



Luxembourg, 04/05/2022

## Environmental and Social Data Sheet

### Overview

Project Name:	<i>WESTERN GALILEE DESALINATION PLANT</i>
Project Number:	<i>2021 0765</i>
Country:	<i>Israel</i>
Project Description:	<i>Design, construction and operation of a sea-water desalination facility, with production capabilities of 100 million m3 per annum, under a PPP scheme, located in Western Galilee, Israel.</i>
EIA required:	yes
Project included in Carbon Footprint Exercise <sup>1</sup> :	yes

(details for projects included are provided in section: “EIB Carbon Footprint Exercise”)

### Environmental and Social Assessment

#### Description of the project

The project concerns the construction of a seawater reverse osmosis (SWRO) desalination plant with a production capacity of 100 million m<sup>3</sup>/year in Western Galilee (on the coastline of Israel and about 15 km North of Haifa of Tel-Aviv) through a Build - Operate & Transfer (BOT) contract. Under the BOT, a private company will be responsible for the design, finance and construction of the desalination plant and all auxiliary systems, including:

- Seawater intake system;
- Feed water pre-treatment system;
- Desalination plant (based on reverse osmosis technology);
- Product water post-treatment system;
- Auxiliaries and infrastructure subsystems;
- Product-water operational reservoir;
- Brine discharge system through a 4 km long sea outfall; and
- Backwashwater treatment plant.

The seawater intake system and brine outfall pipeline will be built “trenchless”.

The Project will support a high priority water supply infrastructure in one of the world’s most water-stressed countries and will allow Israel to meet the growing domestic demand and to increase the volume of water transfers to Jordan and Palestinian territories through separate agreements. It will also contribute to mitigating the impact of climate change-induced decrease in the availability of fresh water resources. The Project is also aligned with the Bank’s water

<sup>1</sup> Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 20,000 tonnes CO<sub>2</sub>e/year absolute (gross) or 20,000 tonnes CO<sub>2</sub>e/year relative (net) – both increases and savings.



Luxembourg, 04/05/2022

sector lending orientation on development of new water resources for the purpose of water security.

The plant is part of Israel's long-term water strategy, which aims to satisfy water demand from the increasing population and reverse the depletion of the natural aquifers. Israel already recycles 93% of its collected wastewater, water losses are at 10% on average and they are expected to be reduced further to 6% in the coming years. Therefore, in terms of water supply, Israel appears to have no other alternative but to use non-conventional water resources like desalinated water.

The Promoter of the project is the Ministry of National Infrastructure, Energy and Water Resources, on behalf of the Government of Israel. The Promoter's capacity in terms of managing environmental and social aspects of the desalination projects is good given its experience, in the last 10 years, in managing a number of operations financed with the EIB (Sorek I, Sorek II, Hadera, Hadera Extension, Ashdod).

The site for the desalination plant is located about 15 km North of Haifa. The distance between the shoreline and the plant is about 1.2 km.

### **Environmental Assessment**

1. The Israeli EIA system is materially consistent with the EIA Directive (2014/52/EU amending the EIA Directive 2011/92/EU) in terms of the methodology and scope of the studies. ESIA documents in Israel are prepared under the Planning and Building Law (1982, revised 2003).
2. In the year 2000, the National Council for Planning and Building prepared a Partial National Master Plan for possible seawater desalination plant sites (NMP 34/B/2), as part of an Integrated National Master Plan for Israel's water sector. Although Israeli law does not stipulate the need for a strategic environmental assessment (SEA), cumulative aspects have nevertheless been considered and integrated into the National Master Plans (NMP). NMP 34/B/2 designates seven sites for desalination plants on the Mediterranean Coast, including the Western Galilee site.
3. Subsequently the Project was included in the National Infrastructure Plan no.36 "Western Galilee Sea- Water Desalination Plant".
4. The Committee for National Infrastructures (CNI) stipulated that a full EIA would be required for the Western Galilee project and appointed the Marine and Coastal Division of the Ministry of Environmental Protection (MoE) as an advisor to the EIA process.
5. The National Infrastructure Plan no.36 "Western Galilee Sea-Water Desalination Plant" and the associated EIA report was approved by the CNI in 2020.

### **Key environmental issues**

The main environmental impacts identified in the EIA report concerned the seawater intake, use of treatment chemicals, concentrate (or brine) disposal and construction of main pipeline infrastructures (both in land and at sea). The mitigation measures identified allow minimisation of the project associated environmental risks and ensure that the site will not suffer permanent impacts. In particular, the physical footprint of the project at sea (pipelines, seawater intake and brine discharge installations) is minimised by adopting trenchless technologies that will have minimal impact on seabed communities and on the shoreline, which are habitats of importance for protected and/or rare species (notably sea turtles and benthic invertebrate communities). Intake will be designed to minimise impingement and entrainment of planktonic marine life using



Luxembourg, 04/05/2022

best available technology and practice adopted for these kind of installations. Brine discharge will make use of diffusers and will be located in an area that maximise dispersion over short distances. The competent authorities have paid particular attention to the choice of the site due to the presence of rocky calcareous ridges, which are a protected feature in the area and characterise the coast and the seabed. The installation was designed to avoid any impact on these features.

The desalination plant is a component of a wider investment programme that involves associated facilities (water distribution pipelines, power lines, a freshwater reservoir and related pipeline connection). All facilities have been subject to a full EIA process and have been approved by the competent authority.

Mitigation measures are explained in more detail in the ESIA and associated Non-Technical Summary (NTS) of the EIA both published on EIB's website.

