
THE IMPORTANCE OF ACTIVATING THE TECHNICAL BURIAL CENTERS FOR WASTE TO PRESERVE THE ENVIRONMENT AND ELIMINATE THE CRISIS OF RANDOM DUMPS: CONSTANTINE'S CASE

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ABSTRACT

The projects of technical burial centers for waste, conversion units, sorting and passive dumps are of great importance and the only solution in the absence of parallel projects, or in the process of establishing them, such as the waste valuation project for the innovative project in partnership with the United Nations Development Program, which provides goals that are capable of providing and creating jobs In line with the principles of sustainable development, strengthening the circular economy, bringing financial returns and combating climate variables and global warming, by involving citizens and associations in the management and setting a budget of its own to finance it with sufficient space that would solve the Constantine crisis represented by the phenomenon of random hollows and the creation of wealth and work positions in the light of preserving The environment, by activating this project, which can eliminate the problem of waste that littered the state of Constantine in particular, and it helps that a very large amount of organic waste can be evaluated and recycled, and this is a positive thing for the state.

Key words: Technical landfill centers, conversion units, waste, environment, activation, Constantine.

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INTRODUCTION

Waste disposal was in the past in developing countries by throwing waste in random lands dumps, which affected public health, as it represented a high stockpile of risks to public health due to the large pollution it produces as a result of random throw dumping without treatment, the production of wastes. remain a major source of concern as it has always been since pre historic period (Chandler et al, 1997). In recent times, the rate and quantity of waste generation have been on the increase. As the volume of wastes increases, so also does the variety of the waste increases (Vergara and Tchobanoglous, 2012). Unlike the pre historic period where wastes were merely a source of nuisance that needed to be disposed of. Proper management was not a major issue as the population was small and a vast amount of land was available to the population at that time. In those days, the environment easily absorbed the volume of waste produced without any form of degradation (Tchobanoglous et al, 1993).

which necessitated countries to develop technical solutions to reduce the damage Among the damages of random throw, including technical landfill centers in a contemporary scientific manner, in which the highest possible side risks that occur as a result of the traditional disposal of these

wastes are avoided, such as air, water, and soil pollution and harm to public health, as waste was previously landfilled in the seas before it became a criminal internationally and nationally. A Sanitary landfill is also a means of final disposal of waste by storing it underground at the level of technical landfill centers, and a means to preserve lost and wasted wealth.

And things to help with Waste management covers a wide range of activities, from its generation to final utilization or landfill. Waste segregation among residents is considered the primary method of waste management and an efficient way to reduce the amount of municipal waste in landfill. However, to make the segregation process economic and environmentally efficient, it must be easy and understandable for the “waste producer” – the consumer (Młoda-Brylewska and Melski, 2022).

Algeria has made efforts to control and recover waste through a number of laws, the most important of which is No. 19-01 related to waste management, removal, and control, which is the basic law for waste (law n ° 01 - 19 Article 3, 2001).

The province of Constantine (Northeast Algeria) is suffering from a growing waste problem as a result of the continuous increase in the volume of waste, reaching 19,963 tons in 2021 in the random public dumps of Ain Esmara, Hama Bouziane, Didouche Murad, Ibn Ziyad, and Ain Abid, so we had to think of a radical solution to convert this huge amount of waste, valorize it and benefit from it economically, socially and environmentally, and the most important thing is protection from pollution, especially with the failure of the technical landfill centers for each of the technical demolition centers of Boughareb, Al-Daghra, Dawams, and Didush Murad due to the opposition of the citizens and the lack of financial funding and the lands, in addition to that, most of the waste in the state is organic, with a rate of 53.5%, which is rapidly degradable, and a large proportion of the waste is recyclable.

The subject treated in this article is a very important nationally, internationally, and original topic that has not previously been studied in the province of Constantine due to the great difficulty in obtaining data, because the state spends exorbitant funds for institutions and studies offices and did not come with final results, and the research came under the title: The importance of activating the technical burial centers for waste to preserve the environment and eliminate the crisis of random dumps: Constantine's case .

The problematic is the following:

- What are the objectives of establishing technical landfill centers for waste, conversion and sorting units, and passive dumps in the province of Constantine?

-What are the reasons for not activating the technical landfill centers for waste in the province of Constantine? What are its advantages and disadvantages?

