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).
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 cementerries.
- 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
- Particles 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 & 24/24 h. 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 particules (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.

For further information, please contact your local PCM representative:
www.pcm.eu