### **EIB Carbon Footprint Exercise**

The annual power consumption of the plant is estimated to be in the order of 320 GWh. At the time of the assessment of impacts for Western Galilee, no decision on the source of energy supply had been taken. The energy supply will come from the Israeli electricity grid. No dedicated on-site power plant is allowed.

The energy use of the project is minimised by using best available technology, such as highest efficiencies in pumps and motors, variable frequency drives, energy efficient Reverse Osmosis (RO) membranes and isobaric energy recovery systems. Furthermore, the design and recovery of the RO stages will be optimized in order to reduce energy use.

### **Climate Risk Assessment**

A number of climate sensitivities and additional geological hazard risks, such as extreme rainfall events (flooding), sea level rise, storm surge and storm tide, storms and high winds, sea currents and waves, tsunamis and earthquake have been identified. Analysis of the issued design specifications for the project demonstrate that the above risks will be taken into account in the project's final design.

### **EIB Carbon Footprint**

The project's absolute emission is equivalent to 85,000 tCO<sub>2e</sub>/year, assuming power supply from the national electricity grid. The baseline scenario has been estimated at 98,000 tCO<sub>2e</sub>/year, assuming the same amounts of water could be produced using the built-in excess capacity of other existing Israeli desalination plants. This yields a relative emission of the project of -13,000 tCO<sub>2e</sub>/year.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be pro-rated according to the EIB lending amount signed in that year, as a proportion of project cost

### **Social Assessment, where applicable**

The project will have short and long-term positive social impacts in terms of enhancing water security and provision of reliable, safe, and drought-proof supply of fresh water. The availability of desalinated water will help to restore the overused underground aquifers and to address the climate change induced reduction of the replenishment of freshwater resources. The latter



Luxembourg, 04/05/2022

qualifies the project as contributing to climate change adaptation. Availability of desalinated water will also enable Israel to increase water transfers to Jordan and the Palestinian territories, positively impacting the population living in those areas. Given the extreme high rate of wastewater reuse in Israel, the potable water from the project will also increase the amount of reused wastewater for the agricultural users, thus helping them to switch away from freshwater usage and easing the pressure on underground aquifers.

The project will not trigger any physical involuntary displacement. It will impact agricultural activities (economic displacement) both permanently and temporarily. The impacted population were involved in several stages of the consultations and will be compensated according to national legislation.

A grievance mechanism is available and managed by the Environmental Regional Unit.

**Labour standards:** Israel is a member of the ILO since 1949 and signatory of all eight fundamental ILO conventions. These have been ratified and transposed into national legislation.

**Occupational Health and Safety:** Israel has extensive occupational health and safety legislation in place, modelled on recognised international health and safety standards. Within the desalination industry, both in terms of construction and operational health and safety the Bank's monitoring experience at the Sorek I and Sorek II, Ashdod and Hadera plants has been positive, with extremely low levels of reported workplace accidents and near misses.

The compliance with both labour and occupational health standards during construction and operation are part of the tender documentation, and thus will be part of the contractual obligations of the concessionaire's and on a back-to-back basis of all first tier suppliers and contractors. Site inspections and reporting on compliance with Occupational health safety and security requirements will be carried out by the WDA's supervision team, as well as the Labour Inspectorate of the Ministry of Labour, Social Affairs and Social Services.

## **Public Consultation and Stakeholder Engagement**

The Israeli EIA process is integrated into the planning system, and as such governed under the Planning and Building Law. Public consultation took place at various stages during the preparation of the EIA report. Any person or entity can submit comments/reservations with regard to the plan and the EIA report, which must be discussed in a public hearing and, if necessary, investigated by a special investigator as prescribed by the law.

The assessment carried out during the preparation of the Partial National Master Plan for possible seawater desalination plant sites (NMP 34/B/2) complied with Israeli procedures and included public participation as well as consultations with NGOs. NGOs were also represented in the National Planning Committee (NPC) that made the final decision on the location of the SWRO plant taking into account the result of the consultations and hearings.

## **Other Environmental and Social Aspects**

### *Cultural heritage*

Under the Article 29 of the Israeli Antiquities Law – 1978, within the affected areas trial trenching will have to be conducted for the purpose of measuring the scope and type of antiquities on the land. The trial trenching will have to be conducted under close supervision of an IAA archaeologist. In addition to the above outlined requirements, the issued tender documentation also includes a detailed Chance Find procedure, to be followed during construction.



Luxembourg, 04/05/2022

## Conclusions and Recommendations

The results and recommendations of the EIA, which cover the Western Galilee plant, are acceptable to the Bank and follow acceptable environmental and social practices.

The project will have a positive social impact and will contribute to the country's adaptation to climate change conditions, in a water stressed area.

With the following conditions in place, the Project is acceptable for financing in environmental and social terms.

### Disbursement conditions

N/A

### Undertakings

- The promoter will implement the project in line with EIB environmental and social standards
- The promoter shall ensure that the Project (including all works performed by the contractors) is carried out in accordance with the provisions contained in the ESIA documents, associated management and action plans;
- The promoter shall notify the Bank, within 2 days after its occurrence, of any significant environmental, occupational health and safety relevant event; and within 30 days provide to the Bank a summary report that includes a description of such significant event, and the measures that the promoter is taking or plans to address the event and prevent any future similar events; and
- The promoter shall comply with the applicable laws, ILO labour standards and EIB standards and ensure that relevant contracts, i.e. the EPC contract as well as sub-contracts financed under the Project comply with these undertakings.