



# PWP's Water 7-YEAR STATEMENT (2025 – 2031)

(Issue 19)

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## GLOSSARY

APSR	Authority for Public Services Regulation, Sultanate of Oman
COD	Commercial operation date
NDS	Nama Dhofar Services Company
IWP	Independent water project
IWPP	Independent water and power project
$m^3$	Cubic metre(s)
$m^3/d$	Cubic metres per day
MIS	Main Interconnected System
MISC	Majis Industrial Services Company (SAOC)
MSF	Multi-stage flash (desalination technology)
NWS	Nama Water Services Company
PWPA	Power and water purchase agreement
PWP	Nama Power and Water Procurement Company
RFP	Request for Proposal
RFQ	Request for Qualification
RO	Reverse osmosis (desalination technology)
SCOD	Scheduled Commercial Operation Date

# OVERVIEW

## Introduction

This statement provides a 7-Year outlook for the water demand and the desalinated water supply in the Main Interconnected System (MIS), the Sharqiyah Zone, and the Dhofar Zone.

PWP annually prepares the 7-Year Statement in accordance with Condition 5 of its license. This is Issue 19, for the period from 2025 to 2031; previous issues and additional information are available at the PWP website: [www.omanpwp.om](http://www.omanpwp.om)

## Demand for Water

In the MIS, peak water demand is projected to increase at 4% per year, rising from 1,170 thousand m<sup>3</sup>/d in 2024 to approximately 1,503 thousand m<sup>3</sup>/d in 2031. In the Sharqiyah Zone, peak water demand is expected to increase by 2% per year, from 157 thousand m<sup>3</sup>/d in 2024 to 175 thousand m<sup>3</sup>/d in 2031.

In Dhofar Zone, peak water demand is expected to grow at 4% per year, from 191 thousand m<sup>3</sup>/d in 2024 to 254 thousand m<sup>3</sup>/d in 2031.

## Desalinated Water Requirements

In the MIS, Ghubrah III IWP with a capacity of 300,000 m<sup>3</sup>/d is currently under construction and is expected to commence commercial operation in 2027. Additionally, Nama Water Services (**NWS**) is considering the potential for an additional capacity of 150,000 m<sup>3</sup>/d in Sohar Zone.

In Dhofar Zone, Nama Dhofar Services (**NDS**) has requested PWP to develop the Dhofar Water 2030 IWP in Raysut with a capacity range of 80,000 m<sup>3</sup>/d to 100,000 m<sup>3</sup>/d to be operational by 2030.

## Procurement Activities

To address projected capacity deficits and ensure a reliable water supply, PWP is planning to procure the following IWPs over the coming years;

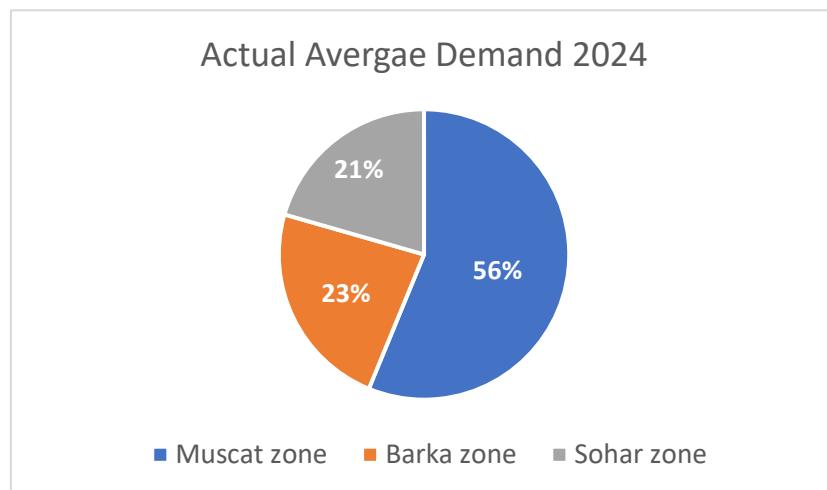
1. Dhofar Water 2027 IWP
2. Dhofar Water 2030 IWP
3. North Batinah IWP

