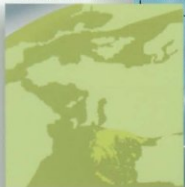


INTEGRATED  
WASTE  
MANAGEMENT  
SYSTEMS

WITH RESPECT FOR THE ENVIRONMENT • ΜΕΤΑ



ΕΠΙΧΕΙΡΗΣΗ ΚΑΙ ΑΝΑΠΤΥΞΗ

A.C.M.A.R.

ASSOCIATION OF COMMUNITIES AND MUNICIPALITIES IN THE ATTICA REGION

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ASSOCIATION  
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SOLID WASTE MANAGEMENT

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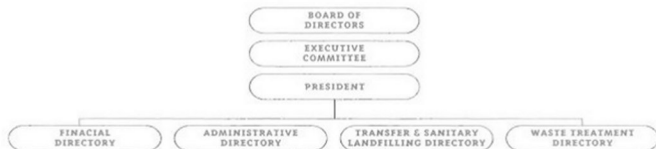
## STRUCTURE AND ORGANIZATION

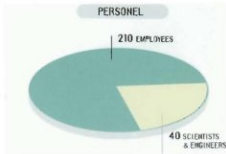
The higher administrative authority for ACMAR is the Board of Directors which elects from its members the, President, Vice-President and a five member Executive Committee. The President is a correspondent of a Mayor concerning its Authority and the Executive Committee the authority of Municipal Committee.

The ACMAR's Board of Directors has 118 members , while now as members of ACMAR participate 73 municipalities and 15 communities of the prefectures of Attica Region which represent about the 95% of the population in the Region .

The personnel of ACMAR is composed of 250 working people, of which, 40 are engineers and scientists of all disciplines.

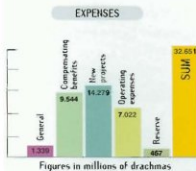
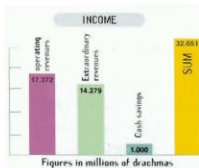
The internal structure of organization in ACMAR is consisted of Directions and Departments with corresponding organic functions and responsibilities as is shown in the attached figure of the next page.





### THE ACMAR'S BUDGET

The accomplishment of ACMAR's project is funded by the operating revenues of its members from the Organization of Local Authorities, and the Capital grants of the Public Investment Program. From ACMAR's revenues, a significant part is disposed for countervailing tariff for hosting its existing infrastructure (Año Liosia, Aspropyrgos, Perama etc.), another part is disposed for research and studies concerning new plants, and the rest of it pays for its operational expenses. In the year 2001 these figures are as following:



## INTRODUCTION

Since the establishment of the Association of Communities and Municipalities in Attica Region (A.C.M.A.R), 30 years have been past. A lot of things have changed in national, as well as, in international level on solid waste management. Science, technology and the followed practices have changed dramatically.

From the seventies till beginning of eighties, waste management was a synonym of the uncontrolled transportation and disposal of waste. Later on and till beginning of nineties, by the term "Waste Management" it was meant the collection, transportation and landfilling of waste mainly in dumps by means and methods that were available by ACMAR.

Nowadays, the concept of waste management includes many parameters that should be present for a sound result and more specifically:

- Prevention, that is reduction of waste production
- Reuse and/or recycling of the materials contained in waste
- Optimization of final disposal
- Safe transportation
- Rehabilitation, that is restoration of the possible harm caused to the environment.

During its 30 years of its operation A.C.M.A.R has succeeded in a significant progress. It has implemented and keeps implementing important and complex high technology projects. It has also introduced innovative methods and practices in Greece.

The truly high valued role of ACMAR is reflected not only on its good relations with local authority but with the citizens too. The ACMAR expresses and promotes with consistency an active and environmentally sound social awareness which is the forefront of local authority on environmental issues and solid waste management.

## PROJECTS AND FACILITIES OF ACMAR

As it has already been mentioned, ACMAR within its program, is performing successfully the below projects (which are co-funded by the 2nd Community Support Frame fund) :



## WASTE RECYCLING AND COMPOSTING PLANT

The recycling plant is located in Ano Liosia region, in a greater area of 200 ha and constitutes one of the most innovative plants for waste treatment, with a daily capacity of :

- 1200 t of municipal waste
- 300 t of biological sludge from the Wastewater Treatment Plant of Athens in Psyttalia island
- 130 t of yard waste

The operation of recycling plant will reduce the quantity and hazards of the waste which is led to the sanitary landfill after its utilization by the recuperation-recycling of lots useful materials, iron and aluminum, and also by the production of new products (compost and RDF). The plant is expected to be operative by the end of 2001.



