Association for the Anticancerous Therapeutic Research

57-59 Rue de la Convention -75015 BETS - Tel. +33 (0)1 45 78 53 53 / Fax. +33 (0)1 45 78 53 50
E-mail: artac.cerc@gmail.com - internet Site: www.artac.info

National appraisal concerning the alternatives to the incineration and to the discharges: aspects environmental, sanitary and socioeconomic.

17.09.2007

Report elaborated by the

Group of the scientific experts on the dangers of the incineration

(GESDI)
Coordinators: Jean Michel Calut, Dany Dietmann,

With the involvement of:

Dominique Belpomme, Colette Castagnoli, Francis Glemet, Philippe Irigaray, Marie - Dominique Loye, Maurice Sarazin, Michel Simonot, Pierre Souvet, Olivier Toma,.

To the use

of the mayors and other elected, and
of the administrative persons responsible
of Republic.

Summary

Our country doesn't have any national politics of management and treatment rational of the actually

garbage. It explains that the territorial collectivities, and in particular the mayors, that him was about big or of small cities, are often disabled facing the size of the problems that they have to solve in harmony with the concerned populations. Facing the numerous garbage that accumulates, linked to our industrialized society and of big consumption, the only choice that is imposed to them is the one of the incineration to the term of which the ultimate garbage is stocked in "centers of burying techniques" (THIS). This way to proceed is unacceptable of the viewpoint of the public health and the preservation of the environment and, compared to the alternative methods, is not profitable of the viewpoint economic, nor socially creative of jobs. Besides, the "solution" of the incineration departs of orientation taken by the Commission European who considers the technical alternatives as advantageous and therefore priority. These are besides already put in work today in an increasing number of member states of the union.

A. OBJECTIF AND METHODS OF ANALYSIS.

The present document has been elaborated by the Group of the scientific experts on the dangers of the incineration (GESDI). He/it tries to remedy the present actual position clean to our country, by an analysis sanitary, technical and socioeconomic critique of the consequences of the incineration and propose replacement solutions.

Benefitting (1) of the experience acquired on the land by different agglomerations of townships, of which the system of "weighed it embarked" of the garbage, insider and put in work by the community of townships of the Door of Alsace, (2) of the observations and studies techniques achieved by specialist French engineers of the treatment of the garbage, and of the experience that they acquired on the disfonctionnement of the incinerators said of "news generation", (3) of the opinions emitted by the physicians and experts having elaborated the Memorandum of the call of Paris, (4) of the processed of the European legislation and documents consultancy emanating the European Commission, (5) of the technical studies and socio-economic achieved by Clermont-Community and the Collective against the incineration some Corsican, (6) of the studies achieved by the lasting development Committee for health (C2DS), concerning the management and the treatment of the medical and hospitable garbage, (7) of the opinion emitted

by the different components of the medical profession having established the common platform of propositions to the attention of the persons responsible of the Grenelle of the environment, stipulating the, required of a moratorium concerning the incineration and the coincinération (to see farther), the present report aims to propose some alternatives to the incineration and to the discharges no secured, through a real national politics of management and treatment of the garbage, integrating in the European setting.

This complete survey therefore the proposition n°2 of the 7 propositions of the Platform of the body medical discount September 20, 2007, to the Minister of state Jean-Louis Borloo, asking,

the immediate institution of a moratorium concerning the construction of new incinerators and the delivery of new authorizations of coincinération in view of to develop the alternative methods (annex 1), as well as she/it is in line with the demand of the CNIID.

The present work puts in light, (1) the sanitary and environmental risks of the incineration, in spite of the stake to the norms for the dioxins, as well as the inherent risks to the discharges and to the buryings of ultimate garbage non secured, (2) the illegality of the procedures of incineration and use of the residues (clinkers), as achieved today in our country and, (3) the socio-economic interest that to address to the has alternative methods of management and treatment of the garbage, as they already exist in our country and in several member states of the union European, rather than to the incineration.

B. STATE OF THE PLACES PRESENT IN OUR COUNTRY.

1. Position of the problem - political Aspects. Illegality of the incineration in virtue of the law of July 13, 1992.

In a general way, considering the rational politics absence concerning management and of treatment of the garbage, the territorial collectivities, and in particular the mayors, are brought, mistake of better, to conform to decisions that they would have rejected spontaneously and that, some reality, don't satisfy their voters.

Indeed, in the present debate, several contradictory pressure strengths are in presence:

(1) the one of the industrial of the incineration and cimentiers-these last extolling the

coincinération-, and (2) the one of the civil society, often represented by associations citizens and of the NGO-which are joined today by an increasing number of experts-, that propose some methods alternative to the incineration on the contrary.

To such point that the final decision often comes back from it to the Prefect that, himself brought to himself to conform to orders from the Ministry of the inside-therefore to a decision the more often of political nature-imposes the incineration in opposition to the demands popular, without respect of the law of July 13, 1992 that placed the incineration in tip of chain, after the sorting-selective and the retraining of the garbage by dating or methanisation, and finally without the problem has really been considered and has been discussed in an independent way, so much a sanitary, socio-economic viewpoint as technique. Indeed, in the very big majority of the cases, the only interlocutor allowed to expose a technical viewpoint is the industrial of the incineration himself, whereas he/it is to the evidence the first concerned person by the acquirement of a new market, and that very often the taken decision doesn't take account of the opinions often negative of the consulted experts, nor finally of the consequences environmental, sanitary and socio-economic of the incineration on the populations concerned.

Thus, the elected and responsible administrative of the territorial collectivities, in particular the mayors, they are often brought to submit to an unpopular decision and that of addition puts in danger the health of the populations that they have the load to manage, all some disregarding the sanitary and socio-economic earnings that the implementation would bring

of the alternatives to the incineration.

2. Not to redo the mistake of the asbestos.
To it the fact is added that the science and in particular the medical research progressing very quickly, the incineration will be considered sooner or later like definitely harmful to health of the populations, and that the complaints and judicial business not concerning this type of pollution
will be able to that to increase. That one remembers the recent and revealing history of the industry of the asbestos that in 1996 defended the idea again according to which he/it had none there
risk to inhale asbestos dusts, while calling on the notion d ' "controlled use", whereas the same year, he/it was indicated legally that the asbestos had to be definitely retired of the European market.

A report of the Senate summarizes in 2005 this sad business: "While exploiting the uncertainties scientific, moreover less and less numerous with the passing of the time, the C.P.A. (the ad hoc committee creates by the industry of the asbestos to justify the use of the asbestos) has successful to insinuate the doubt on the importance of the risk of the exhibition to the asbestos and so to
to delay the interdiction of the asbestos maximally in France."
With the promotion of the incineration or the coincinération as makes it today the industrial, it is clear that the same type of processes and mistakes is in place.

It is therefore above all to the elected, to the administrative and political decision-makers that this document
address, so that they take all their responsibility.

3. What is an incinerator: a gigantic brûlot of which escapes of very numerous toxic substances, recovered in air and the strong residues.
The dioxins are the tree that hides the forest. It is necessary to represent itself an incinerator like one
enormous cigarette from where escape of the dusts (carbon or other particles), of gases acidic (of the sulfur dioxide (SO_2), of the hydrochloric acid and the hydrofluoric acid (fluoride of hydrogen) (HCl and HF), of the nitrogen oxides (NOx), of the carbon monoxide (CO), of the water steam, of the carbon dioxide (CO_2) and other gas-to-effect of greenhouse (GES), of
numerous "heavy" so-called metals and their salts (cadmium, thallium, lead, mercury, etc.), of very
numerous substances carcinogens and reprotoxiques (CMR) as dioxins, furans, polychloréset polycyclic aromatic hydrocarbons (HAP). To it is added, as the underline the European Commission in a specific report, of very numerous compounds, organic volatile (COV), whereas no suitable information valuing the number and the type of these compounds as well as their direct impacts on the human health are not today available or has not been returned public [1]. All these substances that they are volatile or no are descended of the combustion of the garbage that one burns there and of the reaction of the molecules the
some with the other.
Some of the CMR substances as well as the "heavy" so-called metals meet in the residues (clinkers and ashes).
Of 2000 meet in smoke and the tars of tobacco of a cigarette to 3000

chemical substances, of which several are CMR as the cadmium and the arsenic, and one was able to
to show that it is not the addition of filters to the cigarettes that decreases the risk strongly of cancers.

However, he/it is some in the same way of the incineration. Nor the used filters, nor the other processes aiming to
to limit the exhaust of these substances out of the incinerator, nor the supposed stakes to the norms cannot protect against the impregnation of the environment (air, water, soils) by these substances and it especially as the accidents of working are not rare as
to Gilly-On-Isère, Mulhouse, Fourchambault, Lunel, Gien, etc.
The comparison with the cigarette doesn't stop there. The enormous brûlot that represents the incinerator multiplies the amplitude of the risks since it is not a particular individual who is concerned-the one that smokes-, but the set of the populations, not only those situated directly around the incinerator (under the plume), but also those from afar, and sometimes same to very big distance, considering the circulation of the dusts in air and of the fixing of the CMR substances and "heavy" so-called metals on these dusts.
As for the controls of the substances, to the exit of the incinerator-dioxins, furans, polychlorés, organochlorés and organobromés, HAP, "heavy" so-called metals (cadmium, lead, mercury, etc.), other metals (chromium, nickel…) and of non metals (arsenic, antimony…), composed organic volatile (COV), PM2,5 dusts and PM10 and steam of water, without forgetting,
the nanoparticules-, these not being achieved in continuous or not being, he/it results some that this scientific and technical required lack permits to overlook the reality completely of the broadcast of the hundreds of toxic cocktails synthesized by the chemistry of the incineration.

