



WATER DEVELOPMENT
DEPARTMENT
1047 NICOSIA



REPUBLIC OF CYPRUS
MINISTRY OF AGRICULTURE , RURAL
DEVELOPMENT AND ENVIRONMENT

Water Security in Bulgaria
18 – 19 September 2017 Sofia Bulgaria

CYPRUS EXPERIENCE WITH URBAN WASTEWATER TREATMENT DIRECTIVE (91/271/EEC)

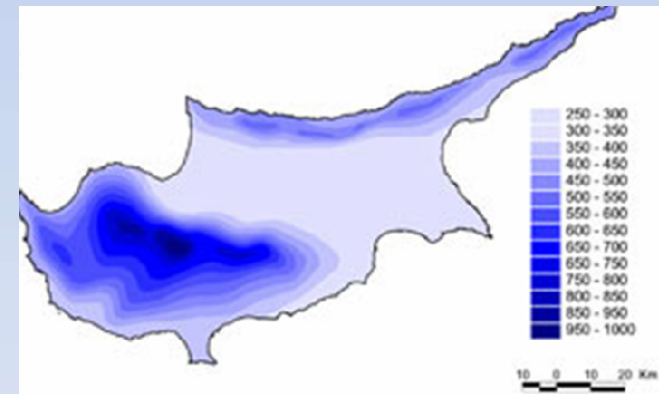
NICOS NEOCLEOUS
CHIEF WATER OFFICER
WATER DEVELOPMENT
DEPARTMENT



SHORT DESCRIPTION ABOUT CYPRUS

- Area: 9250 Km²
- Population: 850,000 (under Government control)
- Year of Turkish invasion and percentage of the occupied area: 1974 , 39%
- Year joined the EU: 2004
- Year joined the Eurozone: 2008
- Year of the Financial crisis: 2013
- GDP (per capita): 2016 €20.984
- Type of Climate: Semi arid climate
- Numerous small catchments
- No perennial flow
- Limited water resources
- Unevenly distributed rainfall
- Temporally and geographically
- Frequent and prolonged droughts

**Annual Rainfall
Distribution (mm)**



UWWT Directive 91/271/EEC

- The Directive was transferred to the Cyprus Law under the Water Pollution Control Laws via Regulations 772/2003 as well as Ministerial Decrees and
- The Sewerage Systems Laws (1/1971)

Competent Authorities & Responsibilities

➤ **Department of Environment**

Implementation of UWWTD and Participation with WDD to the European Committee.

Designation of Sensitive Areas in cooperation with WDD, DFMR, GSD and DA.

Reporting to E. C. according to Article 15 and 16 of the UWWTD.

Effluent Quality Monitoring Programme in cooperation with the S.G. Laboratory and WDD.

Preparation of Discharge Permits for the operation of UWWTPs and the effluent discharges.

➤ **Water Development Department**

- Preparation of the National Implementation Program.
- Reporting to E. C. according to Article 17 of the UWWTD.
- Preparation of design, tenders and contracts for the construction and the maintenance of all rural, sewerage collection systems and WWTPs on behalf of the Rural Sewerage Boards.
- Management /reuse of Municipal UWWTP effluent.

➤ **Sewerage Boards Councils**

- Installation of sewerage networks and UWWT plants in urban centers and peri-urban communities.

➤ **Ministerial Council**

- Implementation of the relevant projects.

RESPONSIBILITY FOR THE CONSTRUCTION OF THE WORKS (Sewerage Network and Wastewater Treatment Plants)

- ***Urban Settlements and peri-urban communities:***

Urban Sewerage Boards (Public Utility Organisations): Responsible for the construction and operation of the systems.

- ***Rural Communities (above 2000 p.e.):***

Water Development Department: Responsible for the construction phase.

Rural Communities Sewerage Boards: Responsible for the operation and maintenance of the systems with the technical assistance from the Water Development Department

GOVERNMENTAL SUBSIDIES (from the governmental budget)

Rural Communities:

80% of the capital cost (sewerage network, wastewater treatment plant , treated effluent storage lagoon and central irrigation network)

100% of the capital cost of the wastewater treatment plant or the required extension of any existing plant for the peri-urban communities joined the Urban Sewerage Boards.