1. HYPOTHESIS

-Involving citizens and associations in the management and setting a budget of their own to finance it with sufficient space that would solve the Constantine crisis represented by the phenomenon of random dumps creating wealth and work positions, controlling gaseous emissions and toxic and polluted water leaking into the soil resulting from waste and re-filtering it to preserve the ocean in the light of preserving on the environment by activating this project.

2. RESEARCH OBJECTIVES

- Activating waste disposal centers throughout the province's territory.

- Elimination of random dumps, which constituted an obstacle to the province of Constantine and the inability to control them through waste valorization, especially with the failure of programmed solutions, including landfills, for financial reasons and citizens' objection.
- Explaining the great importance of this project, which is of great economic, commercial, social, and environmental importance, as it provides job opportunities, in addition to its contribution to the elimination of discarded household waste, its re-conversion, recycling, and valorization, as well as the production of energy, in addition to its role in protecting the environment.
- Mitigating the negative effects of environmental deterioration on the various receiving environments by controlling and utilizing gaseous emissions, toxic and polluted water leaking into the soil resulting from the waste, and re-filtering it to preserve the ocean. As well as improving the living conditions of the citizen.

METHODOLOGY

1- General Presentation Of The Establishment

The Public Establishment for the Management of Technical Landfill Centers and Waste Treatment ([EPIC EPWG – CWT](#)) of the Constantine province, is a public establishment of an industrial and commercial nature, which was created in 2008 ([Interministerial Order No.: 1733,2008](#)).

The EPIC EPWG-CET administers several structures including two Technical Landfill Centers (CET) closed and two centers under construction, a waste collection center, a waste transfer station, an inert landfill, plus five landfills.

1.1- EPIC EPWG – CET activities (Directorate of landfills technical Constantine 2010)

- Dumping and burying of urban waste at the technical landfill center Boughareb, Ibn Badis municipality .
- The dumping of household waste at the level of the household waste transfer station at 13th Km, Route, Ain Smara.
- The recovery of recyclable waste at the level of the waste disposal center which is fitted out at the same site of the 13th Km.
- The dumping of inert waste at the Nouvelle Ville inert waste dump, Ali Mendjeli.

2- General Information On A Technical Landfill

2.1- Description of discharges landfills ([Martin P A, 2006](#))

The implementation of landfills in PED must be carried out according to certain rules and provisions which make it possible to avoid impacts on the environment, which amounts to controlling fermentation phenomena by controlling the nature and flow of buried waste and liquid and gaseous flows.

A controlled landfill can be precisely defined by the fact that precautions are taken in its organization and implementation to avoid any nuisance. Today the term-controlled landfill covers different methods relating to the evacuation and the treatment of household waste.

- The traditionally controlled landfill.
- The landfill, whether compacted or not.

- The discharge of previously crushed garbage.

2.2- Definition of the CET

A CET is a set of cells, hydraulically independent, where each cell is considered a waste disposal site by depositing waste in the ground (subsoil), this land is equipped with active barriers and passive to ensure the drainage of leachate, "waste juice", in pipes towards specific basins, the purpose of which is to protect the soil and the groundwater against contamination by the 'organic' polluting load contained in the leachate (EPWG CET Constantine, 2022)

1. Installations where waste is buried. Since the obligation to bury only ultimate waste, these centers are currently called Ultimate Waste Storage Center (Environmental Dictionary)

A CET is intended to receive final waste, i.e., waste whose characteristics make it impossible to envisage recycling or energy recovery (Technical Landfill Centers, 2019)

2.3- CET Classes (Bouarfa Said , 2018)

The technical landfill center receives household waste to bury it in pits. There are currently three types of CET which receive three distinct categories of waste:

- **Class 1 CET:** For hazardous, toxic waste (treated and stabilized special industrial waste, fly ash from incineration plants, etc.).
- **Class 2 CET:** For household and similar waste (household waste, bulky items, green waste, ordinary industrial waste, etc.)
- **Class 3 CET:** For inert waste (waste, rubble, etc.) from building and public works companies and DIY work by individuals.

The CET is carried out for a population of 100,000 inhabitants and more. The lifespan of a technical landfill is at least 20 years. It is therefore imperative to have the necessary land area and to plan the operation of the site over the minimum lifespan mentioned above. The design of a CET or controlled landfill must be able to provide (from the start) the parameters to be provided by a CET.

