

# **GUIDE ON THE LICENSING OF SMALL PRIVATE DESALINATION PLANTS**

## **(A) Terms of reference of the licensing coordinating committee**

The terms of reference of the licensing coordinating committee shall be determined by the Council of Ministers as follows:

1. regular meetings with the frequency appropriate to ensure that the licensing procedure will be completed within four (4) weeks;
2. receipt of applications by interested parties;
3. preliminary evaluation of the applications focused on the location of the facilities of the desalination plant;
4. consultation with the interested party regarding alternative location options;
5. where the application CANNOT be accepted, the Chairperson of the coordinating committee shall inform the interested party by letter;
6. where the application is preliminarily deemed acceptable, the coordinating committee shall forward it to all stakeholders for final evaluation, imposition of terms and procurement of all required authorisations;
7. the coordinating committee will apply the general requirements of the law as they are described in paragraph (B) below;
8. the licensing procedure to be followed by the coordinating committee is detailed in paragraph (C) below;
9. The aim of the coordinating committee shall be to complete the licensing procedure within four (4) weeks.

## **(B) General requirements of the law per category of desalination plant**

### **Category 1: Desalination plant at an existing development**

- (i) Urban planning authorisations
  - no urban planning authorisation application is required, provided that the plant is located 3.0 metres from the boundaries of the parcel, does not cancel necessary parking spaces and is integrated into the environment as effectively as possible, without damaging its surroundings;
  - an amending building permit must be issued by the competent building authority, which shall stipulate the condition that the temporary construction will be removed within a specified period (e.g. within 3 or more years); It is understood that the interested party shall have the right to re-amend the

building permit in order to extend such period, where justified by the circumstances;

- where the plant is located inside the Beach Protection Zone and a procedure for relaxation is required under Article 5A of the Beach Protection Law (Chapter 59) by the competent District Officer.

(ii) Environmental authorisations

- an application for groundwater work permit must be submitted to the Director of the Water Development Department in accordance with Article 83 of the Integrated Management of Water Law (Law 79(II)/2010);
- an application for an environmental permit (Form 3) must be submitted in accordance with Article 20(2) of the Environmental Impact Assessment from Certain Plans and/or Programmes Law (Law 127(I)/2018);
- the General Environmental Conditions shall apply, as these were decided by the Department of the Environment and the Department of Fisheries and Marine Research and are attached hereto as **Attachment 1**;
- the environmental authority may issue an environmental permit with additional conditions, taking account of the views of the Department of Fisheries and Marine Research depending on the exact location of the plant;
- **Attachment 2** includes maps of the coastal areas characterised as protection zones or areas of specific status (NATURA 2000, bathing areas, etc.), to which the environmental authority will give special attention in evaluating the applications.

**Category 2: Desalination plant that will serve an existing development or will serve the irrigation needs of an agricultural lot in a different area.**

(i) Urban planning authorisations

- no urban planning authorisation application is required, provided that the plant is located 3.0 metres from the boundaries of the parcel, does not cancel necessary parking spaces and is integrated into the environment as effectively as possible, without damaging its surroundings;
- a building permit must be issued by the competent building authority, which shall stipulate the condition that the temporary construction will be removed within a specified period (e.g. within 3 or more years). It is understood that the interested party shall have the right to re-amend the building permit in order to extend such period, where justified by the circumstances;

- the views of the urban planning authority should be requested during the evaluation stage of the building permit application. If the urban planning authority does not send its relevant views within 10 working days, the competent building authority will presume such views as positive;
  - where the plant is located inside the Beach Protection Zone and a procedure for relaxation is required under Article 5A of the Beach Protection Law (Chapter 59) by the competent District Officer.
  - where the plant is located on a state land, an application for the lease of state land must be submitted to the Department of Lands and Surveys;
  - where the plant is located on Turkish Cypriot land, a relevant application for concession by lease contract must be submitted by letter to the Guardian of Turkish Cypriot properties.
- (ii) Environmental authorisations
- The same requirements as in Category 1 shall apply, and additionally:
  - Prior consultation with the Water Development Department is required, since the desalinated water produced through Government Water Projects may be exchanged with an equal quantity of other non-drinking water.