**WASTE RECYCLING AND COMPOSTING PLANT**  
ESTIMATED FINAL BUDGET  
24,4 bill. drs.





## SANITARY LANDFILL OF ANO LIOSIA

The Ano Liosia sanitary landfill is a modern site for the sanitary disposal of waste with an area of 25 ha which almost accepts the total amount of the solid waste produced in Attica and of which 1,700,000 t/y are municipal solid waste. It also accepts (after a relative approval):

- Industrial solid waste

- Non-hazardous waste

- Demolition and excavation products

- Biological sludge from the Psytallia wastewater treatment plant and the Metamorphosis Biological Treatment Center.

The Ano Liosia sanitary landfill has been constructed in stages by the cell method, which means sectional operation and immediate restoration of the site, so that every year are restored and returned to the environment 5 ha of natural park area.



**SANITARY LANDFILL OF ANO LIOSIA  
ESTIMATED FINAL BUDGET  
6,3 bill. drs.**





## HOSPITAL WASTE INCINERATOR

One of the more significant problems to be faced with in Attica is the proper management of its Hospital waste. The ACMAR contributes to the State, in the special waste management, by the construction and operation of a modern central incineration plant equipped with advanced environmental protection systems.

- The capacity of the incineration plant is 30 t/d, able to cover the needs of Attica greater area.

- The plant will start its operation, shortly after its trial operation, within 2001.



HOSPITAL WASTE INCINERATOR  
ESTIMATED FINAL BUDGET  
2,3 bill. drs.



HOSPITAL WASTE INCINERATOR





**RESTORATION OF THE OLD LANDFILL OF ANO LIOSIA**  
 ESTIMATED FINAL BUDGET 7,5 bill. drs.  
**RESTORATION OF THE OLD LANDFILL OF SCHISTO**  
 ESTIMATED FINAL BUDGET 3,9 bill. drs.



## **RESTORATION OF THE OLD LANDFILLS OF ANO LIOSIA AND SCHISTO**

The restoration projects include the remedy of the harm caused to the natural environment from the operation of the old landfills and also the restoration of the disposal sites to a point that they can be used for recreational areas.

The restoration involves:

- The creation of environmental and recreation parks in the corresponding old landfills of a total area of 130 ha (90 ha in Schistos and 40 ha in Ano Liosia old landfills).
- These parks will be ready for the public, living in the greater area surrounding the old landfills, by the end of 2001.

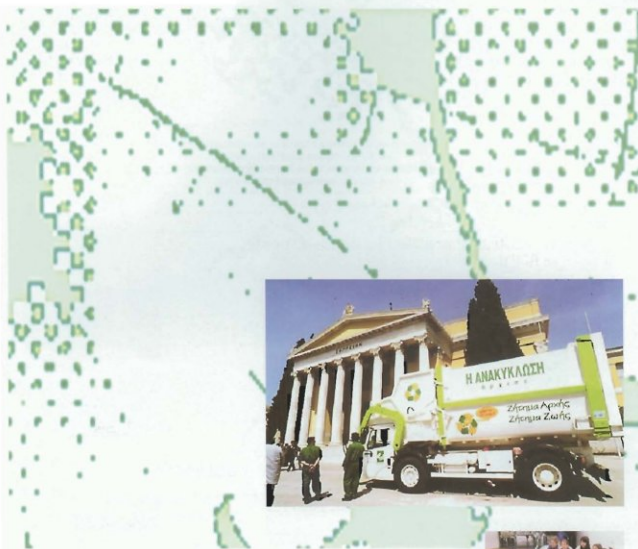




## SCHISTOS TRANSFER STATION

The ACMAR also operates since 1991 the Schistos Transfer Station, one of the largest transfer stations for waste in Europe, with a capacity of 5,000 t/w of municipal solid waste,

working on a five day weekly basis and able to deal with daily peak loads of 1,600 t, serving the communities and municipalities in the area.