2.4- The Life cycle of a CET (Directorate of landfills technical Constantine 2022)

- **Phase 1: studies and site selection**
 - Assessment of sites based on geotechnical and environmental criteria.
 - Communication and sensitization of the population to avoid opposition.
- **Phase 2: Technical design and regulatory approval procedures**
 - Approval of the technical file.
 - Finalization of regulatory procedures.
 - Registration of credits.
 - Launch of works.
- **Phase 3: execution of works**
 - Execution of technical infrastructures.
 - Execution of the first cell.
- **Phase 4: Commissioning**
 - The CET is operated for 15 to 20 years.
 - Cells are made as you go.
- **Phase 5: Site closure**

- The cells are closed and placed under control.
- Often rehabilitation measures are initiated.
- **Phase 6: Long-term monitoring**
 - Control of the site for 30 years.

2.5- Criteria for setting up a CET (Executive D N. 2006-198)

- Human environment: Distance from dwellings, at least two hundred meters from the nearest dwelling.
- Environmental sensitivity: Absence of AEP network, absence of groundwater, wells, drilling, proximity to a Wadi, dams, natural area protection zones, etc.
- Urban planning and land use planning criteria.
- Geological and hydrogeological criteria.
- Hydrogeology: As much as possible, groundwater is avoided.

A multi-criteria analysis makes it possible to identify the sites best suited to the establishment of a CET in a territory. After the choice of a site, based on an analysis of the implantation criteria, investigations are carried out to characterize the initial state of the site and its :

- Environment
- Landscape study
- Geological, hydrogeological, and geotechnical study
- Faunistic and floristic study
- Acoustic study
- Traffic study
- Sanitary study

These studies are included in the environmental impact study file submitted to a public inquiry. It defines the measures to be taken to guarantee optimal integration of a site into its environment.

Being a classified installation, the CET is subject to authorization or refusal to operate under Executive Decree No. 2006-198 of May 31, 2006, Art. 5. - Any request for authorization to operate a classified establishment is preceded and in accordance with the nomenclature of classified installations:

- A study or notice of impact on the environment established and approved according to the conditions set by the regulations in force.
- A hazard study established and approved according to the conditions set by this decree.
- A public inquiry conducted, following the procedures set by the regulations in force.

2.6- Emissions (Directorate of landfills technical Constantine 2010)

By "gaseous emissions from a CET", we mean all the gas or particle emissions into the atmosphere, generated by a landfill area or by biogas recovery and destruction facilities. Potentially, there are three types of gaseous emissions on a CET:

™the biogas emitted on the surface of landfill areas, either during operation through the mass of waste during it or after rehabilitation via leaks within the cover system.

™odors emanating from biogas, percolate storage areas, and fresh waste dumping/regulating areas .

™ the fumes produced by the biogas recovery/destruction units (gas engine and flare).

2.6.1. Biogas

Recently several countries have given high priority to the development of renewable energies, such as biogas, resulting from the anaerobic digestion of biomass in its various forms: liquid and solid, which represents a considerable green energy source (Hajji and Rhachi, 2016).

Raw household waste contains between 50 and 70% fermentable organic matter, two-thirds of which is easily biodegradable with a water content varying from 15 to 30%. There are three categories of organic waste according to their biodegradability. Their average proportions in household waste are as follows:

- Animal and vegetable matter (highly biodegradable), 30 to 50%.
- Paper and cardboard (moderately biodegradable), from 8 to 20%.
- ™ leather and wood (not very biodegradable), from 1 to 10%.

2.6.2. Biogas production

The degradation of waste, at the origin of the production of biogas, results from microbiological activities and translated by a process in two successive stages, the first stage in aerobic conditions and a second in anaerobic conditions.

2.7- Treatment of leachates ((Directorate of landfills technical Constantine 2010)

Leachate treatment involves many processes that depend on the volume and composition of the leachate. A distinction is made between biological and physicochemical treatments inspired by those applied to wastewater in urban wastewater treatment plants.



Figure 1. Landfill cell with biogas extraction chimney(*EPWG CET Constantine 2022*)

2.8- Benefits of a CET (*EPWG CET ,2022*)

A landfill site for a long operating period of 15 to 20 years or even thirty and a post-operating period of 30 years.