**(C) Evaluation procedure**

The procedure detailed below and the submission of the relevant documents are required in the following order:

- 1. The interested party shall submit in 4 copies a Letter for Application for the Licensing of Private Desalination Plant to the Chairperson of the licensing coordinating committee, which will include the following attachments:**
  - application for a groundwater work permit addressed to the Director of the Water Development Department (WDD) in accordance with the standard document found on the website of the WDD (Article 83 of Law 79(II)/2010);
  - Application for an environmental permit, as well as for the Information Form for Projects of the 2nd Annex and the Special Information Form for areas of the Natura 2000 Network, in accordance with the standard documents found on the website of the Department of the Environment (Articles 20, 23 and 33 of Law 127(I)/2018).
- 2. On the same day, the Chairperson of the licensing coordinating committee shall notify and forward the submitted applications to the Directors of the Water Development Department and the Department of Fisheries and Marine Research.**

3. **The three Departments mentioned above shall carry out the following control procedures:**
  - **the Water Development Department shall assess the possibility of exchanging desalinated water produced through Government Water Projects with equal quantity of other non-drinking water (to serve needs away from the beach);**
  - **The Department of the Environment, after consulting the Department of Fisheries and Marine Research, shall assess the environmental impact depending on the location of the desalination plant.**
4. **Subsequently, the three Departments mentioned above shall inform the licensing coordinating committee of their findings, which shall decide as follows:**
  - **reject the application and immediately notify the interested party;**
  - **preliminarily approve the application and inform the interested party of the forwarding of the licensing procedure to the other stakeholders.**
5. **Subsequently and within three (3) weeks, all competent stakeholders shall carry out a final evaluation as follows:**
  - **the environmental authority shall decide on the determination of the final environmental conditions;**
  - **the competent building authority shall decide on issuing a building permit or an amending building permit;**
  - **the competent District Officer shall decide on issuing a relaxation right under the Beach Protection Law.**
6. **After the interested party has obtained all authorisations/permits mentioned above, the licensing coordinating committee shall issue a groundwater work permit.**
7. **The abstraction permit issued by the Director of the Water Development Department shall be considered as the final Operating Licence of the Desalination Plant, provided that the licensing conditions are met. It is understood that, depending on the water use, the minimum qualitative characteristics of the produced desalinated water shall apply as mentioned in Attachments 3 and 4.**

# **ATTACHMENT 1**

## **CONDITIONS OF THE DEPARTMENT OF THE ENVIRONMENT FOR SMALL PRIVATE DESALINATION UNITS**

### **SECTION A: Conditions to be met during the construction phase of the project**

#### **1. General conditions**

- 1.1. Construction works must be limited within the space of the project site. No intervention must be made to the surroundings.
- 1.2. A management plan must be drawn up for the worksite that will operate during construction of the project. This plan should provide for the rational management of the worksite, including the collection and disposal/discharge of solid and liquid waste, used machine oils, scrap material, waste from excavations, etc. The plan should be illustrated in a spatial plan which should clearly indicate the various spaces, as in the room intended for the safe storage of fuels and chemicals, the sanitary facilities, the corridors used for heavy duty and other vehicles, etc. Furthermore, the worksite spatial organisation plan must illustrate separately the temporary storage room of raw materials and waste, the office spaces and the parking areas.
- 1.3. Excavation material, if any, should be used for back-filling needs and as soil additives, as part of the materials will be topsoil.
- 1.4. If works are carried out during night time, there should be adequate lighting which should be installed so that the safety needs are complied with and the light is not diffused beyond where needed.
- 1.5. Before construction works start, the mechanical and geotechnical soil properties should be determined to select the support and foundation methods where trenches, retention walls and technical support may be required to avoid failures.
- 1.6. Any excavation works should be limited to what is strictly necessary and care should be taken to reduce dust emissions. Excavation works should be avoided during hours of rest, particularly during the summer season. Works must be organised in a way that minimises the simultaneous operation time of machinery, as well as the number and operation time of no-load machinery.
- 1.7. An emergency plan should be prepared, which must be implemented, during the project works, in case of accident, leakage of substances (in particular dangerous) into the soil, small or big fire, explosion, flooding, earthquake and injury to a person. In such cases, the competent authorities concerned must be notified immediately.
- 1.8. The provisions of the Waste Laws issued from 2011 to 2016 must be complied with during the construction works.
- 1.9. Automatic devices should be installed around the worksite that will measure and check all main parameters, such as hydrometers at the water inflow and outflow