## SECTION 1: MAIN INTERCONNECTED SYSTEM

The Main Interconnected System (MIS) serves the largest population area and the greatest demand for potable water in the Sultanate of Oman. PWP provides desalinated water to NWS, which is responsible for potable water supply to consumers. The MIS is an integrated network that currently serves potable water requirements of the Governorates of Muscat, Batinah South, Batinah North, Ad Dakhiliyah, Al Buraimi, and Ad Dhahirah.

The MIS consists of three supply Zones (Muscat Zone, Barka Zone, and Sohar Zone), each of which has sources of desalinated water under contract to PWP, other NWS water supply sources, and transmission facilities that allow water transfer between Zones under the management of NWS. Muscat Zone represents the highest relative share of the MIS water demand among the three zones based on the actual demand for 2024, representing 56%, while Barka Zone comes second, representing 23%. Sohar Zone, on the other hand, represents only 21 % as shown in the figure 1 below.

**Figure 1 The MIS Average Water Demand Projections classified By Zones**



**Muscat Zone** includes water demands of the Governorate of Muscat. The current operational desalinated water sources are Ghubrah II IWP, Qurayyat IWP, potential transfers from Barka Zone, and NWS sources including Ghubrah Temporary RO and Qurayyat Small RO plant. The Ghubrah Temporary RO has provided 20,000 m<sup>3</sup>/d since the summer of 2023 and is expected to increase to 30,000 m<sup>3</sup>/d by 2025 until 2027. Additionally, Qurayyat small RO plant with 11,000 m<sup>3</sup>/d capacity is expected to operate until 2029.

**Barka Zone** includes water demands of the Governorates of Batinah South and Ad Dakhiliyah. The current sources of desalinated water for this Zone are Barka I IWPP (MSF), Barka II IWPP, Barka IV IWP, Barka V IWP, and with potential transfers from Sohar Zone.

**Sohar Zone** includes water demands of the Governorates of Batinah North, Al Buraimi, and Ad Dhahirah. The current sources of desalinated water for this Zone are Sohar IV IWP, and with the potential supplementary transfers from Barka Zone.

### 1.1 Demand for Water

NWS has provided PWP with projections of average and peak water demand for MIS as shown in Figure 2 below. Peak demand represents the average daily demand (including network losses) during the week on which the highest demand of the year is present.

NWS's projections take into account changes in population growth, the expansion of transmission and distribution networks, and increases in per capita water consumption. According to NWS, its forecasts are based on the official population projections issued by the National Centre for Statistics and Information for the Sultanate of Oman, which are updated periodically.