Thus, the stake to the present norms for the dioxins and the "heavy" so-called metals of the incinerators of last generation to height of 2 non sudden yearly controls (article
28 of the decree of relative September 2002 20 to facilities of incineration) doesn't mean some no case the disappearance of the sanitary and environmental risks. And it of as much more that the dismissal in the atmosphere of the smokes of the incineration is foreseen statutorily without filtration to height of 60 hours per year by slices of 4 hours, what drags, of legal way, but actually inadmissible for the health of the populations, on average of the broadcasts yearly of 80 to 100 times the norm.

4. Residues of incineration and phenomena of lixiviation. Illegality of the circular ministerial of May 9, 1994 on the use of the clinkers valorisables.
The incinerators generate the diffusion, under the shape of dusts, of numerous, substances and of "heavy" so-called metals in water and air. The idea of purity and security conveyed by the incineration is denied by the diffusion of very numerous substances

toxic in the environment [1] and their concentration in the trophic chains assuring the human food. The blood analyses and dosages in the grease of these substances toxic didn't miss to reveal the presence often alarming of dioxins (of which the 2-37 - 8 TCDD), of PCB and other CMR substances [2].
Besides, the use of the incineration residues under the shape of clinkers to height of 25% of the incinerated masses, in road undercoats, in humid zone remblaiements, and of platforms of industrial zones or leisures, aggravate the environmental dissemination of the pollution whereas the concerned residues are regulated by the circular ministerial temporary of May 9, 1994, making the dead end on the dioxins and other toxic substances,

("heavy" so-called metals), since she/it leans on a protocol of control of the dismissals of metals heavy stopping to 3 lixiviations1 of the clinkers. However, he/it has been proven experimentally as for example for lead, that the curve of relarguage of the toxic substances sought-after reaches his/her/its peak at the time of the 10th lixiviation [3]2.

1 the lixiviation corresponds to the slow percolation of water through soil, accompanied by the dissolution of the, strong matters that there is contained. The resulting liquid is leached it. For example, water can be in charge thus in toxic substances at the time of the crossing of soils having served discharges, or of the containing soils of the nitrates some quantity. The lixiviation in heap or in mobile reactor is used fluently today to decontaminate the earths or of the garbage polluted by organic or mineral elements.
2 the three anticipated lixiviations are distinctly insufficient to appreciate the effective rate of solubility of some heavy metals of which lead. It was necessary to push the number of lixiviations of the clinkers of Lunel Viel until the twentieth to get a leached exempt of lead. During these experiences of advanced lixiviation, the total weight, of the contained lead in leached it was new times superior to the result gotten after the third anticipated lixiviation in the circular.

Thus, of numerous toxic substances and important quantities of CMR substances, or "heavy" so-called metals, present in the clinkers, to the contact of water distribute to the course of the time in the environment (phenomenon of lixiviation), whereas the use of the clinkers so-called "valorisables" in roadworks or in embankments is used always in virtue of an obsolete temporary regulation and that is completely illegal of this fact.

Indeed, according to the technical Guide of use of the embankments and layers of shapes published by the Central laboratory of the Bridges and Pavements [4], he/it is recommended not to use the clinkers descended of the incinerators of garbage (OM):

- in the remblaiements of pavements including the metallic pipelines or some draining system construction,

- in the zones inondables,

- to a distance lower to 30m a river.

These clinkers are not of simple inert by-products being suitable to an use road. Indeed, their chemical composition (dioxins and "heavy" so-called metals) and their unsteady evolution in the time permit to recover the toxic compounds after

washing by water in the natural habitat. It is necessary to recall indeed that a ton of garbage housewives leash after incineration 300 kg of clinker. What drove the department of the High-Rhine as the urban Community of Bordeaux to bar the use of the clinkers for the construction of the roads.

Thus, the use of the clinkers as material of embankment is not only
illegal, but besides he/it is recognized that the clinkers are not inert products.

5. Linked environmental and sanitary risks to the incineration, to the discharges some jumble or to the non secured buryings. Obstinate toxicity of the residues of garbage ultimate coming from the incineration.

5.1. Incineration

The sanitary and environmental risks of the incineration pass of very far the problematic of the increase of the intervening of cancers (lymphomas and sarcomas) linked to the broadcast of dioxins [1-2, 5-8].

They concern:

1.
The acidification of the ecosystems and therefore the deterioration of flora and the fauna.
Although damage assessment is difficult, it is clearly established that the steams of SO2 or NOX, emitted in particular under the shape of acidic rains, can drag an acidification of the ecosystems, and to be at the origin of a decrease of the agricultural outputs and a deterioration of the forests and, jointly to the broadcast of particles, a reason of change of the buildings. Besides, the effects on fauna, relief in particular of the dioxins, furans, PCB, and of some so-called metals heavy, because of their bioaccumulation in the living organisms [1, 8].

2.
The consequences on the health human of the steams of NOX and SO2 and particles PM10 and PM2,5.
There also, although difficult to put in evidence by epidemiological studies targeted (to see farther), the sanitary risks reveal multiple mechanisms, who, very probably participate for a certain part in the morbidity and to mortality global: effects on the respiratory and cardiovascular systems of the PM, toxicity,

respiratory of the steams of NOX and SO2 (transformed in SO4), risks of cancers, etc. [1, 9]

3.
The broadcast of CMR substances, participating in the chemical pollution distributes and multiform air, water and soils, potentially at the origin of cancers, of congenital malformations, of pubertal delays or disfonctionnements of the, reproduction (CMR illnesses) [10-16].
He/it is today difficult to put in evidence by epidemiological studies one associative tie between such or such issued substance and the intervening of these illnesses, being,
given the multitude of these substances and their dissemination to big distance, whereas for each of these substances a causal connection is established clearly of the viewpoint toxicological [17-18].

4.
The broadcast of GES (steam of water, CO, CO2, and other gases), at the origin of one aggravation of the climatic disturbance [18-19].

5.
The possibility of an impact on the stratospheric ozone layer because of the broadcast possible of hydrobromic acid (HBr), in case of incineration of the objects and materials containing the bromine retardateurs of flame, the bromine being 45 times more,

reactive that chlorine to destroy the molecule of ozone [18-19].
However, he/it clearly appears that the French legislation is not respected, in matter of elimination of the present flame retardateurs in the garbage, what means that these are actually incinerated. However, as the Memorandum of the call underlines it of Paris, it is of as much more preoccupying that no measure of the bromine steams and of the bromine compounds to the exit of the incinerators is not done (to see farther).
These five types of risks justify to the evidence the institution of emergency of a moratorium, concerning the construction of new incinerators and the delivery of the authorizations of coincinération, as the proposition n°2 of the Platf orm of the medical profession underlines it, and the setting up of efficient alternatives, at the risk of accepting the idea according to which our country, disowning the registered precaution principle in the Constitution, and losing interest of the
sanitary and ecological problems, would deny the very validity of all politics environmental.

5.2. Discharges in bulk and non secured buryings.
The burying of the garbage non sorted out and non secured is contrary to the law, since some principle the IT can only contain ultimate garbage. Although the discharges in bulk are forbidden today because of sanitary and environmental risks
particularly serious, a certain number among them stays. Thus, in 2000, according to one, report of the Commission European [1], our country counted 3657 discharges, of which only 547 authorized, whereas simultaneously, we had 296 incinerators of which 116 having an energizing valorization capacity. An all-time high within Europe!
Of course, in seven years the numbers should have altered, with a reduction important of the number
of discharges and incinerators, but he/it is more that likely that of numerous discharges persist again.

The linked sanitary and environmental risks to the discharges are multiple:

The discharges often accepting organic matters contaminated attract in big number the animal cash (flies, various bugs, rats, foxes, crows, seagulls, etc.), that become quickly vectors of pathogenic contamination for all the biosphere surroundings.

The humid organic garbage emits the carbon dioxide (CO_2) in phase aerobe, and of methane and the sulfurous hydrogen in anaerobic phase: it is the biogas. For one discharge of 200 000 tonnes/an receiving organic products in mixture, the production of biogas can reach 5500 m^3/heure [20]. The risks of explosion put aside, the power, of exfiltration of these gases the broadcast generates in the atmosphere of multiple sprays. Them
contribute to the change thus and to the dissemination of toxic substances from afar of the discharge, while polluting air and water.

The lixiviats resulting from the mixture of the dripping of the rainy episodes, and of the migration gravitaire of the decomposition juices on the mass dépotée, constitute some miscellanies
particularly toxic and chemically saturated that infiltrate in soils to the meeting of the aquiferous, or that are transferred in the stations of purification of the residuary waters industrial or urban to abound massively the contents in heavy metals and in HAP, of the muds that are extracted of it.

On a sanitary level, he/it can result some close to the discharges a rate of malformations congenital meaningfully elevated as well as the intervening of cancers [21-22], whereas au environmental plan, the risks of pollution of the watertables are major [23].

Actually, the incineration before burying doesn't solve anything, because the residues that some result are toxic ultimate garbage, therefore dangerous, because of the phenomena of lixiviation. The stake in THIS of garbage non sorted out or of ultimate garbage coming from the residues of incineration are not therefore an adequate solution from a sanitary viewpoint and ecological.