2.8.1. Objectives of burial techniques

- Controlling liquid effluents: leachate.
- Controlling gaseous effluents: biogas.
- To fight against fires, waste dispersion in the air, le chiffonnage, odors, and vermin.

2.9- Theoretical techniques for burying household waste

The CET is a large biochemical reactor where millions of chemicals, organic, and mineral compounds, interact with each other under the influence of natural agents (rain, microorganisms). These reactions result in a biological, physical, and chemical transformation of the waste with the release (and consumption) of liquids and gases. This transformation is almost completed in a century (Bellenfant G. 2001)..

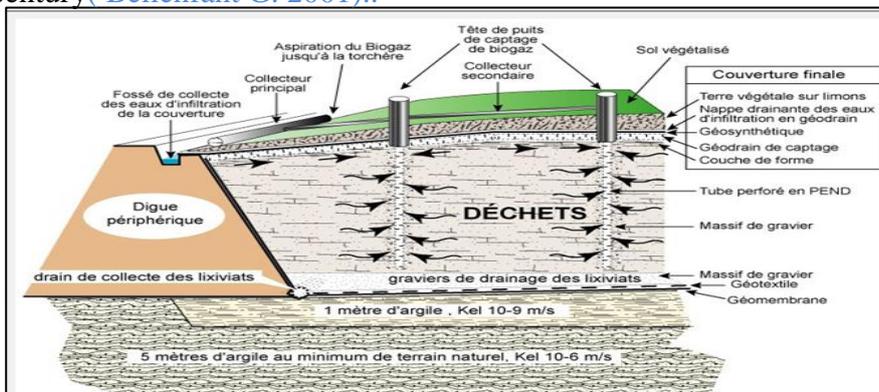


Figure 2. Components of a class II CET cell (Schematic sections). (Abdelhak Djamel 2008)

3- The Structures Of The Province (Waste Collection Center, Transfer Station, Inert Landfill, Technical Landfill Centers)

3.1- The 13th Km waste collection center, Ain Smara Road

The 13th Km waste collection center is an enclosed, equipped space, with an area of 2500 m², for the voluntary contribution of sorted waste, which came into operation on 10/07/2013.2.1.1.



Figure 3. The 13th Km waste collection center. *Researcher, (the autho,2022).*

3.2- Household waste transfer station

The transit station (or transfer dock) is an installation that allows the product of collections from a geographical area of the territory to be grouped together to be transported to treatment and recovery sites. An essential tool for controlling costs and reducing the environmental impacts linked

to transport, the transit station is therefore inserted between the stages of collection and treatment of household waste (SYDOM Aveyron, 2021). The household waste transfer station is a transit point for waste collected from the various urban sectors of the municipalities of the province of Constantine and Ain Smara, transferred to the CET Boughareb. The station entered activity February 2018.

3.3- Lieudit HADJ BABA at 13th Km, Ain Smara Road

The capacity of 400 t/day of waste 400 t/day of waste transferred to the center area of 2 Ha.



Figure 4. Hadj Baba transfer station at the 13th km, Ain Smara Road
 (Google Earth, 2022)

3.4- The landfill of inert Road

The landfill of inert is in the locality Ali Mendjeli in front of the university 3. The EPIC-CET makes available to public establishments, private companies, and all citizens the landfill of inert waste for the dumping of solid and green waste.



Figure 5. Satellite image of the location (Google Earth, 2022)

Table 1. Statistics of the situation of Technical Landfill Centers in the province of Constantine.

Number	Backfill Technical Center and Site	Situation and superficies	Obstacles and difficulties
01	Technical Backfill Center Boughareb municipality of Ibn Badis	It has been used since 2010, estimated at 78 hectares	It has stopped receiving waste since June 15, 2019, due to the opposition of citizens

02	Backfill Technical Center Daghra municipality of Zigoud Youssef	100% achieved, not used, estimated at 30 hectares	It was not used because of the opposition of the citizens
03	Technical Backfill Center Dawas Ain AbidAin municipality	Study in progress from (EPE-URBACO SPA), estimated at 31 hectares	Lack of financial funding
04	Didush Murad Technical Backfill Center, Didush Murad municipality, in the place of the random dump	The study is in progress by the National Waste Agency (AND), estimated at 05 hectares	The procedures for the decision to allocate the land by the Province Property Directorate have not been completed. The financial funding is not available

