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**ANNUAL REPORT OF THE COHESION FUND**

**1995**

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**ANNEX 1 - GREECE - ENVIRONMENT**

(presented by the Commission)

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GREECE

ENVIRONMENT

**Publication of main points of decisions to grant financial assistance under Regulation 1164/94 establishing a Cohesion Fund.**

Project summary  
No 94.09.61.005

1. **Project title** Water supply to Thessaloniki from the river Aliakmon
2. **Authority making the application**
  - 2.1. Name: Ministry of National Economy
  - 2.2. Address: Syntagma square 10 180 Athens
3. **Authority responsible for implementation**
  - 3.1. Name: Ministry of Public Works ,Land planning and Environment
  - 3.2. Address: Fanarioton 9, 10178 Athens
4. **Location**
  - 4.1. Member State: Greece
  - 4.2. Region: Central Macedonia
5. **Description**

**Studies and Consultant expenses**

**Completion of conduit from River Axios to Sindos pumping station.**

Construction of a closed orthogonal concrete conduit, internal dimension 3.0x3.5m, total length 56 m, flow 660 000 cu.m/day (1 st and 2nd phase) with intermediate crossings

Sum required for payment for field damage, expropriation and other cost

**Construction of filters Unit I**

Flow 150 000 cu.m/day (1st stage of 1st phase)

**Conduits to bring drinking water from reservoir D3 to Langadas road-  
construction of Diavata pumping station and reservoirs D3 and D4**

Laying of steel tubes:

- a) Cross-section D 1700, length 3840 m, from reservoir D3 to Diavata pumping station with intermediate crossings
- b) Cross-section D 1500, length 2750 m, from Diavata pumping station to reservoir D4
- c) Cross-section D 1500 to D 1300, total length 6050 m, from reservoir D4 to Langadas road

Flow of these conduits 300 000 cu.m/day; all form part of 1st phase.

- Laying of steel tubing: sum required for payment for field damage, expropriation and other works
- The actual structure of the Diavata pumping station and the electromechanical equipment form part of the 1st phase
- The land for construction of the Diavata pumping station has been expropriated
- Clean-water reservoir D3 will be constructed on expropriated land for the filters and will form part of the 1st phase
- the discharge/overflow conduit for reservoirs D2, D3 will be constructed of cement piping dia. 1000, length 800 m
- Reservoir D4 will form part of the 1st phase. It is planned to complete expropriation of the land for construction of reservoir D4 in the near future.

**Connection of Aliakmon aqueduct with various installations (Diavata reservoir, West Areas D2, Neapolis, Kallithea and reservoirs Touba, D5)**

- A call for tenders for the technical study has been published

**Renovation/repair of connecting canal**

Repair and relining of sections A0, 6A and 9A of the Aliakmon-Axios connecting canal, total length 8 000 + 9 800 + 7 400 = 25 220 m

**6. Objectives**

To provide a 660 000m/day water supply to Thessaloniki, total population, 1 million, at present served only by boreholes; use of which is running into serious difficulties:

- a) the drought is depleting underground water reserves with serious implications for water supply and irrigation
- b) over-pumping is causing subsidence in the area of the boreholes

7. **Work schedule**

<b>Category of work</b>	<b>Commencement</b>	<b>Completion</b>
Studies	Most completed, one remains and has been commenced	30.9.1996
Main works	1.9.1995	31.12.1998
Operational phase	From 1.8.1998	

8. **Economic and social cost-benefit assessment**

The cost-benefit ratio is  $B/C > 1$ . Applying the sensitivity method to the assumptions still leaves this result positive. The yield coefficient for interest rates of 6% and 8% ranges on the two assumptions from 0,91 to 1.47.

The internal yield rate is for assumption a) 10.08% and for b) 7.05%. The number of jobs created directly at the execution stage is 250 in the first year and indirectly in the execution phase 200. The number created directly at the operating stage is 50.

9. **Environmental impact assessment**

- Upgrading of water supplies of the areas in question.
- The project will also have a wider impact:
  - a) in the Kalokhori district, which is subsiding as a result of water-pumping from boreholes and is in danger of being overtaken by the sea. The ground water horizon has been confirmed as brackish and the area is turning into a salt marsh.
  - b) in the Araviso district restoration of the spring waters will permit a recovery of lost plant and animal life
  - c) in Thessaloniki the existence of adequate quantities of water will provide the opportunity to upgrade the environment by increasing the amount of plant life.

10. **Public procurement system**

**Completion of conduit from River to Sindos pumping station.**

Unit price system

**Construction of filters Unit I:**

Lump - Sum system, study - construction and appraisal of tenders

**Conduits to bring drinking water from reservoir D3 to Langadas road-construction of Diavata pumping station and reservoir D3 and D4:**

lump - sum system

**Connection of Aliakmon aqueduct with various installations (Diavata reservoir, West Areas D2, Neapolis, Kallithea and reservoirs Touba, D5)**

lump - sum system

**Renovation /repair of connecting canal**

lump -sum system.

**11. Cost and assistance (in ecus)**

Total cost: 95 127 000

Eligible costs 95 127 000

Rate of assistance 85%

Cohesion Fund assistance 80 857 950

**12. Revenus and pricing Policy**

Any income accruing directly from the project as well as the future pricing policy concerning the project will be subject to follow-up and examination by the Cohesion Fund.

The Cohesion Fund will examine the promoter's utilisation of any financial surplus which will occur from the construction of this project with community financing.

The project has to be accompanied by an updated master plan for water of the greater Thessaloniki Area.

The Cohesion Fund will follow closely the implementation of the programme of control and reduction of water leakages as well as network analysis in the district which will be put in place by the Greek Authorities.

The Greek Authorities are obliged to proceed to a high quality assessment of the situation of the existing project and on any maintenance needed.

The Greek Authorities have to install a monitoring system for the disposal of sludge and effluents from the filters' unit according to international standards.

**Publication of the main points of the Decision to grant assistance under  
Regulation 1164/94 establishing the Cohesion Fund**

Project summary

No 94.09.61.010

**1. Project title**

Enlargement and completion of sewage treatment installations for Thessaloniki stage II.

**2. Authority making the application**

2.1. Name: Ministry for the National Economy

2.2. Address: Pl Sintagmatos 10 180 Athens

**3. Authority responsible for implementation**

3.1. Name: Ministry for the Environment, Regional Planning and Public Works

3.2. Address: Amaliados 17 11 523 Athens

**4. Location**

4.1. Member State: Greece

4.2. Region: Central Macedonia

**5. Description**

Second stage of sewage treatment installations for Thessaloniki.

The installations so far executed (stage 1) are input pumping station, screening, grit removal, first stage sedimentation and sludge treatment line, and disinfection.

- Studies.

- Research programme to monitor the quality of the Thermaic Gulf and of bottom sediments, also covering potential utilization of sludge through humification.

- Technical Consultan.

- construction of various units to complete those already operating and allow the treated sewage to be discharged into the sea.

The additional treatment installation (stage II):

enlargement of the existing installations  
aeration tanks  
intermediate pumping stations  
final sedimentation tanks.