6. Non respect of the guideline 2000/76/CE of the European Parliament and the Council.
The European guideline of December 4, 2000 on the incineration of the garbage, has for objective

(1) to warn or to limit in the whole measure of the possible the negative effects of the incineration of the garbage on the environment and in particular the pollution due to the broadcasts in air, soil, the waters of surface and the underground waters, as well as the risks that some result for the health of people. (article 1st); (2) to make respect by each of the States members, of the boundary values of the broadcasts in air (article 7), these boundary values being fixed in the gases of exhaust, for the dusts, the organic substances, the chloride, and the fluoride of hydrogen, the dioxide of sulfur and the mono and the dioxide of nitrogen (V annex of the guideline); (3) to limit the dismissal of the sloppy waters coming from the purification of gases of exhaust (article 8), in accordance with the fixed boundary values of broadcast in the IV annex of the guideline; (4) to do some measures of it continuous of the atmospheric pollutants previous, as there adding the carbon monoxide (CO) and the total organic carbon (COT) and it without counting at least two measures per year for the "heavy" so-called metals, furans, polychlorés and dioxins (article 11); (5) especially to inform the public, by the, regularly set to disposition by the authorities concerned of the operator's annual pension, concerning the working and the surveillance of incineration facilities of which the rated load is equal or superior to 2 tons per hour.
However, he/it appears that in a general way, our country doesn't respect its liabilities opposite of the European union concerning surveillance and marginal testing of broadcast of the toxic substances (articles 4 and 5), of continuous measures (article 11) and especially of information of the public (article 12), and that the stake to the norms of the incinerators of

new generation, as she/it results from the transposition in French right of the guideline précédente3 doesn't prejudge on no account, in practice, of the quality of working of the, present incinerators, of the nature of the realized controls and their non conditionality to the, interests of the persons responsible of those that have the load, incinerators, of it nor of the information of the public.

This non respect of the European legislation, concerning incineration-comparable to that that is observed today in Brittany concerning pollution of waters by the nitrates (and the

pesticides)-, require an investigation deepened of the state therefore and especially reconsideration
of his/her/its environmental politics concerning incineration, at the risk of reprimands, financial by the European authorities.

7. Place de la France in Europe concerning incineration.
To the support of the previous considerations, is the particular place occupied by our country to the
breast of Europe, concerning incineration.

Our country detains all-time high in number of incinerators of garbage (UIOM)
by head of inhabitant in Europe and is the second country in the world, after Japan for sound, park of incinerators.

What means in plain language, that of the alternative methods exist and that many States members of the union call on them.
In France, decried a long time and shown of the finger by the lobbies of the incineration, several,
Mechanic-biologic Processing units and of Valorization of the Garbage (UTVD), using these alternatives, have been constructed [Launay-Lantic (Coast of Armor), Varennes-Jarcy (Essonne), Beaucaire (Gard), Lille-Calais (North)] or are under construction [Cavaillon (Vaucluse), Saint Maximin (Var), Montpellier Garosud (Hérault)], whereas of very numerous other units exist notably in Spain (construction of several score
of units since 2000), in Germany (55 units) and in Austria (16 units).
To it the fact is added that using the same principle, of numerous French collectivities, farming, for most, put in work of the procedures permitting to avoid
the incineration [St. Philbert of Bouhaine Vendée, C.C. of Montaigu, CC of Alésia, CC of the, Door of Alsace, CC of Ribeauvillé, THAT of Besançon, CC of Doors the Valencia, etc.].

3 the transposition of the guideline dates of September 20, 2002. His/her/its entry in application has in fact been delayed
until December 28, 2005-either 5 years after the release of the European guideline.

The technological delay of our country in this sector became abyssal, since for to construct the few previous alternative units, it was necessary to make call to foreign, notably Spanish industrial and that for the setting up of the solutions farming alternatives ferrailler was necessary very toughly with the official processes exist, priorisant the incineration completely.

To note that many European countries, of which Germany, Switzerland, Belgium, Austria, Holland and Spain, thanks to experiences of more than 20 years, became of the countries of reference, concerning selective sort, dating and méthanisation.

To note also, as the Memorandum of the call of Paris underlines it, that orientation present of the European Commission, concerning management and treatment of the garbage, himself,
basis on the collection, reuse, the selective sort and the retraining, reserving the incineration that to an ultimate stage [COM (2005) 666 finale] and that this orientation is legally expressed in the relative guideline 2002/96/CE to the garbage of electric facilities and electronic (DEEE) (to see farther).

C. TECHNOLOGICAL ALTERNATIVES TO THE INCINERATION.
The alternatives to the incineration have for objectives, not only to respect the health of the populations and the environment, but also to stimulate the technological innovation, and especially
to save resources of the planet rather than to destroy them.

1. To take the party of the refusal of the incineration. The political aspects.
The arguments in favor of the incineration, as expose them the industrial of the incineration testifies in fact of a mainly commercial attitude, in other words of financial interests short-term them concerning especially, therefore of one bad will to all to put back flatbed and to innovate on a technological level and finally of one absence of consideration of the general interest, whereas on the contrary their benefit should drive them to get first and foremost to monitoring and to the service of the society.

He/it is some in the same way of the women and politicians and the administrative persons responsible, that,
when they contribute to the decision to construct a new incinerator or to deliver one authorization of coincinération, either are not informed or have been counseled badly on the possibilities of technological alternatives, either choose the solution of easiness-the one that consist in getting along directly with the industrial of the incineration or the coincinération,- and get rid therefore of the problem without having thought about all other possibilities and makes
the effort to search for them, to the contempt of the health of their fellow citizens and the respect of
the environment.

In fact, this maladjusted attitude is changing. Many mayors and a number growing of elected, whatever is their political adherence, take today the party of the refusal of the incineration. And it is necessary them to thank some.

The incineration appears the solution of easiness indeed, whereas it is the most dangerous to the
plan of the public health, least profitable on an economic level, the worst to the plan social since it is the one that generates the less jobs (to see farther), and finally the more destructive concerning saving of the global resources.

2. To stimulate the technological innovation, to valorize the socio-economic development, while guaranteeing the sanitary security of the populations: the 9 advantages of the alternatives to the incineration.
To the inverse, the alternative methods, although they are for some more difficult to to put in work, present nine advantages:

1. They guarantee the sanitary security of the populations while generating a lot less of toxic products of synthesis
2. They pollute the immediate environment a lot less and from afar.
3. They create a social tie with the populations, while instituting an involvement activate, thanks to the selective sort.
4. They save the raw materials and secondary and renew them thanks to a reuse of some components and to the retraining.
5. They settle in very big part the problem of the storage secured and of the burying of the ultimate garbage, since these are in very reduced quantity.

6. They stimulate the technological innovation oriented toward the lasting development and makes that the industrial-those that understood that the innovation is the main key of the economic development-can acquire new market shares, to the level, national and international.
7. They are financially and economically profitable for the society, that means so much by the territorial collectivities that for the users.
8. They are creative of very numerous jobs.
9. They reduce considerable way the broadcast of the GES and contribute to not to aggravate the reduction of the stratospheric ozone layer, while suppressing the broadcast of composed chlorinated and bromine (as hydracids).

3. Different types of garbage.

The guideline 75/442/CEE of relative July 1975 15 to the garbage established a list of 16 categories of garbage, lately taken in the guideline 2006/12/CE of the Parliament, European and of the Council of April 5, 2006, in replacement of the guideline 75/442/CEE. As the Memorandum of the call of Paris indicates it (R-M 143, to see the annex 2) for convenient reasons, in view of the valorization of the garbage by the selective sort and the retraining, us, let's classify the garbage in two groups:

- those reusable as components or directly recyclable.

- those no directly usable or recyclable.

Besides, to it is added the essential notion of dry or humid garbage, the one of garbage, dangerous and the one of the source of the garbage (garbage, hospitals, industries). To the total, 4 categories of garbage can be distinguished schematically: (1) garbage housewives, (2) the special domestic garbage (DMS) and cumbersome dry, (3) the garbage industrial banaux (DIB) and (4) the dangerous garbage and toxic garbage in quantity scattered (DTQD).

3.1. Garbage

According to the ADEME, the content of our trash cans reached 367 kg per year and per capita in 2002 and consisted (1) for close to 30% in fermentable biodegradable matters, (2) for 25% in newspapers, papers, cardboards, (3) for 18% in textiles and complex materials, possibly dangerous, (4) for 13% in glass, (5) 11% in plastic, and (6) 4% made of metals.

Actually, the fermentable part of the domestic garbage would be a lot more elevated, reaching more 50%, has like that can be demonstrated during appraisals complementary achieved by Maurice Sarazin (Company Innovert), whereas the humidity average would wait for 35%.

The selective sort to the source instituted locally by the competent territorial collectivities, adapted to the local urbanistic constraints, must apply the fundamental principle therefore and transverse of the separation of the dry garbage and the humid garbage.

The essential is indeed to separate the humid garbage of the dry garbage, because this separation permits to assure a much better quality of the reusable or recyclable layer.

The humid garbage consists of the set of the domestic biodéchets and green garbage

fermentable, whereas the dry garbage is essentially constituted (1) of the papers and cardboards, (2) of the packings in plastics, (3) of the objects in glass, (4) of the metallic objects,

(5) of the textile objects, but also (6) of special objects (Medicines, batteries, bulbs, tubes fluo, batteries, etc.) that must make the object of specific treatments. The packings raising some categories (2) and (5) constitute a part important of the garbage of our trash cans. Most this garbage, that they are humid or dry, are recyclable or reusable (to see farther).