The contribution of each rural community decreases by 50% in case the project is co financed by the Cohesion Fund.

0% for the operation and maintenance

Urban Sewerage Boards:

100% of the capital cost and the related cost of the operation and maintenance of the tertiary treatment plant.

FINANCING

- **Construction of the works for the Rural Communities:**
 - a. National Fund
 - b. Co financed by the cohesion fund of the EU and Cyprus Government
 - c. Loan from EIB up to 50% of the required expenses
 - d. Contribution of the Community
- **Operation and Maintenance of the works (non governmental contribution):**
The Sewerage Board of the rural communities through taxation of the citizens.
Two types of taxes:
 - Sewerage fee: paid once a year based on the value of the house
 - Sewerage system use: paid every two months based on the drinking water consumptionEach fee has to be approved by the parliament.

Construction of the works and Operation and Maintenance by the Urban Sewerage Boards

Loans by the Urban Sewerage Boards from EIB, CEB and other banks
The Sewerage Board through taxation of the citizens.

- Two types of taxes:
- Sewerage fee: paid once a year based on the value of the house
 - Sewerage system use: paid every two months based on the drinking water consumption
- Each fee has to be approved by the parliament.

CONDITIONS OF CONTRACTS FOR THE RURAL COMMUNITIES.

WASTEWATER TREATMENT PLANTS and pumping/lifting stations of the network (Turn-key Project) :

FIDIC Contract - Gold

Design Build Operate: Two phases Contracts

Phase 1: Design - Build – Commissioning – Testing- One year operation as defects Liability period.

Financing: Co financed by the cohesion fund of the EU and the Government of Cyprus.

Contracting Authority: Water Development Department

Requirements: Only the quality of the treated effluent.

Treatment Method: the tenderer to select proven method.

Phase 2: Operate for 19 years (all the costs i.e. chemicals/electricity are borne by the Contractor. The contractor could also use renewable energy resources at his own cost)

Contracting Authority: Sewerage Board of the Rural Communities. Water Development Department is acting as technical advisor.

Award Criterion: Exclusively the lowest price (phase 1 and phase 2), provided that the tenderer fulfills the economical and technical qualifications.

SEWERAGE NETWORK:

- **Design:** Prepared by WDD by subcontracting to Design Consultants.
- **Contract Conditions:** for the construction of Civil Engineering Public Works, based on FIDIC.

Contract with approximate quantities.

After taking over of the network the maintenance is by the Sewerage Board through subcontractors.

CONDITIONS OF CONTRACTS FOR THE URBAN SEWERAGE BOARDS.

WASTEWATER TREATMENT PLANTS and pumping/lifting stations of the network :

FIDIC Contract - Design Build Operate: Two phases Contracts

Phase 1: Design - Build – Commissioning – Testing- One year operation as defects Liability period.

Contracting Authority: Urban Sewerage Board

Requirements: Only the quality of the treated effluent.

Treatment Method: the tenderer to select proven method.

Phase 2: Operate for 9 years (all the costs i.e. chemicals/electricity are borne by the Contractor. The contractor could also use renewable energy resources at his own cost)

Contracting Authority: Urban Sewerage Board.

In some cases the Urban Sewerage Board operates the plant with its employees.

Financing: The Urban Sewerage Board through taxation of the citizens.

Two types of taxes:

- Sewerage fee: paid once a year based on the value of the house
- Sewerage system use: paid every two months based on the drinking water consumption

Each fee has to be approved by the parliament.

Award Criterion: Exclusively the lowest price (phase 1 and phase 2), provided that the tenderer fulfills the economical and technical qualifications specified in the tender documents.

SEWERAGE NETWORK:

- **Design:** Prepared by the Sewerage Board by subcontracting to Design Consultants.
- **Contract Conditions:** for the construction of Civil Engineering Public Works, based on FIDIC.

Contract with approximate quantities.

After taking over of the network the maintenance is by the Sewerage Board through subcontractors.

STATUS OF COMPLIANCE

Accession Treaty Commitments

Transitional period negotiated in the accession treaty of Cyprus for the full implementation of the UWWTD, Articles 3, 4 and 5(2) was **31.12.2012**.

Current Situation: National Implementation Program of 2014 (with reference year 2014 and compliance date 31/12/2027)

- 7 Urban agglomerations – 736.000 p.e.
- 50 Rural agglomerations – 259.000 p.e.