positions towards the treatment plant, a level meter in the clear water tank, pH and electrical conductivity meters, etc.

- 1.10. The technology to be chosen should consume as less energy as possible and energy-saving measures should be implemented.
- 1.11. It should be examined whether part of the energy required by the plant could be generated by RES (e.g. photovoltaic systems).
- 1.12. After construction works of the project are completed:
  - i. all worksite installations should be removed and all worksite areas should be restored;
  - ii. to restore the surroundings, earthworks should be followed by anti-erosion works that will prevent the loss of valuable soil and the formation of rill erosion before sufficient vegetation grows.
  - iii. A fence should be constructed and trees should be planted along the perimeter of the project to ensure that it is kept visually isolated.

## **2. Conditions regarding soil protection**

- 2.1. In case hazardous substances (e.g. fuels, lubricating oils, etc.) leak into the soil, restoration works must be carried out immediately. In particular, the excess fluid which was not absorbed by the soil should be collected through absorbents and excavation should be performed at an appropriate depth to remove the polluted soil. After their use, the absorbents and the polluted soil should be stored in leak-proof containers and be delivered to an authorised waste management operator in accordance with the Waste Laws issued from 2011 to 2016.
- 2.2. Any equipment and vehicle maintenance works, as well as the refuelling vehicles and lubricating oil change should be avoided in the wider construction site of the project.
- 2.3. All machinery to be used during the construction should be properly maintained regularly and should not show any leaks of fuel or machine oils.

## **3. Conditions regarding the protection of surface and ground water**

- 3.1. Any produced aggregate should be deposited in locations that do not negatively affect surface run-off water.
- 3.2. Earthworks should be avoided during heavy rainfall.
- 3.3. Chemical toilets should be installed around the project area to meet the sanitary needs of the worksite personnel. Liquid waste from the chemical toilets should be delivered to authorised waste collectors and transporters, in accordance with the Waste Laws issued from 2011 to 2016.

- 3.4. Discharge, deposit or disposal of any substance that pollutes or is likely to pollute water and soil is prohibited in accordance with the Water Pollution Control Laws issued from 2002 to 2014.

#### **4. Conditions regarding protection of the atmosphere**

- 4.1. All necessary measures should be taken to reduce dustiness.
- 4.2. Burning waste or other substances or objects is strictly prohibited.
- 4.3. Storage areas of aggregates should include proper arrangements such as protective trenches or other means to prevent dispersion of solid particles.

#### **5. Conditions regarding noise minimisation**

- 5.1. Where possible, works that produce significant noise levels should be carried out simultaneously to minimise the duration of noisy works.
- 5.2. The seat of construction machinery should include elastic anti-vibration mounts and, where necessary, silencers and side barriers should be used.
- 5.3. Where required, technical solutions should be applied to reduce noise cause by the movement of heavy-duty vehicles (e.g. use of noise barriers at high noise level emission points) and by the operation of machinery to be used outdoors (e.g. sound insulation).