3.2. Special domestic garbage (DMS) and cumbersome dry.

The DMS consist of the exploding products (sprays), corrosive (acidic), toxic reagents, harmful, irritating (ammonia water, resin), comburants (chlorates) easily flammable, or broadly speaking prejudicial for the environment: heavy metals of some batteries, accumulators, fluorescent lamps, CFC of the refrigerators, freezers, etc. This garbage special don't must to be mixed between them therefore ever, because the contact of some products
can provoke dangerous chemical reactions. Many DMS actually must to be considered like dangerous garbage (to see farther).

Among the cumbersome dry, it is necessary to individualize the treated or unprocessed woods (furniture,
agglomerate panels, etc.), the objects in plastic, textiles, the domestic devices, (refrigerators, machinery to wash) and the electric and/or electronic facilities (computers, televisions, etc.) that must make the object all as the DMS of sortings

specific because of their danger potentials and their possible reuse or retraining.

3.3. Garbage industrial banaux (DIB) or assimilated.

It is about industrial products or commercial that arrange some same features that the domestic products. On the other hand, they are a matter for the regulation of the freedom of competition
commercial (Garbage of supermarkets, of various supermarkets, of the industry, of the handicraft, of the BTP), and escape of this fact to the expertise of the competent collectivities.

Under some conditions little coercive, they arrange, contrary to the products vestigial domestic, of the free circulation in the European space.

To it are added the cumbersome dry as described previously. This garbage is reusable or recyclable in some limits. One can estimate to more of 50% the quantity of materials present valorisables in the DIB, this number capable to reach 90% for the vehicles of transportation out of use.

The DIB require to be there sorted, within the enterprises or in centers of sorting special. They must not make on no account part of the garbage (to see farther).

3.4. Dangerous garbage, toxic garbage in scattered quantities (DTQD).

The electric and electronic garbage (DEEE) have a place to part because of the possibilities of reuse and retraining (to see farther). However, it is not the case of all dangerous garbage. Very often, this garbage is not recyclable or reusable, and ask for the particular treatments so that their danger is ruined. It is the case of some DMS, as considered previously (exploding or flammable products) of the hospitable and medical garbage, the treated woods, the used oils, the chemical residues some source of the industry (batteries, batteries, etc.), of the laboratories, and of general way of all

the DTQD.

This garbage must be individualized therefore as quickly as possible at the source and distinguished in "strong" and liquid. They require to be sorted to the source in conditions secured, considering their danger (to see farther).

4. Processes alternative to the incineration. The six stages of the management and the treatment of the garbage.
No perfect solution, for the management and the treatment of the garbage, exists but one optimization of the different methods of valorization, others that the one using the incineration or of other thermal methods. This optimization is indeed possible, considering the technological progress achieved.

4.1. Not to call on the thermal methods.
The thermal methods (thermolyse, gasification, pyrolysis) presented like surrogates to the incineration must be excluded positively of the alternatives to consider for of multiple reasons:

- They are not currently to the point because they call on industrial technologies complex.
- They are "disguised incinerators" and present the same shortcomingses therefore.
- They are polluting
- They are not framed by international norms and the strict controls.
- They are not profitable from an economic viewpoint.
- They are little creative of jobs

4.2. The alternative path of management and treatment of the garbage.
The alternative path of management and treatment of the garbage rests on 6 stages:

1. Organization of the éco-conception of the products, in the goal to facilitate the sorting, the collection, the,
reuse and the retraining
2. the selective sort,
3. the retraining,
4. the reuse of the components,
5. the storage secured,
The selective sort can be made according to multiple variants that go from the sorting in the source the more advanced accompanied of a collection adapted until the mechanic-biologic sorting on raw garbage.

Immediately note that the used procedure is more flexible and less risky than the incineration and therefore that in case of dysfunction, the sanitary consequences and environmental are distinctly important and the related costs to the technical stops, a lot less elevated.

4.3. Eco-Conception of the products. Reduction of the garbage to the source.
As the report of Clermont-Community indicates it, "the best loss is the one that is

doesn't produce" [23]. To reduce the production of garbage in the source is probably the measure the
more important, but also the most difficult to put in work, because she/it throws into question some
gone our system economic of production.
Such a measure makes today the unanimity of the NGO and experts. She/it corresponds to orientation taken by the European Commission and general way by the union.
However, in this domain, our country doesn't have any politics of reduction of the packings. And, as
indicate it the Memorandum of the call of Paris (R-M 141, to see the annex 2), the article 3 of the
guideline 2006/12/CE, incite the member states to promote the prevention or the reduction of the production of garbage and their harmfulness by suitable measures. In fact, the guideline express the intentions, letting every member state free to take the measures who, impose themselves to reduce the production of the garbage efficiently. Actually, the data essential to conceive is the cycle of life and more specifically the life span of the products set on the market (to see R-M 141, to see the annex 2).
The useless packings and dispendieux must be reduced, by specific actions nearby of the manufacturers and distributors.

Some strategic measures must be taken therefore by our country in the setting of one public policy of reduction of the packings, while acting by the manufacturers and distributors so that they reduce the packings and simultaneously, while inciting economically the citizens to the sorting, because the sorting is a gesture of added value, that transforms
the loss in secondary raw material ready to be reused or recycled. He/it is sufficient for it to pass the blind and rigid tax, to the royalties incitative that allows the citizen of to reduce his/her/its layer of garbage as he/it reduces his/its consumption of water, of electricity or of
telephone.

4.4 the different sorting methods selective: garbage, DIB and garbage médico-hospitable.
It is about the most important measure to take, after the reduction of the garbage to the source, but provided that she/it is rational, explained sufficiently through 2 fashions of collection or of recuperation and that he/it is taken it subsequently into account.
She/it can apply under two shapes:

1.
The collection to the door-to-door that permits not to penalize people to mobility reduced.
2.
The points of voluntary contributions or the déchetteries/recycleries.
There are three means to sort out the garbage:

1. the voluntary sorting, by contribution of garbage in columns of collections. The example the more
conclusive here is the collection of the glass.
2. the sorting to the source, that means on the place of dwelling, work, or purchase is fundamental.
It is from afar the most effective system in lasting evolution term, dice at the time that the

public powers accept to invest in processes efficient of organization and
of information of the public, by districts, schools and mediating medias. It is about merely of
to generalize the multiple experiences that are already in use in France, and elsewhere. This path
come in urban environment with méthaniseurs treating the biodéchets. In middle
pavillonnaire or farming, the dating fills this office.
3. In the cases where the conformation of the habitat or cloths urban don't permit of
to achieve the aforementioned collections, he/it can be called on the mechanic-biologic sorting, permitting of
to separate in factory the organic matters of the dry materials, in order to recycle them. This process
is actually distinctly good than the sorting to the source, since in the case of a collection some
jumble, the fermentable juices migrate largely in the other fractions of the trash can,
and are at the origin of irreversible chemical reactions, generating toxic salts, that that
finally succeeds to the contamination of the dry garbage by the humid garbage. However,
although the mechanic-biologic sorting doesn't give whole satisfaction with regard to the
agronomic quality of compost, and that the results in the retraining of the papers cardboards
are little effective, he/it can bring an economically profitable solution in the zones

difficult where the sorting to the source cannot be set in motion. These are these aspects that he/it suits
to develop to lead the alternatives to the incineration.

To it the sorting of the DIB is added and the one of the potentially dangerous garbage, as the, hospitable and medical garbage (to see farther).

One must consider these different means of sortings as complementary and no to oppose them and they can be combined of different manners according to the geographical context, sociological and political.

4.4.1. Garbage
The selective sort by voluntary contribution

The selective sort by voluntary contribution demonstrated its utility for the collection of the glass. He/it must be
extended to the electric and electronic garbage, according to the guideline 2002/96/CE (to see more
far), as it is the case in several member states of the union. To organize this type of
collection, especially those of the dangerous garbage, in a more explicit way, are imperative.

Besides, for the dangerous products (batteries, batteries, tubes of lighting, medicines,
expired, used oils, etc.) of the specific and sufficiently explicit points of collection
in the cities and agglomerations of townships should be obligatory, while distinguishing
the liquid dangerous garbage of the strong dangerous garbage (to see farther).

The sorting to the source

He/it is essential and of the responsibility of the users, provided that the public powers their some
give the means.

As indicated previously, he/it is fundamental that to the minimum two types of trash cans are distinguished: one for the humid organic garbage, that means fermentable, and the other for the dry garbage, whatever is their nature of it (papers, cardboards, plastic, textiles, etc.), with the exception of the dangerous garbage.

This distinction is essential, because mixed to the dry garbage, the humid garbage the corrupt while altering them, in particular while oxidizing them, what makes garbage of it no recyclable, and besides possibly dangerous.
However, it is not what is achieved currently, in most cities of our country, the, fermentable organic garbage (garbage of fruits and vegetables, rests of meat, etc.) being mixed to the other dry garbage with the exception of the "clean" papers-cardboards, of the boîtescanettes, in well emptied metal, of the plastics and the glass that they are collected separately.
The individual selective sort, provided that he/it is simplified and adapted: a specific trash can for the humid garbage, and another for the dry garbage and explained correctly to the users, can prove to be of a remarkable efficiency concerning management and treatment of the garbage and it of as much more if for the dry garbage, the collection is achieved with the help of individual ferries rather than by bags. However the measure to take is extremely simple, easily comprehensible by the set of our fellow citizens, expensive, and especially easy, to put in work in the context present sociétal.