Construction of Collecting Systems and UWWTPs (as at 31/12/2016)

- *Construction of Collecting Systems*
 - ❖ *Urban : 6 completed, 1 in process*
 - ❖ *Rural : 29 completed, 18 haven't started yet, 3 IAS*
- *Construction of UWWTPs*
 - ❖ *Urban : 8 completed, 1 in process, 1 haven't started yet*
 - ❖ *Rural : 1 completed, 1 in process, 4 haven't started yet*

% compliance

According to the national report for the 9th reporting (reference year 2014) of the Urban Waste Water Treatment Directive prepared by the EC:

- ❖ the compliance rate with *Article 3* of the Directive is **65%** related to the total generated load of the agglomerations
- ❖ the compliance rate with *Article 4* of the Directive is **85.6%** related to the load entering to collecting systems and treatment plants
- ❖ the compliance rate with *Article 5* of the Directive is **85.3%** related to the load entering to collecting systems and treatment plants discharging into Sensitive Areas

SUPPLY OF TREATED EFFLUENT

The policy of the Government is that the treated effluent produced by the Urban Sewerage Boards will be reused by the Government through the Water Development Department who is responsible for the reuse of treated effluent from the urban wastewater treatment plants.

The cost for the construction and the operation and maintenance of the tertiary treatment plant carried out by the Urban Sewerage Boards is undertaken by the Government.

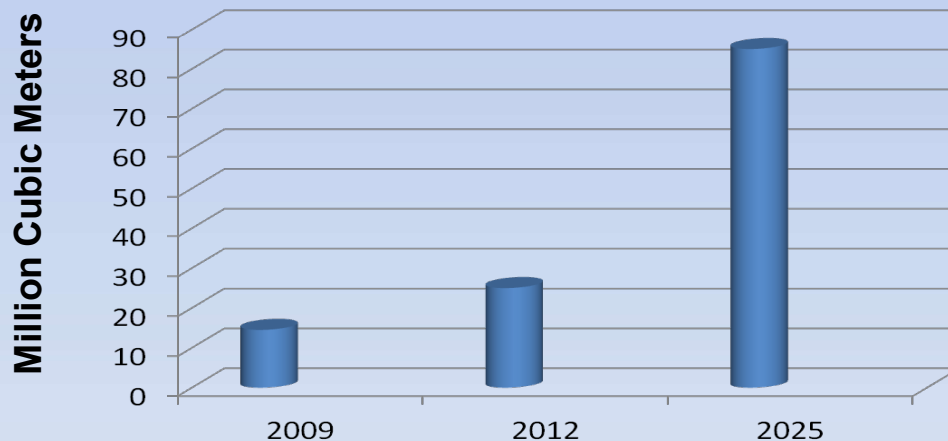


REUSE OF TREATED EFFLUENT IN CYPRUS

IN CYPRUS THE TREATED EFFLUENT FROM THE URBAN WASTEWATER TREATMENT PLANTS IS REUSED FOR THE FOLLOWING PURPOSES :

1. IRRIGATION
2. ENRICHMENT OF UNDERGROUND WATER
3. DRY BED OF RIVERS FOR INFILTRATION

THE IRRIGATION IS DONE UNDER THE CODE OF GOOD AGRICULTURAL PRACTICE.



OTHER WAYS OF DISPOSAL

- DISCHARGE INTO THE SEA

DUE TO SEASONAL DEMAND OF WATER FOR IRRIGATION AND LIMITED STORAGE CAPACITY, CERTAIN AMOUNTS OF TREATED EFFLUENT ARE DISCHARGED TO THE SEA AND POLEMIDIA DAM (NON POTABLE), DURING WINTER MONTHS.



WATER DEVELOPMENT
DEPARTMENT
1047 NICOSIA



REPUBLIC OF CYPRUS
MINISTRY OF AGRICULTURE , RURAL
DEVELOPMENT AND ENVIRONMENT



LIMASSOL (MONI) WWTP



THANK YOU

NICOS NEOCLEOUS
CHIEF WATER OFFICER
WATER DEVELOPMENT
DEPARTMENT

nneocleous@wdd.moa.gov.cy