Conduit for discharge of treated sewage into Thermaic Gulf

- Land section of conduit, total length approximately 7920 m, running from the existing diversion pond to the charging for the undersea section: This will be a twin conduit, internal diameter 1500 or 1600 mm depending on the construction material.
- Undersea section of conduit, consisting of two branches, total length 2600 m (including diffusers) each. The greater part of the conduit will be piping of diameter 1600 or 1500 mm depending on the construction material. The diffusers will be of gradually tapering diameter.

#### 6. Objectives

Sewage treatment for Thessaloniki. The post-treatment waste will be discharged into the Thermaic Gulf. At present only a small proportion of the sewage and tank sewage of the areas is treated.

#### 7. Work schedule

Category of work	Commencement	Completion
Main works	1996	1999
Operational Phase	1999	2.000

#### 8. Economic and social cost-benefit analysis

Execution of investment will be advantageous. It will be of immense value immediately and provide a high of return. Failure to execute the investment would correspondingly present exceptionally serious problems.

Direct job creation: 100 per year at the execution stage, once operational 5

Indirect job creation: 10 at the execution stage, once operational 2.

#### 9. Environmental impact analysis

As the situation stands at present we have four types of pollution source:

- a) urban sewage and tank sewage



- b) industrial waste
- c) drainage ditches - pumping stations
- d) rivers

Industrial waste comes chiefly from four industrial zones

- a) Iagadas
- b) Diavata/EKO
- c) VIPETH/Gallikos
- d) Axios

Of the drainage ditches the Sindos has a natural flow Thessaloniki Bay. The others terminate at four pumping stations: East Khalastra, West Khalastra, Kleidios and Malgara. The three main rivers are the Axios, Loudias and Aliakmon. Apart from the Aliakmon-Loudias-Axios delta hydrobiotope the general area is not interesting as regards fauna. For flora the interest lies in various types of phytoplankton. The reductions in the pollution load will have the following impact on the environment:

- 1) substantial quality improvement for Gulf of Thessaloniki and coastal area
- 2) improvement of central part of Gulf of Thessaloniki as regards eutrophication
- 3) improvement of toxic waste collection

**10. Cost and assistance (in ecus)**

Total cost: 66.080.000

Eligible costs (after 11.07.1994) 66.080.000

Rate of assistance 85%

Cohesion Fund assistance 56.168.000

**11. Special conditions**

The Greek authorities undertake to closely monitor water quality in the inner and central areas of the Thermaic Gulf. They will take the necessary action to expand the sewer network and propose to link up the industrial area to it and to monitor the quality of industrial effluent.

They will ensure that operating and maintenance costs are covered from the relevant revenues.

Publication of main points of decisions to grant financial assistance under Regulation 1164/94 establishing a Cohesion Fund.

Project summary  
No 94.09.61.11- 8

1. Project title

"Buttressing of Mornos aqueduct upstream of Kitheronas tunnel"

2. Authority making the application

2.1. Name: ministry for the National Economy

2.2. Address: Pl Sintagmatos 10 180 Athens

3. Authority responsible for implementation

3.1. Name: Athens Water Supply and Sewerage Company

3.2. Address: Oropou 156 111 - 46 Galatsi

4. Location

4.1. Member State: Greece

4.2. Region: Central Greek

5. Description

Action to buttress and safeguard the open Mornos aqueduct commensurate with its existing cross-section takes two forms:

1. placing of prestressed ribs at 0.8 metre intervals over a length of 9 550 metres.

2. placing of prestressed ribs at 0.7 metre intervals over a length of approximately 14 800 metres

The locations along the aqueduct at which the work will be carried out are:

Location	Total length (metres)	Distance in question (metres)
Khryssos canal	3 600	3 150
Delfi B canal	1 900	1 900
Kyriakion canal	2 100	2 000
Elikonas canal	1 060	1 000
Elikonas B canal	1 530	1 500
Thisvis - Ellopia canal	14 800	14 800
<b>Total</b>	<b>24 990</b>	<b>24 350</b>

6. Objectives

Reduce leakage from the canal by 25% (from 8% to 6%).

7. Work schedule

Category of work	Commencement	Completion
Mains Works	1995	31.12.1997

8. Economic and social cost-benefit analysis

The loss reduction achieved will save a large volume of water per year that would otherwise be supplied by pumping from the Iliki aqueduct, which entails a cost for the electric power required.

9. Environmental impact analysis

Buttressing of the walls of the canals and general safeguarding of the Mornos aqueduct upstream of the Kitheronas tunnel will have no supplementary environmental impact. The work is on the existing construction and affects no new areas.

10. Cost and assistance (in ecus)

Total cost: 13.845.000

Eligible costs 13.845.000

Rate of assistance 85%

Cohesion Fund assistance 11.768.250

11. Special clauses

The Greek authorities undertake to work out and submit to the European Commission the Athens water supply master plan and to appoint a project manager for the range of AWSSC projects financed from the Cohesion Fund.

The Cohesion Fund reserves the right to inspect the works to verify their conformity with the technical specifications and the implementation of the technical recommendations that have been issued by the Cohesion Fund's consultants.

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/015-2

**1. Name of project:**

Biological treatment plant and sewer networks for Skydra, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Skydra

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Makedonia

**5. Description**

1) Completion of sewer networks

(a) Restoration of roadways	2 500 m <sup>2</sup>
(b) Restoration of kerbs	5 000 m <sup>2</sup>
(c) Restoration of pavements	2 000 m <sup>2</sup>
(d) Access to collectors from railway lines	1

2) Biological treatment plant

- Purchase of land - 13 652 m <sup>2</sup>	100%
- Study	100%
- Pumping stations	3
- Inlet tank from urban sewers	1
- Equipment for raising waste water	1
- Sewer unit	1
- Eschar formation	2
- Grit collector	2
- Measuring input	1
- Input counter	1
- Aeration, nitrification, denitrification	2

- Compaction second level 2
- Pumping station for sludge 1
- Pumping station for mixture 1
- Chlorination 1
- Sludge thickening 1
- Dehydration of sludge 2
- Pumping station 1
- Automation 1
- Other installation work 1
- Test operation of equipment for 18 months 100%

**6. Objectives**

This stage of the project involves completing the sewer drainage network and building the biological treatment plant (purchase of the land, preparation of a study and building the waste-water treatment plant).

**7. Work schedule**

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1997

**8. Economic and social cost-benefit analysis**

Social benefit. Improvement of the quality of life of the inhabitants and public health in general. In the long term, contribution to economic development and decentralization.

**9. Assessment of environmental impact**

The project will comply with Directive 91/271/EC, since the sewers empty into the Loudia river. The project must meet the requirements of Decree No 91446 of the Ministry of Regional Planning, the Environment, and Public works of January 1994.

**10. Cost and assistance (in ECU '000)**

- Total cost: 1 830 000
- Rate of assistance: 85%
- Cohesion Fund assistance: 1 555 500

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/017

**1. Name of project:**

Waste-water drainage and biological treatment plant at Palio Kavallas, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Kavala

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Makedonia

**5. Description**

- |  |          |
|--|----------|
| 1. Drainage collector  | 2 930 m  |
| 2. Pumping stations for drainage:  |          |
| (a) main stations  | 2 units  |
| (b) ancillary stations   | 10 units |
| 3. Underwater collector  | 400 m    |
| 4. Installation of biological treatment facilities<br>with a capacity of 20 000 inhabitants equivalent |          |
| 5. Phosphorus removal unit for Kavala town   | 1 unit   |
| 6. Waste-water discharge pipes for the town's<br>internal network                                      | 3 000 m  |

6. **Objectives**

The second phase of this project involves the completion of the drainage network for Palio Kavala. Waste water will be channelled to the treatment plant which is currently being built at the same time as the drainage network.