The mechanic-biologic sorting.

This mode of management and manufacturing treatment of the garbage is destined to the treatment of flux imports domestic garbage, when the sorting to the source is not possible, what must be the exception. He/it is therefore more especially adapted to the big urban concentrations, when the treatments of the garbage are not at home possible, contrary to what can be done in farming zone (to see farther).
The UTVD permit a sorting-dating. Their minimum size commonly recognized is of 20.000 tons per year (example of Launay-Lantic, department of the Coast of Armor). Them permit the treatment of the raw or gray garbage (that benefitted a sorting selective to the source). In the case of the technique using a Bioréacteur-Rotary Sequential (BRS), after passage in a "Separating drum 4" (rotary cylinder) of humidification and of maturation, different devices separate the fermentable matters of the materials vestigial recyclable: ferrous, non ferrous, glass and plastic. In the case of the technique classic, there is not a passage in tube of maturation. Some of these units can to receive and to treat other types of garbage as the agricultural garbage, the green garbage, and the garbage industrial banaux (DIB).

4 equipment used for the sifting of the garbage. The garbage passed in the separating drum and sorted out in fractions of different sizes and in contaminating, as the plastic movies that are withdrawn.

These units of sorting, treatment and valorization benefit today from progress technological important, permitting the realization of a mechanical sorting and the manufacture of composts, usable in agriculture but under some conditions (to see farther).

With or without méthanisation, the mechanic-biologic sorting can bring a solution complementary for the treatment of the different types of non dangerous garbage and can to adapt to different levels of sorting in the source. Used in particular for the management and the treatment of the garbage in urban zone, he/it permits the absorption of the seasonal tips without set in bullets, nor storage.

4.4.2. Other garbage: DIB and hospitable and medical garbage.
The sorting of the DIB relief of the industrial themselves. He/it must be done on the industrial sites same or in centers of special sortings. However, in case of layers little important and of non toxic garbage, he/it can be made in the units of mechanic-biologic sorting.
The sorting of the hospitable and medical garbage must also be considered, it especially as it is about potentially dangerous garbage and that all incinerators installed in the hospitable establishments have been closed.
So according to the Committee for the lasting development in health (C2DS) he is urgently asked, a reduction to the source of the hospitable garbage, in the setting of the setting up, of a real responsible and lasting politics concerning medical facilities and of material hospitable on the basis of the engagement charter signed lately by four purchasing groups or of référencement.

4.5. Selective collection and treatment close to the layers of garbage.
The selective sort by voluntary contribution or to the source has the advantage to generate some cycles short of collection for the treatment, and therefore to achieve savings of transportation. However in zone urban or to the echelon of a region or a territory, the sorting by voluntary contribution or individual to the source, can prove to be insufficient, considering the volumes of garbage to to sort out.
In urban zone, the selective collection by voluntary contribution is the fact of the garbage dumps. The function of the garbage dumps is probably to review, considering the necessity to put some, place of new paths of sorting, such those of the treated and unprocessed woods and garbage

toxic, and to articulate their role in complementarity with the one of the UTVD. Indeed, simultaneously to the sorting by voluntary contribution or to the source, the necessity to resort to the sorting mechanic-biologic imposes itself in zone very urbanized.
The consideration of the costs of transportation of the garbage, that they are or non sorted out to the source, is often an overlooked data.
Because of the transportation, the centralization of the treatment of the garbage generates some costs no only on an energizing level (fuels), but also to financing plan (amortization of the vehicles of transportation, expenses of working).

It is essential not to displace the layers of most important garbage, but to the contrary to treat them close by and so possible there.

Thus, according to the survey achieved by the Collective against the incineration of the garbage in Corsica [24], the decentralized data processing of the garbage in 2 to 4 units could generate an economy for the taxpayers of at least 3 millions of euros per year on the transportation, in relation to the, regrouping of the garbage in the center of Corsica. Thus, instead of only one factory to "to burn" to the center of Corsica, as consider it today the public powers in Corsican, alternately he/it is recommended the implantation of 2 to 4 units "to sort out and to stamp" close to the layers of most important garbage.

Such a decentralized data processing of the garbage is economically the most profitable solution, the most efficient socially, considering the generated jobs, and besides, the more respectful of the health of the populations and the environment (to see farther).

Indeed, the treatment there of the garbage, not only achieve an economy of energy some limiting the transportation, but decreases the risk of pollution also, linked to the transportation and to the scattering of the garbage in the environment from their place of production.
What has been studied by the Collective against the incineration of the garbage in Corsica is applicable to some agglomerations of the continent, as well as to the DOM-TOM.

In a given region, he/it is worth to construct several alternative processing units better of the garbage on the place of layer of the garbage, rather than only one centralized unit, and concerning the cities, to construct these units in near peripheral zone, rather than of the to make in urban zone, to see in full center of the cities.

To the level of a region, the decentralized data processing of the garbage, that means while achieving it to as near as possible of their production place is a sanitary and economic imperative and besides, creative of jobs.

4.6. Mechanic-biologic Processing units and of Valorization of the Garbage (UTVD).
The techniques of mechanic-biologic Treatment and Valorization of the Garbage have progressed considerably. With the selective sort to the source, these techniques constitute one efficient alternative to the incineration. As the report indicates it elaborated by Clermont - Community [25] and according to the opinion of several experts, the selective sort to the source is the process alternative essential to the incineration, that owes that made be put in work therefore before is considered the recourse to the mechanic-biologic sorting. The mechanic-biologic preprocess of the garbage, before burying, is an assembly of mechanical sorting processes, of grinding and of biologic, chosen and set treatment according to the three following objectives: valorization of matters, possible energizing valorization, stabilization of the ultimate garbage,

to decrease the quantity and the polluting character of it. After individualization of the garbage dangerous (to eliminate in a specific path), the separation of the different constituent is operated so that they are valorized: (1) fermentable, (2) metals, (3) plastic, (4) papers and cardboards. To the term of this separation and valorization, the ultimate garbage, become inert,
are stocked by burying.
To it a biologic preprocess is added, solid in the quick fermentation and controlled of the fermentable, permitting the dating or the méthanisation.

4.7. Retraining, dating and méthanisation.
Some dry materials, like the papers-cardboards, and the glass is directly recyclable. Him some is in the same way clean fermentable garbage-that means non polluted. Matters secondary, like metals, plastics, can be recycled also. Such is the case of iron (and therefore of steel), and of aluminum. The prices of the raw materials increasing, because of
their increasing rarity (Aluminum: 900€/tonne, Plastic,: 230€/tonne, Steel 100€/tonne, Paper cardboard: 108€/tonne, etc.), the retraining of the such rare metals the chromium, the nickel, the,
turntable, etc., becomes economically profitable. On the other hand, some garbage won't be able to be
recycled that after specific treatments or even are not able to being. In this case,-and

only in this case,-when the retraining is impossible, the burying of this garbage in THAT will be able to be considered and it in a controlled way.

4.7.1. Dating.
The individual or industrial dating is a key element of the retraining: he/it consists in returning to the earth, under the shape of compost (humus), what she/it gave to the man, as staples and other, of animal and plant origin. It is a means extremely efficient of management and treatment of the garbage.
The organic garbage represents about the third party of the volume of the domestic garbage and the
half of their weight. One stamps them easily in farming zone or pavillonnaire.
The experience of Dany Dietman, Mayor of Manspach, with the set of his/her/its colleagues Maires,
of the Door of Alsace, is remarkable, considering the success of the experience that he/it achieved,
to the echelon of 33 farming townships of 14 000 inhabitants, of the quality of the dating, individual gotten and of the incitement citizen that he/it caused, while finalizing a taxation based on weighed it embarked of the garbage [26].
In city, and especially as the urban concentration is important, the méthanisation industrial is a more adapted method. However, it is necessary to look here after the quality of the
composts gotten.

4.7.2. Particular case of the purification muds
All compost must answer the norm European NFU44.051. It is necessary to stay up in particular to
the absence of undesirable chemical elements that can be associated to the garbage, as "heavy" so-called metals (cadmium, lead, mercury, etc.), nitrates, pesticides, hormones,

antibiotics, contaminating others.

He/it is therefore essential that the organic garbage that constitute with the garbage green a material of choice for the dating is correctly sorted.

Although the muds of purification are considered to be non dangerous garbage, he/it is not licit to the sanitary plan to use them for the épandage of soils and as material of dating, considering their contamination by very numerous substances, undesirable as considered previously.

Thus, the best use of the purification muds in the absence of specific treatments aiming to decontaminate them, is actually their energizing valorization by méthanisation

(to see farther).

4.7.3. Retraining of the garbage dry non dangerous.
The non danger of this garbage, is bound to their inert character. The papers and cardboards, the,
glass, textiles, iron and other metals enter in this category. The retraining is done by specific processes.

4.7.4. Energizing valorization by méthanisation.
The méthanisation is an option of valorization. The production of methane can be valorized in heat, in electricity or while carburating.

The méthanisation is a non polluting energizing valorization.