Source: EPWG CET Constantine (2022).

a)

b)



Figure 6. Customized sites for: (a) Boughareb technical landfill (Ibn Badis municipality) and(b) Doghra technical landfill (Ziroud youcef) :

(EPWG CET Constantine, 2022)

4- The Average Composition Of Household And Assimilated Waste (Dma) From The Campaigns (Seasons) Of The Province Of Constantine (CHARACTERIZATION,2019)

- A preponderance of organic matter with more than 53.5%, despite a drop compared to other provinces .
- A massive portion of plastic(%15.41 ~) .
- Small portions of disposable diapers with (~ 8.34%), Paper/Cardboard (~ 8.05%), and textiles ~ (%6.78).
 - For other waste, it varies between 1.30 and 0.93%. They represent less than 7.91% of the quantity of DMA. The Figure 7 shows clearly that a significant percentage of the waste is organic, could be valorized, and recyclable, and this is a positive thing for the province.

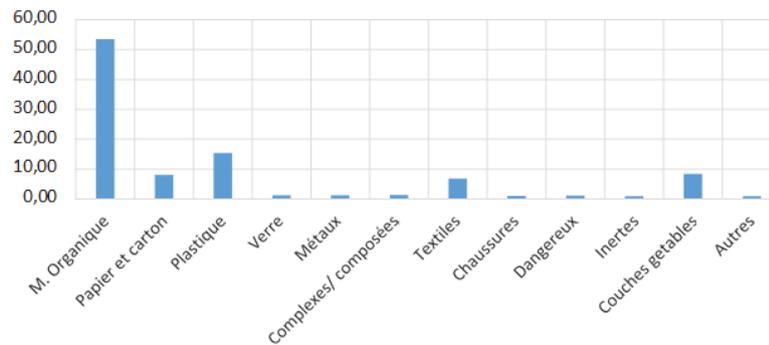


Figure 7. Average annual composition DMA of the 4 seasons – Constantine 2018 – 2019(*Household and similar waste characterization report DMA, Algerian national waste agency, p21, 2019*).

Table 2. Quantities of household waste dumped in 2021 through the various controlled landfills.

Landfills	Municipalities and institutions that throw waste there	Per Tons
Landfill Ain Smara	EPIC EPAS (Ain Smara municipality) EPIC ENOR (Ouled Rahmoune municipality) EGUVAM+ EPCA KHROUB +PROPREC nv (Elkhroub municipality) CONSTANTINE COMMUNE +Private and public establishments	145811
Landfill HAMMA Bouziane	EPIC HAMMA VERT (Hamma Bouziane municipality) + some sectors of the municipality of Constantine + Private and public establishments	25647
Landfill Didouche Mourad	EPIC EGUCDM (municipality Didouche Mourad) + Private and public establishments	9367 during (July-December)
Landfill IBN ZIAD	Municipality IBN ZIAD	7142
Landfill Boughareb	EPCA AIN Abid (Ain Abid municipality) +EPCA IBN BADIS (Ibn Badis municipality)	11996

Source: EPWG CET Constantine, 2022 + researcher +environment department.

Constantine produces a value of 199,963 tons in 2021, which is a large number if we compare it with the rest of the provinces. The municipality of Ain Asmara alone produces about 145811 tons, which requires the need to develop solutions.

5- Reasons For Not Activating The Technical Landfill Centers

- Lack of partnership with associations and with citizens residing near landfill centers within the framework of transparency and good governance: this results in the refusal of the residents and riots

and blocking the road, such as the technical landfill center in Boughareb in the municipality of Ibn Badis, which has stopped receiving waste since 15/06/2019 due to the opposition of the citizens, in addition to the technical landfill center Al-Daghra in the municipality of Zighoud Youssef, where the occupancy rate reached 100%, was not used due to the opposition of the citizens.