7. **Work schedule**

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1997

8. **Economic and social cost-benefit analysis**

Palio is situated 8 km south-west of Kavala town. The population of Kavala quadruples in the summer because of tourism. The project will improve the quality of life and public health of Palio, thereby contributing to its economic development and the region's infrastructure and, in the long term, to decentralization.

9. **Assessment of environmental impact**

Palio has no drainage network. Waste water collects in catchpits which have polluted the ground water. Operation of the biological treatment plant will help clean up the sea, which is the final destination of the waste water. The project is therefore in accordance with Directive 91/271/EC. The project must meet the requirements set out in Decree No 66717 of the Ministry of Regional Planning, the Environment and Public works of 2 December 1993.

10. **Cost and assistance (in ECU '000)**

<u>Total cost:</u>	5 146 000
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	4 374 100



**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/026

**1. Name of project:**

Construction of a secondary waste-water drainage system for Ioannina, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Ioannina

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Epiros

**5. Description**

Waste-water drainage network	38 000 m
Rain-water drainage network	18 500 m
Wells	5 800 units
Substation	100%
Purchase of sealing vehicle	100%
Electrical production set	100%

**6. Objectives**

This stage of the project involves completing the construction of the separate network for waste-water drainage and rain-water drainage.

**7. Work schedule**

Category of work	Commencement	Completion
Main work	1 June 1995	31 December 1998

8. Economic and social cost-benefit analysis

Social benefit for 56 000 inhabitants of the town of Ioannina, which is the capital of the north-western region of Greece. Improvement in the quality of life of the inhabitants and enhanced possibilities for economic development of the larger area.

9. Assessment of environmental impact

The purpose of the project is to reduce pollution, because not long ago waste water was discharged into catchpits which polluted the ground water and caused major pollution problems for the Ioannina lake.

10. Cost and assistance (in ECU '000)

<u>Total cost:</u>	8 940 000
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	7 599 000

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/028

**1. Name of project:**

Waste-water drainage and biological treatment plant in Corfu, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Corfu

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Ionian Islands

**5. Description**

Waste-water drainage

1. Collectors 160-800	14 250 m
2. 1 pumping station, Tsavrou	100%
3. 1 pumping station, Kontokaliou	100%
4. 2 pumping stations, Alikon Potamon	100%
5. Under-water exit collector	1 700 m
6. Collector pumping station	100%
7. Well for the under-water collector	100%

Biological treatment plant

1. Earthworks	62%
2. Civil engineering works	73%
3. Electro-mechanical works	78%

**6. Objectives**

The second stage of the project concerns the completion of the drainage network for the northern suburbs of Corfu town, channelling rain water to the sea and waste water to the biological treatment plant which is under construction.

7. Work schedule

Category of work	Commencement	Completion
Main work	1 June 1995	31 December 1997

8. Economic and social cost-benefit analysis

Social benefit. Improvement of the quality of life and public health of 36 900 inhabitants of the area, which is one of the most heavily visited by tourists to Corfu town. In the long term, completion of the waste-water drainage network and the biological treatment plant will contribute to the economic development and decentralization needed to cope with the accelerating population increase.

9. Assessment of environmental impact

The project must meet the requirements laid down in Decree No 16125 of the Ministry of Regional Planning, the Environment and Public works of 1.6.1993.

10. Cost and assistance (in ECU '000)

<u>Total cost:</u>	9 345 000
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	7 943 250

**Publication of main points of decisions allocating financial assistance under  
Regulation No 1164/94 establishing a Cohesion Fund**

Summary of project no 94/09/61/029-2

1. Title

Sewage treatment facility for Agrinio

2. Applicant authority

2.1 Name: Ministry for the National Economy

2.2 Address: Platia Sintagmatos, 101 80 Athens

3. Authority in charge of execution

3.1 Name: Agrinio Public Water Supply and Sewerage Undertaking

3.2 Address: Ministry for the Interior, Stadiou 27, Athens

4. Location

4.1 Member State: Greece

4.2 Region: Western Greece

5. Description

Construction of sewage treatment installations for Agrinio, capacity 60 000 population equivalents.

(a) Pre-treatment

Construction and electromechanical equipment for input stage (pumping unit for initial elevation screening, grit removal, main flow meter, screen housing etc.)

(b) Biological treatment

Construction and electromechanical equipment for two complete treatment lines (pre-selection sumps, aeration tank, settling tank, recirculation pumping unit, sludge return unit)

Construction and electromechanical equipment from outlet of settling tanks to biological outlet (disinfection tank, flow meter, unit bypass, disinfection housing, disinfection apparatus)

(d) Sludge treatment

Construction and electromechanical equipment from pumping unit for excess sludge to storage space for dehydrated sludge (thickening, dehydration necessary housing, filtration etc)

(e) Administration building

(f) Electricity supply building

(g) Other service installations; landscaping, roadways, fencing, water supply, drainage, tree planting etc.

- (h) Measurement and control systems, automation
- (i) Twelve-month testing period

6. Objectives

Construction and bringing into operation of the sewage treatment facility as described at (5) above to provide a direct service to the some 40 000 permanent inhabitants of the Agrinio area

7. Timetable

Type of work	Commencement	Completion
Main work	1 January 1995	31 December 1996

8. Economic and social cost-benefit estimate

Particularly important social benefit given that the some 40 000 permanent inhabitants of the Agrinio area will gain from it as regards improvement of quality of life, protection of the environment and long-term population increase and decentralization.

9. Environmental impact

Improved collection, treatment and discharge of waste water permitting pollution control. The project will be in line with Community Directive 271/91 in that final discharge will be into the Akhelos river.

The requirements of MERPPW Decision No 31588/29.7.1994 must be observed.

10. Cost and contribution (in ecus)

Total cost: 4 675 410

Contribution rate: 85%

Cohesion Fund contribution: 3 974.099

**Publication of essential elements of decisions granting assistance under  
Regulation 1164/94 establishing the Cohesion Fund**

Summary of Project  
No 94 /09/61/029-3

1. **Project title**  
Sewerage and sewage treatment works for Pirgos.
2. **Applicant authority**
  - 2.1. Name: Ministry for the National Economy
  - 2.2. Address: Platia Sintagmatos 1011 80 Athens
3. **Authority in charge of execution**
  - 3.1. Name: Pirgos Public Water Supply and Sewerage Undertaking
  - 3.2. Address: Ministry for the Interior, Stadiou 27, Athens
4. **Location**
  - 4.1. Member State: Greece
  - 4.2. Region: Western Greece
5. **Description**
  1. Internal drainage network length 3 000m
  2. Central drainage conduit length 3 000m
  3. Treatment installations of capacity 50 000 population equivalents comprising:
    - 3.1 Tank sewage reception
    - 3.2 Entry interceptor
    - 3.3 Raising mechanism
    - 3.4 Pre-treatment; flow measurement
    - 3.5 Aeration tanks
    - 3.6 Settling tanks
    - 3.7 Chlorination
    - 3.8 Sludge thickening
    - 3.9 Sludge dehydration
    - 3.10 Sludge recirculation pumping unit
    - 3.11 Administration building

- 3.12 Treatment piping
- 3.13 Landscaping of grounds
- 3.14 Infrastructure networks
- 3.15 Electrical installations
- 3.16 Measuring instruments and laboratory equipment
- 4. Treated effluent disposal pipe length 1 000m.