Considering the present agricultural stakes (decrease of fertility of soils), it is necessary to give the priority
to the dating, when the fermentable garbage is considered to be little or not contaminated. On the other hand, the muds of purification could constitute a material of choice for
this process.
Indeed, the muds of purification are today largely épandues on the earths agricultural without precaution. However, they contain many pollutants (to see previously).
The dating of the purification muds without their previous analysis is not advisable because if compost is contaminated, the risk of soils home contamination.
In the absence of specific dosage of the purification muds, he/it appears therefore that the best solution is their energizing valorization by méthanisation.
Besides, it is clear that some complementary studies are necessary to value the risks linked to the use of composts descended of the digestats resulting from the méthanisation, the process of
méthanisation capable to drag a concentration of the contaminating preexisting.
He/it is right to specify however that the méthanisateur requires the proximity of a station of effective purification capable to treat the lixiviats.

4.8. Reuse and retraining of the components of industrial objects put on the walked. Non respect of instructions 2002/96/CE and 2003/108/CE relative to the garbage

of electric and electronic facilities (DEEE).
The reuse of the components of industrial objects put on the market must be distinguished of the
retraining of the secondary matters. The reuse of the components concerns
particularly the automobile industry, the domestic devices and in a more general way all
electric and/or electronic materials (televisions, radios, computers, etc.)
Reuse and the retraining of the materials used for the construction of the vehicles put
on the market are today in done very big part, thanks to a politics of
recuperation implementation by the valet parking attendants. As well as the reuse of the components to
to leave from the used vehicles serving to the repair of the damaged vehicles.

As the Memorandum of the call of Paris underlines it (R-M60, to see the annex 2), the collection
selective of the garbage of electric and electronic facilities (DEEE) and their valorization
by retraining and reuse is submitted to the Guideline 2002/96/CE of the Parliament European and
of the Council of January 27, 2003, relative to the garbage of electric facilities and
electronic (DEEE), modified by the Guideline 2003/108/CE of the Parliament European and the
Advice of December 8, 2003. The mind of the guideline 2002/96/CE is fundamental, since it
imply the principles of selective collection, retraining and reuse of the components
of the expired electric and electronic facilities, that she/it confers to the users the obligation
not to mix the DEEE with the non sorted out municipal garbage, and therefore,
that she/it proposes that: "the responsibility of the financing of the management of the historic garbage
[the resulting garbage of the products already put on the market to the date of the guideline] should be
shared by all existing producers, in the setting of systems of financing,
collective to which all producers existing on the market as the costs are
generated, contribute proportionally" (consideration 20).

Thus, according to this guideline is him asked to the "producers" to participate in financing
of the costs of collection and treatment of the DEEE when they come from other users
that the users (article 9).

Besides, he/it is clearly indicated that the retraining of the DEEE must get used "to the exclusion
of the energy" recuperation (article 3). What implies the absolute interdiction to incinerate
all containing object of the electric and electronic facilities.

The member states had to put in force the legislative, authorized arrangements and
administrative necessary to conform to the guideline before August 13, 2004, and some
to inform the Commission (article 17). In fact, because of a renegotiation with the
producers, concerning the article 9, this article has been modified in the guideline 2003/108/CE, and
the date of transposition of the two instructions 2003/108/CE and 2002/96/CE were remote at 13
August 2005.

In fact, the problem is to know if today our country respects the scrupulously
contained of these two instructions. However, he/it seems that in many cases, the DEEE and all
the objects that contain them are not effectively sorted and recycled, and are therefore

incinerated. An investigation of the state imposes itself therefore in order to verify if our country is or no some
conformity with the two European instructions.

For in to know more, he/it is indeed essential that are achieved with regard to the of the controls present units of incineration and that the civil society is informed correctly, no
only on the effective realization the selective collection, the retraining and reuse
of the DEEE, but also on the exact nature of the garbage incinerated and their tonnage, because so such
was not the case, our country would be not only in infringement to the look of instructions 2002/96/CE and 2003/108/CE on the DEEE, but also to the look of the guideline 2000/76/CE on the incineration of the garbage.

4.9. Storage secured and burying of the ultimate garbage.
The previous alternative procedures, based on the selective collection, the dating, the, méthanisation, the retraining and the reuse of the components of the industrial objects are not the solution to all problems, but are currently the best possible alternative to
the incineration, in all cases simplest, the most flexible and fastest to put in work. The combination of these different processes close to the layers of garbage and use
of the UTVD should permit to reach the valorization of 70-75% of the garbage, if the whole
of the alternative solutions (dating, méthanisation, retraining and reuse) is used.

Therefore, would remain to consider 25 to 30% of ultimate garbage, equivalent in mass to the 30% of contaminated clinkers and toxic ashes resulting from the incineration.

The law of July 23, 1992 reserves the use of the storage sites from July 2002
to the ultimate garbage and defines an ultimate loss as: "a resulting loss or no of the treatment of a loss, that is not more susceptible to be treated in the technical requirements and economic of the moment by extraction of the part valorisable or by reduction of sound polluting or dangerous" character.
The ultimate garbage, resulting of the path of mechanic-biologic treatment and valorization, of the garbage, as exposed previously, understand (1) of the secondary garbage no valorisables generated by the UTVD, (2) of the non recyclable vestigial OM, (3) of the clutters non combustible, and (4) of the non recyclable DIB.

This vestigial garbage is therefore in principle dry and inert, therefore non toxic, generating nor lixiviats nor odors, what returns therefore their storage secured possible by
burying, after compaction, to reduce the volume meaningfully of it.

The rates of ultimate garbage gotten are certainly near of those of the residues of the incineration,
but on the contrary, they are not toxic and therefore little dangerous. Besides, of such garbage ultimate since non dangerous, can be buried close to the main places of
layer of the garbage, in order to achieve, there also, of the linked savings of energy to the transportation.

D. SOCIOECONOMIC ADVANTAGES OF THE ALTERNATIVES HAVE
THE INCINERATION.
1. General data-political Aspects.
The processes alternative to the incineration, rest (1) for part on the collectivities

territorial (columns of recuperation, education to the selective sort, placed at disposal of the means,
of collection, construction of units of Treatment and Valorization), (2) for part on the involvement of the citizens (sorting by voluntary contribution, selective sort on the place of dwelling and of
work), and also, in an essential way, (3) on the state, in the setting of his/her/its double expertise,:
a will public policy, taking in account the set of the problems, and a follow-up

administrative respectful of the laws and regulations, in narrow adequacy with contingencies, popular local.

The setting up of these alternative processes, if they are respected, will only be popular, because creator of social ties. To the inverse so such the case was not, in other words, if the moratorium with regard to the incineration or the coincinération was not applied, it some would result a general resentment and an increasing unpopularity and in any case, the unanimous and determined opposition of the medical profession.

2. Economic aspects.
As the report of the European Commission indicates it [1] and more lately Ari Rabl, scientific person responsible in the center of energizing of the Civil engineering school of Paris, in sound,
report "How much to spend for the Protection of Health and the environment: a setting for the assessment of the choices" [27], the Costs-Earnings analyses (ACB) are necessary, some
so much qu ' "decision support."
He/it is right to take into account the costs of the damages (external Costs) linked to the pollution, some,
using the methodology of ExternE5 for the calculation of the impacts and these costs. Thus, in one
very educational report, he/it is demonstrated that on the economic plan, the incineration of the OM,
is preferable to their setting in discharge.
Unfortunately the comparison endures an unsuitability currently to the problems calm, since the raw garbage dumps are now forbidden, and that the objectives present of the European Commission concern the alternatives to the incineration. It is therefore the incineration and his/her/its alternatives that he/it is right to compare.
However, here, the exploratory data of the studies of costs are especially encouraging.
The alternative methods of treatment of the garbage are generating of savings to the level of the townships, and therefore for the users, savings that can be reinforced by the institution of invoicings incitatives of the services.

5 the External project had for objective to collect the information and to value progress accomplished in matter
of damages environmental and of health bound to the broadcasts from different sources of energy some
Europe. These results are considered applicable to the broadcasts of the chimneys of incineration factories since that
project concerns the broadcasts of particles, NOX, SO2, CO, VOC and of CO2.

Compared to the incineration, the alternatives to the incineration are indeed economically profitable. As several survey of costs indicates it, in any case of face, the cost, in investment and working of the alternative methods is lower to the one of the incineration: the economy is of about 30% according to the evaluation achieved in Corsica (to see faces below), this number capable to reach 50% according to the evaluation achieved by Clermont Community.

Costs compared of treatment by units of mechanic-biologic sorting and incineration some

Corsican.

104
76
86
95
0
20
40
60
80
100
120
Script 1 Script 2 Incineration
euros / ton
The 2 scripts relate to the number of factories (script 1 = 2 factories, script 2 = 4 factories). The costs of treatment include the amortization, the working, the burying, of the ultimate garbage and the sale of the materials to recycle. The script 1 understands the implantation of 2 processing units and Valorization of the garbage, whereas the script 2 consist of 4 of them. According to the Collective against the incineration of the garbage in Corsica (www.contrelincinerateurcorse.org)

3. Social aspects.
Simultaneously, in the setting of the alternative methods, in mirror of the easiness of consumption, for him is asked the consumers to participate actively in the process inverse: the one of the management of their garbage. Such an effort of cleanliness and citizenship can materialize that by the education. He/it generates an obvious civic tie. Besides, he/it is socially equitable, since the quantity of garbage to manage individually is proportional to the consumed quantity.
However, the essential point is that the management and the treatment of the garbage by the methods alternatives permit the creation of more than jobs that the incineration. In the case of Corsica, 2, time more of jobs are create in the only processing units (to see face below).