- Orientation towards new projects in valorization and international partnership and leaving landfill centers: among them “The Algerian Canadian partnership to implement a pilot project for the integrated management of waste in Constantine and Setif on 19 April 2018 to implement a pilot project for the combined management of household and similar waste with low greenhouse gas emissions, and in this regard, more than 500 tons/day of household waste will be treated. This project, worth fifty million euros (70% for the Algerian side and 30% for the Canadian side), will be launched in the framework of the implementation of the national strategy for the integrated management of waste, which is a source of raw material that can be recycled and valorized. Thus, it constitutes a strong source for reviving the growth of the national economy and a fertile ground for public-private companies. This environmental project will also allow to reduce the need for real estate for technical backfill by 75% and reduce the burden of waste management. In addition to creating wealth and jobs, this sectoral partnership will contribute to reducing the bill for importing chemical fertilizers (Ministry of the Environment 2022).
- Establishment of technical landfill centers without the presence of the without finances budgets or lack thereof, as happened with the projects of the Technical Landfill Center Dawas of the municipality of Ain Abid and the Technical Landfill Center Didush Murad, in place of the random vicious cycle.
- It is known that the technical landfill centers need space and the procedures for the decision to allocate the land by the Directorate of Province Properties have not been completed. The study is in the process of being completed by the National Waste Agency (AND), estimated at 05 hectares in Didush Murad.

6- The Objectives Of Waste Recycling Centers, Transfer Stations, Technical Landfill Centers In The Province Of Constantine

6.1- Objectives for Waste collection centers

- Individuals and institutions can go there for the free deposit of some of their recyclable waste such as bulky waste, example: The waste disposal center of 13th Km, Route Ain Smara.
- Allow fighting against wild deposits.
- Giving a second life to waste by recycling it.
- Encourage citizens to contribute to the preservation of the environment.

6.2- Objectives for Transfer Stations

- The economy of the execution time of collection operations.
- The alleviation of road traffic by reducing the number of trucks ensures the transfer of waste from urban sectors to the CET.
- Fuel economy.
- Rationalization of the use of collection equipment.

- Optimization of the recovery of recyclable waste.
- The reorganization of the activity at the level of CET Boughareb allows better treatment of household waste.

6.3- Objectives for Technical Landfill Centers

- Disposing of the growing waste problem because of the continuous increase, reaching 19,963 tons in 2021 in the random public dumps in Ain Asmara, Hama Bouziane, Didouche Murad, Ibn Ziyad, and Ain Abid.
- Transforming this massive amount of waste, valorizing it, and benefiting from it economically, socially, and environmentally, through recycling and burying the waste that is not recycled.
- Most of the waste in the province is organic, with a rate of 53.5 %, which means that it can decompose quickly, and a considerable proportion of waste is recyclable.
- Elimination of random dumps, in which the percentage of contamination increases year after year.
- Distribution of burial centers across the entire province to avoid pressure on one municipality, and fuel economy.
- Giving an aesthetic aspect to the city.
- following the general directions of the state to establish technical landfill centers within the framework of preserving the environment and sustainable development.

7- The Objectives Of Waste Recycling Centers, Transfer Stations, Technical Landfill Centers In The Province Of Constantine

7.1- Disadvantages

- The possibility of leachate leaking (waste leachate into the groundwater, causing its pollution).
- The inability to determine the time required for the decomposition of the buried waste, because it is mixed waste, and each component of it has a different period of decomposition.
- It takes a lot of space to get it done.
- It needs large funding and much equipment, unlike evaluation projects with countries abroad that finance themselves through joint projects in cooperation with the United Nations Development Program.

7.2- Advantages

On the other hand, sanitary backfilling has the most important advantages:

- The Technical Landfill Center contributes to activating waste recycling by sorting recyclable waste (paper, wood, plastic, cardboard ... etc.).
- The landfill center generates revenues by selling the sorted materials to the recycling factories as raw materials.
- The landfill center contributes to reducing the volume of waste and thus reducing pollution.
- Transforming landfills and backfilling basins into green spaces, achieves sustainable development.

- Controlling a significant percentage of gaseous emissions and benefiting from them, as well as toxic and polluted water leaking into the soil.

CONCLUSION

In this article, we discussed the reality of the technical landfill centers for waste, transformation units, sorting and passive dumps in the province of Constantine (Northeast Algeria), the great importance of these vital projects, and the objectives of their establishment, in addition to the advantages and the disadvantages of technical backfilling of waste with associations and with citizens, moving towards new projects in valorization and international partnership and the establishment of technical burial centers without the presence of fundings, lands and space. Among the objectives of establishing technical landfill centers for waste, conversion and sorting units, and passive dumps:

1- WASTE COLLECTION AND SORTING UNIT

- Individuals and institutions can throw recyclable waste and recyclable waste such as bulky waste, for example, the waste disposal center in Kilo 13 Ain Smara Road.
- Encourage citizens to contribute to preserving the environment.