6. **Objectives**

- (a) Expansion of the existing sewerage network of the town of Pirgos and construction of a central effluent pipe leading to the treatment plant, whence the treated effluent will be discharged via the pipe to be laid to the Alfios river
- (b) Construction of the town's treatment plant, population capacity 50 000.

7. **Timetable**

Type of work	Commencement	Completion
Main work	1 January 1995	31 December 1997

8. **Economic and social cost-benefit estimate**

Public utility - improvement of the quality of life of the 30 000 permanent inhabitants of the town, the population of which increased substantially between 1981 and 1991, seriously burdening its infrastructure. A further population increase is expected over the long term. The project will improve the quality of life of the inhabitants and boost the town's role as a centre for complementary activities to the agricultural production of the area.

9. **Environmental impact assessment**

The aim is to improve collection, treatment and disposal of waste water and so control pollution arising from the continuing economic and touristic development of the town and the continuing use of fertilizers, pesticides etc. given the area's predominantly agricultural character. It will conform with the provisions of Directive 271/91 since the treated effluent is discharged into the Alfios river.

The requirements of MERPPW Decision No 34248/12.1.1995 must be observed.

10. **Cost and contribution (in ecus)**

Total cost: 5 885 000  
 Contribution rate: 85%  
Cohesion Fund contribution: 5 002 250.



**Publication of essential elements of decisions granting financial assistance  
under Regulation No 1164/94 establishing a Cohesion Fund**

Summary of project number 94/09/61/030

931

1. Title

Water supply, sewerage and biological sewage treatment for Thiva

2. Applicant authority

2.1 Name: Ministry for the National Economy

2.2 Address: Platia Sintagmatos, 10180 Athens

3. Authority in charge of execution

3.1 Name: Thiva Public Water Supply and Sewerage Undertaking

3.2 Address: Ministry of the Interior, Stadiou 27, Athens

4. Location

4.1 Member State: Greece

4.2 Region: Central Greece

5. Description

Water supply, sewerage and biological sewage treatment for Thiva:

1. Laying of 26 000 m water supply network
2. Laying of 47 400 m sewerage network of PVC S42 pipes
3. Central effluent conduit, length 2000 m
4. Sewage treatment installations, capacity 40 000 PE, comprising
  - 4.1 Input pumping unit
  - 4.2 Preliminary treatment:
    - a. Reception and pre-treatment of tank sewage
    - b. Screening
    - c. Removal of grit, scum, other floating material
  - 4.3 Ventilation and deodorization of tank sewage and screening building
  - 4.4 Biological treatment
    - a. Distributing sump for aeration tanks
    - b. Aeration tanks
  - 4.5 Second stage settling tanks
  - 4.6 Sludge recirculation
  - 4.7 Rotating filters
  - 4.8 Disinfection
  - 4.9 Sludge treatment (thickening and dehydration)

6. Objectives

- a) Rational operation of and leakage reduction in the water supply system by various improvements, replacements and additions to the existing network.
- b) Laying of sewerage discharging into a central conduit leading to the treatment plant.

7. Timetable

Type of work	Commencement	Completion
Main work	1 January 1993	31 December 1998

8. Economic and social cost-benefit analysis

Particularly, significant social benefit for the some 22 500 permanent inhabitants of the Thiva area as regards improvement of quality of life, protection of the environment and long term population increase and decentralization.

9. Environmental impact assessment

Improved collection and disposal of waste and rain water permitting control of pollution. In line with Community Directive 271/91 given that final discharge of the treated effluent is into Lake Iliki.

The requirements of MERPPW Decision No 31430/25.5.1994 must be observed.

10. Cost and contribution (in ecus)

Total cost: 17 228 000

Contribution: 85%

Cohesion Fund contribution: 14 634 800

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/031-1

**1. Name of project:**

Waste-water drainage in Xylokaastro, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Xylokaastro

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Peloponnisos

**5. Description**

Force pipes	1 980 m
Central pumping station	45%
Intermediate pumping station	45%
Machinery for central pumping station	30%
Machinery for intermediate pumping station	30%
Machinery for 4 wells	30%
Drainage network	2 500 m
Purchase of pipes	2 500 m
Connections, other requisites	1 000 units
Asphalt surface	15 000 m <sup>2</sup>

**6. Objectives**

The project involves the construction of a waste-water drainage network leading to the town's biological treatment plant, which is to be built with financing from Envireg.

7. Work schedule

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1996

8. Economic and social cost-benefit analysis

Xylokastro is a commune situated near the sea and heavily frequented by tourists during the summer. The town normally has 6 000 inhabitants, but its population increases five-fold in the summer. The project aims to improve infrastructures and the public health of the inhabitants and tourists at this resort.

9. Assessment of environmental impact

Not long ago the area had no waste-water disposal network. Small private catchpits were used, which polluted the coastal region. Completion of a drainage network which will be linked to the treatment plant will solve the area's environmental problems.

10. Cost and assistance (in ECU '000)

Total cost: 447 000

Rate of assistance: 85%

Cohesion Fund assistance: 379 950

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/031-2

**1. Name of project:**

Water supply and waste-water drainage for Kiato, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Kiato

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Peloponnisos

**5. Description**

- |   |          |
|---|----------|
| 1) Waste-water drainage network:        |          |
| - Construction of drainage pipeline     | 3 000 m  |
| - Pumping station                       | 40%      |
| 2) Water-supply network:                |          |
| - Construction of water-supply pipeline | 23 000 m |
| - Supply tank                           | 1 unit   |

**6. Objectives**

With assistance from the Community financial instruments, the central pipeline and secondary waste-water drainage network have already been built. This stage of the project involves the construction of another pipeline for channelling the waste water to the biological treatment plant, built with financing from Envireg, and the extension of the water-supply network needed to improve the town's water supply.

7. Work schedule

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1996

8. Economic and social cost-benefit analysis

The town of Kiato is situated near the sea and heavily frequented by tourists in the summer. The town normally has 9 000 inhabitants, but its population increases five-fold in the summer. The project aims to improve infrastructures and the public health of the inhabitants and tourists at this resort.

9. Assessment of environmental impact

Not long ago the area had no waste-water disposal network. Small private catchpits were used, which polluted the ground water and the coastal region. This project aims to solve the area's environmental problems.

10. Cost and assistance (in ECU '000)

<u>Total cost:</u>	1 663 628
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	1 414 084

Publication of main points of decisions to grant financial assistance under Regulation (EC)  
No 1164/94 establishing a Cohesion Fund

No 94/09/61/032

**1. Name of project:**

Sewage and rain-water disposal in Veria, Greece.

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Veria

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Makedonia

**5. Description**

Sewage and rain-water discharge network 47 000 m in length.

**6. Objectives**

The purpose of this stage of the project is:

- (a) to bring urban sewage to the central discharge tank and transport it to the sewage treatment plant,
- (b) to improve the existing sewage and rain-water discharge network by replacing certain parts and extending the network to the remaining parts of the city.

