CLAIMS

1. Method for producing essentially non-putrescible sludge and energy, said method comprising the following steps:

(i) obtaining digested sludges by primary sludge digestion;

(ii) obtaining a first aqueous effluent and digested sludges at least partly dehydrated by a first liquid-solid separation of the digested sludges obtained at the step (i);

(iii) obtaining digested sludges at least partially dehydrated and hydrolyzed by thermal hydrolysis at a temperature of 120°C to ~~180~~165°C of the at least partially dehydrated, digested sludges obtained at the step (ii);

(iv) digestion of the at least partially dehydrated and hydrolyzed sludges obtained at the step (iii);

said process further comprising:

- a step for recovering biogases formed during said digestion and said primary digestion~~;~~ ~~and~~
- ~~a step for producing energy from said biogas comprising a sub-step for producing energy needed to implement said thermal hydrolysis and a sub-step for producing surplus energy~~ using a co-generation motor, said co-generation motor producing heat,
- the entirety of said biogas being used to produce electricity~~.~~; and
- a recovery step of the heat by a heat exchanger in order to produce all the thermal fluid needed to perform said thermal hydrolysis.

2. Method according to claim 1, characterized in that it comprises a step for obtaining a second aqueous effluent and treated sludges by a second liquid-solid separation of the sludges obtained at said step (iv).

3. Method according to any one of the claims 1 or 2, characterized in that said thermal hydrolysis is performed at a pressure of 1 to 20 bars, for a duration of 20 to 120 minutes, and at a temperature of 120°C to 165°C.

4. Method according to claim 3, characterized in that said thermal hydrolysis is carried out at a pressure equal to the saturation vapour pressure, at a temperature of 165°C, for a duration of 30 minutes.

5. Method according to any one of the claims 1 to 4, characterized in that said primary digestion and/or said digestion are of a mesophilic anaerobic type.