2- TRANSFER STATIONS

- The economy in the time of conducting collection operations and reducing traffic.
- Fuel economy and rationalization of the use of combination equipment.
- Optimization of the recovery of recyclable waste.
- Reorganization of activity at the level of CET Boughareb to allow for better treatment of household waste.

3- TECHNICAL LANDFILL CENTERS FOR WASTE

- Disposing of the growing waste problem because of the continuous increase, reaching 19,963 tons in 2021 in the random public dumps in Ain Asmara, Hama Bouziane, Didouche Murad, Ibn Ziyad, and Ain Abid.
- Transforming this massive amount of waste, valorizing it, and benefiting from it economically, socially, and environmentally, through recycling and burying the waste that is not recycled.
- Most of the waste in the state is organic, with a rate of 53.5 %, which means that it can decompose quickly, and a considerable proportion of waste is recyclable
- Elimination of random dumps, in which the percentage of contamination increases year after year.
- Distribution of burial centers across the entire province to avoid pressure on one municipality, and fuel economy.
- Giving an aesthetic aspect to the city.
- Following the general directions of the province to establish technical landfill centers within the framework of preserving the environment and sustainable development.

Through these projects, the objectives and importance of establishing technical burial centers for waste, transformation and sorting units, and passive dumps by eliminating random dumps and thus, fighting fires, flying waste, friction, odors, and pests becomes clear to us. Controlling gaseous

emissions and toxic and polluted water in the soil resulting from sewage waste and re-filtering it to conserve the ocean. We can also summarize the disadvantages of technical backfilling of waste in the possibility of leachate leakage and gaseous emissions, the inability to determine the time required for the decomposition of the buried waste, and the need for a large space for its completion and many pieces of equipment to run it. As for the advantages, on the other hand, The Technical Landfill Center contributes to activating waste recycling by sorting recyclable waste (paper, wood, plastic, cardboard, etc.) and thus generating revenues through its sale and reducing the volume of waste, thus reducing pollution. In addition to the valorization and recycling of a large amount of organic waste, this is a positive thing for the province.

There are also several reasons for not activating the technical landfill centers, including:

- Lack of partnership with associations and with citizens residing near the burial centers within the framework of transparency and good governance: this results in the refusal of the residents and riots and blocking the road, such as the technical filling center in Gharb in the municipality of Ibn Badis.
- Orientation towards new projects in valuation and international partnership and leaving landfill centers: among them "The Algerian Canadian partnership to implement a pilot project for integrated waste management on April 19, 2018, in Constantine and Setif. Among the objectives of this project is to reduce the need for real estate directed at technical backfill by 75% and reduce the burden of waste management.
- Establishment of technical burial centers without the presence of the financial fundings or lack thereof, as happened with the projects of the Technical Landfill Center Dawams in the municipality of Ain Abid, and the Didush Murad Technical Landfill Center, in place of the random dump.

It is known that the technical burial centers need space, but the procedures for the decision to allocate the land are being completed by the Directorate of Province Properties, the study is in the process of being completed by the National Waste Agency (AND), estimated at 05 hectares in Didush Murad.

- The necessity of establishing technical landfill centers for waste.

The activation of the landfill centers on the entire territory of the province would eliminate the random dumps that posed an obstacle to Constantine province, as it became an urgent necessity to stop and control gaseous emissions and toxic and polluted water leaking into the soil resulting from the waste and re-filtering it. In addition to economic, commercial, social, and environmental benefits, as it provides job opportunities, in addition to its contribution to the elimination of discarded household waste, its re-conversion, recycling, and valorization, as well as energy production, in addition to its role in protecting the environment.

Constantine, which is considered the capital of the East in Algeria, is waiting and in need of such projects, which are considered a qualitative and great leap in the field of environmental preservation, especially with the emergence in recent years of many random dumps and the inability to manage and control them, which has spurred citizens and officials, and which ensures a clean and sustainable environment and a green circular economy.

Summary of requirements

The author has nothing to declare:

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The author certifies that they have no affiliations with or involvement in any organization or entity that has any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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