He/it appears therefore clearly that on a socioeconomic level, the alternatives to the incineration,
are not only economically profitable, but socially justified, because of the
creation of very numerous jobs, and that all action, solid to impose the incineration,
prove to be today, not only distant of orientations present Europeans,
but besides unpopular and, in the state of our knowledge, counterproductive.

Comparison of the theoretical jobs created in Corsica in the processing units.

35
88
78
0
20
40
60
80
100
Script 1 Script 2 Incineration
number uses permanets
Script 1 = 2 factories of mechanic-biologic sorting, script 2 = 4 factories, incineration = one factory. According to the Collective against the incineration of the garbage in Corsica (www.contrelincinerateurcorse.org)

E. SANITARY ADVANTAGES AND ENVIRONNEMANTAUX OF THE ALTERNATIVES TO THE INCINERATION. STRUGGLE AGAINST THE CLIMATIC WARMING UP.
Each of the stages of the alternative processes, as described previously, are

respectful of the environment and must present little sanitary risk only.

The advantage here is enormous in term of public health (savings achieved in that
domain, have not been taken in account for the evaluation of the costs).
The advantage is in the same way order concerning the broadcast of GES. As the face cidessous indicates it
relating the survey done by the collective against the incineration of the garbage in Corsica, the broadcasts of carbon dioxide (CO2) are practically negligible in relation to those generated by the incineration, if one considers besides a reduction of the transportation bound to the
decentralization of the units of preprocess and valorization of the garbage, that means their implantation close to the main layers of garbage.

CO2 téq

0
10000
20000
30000
Road Rail Script Script
Syvadec Syvadec 1 2

Comparison of the net issues of CO2 (transportation + treatment) in the plan of Syvadec-centralization and incineration-and the alternative plan-decentralization and mechanic-biologic sorting.
The net issues correspond to the fossil carbon combustion, therefore to the greenhouse effect. According to the Collective against the incineration of the garbage in Corsica. www.contrelincinerateurcorse.org)

To contribute to fight against the climatic warming up implies the dead halt of the incineration and his/her/its replacement by the alternative methods previously considered.

CONCLUSION

To the total, the incineration is an obsolete process, emitter of gas to greenhouse effect, dangerous, for health and unremunerative on a social and economic level. Not to move from now on toward the setting up of alternative methods as developed and explained in that report, would be a technical mistake, sociétale and politics. Not to redo the mistake of the asbestos, such is the conclusion of this report.

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Annex 1

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National platform of the medical profession for the Grenelle of the environment

The seven propositions of the medical profession
concerning health-environmental

The good health is a preoccupation priority of our fellow citizens. The set of the 7 propositions follow elaborate by the medical profession of our country integrates in the European Action plan 2004-2010
in favor of the environment and health, thrown by the European Commission in 2004 [COM(2004)
416 final], to the decrease of the SCALE initiative [COM(2003) 338 final] and discussed in last June in Vienna
in the setting of an intergovernmental meeting. Several experts of the call of Paris contributed to the development of this initiative and participated at the fourth ministerial conference on the environment
and health organized by the WHO in Budapest in June 2004. The imperative to respect the fixed strategy by
Europe at the time of the determination of the French measures concerning sanitary politics and environmental is of as much more essential to consider than France will take the presidency of the union European from June 2008, and that he/it would be welcome that she/it can present a politics
ambitious concerning health, environment and research, in the setting of the European legislation,
already existing. As the experts of the call of Paris and other participants indicated it at the conference
of Budapest, the childhood is the priority of the priorities concerning environmental health politics, some,
reason of his/her/its vulnerability. Four types of linked pathologies to the environment and concerning in particular
the child, are considered to be priority by the union European: the asthma, the allergies, the, endocrinopathies and the cancers. The medical profession must therefore to be here in first line, in particular the
physicians, since according to their mission of public health (code of public health), they must to contribute to the prevention, to the tracking, to the diagnosis and to the treatment of these pathologies.

1st proposition:

To actualize, to complete and to activate the Plan concretely National Health-Environment (PNSE) that, of
the opinion of the experts having participated in its development, didn't fill his/her/its role in a big number of
domains, in particular in the next one: reduction of the particles diesel broadcasts, reduction of the,
number of unsanitary lodgings, protection of the zones of water catchment, struggle against the pollution

atmospheric. This plan is besides insufficient concerning struggle against the change of the chain
food. The state affirmed its goodwill without achieving what he had committed to make. In the same way, in
numerous case, the territorial collectivities seem not to have filled their mission.

2nd proposition:

To institute a moratorium concerning the construction of new incinerators of garbage (I.O.M.) and the delivery of the authorizations of coïncinération, according to the registered precaution principle,
in the Charter of the environment (art. 1 and 5), incorporated since March 2005 to the preamble of our
Constitution.
The present scientific appraisals reveal that of very numerous toxic substances of CMR type (carcinogenic, mutagens, reprotoxiques) escape from the I.O.M. and that the incineration emits gases to effect
of greenhouse. To encourage the preponderance of the solutions alternative to the treatment of the domestic garbage, having one,
minimum impact on the public health, while reducing the garbage in the source, while encouraging the selective sort and the
retraining, the dating and the méthanisation of the fermentable, and the ultimate storage secured is therefore
essential. The French park of I.O.M. is always the most important of Europe. Our country accuses a delay
technological considerable in this domain. The range of the alternative solutions, creators of new
jobs, already exist under the shape of units of management and treatment of the garbage in France (3 units) and
especially in other States-Members of the European union, notably Spain, Netherlands and Austria. He/it corresponds to the orientation of the measures currently proposed by the Commission
European, the incineration having to remain only a solution of last recourse.

3rd proposition:

Several products phytosanitaires, biocides, additives and substances contained in the hair oils are himself
revealed to be very toxic after their marketing. Some of these products having some CMR properties
are at the origin of cancers, congenital malformations and barrenness. Some are besides neurotoxic and/or allergenic. From where the necessity, in the mind of the Regulation European REACH, of

to reinforce the procedures of marketing authorization (AMM) of the products phytosanitaires (pesticides), biocides, food additives and cosmetic, in order to make they as strict of the point of toxicological and sanitary view that the AMM used for the medicines. Let's underline that one

backing of the procedures of marketing of the pesticides would certainly have avoided the intervening of the
present agricultural and sanitary disasters to the Antilles bound to the use of the chlordécone and the paraquat.

4th proposition:

To the CMR properties many products phytosanitaires, be added the fact that several studies international showed that the nitrates in excess in the water of drink are carcinogenic. From where the
required to reduce meaningfully and in a programmed way the quantitative and qualitative use of the nitrates and pesticides while barring all pulverization by plane and while developing the alternatives
agricultural setting in work in several States of the union, to be quickly in adequacy with
the objectives promoted by the union European. For it, he/it is right to actualize the French legislation and
in particular to transpose and to apply the European Instructions concretely concerning the factors
environmental (water, air, soils) having an impact on the public health.

5th proposition:

Some phthalates, of which in particular the Di 2 Ethylhexyls-Phthalate (DEHP) (most toxic) were revealed
to be CMR substances. From where the necessity to spread the interdiction of use of the phthalates, to the,
medical devices, as it is the case today for the toys and articles of children (decree of the 16.01.2007). Eco-Concevoir tomorrow's hospital while privileging an ergonomics of the respectful building
of the patients and the good to be of the people whom there works, the use of less toxic materials, one,
management responsible of the energies and a modular capacity to answer the evolution of the needs.
To count and prioriser the set actions of prevention in work by the hospitable establishments, the,
to value to widen the application perimeter of the MIGAC then to finance them in an equitable way on the
territory.

6th proposition:

To redeploy the Plane cancer while articulating it with the PNSE, while reorienting the research in the
domain of the toxicogénomique (genetic polymorphisme) in relation with the environment, and some
developing the toxicology, the epidemiology and the environmental prevention. Such a reorientation
some Plane cancer had been baneberry by the precedent President of Republic, Jacques Chirac, to the demand of
numerous physicians and researchers cancerologists.

To this effect, he/it is asked for the generalization of the registers of the general cancers (morbidity) in all
departments and French territories, and the actualization of the set of the existing registers. The creation
fast of such registers permitting to quantify the number and the type of cancers of the departments and
French territories are indeed indispensable to do an epidemiological research of quality.
Otherwise, according to the recent investigation of the Necker institute (Paris V), our country is classified to the 14th rank
world concerning biomedical research, in particular cancérologique. A reform of the present Plan
cancer proves to be therefore indispensable.

7th proposition:

The physicians and the set of the path of care are in first line in information, the prevention, the, tracking, the precocious diagnosis and the treatment of the environmental pathologies. From where the absolute
required to develop the preventive medicine, in particular the environmental prevention, and of to reinforce the initial formation of all medical and paramedical paths and the formation continue in this domain. To develop the preventive medicine consists concretely in inciting the physicians to dedicate a part of their time to the prevention under a shape whose modes will have to
to be negotiated in the setting of the conventional game and possibly with other partners.
To reinforce the formation of the students requires to spread to the national level the pilot experience of
the university of solid Strasbourg to teach the environmental medicine. To reinforce the formation
continue some physicians in the domain of the preventive medicine is especially necessary than they are
the indispensable mediators to the general public education. So he to develop the invites campaigns of sensitization of the physicians to the environmental prevention and to promote for the
physicians of the help tools to the prevention (synthetic grid of compilation of the risks, guide to orientation...).

