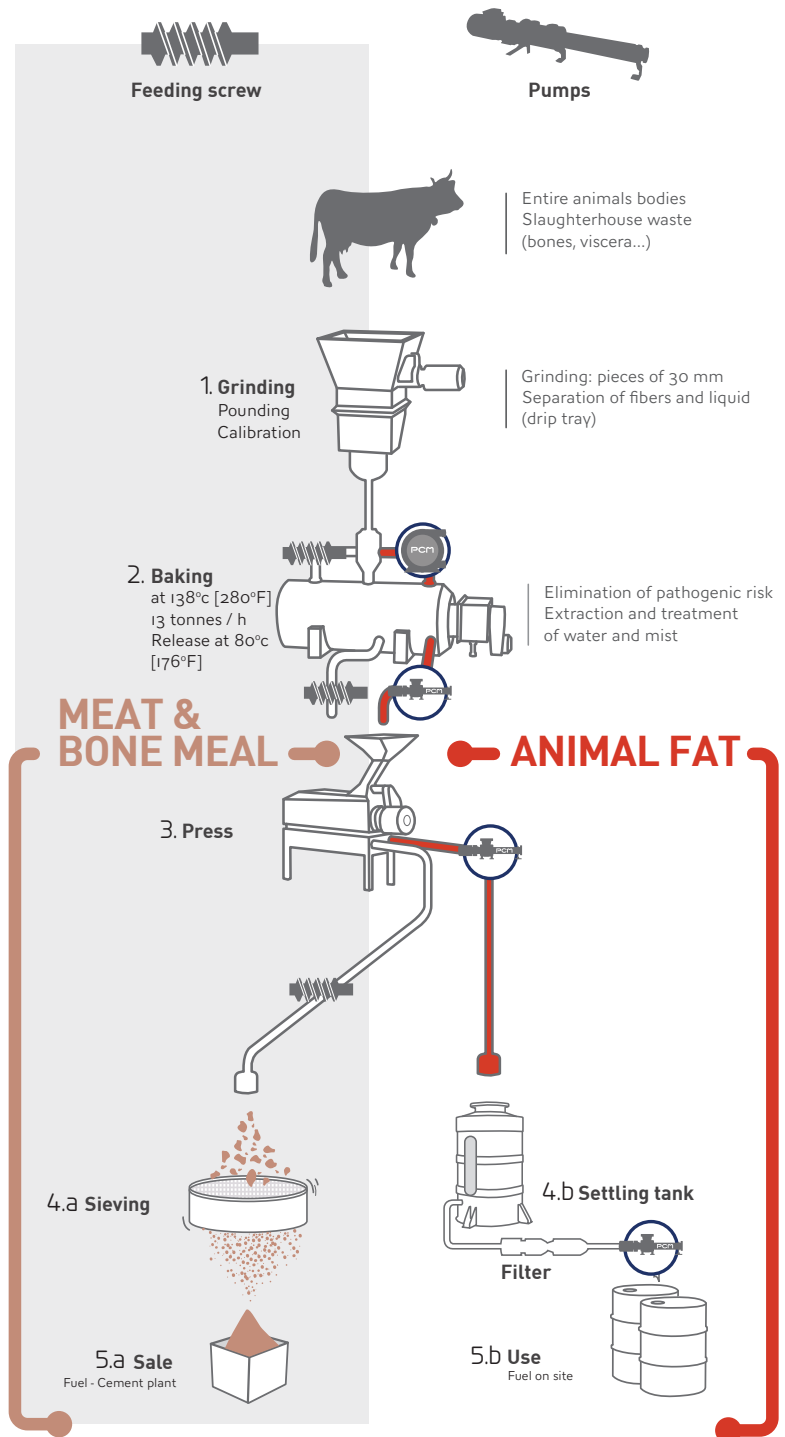
1 ACTIVITY AND MANUFACTURING PROCESS

The rendering industry's aims are :

- **Collection** of fallen stock and slaughterhouse waste,
- **High temperature treatment** includes removal of pathogenic bacteria (eg responsible for neurodegenerative diseases like mad cow animals).
- **Rendering** converts waste animal tissue into stable, value-added materials.

After processing the waste, they are separated into "meat & bone meal" and "animal fat".

- Meat & bone meal (from category 1*) are used as fuel in cementeries.
- Animal fat (C1 & C2) are used to power boilers. They are also used (more rarely) for the production of electricity in power plants. Calorific value is equivalent to 95% of the heavy oil.





2 TECHNICAL DATA & PROCESSING RESTRICTIONS

› JUICE OF GROUND MEAT :

Viscosity: 10 to 100 cPo

Particules size: max 8 mm

Temperature: room temperature

Negative suction: recovery of juice in buried tank after drip

› ANIMAL FAT :

Viscosity: 100 cPo

Discharge pressure: usually under tank

Flow: 400L/h up to 4000L/h (at 6 bars)

Temperature: 80 to 90°C



› PROCESSING RESTRICTIONS :

- **High abrasion** due to the presence of bone fragments
- **Lean manufacturing process** : use of machinery 6/7 day & 24/24h. This is due to the continuous arrival of truckloads of ABPs from slaughterhouse and should be treated quickly to prevent the growth of pathogenic bacteria and odor problems.

3 EQUIPMENT AND PROCESSING RECOMMENDATIONS

Two technologies are particularly recommended to support the transfer of animal fats which may contain fragments of bone (generally less than 8mm) :

- **Peristaltic pumps**
- **Moineau pumps**

As the application does not require a hygienic pump a cast iron body for the Moineau pump range is justified for cost reasons.





4 PRODUCT RECOMMENDATIONS

› GRINDING OUTPUT:

Peristaltic pump DELASCO™ (case study DL45).

- Allows negative suction (buried tank)
- Allows particles (1/3 of the inside diameter of tube)
- Resistant to abrasion (accept the passing crushed bone)
- Easy and economical maintenance



› COOKING-HEATING OUTPUT:

EcoMoineau™ M pump

In the case visited, the installation of a 25M12 has reduced maintenance costs by 4 compared to the previous use of centrifugal pumps. The high abrasiveness of the liquid damage centrifugal pumps.



› PRESS AND SETTLING TANK OUTPUT :

Centrifugal pumps are commonly used at this stage which leads to high maintenance costs. As in the previous step, it is recommended to install a EcoMoineau™ M series.



Do not forget to offer our pumps to equip the water treatment plant of rendering center.

Please refer to the water treatment application sheet.