**7. Work schedule**

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1999

8. Economic and social cost-benefit analysis

Veria is the second largest city in Makedonia after Thessaloniki and is very important for the economic and administrative development of the region. The agricultural product processing industry in greater Veria employs a large number of the region's inhabitants, particularly in the summer. The project is clearly of social importance because it will improve the quality of life of 39 619 inhabitants as well as public health and, in the long term, it will contribute to the economic and structural development of the region.

9. Assessment of environmental impact

The city's rain water is channelled to the Tripotamos river and, from there, via the T66 ditch, it is discharged into the Aliadmonas river and thereafter into the sea in the Klidi region, which has been protected since 1989 by the RAMSAR treaty. The project is therefore in accordance with Directive 91/271.

10. Cost and assistance (in ECU '000)

Total cost: 4 245 033

Rate of assistance: 85%

Cohesion Fund assistance: 3 608 278.



**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/033-1

**1. Name of project:**

Waste water drainage in Patras, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Patras

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Peloponnisos

**5. Description**

Waste-water drainage network	56 140 m
Rain-water drainage network	37 450 m
Collectors	13 820 m
Construction of water collection tanks	710 units
Cleaning of water collection tanks	7 900 units
Pumping stations	10 units

**6. Objectives**

The project involves completing the waste-water and rain-water drainage systems for the town of Patras.

**7. Work schedule**

Category of work	Commencement	Completion
Main work	1 April 1995	31 December 1999

8. Economic and social cost-benefit analysis

The project aims to improve the quality of life of the inhabitants of the town, which is a cultural and university centre in western Greece. The rapid development of the town's coastal area will result in further economic development in the region through the arrival of commercial and tourism activities.

9. Assessment of environmental impact

The project complies with Directive 91/271/EC, since it will reduce the rather serious pollution of the Gulf of Patras.

10. Cost and assistance (in ECU '000)

<u>Total cost:</u>	32 100 000
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	27 285 000

Publication of main points of decisions to grant financial assistance under Regulation (EC)  
No 1164/94 establishing a Cohesion Fund

No 94/09/61/037-2

**1. Name of project:**

Completion of sewage network in Xanthi, Greece.

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Xanthi

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Thraki

**5. Description**

Discharge collectors	19 500 m
Inspection chambers	220 units
Water-supply network	19 000 m
Rain-water network	4 000 m
Water-supply chambers	100 units
Asphalt coating	75 000 m <sup>2</sup>
Tiling	2 700 m <sup>2</sup>

**6. Objectives**

The purpose of the project is to build part of the discharge system in the different suburbs of Xanthi. The project is unusual in that it involves small extensions to the discharge network in fairly narrow streets, necessarily followed by small-scale water-supply and rain-water discharge operations, because the narrowness of the streets makes the building of a single well for both water supply and discharge impossible. This is the second stage of the project begun in 1993, the need for which is clear if the sewage discharge network is to be complete and functional.

7. Work schedule

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1995

8. Economic and social cost-benefit analysis

Xanthi is the capital of the prefecture of the same name, and the economic and administrative centre of the region. It has great scope for economic and industrial development. Completion of the disposal system will greatly improve the infrastructure and the quality of life of the 40 000 inhabitants of this border town and help ensure that the population and the workforce remain in the region and contribute to its development.

9. Assessment of environmental impact

The purpose of the project is to complete the town's sewage discharge system, to link it with the already functioning treatment plant and to improve the water supply to the town of Xanthi.

10. Cost and assistance (in ECU '000)

Total cost: 1 993 355

Rate of assistance: 85%

Cohesion Fund assistance: 1 694 352.

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94.09.61.039

**1. Name of project:**

Completion of modern waste-disposal site in Patras

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: Municipality of Patras

3.2. Address: Ministry for the Interior, Stadiou 27, 10183 Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Western Greece

**5. Description**

Completion of new dump - 42 %  
Improvement of old dump - 100%

**6. Objectives**

Environmental protection. Solution of problem of uncontrolled burial of waste.

**7. Work schedule**

Category of work	Commencement	Completion
Main work	1.1.1995	31.12.1997

**8. Economic and social cost-benefit analysis**

Revenue offsets running costs.

9. Assessment of environmental impact

Protection of the environment and public health against uncontrolled dumping of waste. Considerable improvement of quality of life.

10. Cost and assistance (in ECU '000)

Total cost: 2 576 000

Eligible cost (after 27.7.1994): 2 576 000

Rate of assistance: 85%

Cohesion Fund assistance: 2 180 600

**Publication of the main points of the Decision to grant assistance under  
Regulation 1164/94 establishing the Cohesion Fund**

Project summary  
No 94/09/61/043

**1. Project title**

Completion of the sewerage treatment plant in the Tourist Area of Thessaloniki

**2. Authority making the application**

2.1. Name: Ministry of National Economy

2.2. Address: Pl. Syntagmatos 10 180 ATHENES

**3. Authority responsible for implementation**

3.1. Name: Thessaloniki Sewerage Organisation

3.2. Address: Tsimiski 98 - 546 22 THESSALONIKI

**4. Location**

4.1. Member State :Greece

4.2. Region: CENTRAL MACEDONIA

**5. Description**

Completion of sewerage installations.

Tank sewerage	21%
Inflow	46%
Separation chamber	16%
First stage sedimentation tank	5%
Aeration tank	2%
Interceptors to regulate flow to second stage sedimentation	74%
Second stage sedimentation tank	9%
Disinfection unit	29%
Recirculation pumping unit	18%
Sludge thickeners	32%
Thickened sludge pumping unit	18%

Digesters	29%
Dehydration	25%
Pumping unit for strainers	10%
Administration building	5%
Workshop,machine shop	2%
Substation, couple	73%
Treatment and strainer piping	38%
Water supply and irrigation systems	95%
Road surfacing, landscaping, fencing, rainwater catchmen	76%
Ancillary equipment and laboratory	58%
External lighting, lightning conductors	20%
General earthworks, backfilling	13%
Control centre and instruments	76%
Trial operation	100%
Operation	100%
Disposal conduit	2%
Planting of grounds	100%
Additional equipment	100%

6. **Objectives**

The treatment of urban waste of 11 municipalities the depollution of the region and the protection of the Thessaloniki Gulf.

7. **Work schedule**

Category of work	Commencement	Completion
Works	01.01.1995	31.12.1996

8. **Economic and social cost-benefit analysis**

Employment for the entire project.

During operation: directly: 8 persons  
indirectly: 2 -3 persons

During implimentation: directly: 135 men/years  
indirectly:45 men/years.

9. **Environmental impact analysis**

Protection of environment and public health. Protection of the Thessaloniki Gulf. The construction has to be in conformity with the environmental terms issued by the 13059/19.11.1992 decision of the Ministry of Environment.