## PAPER RECYCLING PROGRAM

Finally ACMAR, with its well known slogan "Do it, you too!", is implementing the Paper Recycling Program since 1994 with the participation of hundred thousands of citizens in communities and municipalities of Attica Region, by use of the "Bring-System" and covering, geographically and by number of population, the 50% of Attica Basin.





## THE ACMAR'S PLANNING AND PROJECTS FOR THE NEW MILLENIUM

The ACMAR, within the framework of goals as defined by the Regional Planning and also the goals set by the European Rules and Directives, is intended to implement an integrated and cohesive plan for its interference in the waste management.

The implementation of about 30 projects included in ACMAR's own program is proposed within the framework of the Operational Programs of the 3rd Community Support Frame and the Cohesion Fund.

Below, are quoted the thematic titles of the corresponding projects.

### Recycling - Treatment - Utilization

Development of two stream (liquid-dry) waste collection network

Development of a separation at source network for recyclable materials

Construction of a recycling center for packaging materials

Construction of a Mechanical Recycling Plant

Construction of a waste treatment plant for the liquid stream

Construction an RDF thermal treatment unit

### Transfer - Final Disposal

Establishment of Hymettus transfer station

Establishment of Athens and neighboring municipalities transfer station

Development of an interconnected network of local waste transfer stations

Construction of West Attica Sanitation Landfill II

Construction of a 2nd sanitation landfill for non-hazardous waste

### Management of Special Waste

Construction of collection and temporary storage centers for exhausted car catalysors

Construction of a treatment unit for exhausted car catalysors

Construction of a collection and temporary storage center for used mineral oils

Construction of a treatment unit for used mineral oils

Supply and installation of a shredder for tires and bulky objects

Construction of a tires treatment unit

Construction of a collection and temporary storage center for the small quantities of hazardous wastes in municipal waste

Construction of a safe landfilling site for wastes

Construction of a unit recycling unit for demolition and inert materials from construction works

Construction of a collection and temporary storage center for electric and electronic appliances

Construction of a treatment unit for electric and electronic appliances

### Restorations

Restoration of uncontrolled Landfills in Attica Region

Restoration of inoperative quarries by use of inert materials

Restoration of inoperative quarries by use of bound residues from MRF's

Upgrading of the gaseous emissions treatment system of the Mechanical Recycling Plant's composting unit

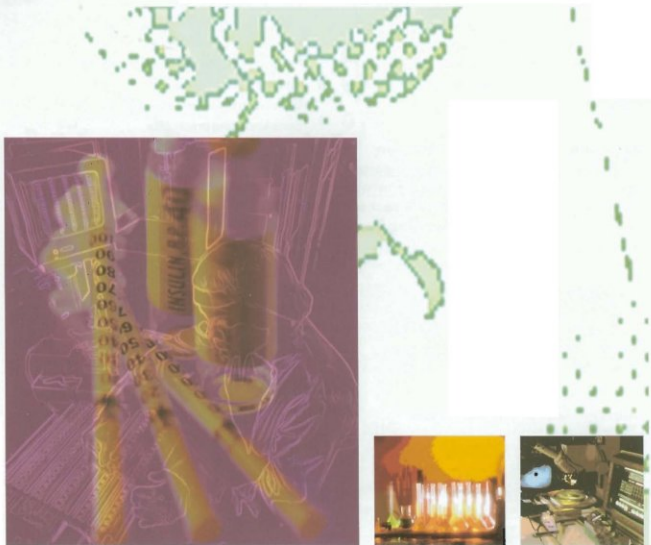
Upgrading of the Mechanical Recycling Plant's and Incinerator's greater area

### Supplementary Supportive Actions

Development of an integrated information system

Publicizing activities for the waste management plan and public opinion sensitization

Health and Safety at work in the ACMAR facilities areas



## LABORATORY OF QUALITATIVE AND ENVIRONMENTAL CONTROL

Twenty years ago ACMAR set forward a concerted effort to keep an essential control of the incoming waste disposals, to the areas of its liability, preparative not to end up to them hazardous litter, for the Public Health and the environment.

For the security of the above and the self-reliance support of its inquiring project, has developed a control process which relied technically and materially on the ACMAR Lab of Waste Disposals, which operates since 1985, and scientifically on its specialized and scientific personnel.

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