### **SECTION B: Conditions to be met during the operational phase of the project**

#### **1. General conditions**

- 1.1. The quantity of untreated water entering the treatment plant and the quantity of treated water made available to the water supply network should be recorded systematically.
- 1.2. The provisions of the Waste Laws issued from 2011 to 2016 must be complied with.
- 1.3. All processes related to the project should be carried out exclusively within the limits of their location.
- 1.4. Equipment should be arranged in a way that facilitates open access for inspection and maintenance.
- 1.5. The desalination plant site should bear appropriate signs that prohibit access to unauthorised persons in the plant.
- 1.6. Regarding refrigeration and air conditioning systems, the provisions of Law 23(l)2010 on certain fluorinated gases (recovery, leakage prevention, environmental disaster by gases) as well as of the Regulations of Regulatory Administrative Act 133/210 as they arise from the above law (certification of personnel working with refrigeration equipment) should be complied with. The refrigerants/refrigeration system should be selected with particular care, since

there are ban schedules on the use of many refrigerants/types of equipment (Annex III to Regulation (EU) No 517/2014).

- 1.7. Management measures for water conservation should be taken (e.g. Installation and use of air or sensor taps).
- 1.8. Regarding lamps to be used, it is recommended that they comply with the requirements of the Establishment of Ecodesign Requirements for Energy-related Products Law of 2011 and of the relevant implementing measures.
- 1.9. An emergency plan should be prepared, which must be implemented, during the operational phase of the project, in case of accident, leakage of substances (in particular dangerous) into the soil, small or big fire, explosion, flooding, earthquake and injury to a person. In such cases, the competent authorities concerned must be notified immediately.
- 1.10. Mechanical equipment should be checked regularly to ensure proper and environmentally friendly operation of the project.
- 1.11. The plant should have a stock of mechanical equipment spare parts and components stored to ensure that any damage is repaired immediately, particularly where such damage may cause environmental pollution. The Director of the Department of the Environment should be notified immediately in such circumstances.

## **2. Conditions regarding noise minimisation**

- 2.1. Covering plant walls with sound-absorbing materials will improve conditions inside a specific space by reducing noise echo. At the same time, it will reduce noise in adjacent spaces that may be used widely by operational staff.

## **3. Conditions regarding protection of the atmosphere**

- 3.1. If fire extinguishing systems use substances that deplete the ozone layer, the gas must be recovered in accordance with Law 16(l)/2011 on the substances that deplete the ozone layer, as well as in accordance with the Regulatory Administrative Acts 67/2011 on the execution of the relevant work and 66/2011 on the obligations that arise from the use of substances that deplete the ozone layer.

## **4. Conditions regarding soil conservation and the protection of surface and ground water**

- 4.1. All waste and in particular hazardous waste (e.g. lubricants, residue and packaging material of dyes and preservatives, sludge, etc.) generated during the operation of the plant should be collected separately and delivered to holders of certificate of registration in the Waste Management Record in accordance with the provisions of Waste Laws issued from 2011 to 2016.



- 4.2. Rooms with mechanical equipment should include sufficient amounts of absorbent materials (e.g. Sawdust, sand) so that fuels and lubricants are retained in case of leakage. After their use, absorbent materials should be collected and delivered to an authorised management operator in accordance with the Waste Law.
- 4.3. Discharge, deposit or disposal of any substance that pollutes or is likely to pollute water and soil is prohibited in accordance with the Water Pollution Control Laws issued from 2002 to 2014.
- 4.4. Brine should be disposed of into an area where the effect on the marine environment will be as minimal as possible through properly designed diffusers to achieve optimum dilution of the brine in the sea.
- 4.5. All necessary measures should be taken to prevent marine organisms from entering into the seawater inlet/open duct during desalination.
- 4.6. Raw materials such as fuels, lubricants, chemicals and other substances should be stored in appropriate containers in rooms with limited access which will be properly constructed with impermeable surfaces and protected from weather conditions.
- 4.7. Waste generated from the staff should be regularly collected and disposed of.