10. Cost and assistance (in ecus)

Total cost: 2.743.000

Eligible costs (after 27.07.1994.) 2.743.000

Rate of assistance 85%

Cohesion Fund assistance 2.331.550

Publication of main points of decisions to grant financial assistance under Regulation (EC)  
No 1164/94 establishing a Cohesion Fund

No 94/09/61/046

1. **Name of project:** Urban waste-water treatment plant for Rhodes

2. **Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

3. **Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Rhodes

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

4. **Location**

4.1. Member State: Greece

4.2. Region: Aegean Sea - Nomos Dodekanissa

5. **Description**

Completion of urban waste-water treatment facilities. The following work is to be carried out from 1 January 1995:

- Earthworks	6
- Entrance shaft	3
- Biological level	77
- Final leveling	74
- Disinfection	75
- Pumping station	13
- Pretreatment	57.12
- Settling-aeration	41.69
- Exit works	45.19
- Sludge treatment	97
- Dehydration	98.36
- Automation	100
- Spatial planning	100
- Building	98.03
- Training	100
- Equipment	46.35

6. **Objectives**

454

- Completion of the drainage network and urban waste-water treatment facilities.

7. **Work schedule**

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1996

8. **Economic and social cost-benefit analysis**

Public utility - Improvement of public health.

9. **Assessment of environmental impact**

Reduction of pollution.

These stages of the project must meet the requirements laid down in Decree No 68625 of the Minister of Regional Planning, the Environment, and Public works of 15 February 1994.

10. **Cost and assistance (in ECU '000)**

Total cost: 7 770 000

Rate of assistance: 85%

Cohesion Fund assistance: 6 604 500

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/047

**1. Name of project:**

Waste management in Zakynthos

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: Association of waste removal services of the municipalities and communes of Zakynthos

3.2. Address: Ministry of the Interior, Stadiou 27, 10183 Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Ionian Islands

**5. Description**

- Placing of sealing membranes
- Earthworks for protective layer for membrane
- Laying of pipeline for discharge of biogas and collection of condensates
- Laying of pipeline for removal of condensates
- Purchase and installation of pump for condensates
- Purchase and installation of a weigh bridge
- Construction of an access road
- Asphaltting access road over 2 km
- Covering of waste
- Landscaping of subdued relief
- Sealing the covering, resurfacing and planting
- Works relating to the management of condensates and biogas
- Restoration of site of incinerator formerly used to burn waste.
- Purchase of tanker costing DRA 20 million
- Control of quality of waterproofing work.

**6. Objectives**

Protection of the environment from uncontrolled tipping on Zakynthos.

**7. Work schedule**

Category of work	Commencement	Completion
Main Work	1.1.1995	31.12.1995

**8. Economic and social cost-benefit analysis**

- Revenue offsets running costs;
- direct creation of jobs during implementation phase: 22 manyears;
- direct creation of jobs during operational phase: 4 jobs
- indirect creation of jobs:
  - implementation phase: 6
  - operational phase: 2.

**9. Assessment of environmental impact**

Protection of the environment and reduction of pollution due to disposal of solid waste. New management methods.

**10. Cost and assistance (in ECU '000)**

Total cost: 1 060 000

Eligible cost (incurred after 27.7.1994): 1 060 000

Rate of assistance: 85%

Cohesion Fund assistance: 901 000

Publication of the main points of the Decision to grant assistance under  
Regulation 1164/94 establishing the Cohesion Fund

94/09/61/048

**1. Project title**

Drainage and biological clean-up of the town of Igoumenitsa

**2. Authority making the application**

- 2.1. Name: Ministry of the National Economy
- 2.2. Address: Pl. Syntagmatos, 101 80 Athens

**3. Authority responsible for implementation**

- 3.1. Name: Ministry of the Interior / Municipality of Igoumenitsa
- 3.2. Address: Stadiou 27, Athens

**4. Location**

- 4.1. Member State: Greece
- 4.2. Region: Epirus

**5. Brief description**

- 1. Project 94/09/61/048: Drainage and biological clean-up of the town of Igoumenitsa

- Construction of drainage pipeline:
  - gravitational: length 2 150 m
  - discharge: length 2 160 m

2 pumping units with a capacity of 2x25+50 kW

Waste-water treatment plants with a capacity of 27 000 inhabitants equivalent

Underwater outlet pipe (length: 225 m)

Drainage network (secondary): 48 km.

The 1994 appropriations will be used to commence construction of the drainage network

and the external drainage pipeline.

**6. Principal objectives**

Integrated management of liquid sewage. Extension of the drainage network and wastewater treatment plant.

**7. Work schedule**

	Commencement	Completion
Main work	1 January 1993	31 December 1997

**8. Feasibility study**

Public interest; improvement of the quality of life.

**9. Assessment of environmental impact**

Environmental protection by disposal of liquid sewage. Protection of public health. This is of particular importance because Igoumenitsa is set to become one of the chief towns of entry into and exit from Greece.

**10. Cost (in million ecus)**

Total cost: 11.099  
Community assistance: 9.43

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/049

**1. Name of project:**

Installation of a waste-water drainage system on Skiathos

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Skiathos

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Magnisia Nomos

**5. Description**

Waste-water drainage system	6 100 m
Rain-water drainage system	2 850 m
Inspection shafts	195 units

**6. Objectives**

This is the second stage of the project, the general objective of which is the construction of an internal drainage system for waste water and rain water for Skiathos town. It also involves the construction of diversions of the waste-water drainage network to enable certain parts of the town to be connected.

**7. Work schedule**

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1997



8. Economic and social cost-benefit analysis

Social benefit for the population of a town with 22 000 inhabitants (improvement in the quality of life and public health). In addition, the project will contribute to the rational operation, in line with the criteria laid down, of the biological treatment plant which currently has to treat very polluted water.

9. Assessment of environmental impact

This project will have a positive impact on the environment because it will help clean up ground-water pollution in the region caused by the use of catchpits and will contribute to the protection of the region's marine environment.

10. Cost and assistance (in ECU '000)

Total cost: 2 354 000

Rate of assistance: 85%

Cohesion Fund assistance: 2 000 900

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/049-1

**1. Name of project:**

Waste-water drainage system for Karditsa, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens. Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Karditsa

3.2. Address: Ministry for the Interior, Stadiou 27. Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Thessaly

**5. Description**

Waste-water drainage system	62 000 m
Rain-water drainage system	22 000 m
Waste-water pumping station B	1
Extension/modernization of pumping station A	1
Purchase of machinery	2 units
Study on drainage works	100%

**6. Objectives**

The second stage of the project involves completion of:

(a) a waste-water drainage network, and

(b) a rain-water drainage network

as well as the construction of pumping stations and the installation of the machinery needed to ensure functional and efficient operation of the existing biological treatment plant.

7. Work schedule

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1997

8. Economic and social cost-benefit analysis

The town's population is increasing rapidly and forecasts predict that the number of inhabitants will rise to 51 000 before 2000, of whom 46 000 will be permanent residents of the town. The project will help improve public health and, in the long term, will contribute to economic development and decentralization in the region.

9. Assessment of environmental impact

The purpose of the project is to complete a separate system of waste-water and rain-water drainage to stop the pollution of the Mega and Pinios rivers. The project therefore complies with Directive 91/271/EC. The project will also remove the catchpits, used by a large part of the population, which pollute the ground water.