September 3, 2007

Participants:

Committee of support of the call of Paris, Committee Lasting Development in Health (C2DS), Confederation of the
Unions Medical French (CSMF), Council National of the order of the Physicians (CNOM), Coordination
National Medical Health Environment (CNMSE), Teachers of the Universities of Strasbourg, Paris and
Montpellier, Federation of the Physicians of France (FMF).

Annex 2

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Extracted of the Memorandum of the call of Paris

R-M60: Electric and electronic facilities.

The main goal of the guideline 2002/95/CE RoHSs of the European Parliament and the Council of the 27
relative January 2003 to the limitation of the use of some dangerous substances in
the electric and electronic facilities are to avoid that the dangerous substances, of which
the retardateurs of bromine flames (PBB and PBDE) don't meet in the discharges.

1st

According to this guideline, since the July 2006, the marketing and the,
merchandising of all containing electric and electronic facilities of lead,
of mercury, of the hexavalent chromium, the cadmium, the PBB and the PBDE is forbidden. So that
the product is compliant, none of the uniform materials (simple substances) incoming in the composition of the product must not contain one or the other of the substances to a concentration
superior to the maximal securities of concentration established.
Unfortunately, the directive RoHS sulfur of numerous exemptions and don't apply
to the maintenance parts destined to the repair of the electric or electronic facilities
set on the market before July 1st, 2006, nor to their reuse.

Considering the toxicity of lead, mercury, the cadmium, the hexavalent chromium, and
of the very big difficulty to manage the electric and electronic garbage, the union,
European must reinforce the directive RoHS. She/it must reinforce imperatively
the interdiction of marketing of the bromine and his/her/its derivatives, and to widen the guideline to the
detachable pieces and to the obsolete products. Finally and especially, the European union must
to limit the derogations and exemptions maximally.

R-M141: Reduction of the production of the garbage to the source. Life span
of the products put on the market.

In a general way, the overconsumption bound to the western economic system generates one quantity too important of garbage. The article 3 of the guideline 2006/12/CE in sound paragraph has) incites the member states to promote the prevention or the reduction of the production of the garbage and their harmfulness by suitable measures. In fact this guideline express the intentions, without imposing to the member states the hold of specific measures, for to reduce the production of the garbage efficiently. Actually the fundamental data to conceive is the cycle of life, and more specifically the life span of the products put on the market.

TO CONSTANT USE, A PRODUCT OR OBJECT LASTED OF SHORT LIFE
WILL GENERATE A LOT MORE TO THE COURSE OF THE TIME A QUANTITY
IMPORT GARBAGE THAT A PRODUCT OR OBJECT LASTED OF LIFE

LONG.

The European union must reconsider the guideline 2006/12/CE as there introducing the notion of life span of the products put on the market. The marketing of products to length of long life must be privileged in relation to the one of the products to short life span.
The life span of a product must be therefore in the center of the preoccupations of the world modern. She/it must be valued systematically by the industrial with the help of tests of performance specific and to be part of the conditions of marketing authorization.
So the products or "disposable" objects, even though they are recyclable, must be forbidden of marketing, when an alternative permitting a prolonged life span exists in identical conditions of security.

R-M143: Ordering of the garbage in view of their valorization by the sorting selective and the retraining.

Because of the multitude and the nature and the very varied origins of the garbage, their, ordering is extremely complex.
The guideline 75/442/CEE of the Council of relative July 1975 15 to the garbage, established in sound
I annex a list of 16 categories of garbage.
This list has been taken in an identical way in the guideline 2006/12/CE of the Parliament European and of the Council of April 5, 2006 (to see previously), take in replacement of the guideline 75/442/CE.
The guideline 91/689/CEE of the Council of relative December 1991 12 to the dangerous garbage has
established in his/her/its I annex, another more precise list concerning "the categories or standard
generic of dangerous garbage characterized by their nature or the activity that produced them."
Thus, to the I annex of this guideline, are considered to be dangerous, the hospitable garbage, the drugs, the products of wood preservation, the biocides and products phytopharmaceutiques, the residues of solvents, the halogenated substances, the used oils, tars from the industry, inks, stains, plasticizers and glues, etc.
Actually, according to the decision 2000/532/CE of the Commission of May 3, 2000, replacing, the decision 94/3/CE establishing a list of the garbage in application of the article first, point, a), of the relative guideline 75/442/CEE to the garbage and the decision 94/904/CE of the Council
establishing a list of dangerous garbage in application of the article first, paragraph 4, of the guideline 91/689/CEE of the relative Council to the dangerous garbage, a list of the garbage,
a lot more exhaustive, resulting of a synthesis of the two instructions 75/442/CEE and 91/689/CEE, has been established, driving to the development of an European catalog of the garbage. That
catalog counts 839 categories of garbage, listed in 20 chapters.
Actually the European catalog of the garbage doesn't take into account the recyclable character or
reusable of the garbage.
Among the reusable garbage as components or directly recyclable, one must mention: (1) the domestic biodéchets, (2) the very big majority of the papers and cardboards, (3)
the packings in bioplastiques, (4) the green garbage and unprocessed woods, (5) the objects some

glass, (6) the vehicles of transportation out of use, (7) the electric facilities and electronic.
Are not on the other hand directly usable or recyclable and require the recourse therefore to a specific previous treatment: (1) a big number of food packings put on the walked, (2) the muds of purification, (3) the treated woods, (4) the hospitable and medical garbage,

(5) the used oils, (6) the residues from the industry and laboratories and of general way, all dangerous products.
In order to valorize the garbage by the recuperation of other resources that the production of energy, the European union and the member states must distinguish the garbage reusable or recyclable of those that he/it is not, and to institute for the garbage reusable or recyclable a path of management and treatment based on a collection organized, the selective sort and the retraining after specific treatment.

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Not to accept the demand of moratorium concerning the construction of the new incinerators and the delivery of the authorizations of coincinération, as the formula the proposition n°2 of the common Platform of the medic al profession and therefore, to persist to not to promote the methods alternative to the incineration, as they are set in motion in many member states of the union European, cannot actually drive locally that to an increasing unpopularity, so much to the level of the townships that of the territorial collectivities, to the climatic warming up because of the emission of gas to effect of greenhouse, and finally to a dead end on an environmental, sanitary and socioeconomic level.

The very incineration "put to the norms for the dioxins" is indeed a polluting method for the environment by his/her/its sparkling sewages and his/her/its clinkers, from afar the most loaded in dioxins and
"heavy" so-called metals. Originator of greenhouse gas-to-effect (GES), the incineration contributes to the
climatic warming up. Otherwise, originator of carcinogenic substances, mutagens and reprotoxiques (CMR), she/it is sanitarily dangerous, at the origin of cancers and of congenital malformations.
Our country doesn't have any national politics of management and treatment of the garbage actually, that that
explain that in this domain he/it is in infringement opposite his/her/its own legislation and the European legislation. Of this fact and because the incineration is a polluting and dangerous process
for health, the territorial collectivities, and in particular the mayors are brought to participate to of the unpopular decisions when the construction of an incinerator is imposed, to the contempt of the
sanitary security of their managed and of orientations taken by the European Commission.
Indeed, considering exploratory investigations, he/it appears that in practice, the blind incineration,
of the garbage, as she/it is achieved in our country, don't respect the guideline 2000/76/CE of the
European parliament and the Council, nor instructions 2002/96/CE and 2003/108/CE, relative to the,
garbage of electric and electronic facilities (DEEE), which should be reused and recycled, and non incinerated therefore.

To it the fact is added that the law of July 13, 1992 places the incineration at the end of chain of treatment by sorting and retraining and that the use of the residues of the incineration under the shape of
clinkers as materials of embankment are not only dangerous because of the
phenomena of lixiviation, but completely illegal since being only a matter for a circular.

Yet, some methods alternative to the incineration exist, based on the reduction of the garbage to
the source, the valorization of matters and a management of proximity, permitting the progressive decrease,
and continuous of the quantities of ultimate garbage to bury and the annulment of their toxicity.
These results are gotten thanks to optimization and to the development of the selective sort and the
collection organized, to the reuse of the components of the industrial objects, to the retraining of the,
secondary matters, to the valorization of the organic garbage by dating or by
méthanisation and to the storage secured of the ultimate garbage.
The selective sort to the source, separating the fermentable humid garbage of the dry garbage, is
fundamental, because permitting a retraining of good quality. The setting up of such a selective sort
relief of the expertise of the territorial collectivities, in particular of the mayors, and his/her/its realization,
of the education of the citizens. The alternative methods present a considerable interest. No only they decrease the risks of environmental pollution very distinctly, including
the broadcast of GES, and therefore the sanitary risks, but they are economically
profitable, decreasing from 30% to 50% the costs of investment and working by report
to the incineration, and socially beneficial since these methods are as creators of very
numerous jobs. The reasons are obvious of it: to the economic plan, the valorization of the,
matters by retraining or reuse and the reduction of the transportation of garbage, under the condition
to treat them close to the main places where they are produced, permits substantial earnings,
and on a social level, one could estimate that the creation of jobs could reach two times more of those generated by the incineration.

Not to redo the mistake of the asbestos, such is the final conclusion of this report.