### **SECTION C: Environmental monitoring**

1. The competent authority should prepare and implement a monitoring plan for the brine discharge area and for the quality of the discharged water and submit such plan for approval to the Department of the Environment.

### **SECTION D: General conditions regarding decommissioning of the project**

1. The project owner must submit to the Director of the Department of the Environment a plan for the decommissioning and restoration of the plant site at least six (6) months prior to the cease of operation. Following approval, this plan must be implemented within three (3) months
2. Waste management, decommissioning of the plant, as well as restoration of the site and the installation should be carried out in accordance with the Waste Laws issued from 2011 to 2016.
3. Following decommissioning of the facilities, the project owner must ensure that the following are restored:
  - a) any potential damage caused to the environment due to the operation of the facilities;

b) the natural environment by adapting and integrating the facilities into their surrounding area to achieve upgrading and conservation of the landscape. This is will be accomplished by submitting appropriate plans to the competent authority over time.

4. Where plant facilities are modified or expanded in any way, the owner should notify the Department of the Environment, which will assess whether this may entail significant negative environmental impact and will determine whether the procedure under the Environmental Impact Assessment from Certain Plans and/or Programmes Law 127(I)/2018 must be followed.

## **DEPARTMENT OF THE ENVIRONMENT**

**3 October 2018**

**CONDITIONS OF THE DEPARTMENT OF FISHERIES AND MARINE RESEARCH  
FOR SMALL PRIVATE DESALINATION UNITS**

**1. General conditions**

- 1.1. Disposal of brine in marine protected areas and areas with protected habitats shall be prohibited.
- 1.2. The brine disposal system should be installed in points with increased water circulation and turbulent water flow (currents, rippling) to assist dilution.
- 1.3. The brine disposal system should take account of the area's characteristics as well as the degree of brine dilution in accordance with the quality environmental standards in relation to the protection of potentially neighbouring sensitive ecosystems.
- 1.4. A specially designed borehole should be fitted at the water inlet to prevent marine organisms from entering.
- 1.5. Depending on the location of the desalination plant, any particularities will be examined individually as the case may be.

**DEPARTMENT OF FISHERIES AND MARINE RESEARCH**

**3 October 2018**

## ATTACHMENT 2

- **Maps of coastal areas**
  - **(1) Protection zones of the District of Paphos**
  - **(2) Protection zones of the District of Limassol**
  - **(3) Protection zones of the District of Larnaca**
  - **(4) Protection zones of the District of Famagusta**

**Note:**

See corresponding Adobe Acrobat Document (.pdf) files found on the website of the Water Development Department.

## ATTACHMENT 3

### MINIMUM QUALITATIVE CHARACTERISTICS OF DESALINATED WATER PRODUCED FOR IRRIGATION

pH.....	8.0 - 8.6
Electrical conductivity*.....	1,000 $\mu$ S/cm
Boron* .....	0.50-1.0mg/L
Chloride* .....	200-300mg/L
Total alkalinity as CaCO <sub>3</sub> .....	>80mg/L
Calcium (Ca) .....	30.0-50.0mg/L
Total Hardness as CaCO <sub>3</sub> .....	80.0-130mg/L
Ammonia.....	<0.1mg/L

**Note:**

The limit for chemical parameters marked with an \* will be determined at the licensing stage, depending on the crop.

## ATTACHMENT 4

### MINIMUM QUALITATIVE CHARACTERISTICS OF DESALINATED WATER PRODUCED FOR POOLS AND WATER PARKS

Paragraphs 37 and 38 of the regulations of 1996 on public swimming pools [Regulatory Administrative Act 368/96] shall apply.

pH.....7.2 - 8.2

Total alkalinity calculated with methyl orange: .....80mg/L - 120mg/L

Colony forming unit < 100 per cc of water

Most probable number of (MPN) coliform organisms < 5 per cc of water

No coliform organism (E.Coli) will be present in 100 cc of water.

Staphylococci count < 10 per cc of water.