10. Cost and assistance (in ECU '000)

<u>Total cost:</u>	4 300 000
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	3 655 000

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/054-1

**1. Name of project:**

Drainage and biological treatment

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Kozani

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Makedonia

**5. Description**

Water supply - waste-water drainage

- Waste-water drainage network	53 520 m
- Water-supply network	46 140 m
- Central drainage collector	18 000 m
- Water-supply tank	2 500 m <sup>3</sup>
- Pumping units	2 units
- Remote control monitoring - intercommunication system for a water-supply pumping station	1 unit

Biological treatment plant

- Access works	1 unit
- Hydroelectric station	1 unit
- Administration building	1 unit
- Phosphorus removal	
- Internal collectors	1 unit
- Well	1 unit
- Ancillary plant - automatization	1 unit
- Aeration - denitrification	
- Infrastructure work and equipment	

- Final levelling
- Spatial planning
- Pumping stations for recirculation and sludge removal
- Thickening - dehydration of sludge
- Disinfection
- Test operation for 24 months

6. **Objectives**

This stage involves completing the water-supply and waste-water drainage networks for the town of Kozani and building the biological treatment plant.

7. **Work schedule**

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1997

8. **Economic and social cost-benefit analysis**

Kozani is the centre of greater western Makedonia. The town is situated in an area rich in lignite deposits. There has therefore been very rapid economic development here. The purpose of the project is to improve the quality of life of the inhabitants and improve infrastructures to ensure decentralization in the long term.

9. **Assessment of environmental impact**

The project will comply with Directive 91/271/EC because the urban sewers used to empty into the Polyfitou lake and the Aliakmona river. The project must meet the requirements of Decree No 66630 of the Ministry of Regional Planning, the Environment and Public Works of 31.1.1994.

10. **Cost and assistance (in ECU '000)**

<u>Total cost:</u>	13 890 000
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	11 806 500

**Publication of essential elements of decisions granting financial assistance  
under Regulation 1164/94 establishing a Cohesion Fund**

Summary of project number 94/09/61/055-3

1. Title

Sewerage and biological treatment for Giannitsa

2. Applicant authority

2.1 Name: Ministry for the National Economy

2.2 Address: Platia Sintagmatos, 10180 Athens

3. Authority in charge of execution

3.1 Name: Giannitsa Public Water Supply and Sewerage Undertaking

3.2 Address: Ministry for the Interior, Stadiou 27, Athens

4. Location

4.1 Member State: Greece

4.2 Region: Macedonia

5. Description

1. Laying of central sewer conduit, length 880 m

2. Laying of drainage system (torrent control), length 2100 m

3. Construction of sewage treatment plant, capacity 35 000 population equivalents:

3.1 Pre-treatment

3.2 Biological treatment

3.3 Disinfection

3.4 Sludge treatment

3.5 Administration building

3.6 Electric power building

3.7 Other features

3.8 Measurement, control and automation systems

3.9 Operation for twelve months

6. Objectives

Completion of drainage network and bringing into operation of sewage treatment plant as described at (5). A separate drainage network will be laid for rainwater (torrent control) leading to the Loudias river while sewage, will be channelled through the central collector conduit to the treatment plant

7. Timetable

Type of work	Commencement	Completion
Main work	1 January 1994	31 December 1998

8. Economic and social cost-benefit estimate

Particularly important social benefits: in the medium term improvement of the quality of life for the 25 000 permanent residents of the town and in the long term economic development and decentralization.

9. Environmental impact assessment

Improved collection, treatment and disposal of waste water permitting pollution control. In line with Community Directive 271/91 given that final discharge of the treated effluent will be into Giannitsa dyke 66 itself discharging into the Loudias river.

The requirements of MERPPW Decision No 33361/14.11.1995 must be observed.

10. Cost and contribution (in ecus)

Total cost: 3 703 000

Contribution rate: 85%

Cohesion Fund contribution: 3 147 550

Publication of main points of decisions to grant financial assistance under Regulation (EC)  
No 1164/94 establishing a Cohesion Fund

No 94.09.61.064

**1. Name of project:**

Water supply and waste water disposal systems for Livadia, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Livadia

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Central Greece

**5. Description**

Water supply

(a)	Collectors	21 000 m	
(b)	Tank	640 m <sup>3</sup>	1 item
(c)	Reconstruction and modernization of the Chlia pumping station		1 item
(d)	Bore holes at the Chlia pumping station		1 item

Waste water disposal

(a)	Waste-water collectors	45 000 m	
(b)	Connections	2 000 items	
(c)	Rain-water collectors	15 000 m	
(d)	Arrangement of river bed	450 m	



6. Objectives

The purpose of this project is to complete the town's water-supply and waste-water disposal networks and to make it possible to channel rain water to the adapted section of river to prevent flooding in the town and environs.

7. Work schedule

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1999

8. Economic and social cost-benefit analysis

Social benefits. Improvement of the quality of life of Livadia's 19 000 permanent inhabitants and the possibility of greater development of the administrative and tourism infrastructure.

9. Assessment of environmental impact

The project involves the provision of water-supply and rain-water networks and a waste-water disposal system which will result in better quality drinking water in the region as well as improved quality of life for the inhabitants of Livadia. Between 1981 and 1991 the population of the town increased by 6.3% because Livadia is the administrative, agricultural and commercial centre of the region and a point of passage for tourists travelling to sites like Delphi, etc.

10. Cost and assistance (in ECU '000)

Total cost: 9 400 000

Rate of assistance: 85%

Cohesion Fund assistance: 7 990 000

**Publication of main points of decisions to grant financial assistance under Regulation  
(EC) No 1164/94 establishing a Cohesion Fund**

No 94/09/61/066

**1. Name of project:**

Sewage and rain-water collection network in Tyrnavos, Greece

**2. Authority making the application**

2.1. Name: Ministry of the National Economy

2.2. Address: Platia Syntagmatos, 10 180 Athens, Greece

**3. Body responsible for implementation**

3.1. Name: DEYA (State Company for Water Supply and Drainage), Tyrnavos

3.2. Address: Ministry for the Interior, Stadiou 27, Athens, Greece

**4. Location**

4.1. Member State: Greece

4.2. Region: Thessaly

**5. Description**

Waste-water drainage network	31 500 m
Rain-water drainage network	10 000 m
Inspection shafts	900 units
Connections	2 340 units
Structural part of 2 pumping stations	2 units
Electro-mechanical equipment for pumping stations	2 units
Sealing equipment	1 unit

**6. Objectives**

This stage of the project involves completion of the construction of the waste-water and rain-water drainage network to meet the needs of the entire town.

7. Work schedule

Category of work	Commencement	Completion
Main work	1 January 1995	31 December 1998

8. Economic and social cost-benefit analysis

Considerable social benefits, since the project will not only improve the quality of life and public health of the 12 000 inhabitants of the area but also contribute to the balanced development of infrastructure and, in the long term, to economic development and decentralization.

9. Assessment of environmental impact

Until now the town of Tyrnavos had no sewage and rain-water drainage system. Catchpits were used, which polluted the ground water. Moreover, pollution is worsening in the town centre, where the population density is rather high. Since the town is situated in a flat area, rain water cannot easily drain away and the town has been flooded twice, in 1935 and in 1972. The work undertaken in this project will help to solve these problems.

10. Cost and assistance (in ECU '000)

<u>Total cost:</u>	6 785 000
<u>Rate of assistance:</u>	85%
<u>Cohesion Fund assistance:</u>	5 767 250

**Publication of essential elements of decisions granting financial assistance  
under Regulation 1164/94 establishing a Cohesion Fund**

Summary of project n° 95/09/61/003

**1. Title**

Water supply for Khania

**2. Applicant authority**

2.1 Name: Ministry for the National Economy

2.2 Address: Pl. Sintagmatos 10180 Athens

**3. Authority in charge of execution**

3.1 Name: Khania Public Water Supply and Sewerage Undertaking

3.2 Address: Leoforos Kidonias, Khania 73100

**4. Location**

4.1 Member State: Greece

4.2 Region: Crete

**5. Description**

**A. PLANNING**

1. Small reservoir utilization studies
2. Planning and calls for tenders for modification of existing installations, i.e. pumping stations, reservoirs and networks (both structural features and electromechanical equipment) to permit automation, enlargement and fuller control of the system.
3. Planning and calls for tenders for enlargement of the system and replacement of conduits.
4. Planning and calls for tenders for central control rooms for installations

## B. IMPLEMENTATION

Instruments for modernization and rational management of water supply system: flow meters, quality parameter measurement (chlorine residue recording), piezometers, water level gauges etc.

Equipment of KPWSSU with computers and modern software (network, AUTO CAD, Project, Coreldraw, etc.)

Automation of distribution by installation of a SCADA system (central control station, local stations, communications, automation equipment, conversion of existing infrastructure, additions, equipment for pumping stations and reservoirs, replacement of equipment that cannot be automatized), reinforcement of electromechanical installations; construction of premises for central control station.

Replacement or renewal of 14 000 m of existing network.

Installation or replacement of valves with manholes for improved operation of network.

Laying of 10 000 m of primary network.

Laying of 32 000 m of secondary network.

Construction of two reservoirs each 6 500 m<sup>3</sup> with complementary equipment (valves, conduits, chlorination, housing for chlorination and other treatment).

Construction of a 2 000 m<sup>3</sup> reservoir with complementary equipment.

Construction of a 1 000 m<sup>3</sup> with complementary equipment.

Enlargement of a reservoir by 1 000 m<sup>3</sup>.

8 000 m conduit with complementary equipment and modifications (valves, manholes etc.) to link Agia pumping station and Vante reservoirs with existing networks.

Mechanical filtering of water obtained from another agency.

## 6. Objectives

Economy and rational management of water resources combined with improvement of water quality. Resolution of quantitative, qualitative and distribution problems.

KPWSSU figures indicate a steadily worsening water shortage, at present around 30%, in the summer months.

**7. Timetable**

Type of work	Commencement	Completion
Planning	1.1.96	31.12.96
Main work	1.1.96	31.12.99

**8. Economic and social cost-benefit analysis**

Number of jobs created at execution stage: directly 18, indirectly 80

Number of jobs created at operational stage: directly 2, indirectly 10

Investment in water supply will ensure a satisfactory volume of supply for the inhabitants of the town and adequate cover for touristic needs. It is estimated that 13 414 992 m<sup>3</sup> of drinking water will be saved over the period 1999-2014.

**9. Environmental impact assessment**

Reinforcement of the supply network together with continuous leak monitoring will give a saving in water resources estimated for the period 1994-2015 at 13 414 992 m<sup>3</sup> of drinking water. The work proposed accordingly contributes to achievement of the European Community's policy aim of economy and rational management of water resources. It will help conserve the water resources of the Khandia area, faced with particular difficulties owing to reduced rainfall.

Improvement of drinking water quality.

**10. Cost and contribution (in ecus)**

Total cost: 5 524 000

Eligible expenditure (from 1.3.95): 5 524 000

Community contribution: 85%

Cohesion Fund contribution: 4 695 400

**Publication of the main points of the Decision to grant assistance under  
Regulation 1164/94 establishing the Cohesion Fund**

Project summary  
No 95.09.61.11-10

**1. Project title**

**Dam Ag. Dimitrios - Electromechanical equipment of the relevant works  
Tunnel Evinos - Mornos - Electromechanical equipment.**

**2. Authority making the application**

2.1. Name: Ministry of National Economy

2.2. Address: Pl. Syntagmatos 10180 ATHENS

**3. Authority responsible for implementation**

3.1. Name: Ministry of Public Works

3.2. Address: Amaliados 17 115 23 ATHENS

**4. Location**

4.1. Member State: Greece

4.2. Region: WESTERN GREECE

**5. Description**

Equipment that will be installed at the low level outlet of the Ag. Dimitrios Dam.  
in particular:

- a) Equipment for the tunnel of the low level outlet
- b) Equipment for the gate chamber of the low level outlet
- c) Equipment for the supply of 1m<sup>3</sup>/sec
- d) Equipment for the control building of the dam
- e) Future small hydropower station

**6. Objectives**

This work will enable the functioning of the dam of Ag. Dimitrios as well as the  
tunnel Evinos - Mornos.

7. Work schedule

Category of work	Commencement	Completion
Studies	11.1995	04.1996
Main works	06.1996	10.1997
Operation	11.1997 or	12.1997

8. Economic and social cost-benefit analysis

The ratio cost /benefit is  $B/C > 1$ .

Employment creation: directly during execution: 40/year  
indirectly during execution: 10/year  
directly during operation: 15  
indirectly during operation: 12

9. Environmental impact analysis

10. Cost and assistance (in ecus)

Total cost: 9.300.000

Eligible costs (after 26.10.1995) 9.300.000

Rate of assistance 85%

Cohesion Fund assistance 7.905.000

11. Special conditions

Any change in the total cost can only result from either a concept of the advisory and coordinating board, or the contract when awarded. The contract on the electromechanical equipment will be sent to the Cohesion Fund.



**Publication of essential elements of Decisions granting financial assistance  
under Regulation 1164/94 establishing a Cohesion Fund**

Summary of Project 95/09/61/043

1. Title

Sewerage for the tourist area of Thessaloniki, second part

2. Applicant authority

2.1. Name: MNE

2.2 Address: Pl Sintagmatos 10180 Athens

3. Authority in charge of execution

3.1 Name: Thessaloniki Sewerage Board

3.2 Address: Tsimiski 98 54622 Thessaloniki

4. Location:

4.1 Member State: Greece

4.2 Region: Central Macedonia

5. Description

Laying of 28 000 metres of sewage collection piping and construction of six pumping stations in the tourist area of Thessaloniki.

6. Objectives

Completion permitting operability of the sewage and biological treatment installations for the tourist area of Thessaloniki

- Upgrading of Gulf of Thessaloniki
- Boosting of Tourism
- Expansion of shellfish cultivation and fishing

7. Timetable

Type of work	Commencement	Completion
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Main work	1.1.96	31.12.1998

8. Economic and social cost-benefit analysis

Impact on employment: execution stage: 150 persons directly, 20 indirectly,  
operational stage: 4 persons directly, 500 indirectly.

Internal rate of return: 5.2%

Cost/benefit ratio: 1.046.

9. Environmental impact assessment

- Improvement of the area's sanitation
- Upgrading of Gulf of Thessaloniki
- Conformity with European Union Directives 91/271 on urban waste-water treatment and 75/440 on surface drinking water quality. For execution of the project the environmental terms must be observed of Environment Ministry Decision 13059/19.11.92.

10. Cost and contribution (in ecus)

Total cost 8 696 000

Eligible expenditure (from 1.9.95) 8 696 000

Contribution rate 85%

Cohesion Fund contribution 7 391 600