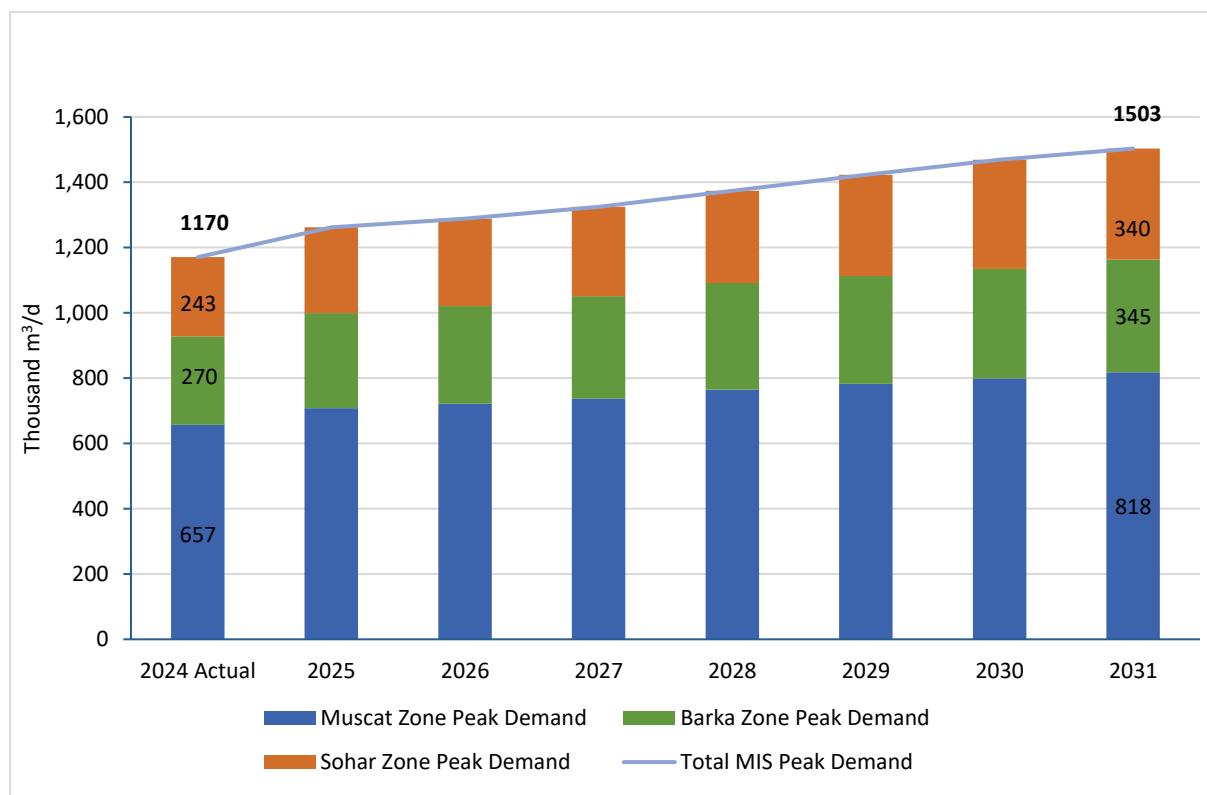
The average water demand for MIS in 2024 was approximately 1,052,000 m<sup>3</sup>/d, which is 51,000 m<sup>3</sup>/d lower than NWS's last year forecast.

NWS expects an average annual water demand growth of approximately 3% in MIS during the forecast period until 2031. By Zone, Sohar Zone is projected to have the highest average annual water demand growth of approximately 5%. This increase is attributed to the expected network expansion in Al Dhahirah, along with the expected population and economic growth in the zone.

NWS anticipates a rise in the average demand for water over the next 6 years compared to previous forecasts. Specifically, it expects a cumulative increase of 147,000 m<sup>3</sup>/d in during (2025-2030). This projected increase is primarily attributed to higher rates of water network losses rates in Muscat Zone.

NWS regularly reviews its forecasts by updating and upgrading its forecasting models. This can involve updating assumptions or modifying calculation methods.

**Figure 2 Water Demand Projections – MIS**



	2024 <sup>a</sup>	2025	2026	2027	2028	2029	2030	2031	Average Growth (%)
Thousand m <sup>3</sup> /d									
<b>Muscat Zone</b>									
Peak Demand	657	708	722	738	765	782	799	818	3%

	2024 <sup>a</sup>	2025	2026	2027	2028	2029	2030	2031	Average Growth (%)
Average Demand	591	636	647	661	682	697	711	727	3%
<b>Barka Zone</b>									
Peak Demand	270	292	299	314	326	331	336	345	4%
Average Demand	244	263	269	282	291	294	298	305	3%
<b>Sohar Zone</b>									
Peak Demand	243	262	267	273	283	310	334	340	5%
Average Demand	216	232	236	241	248	270	290	295	5%
<b>Total MIS</b>									
<b>Peak Demand</b>	<b>1,170</b>	<b>1,262</b>	<b>1,288</b>	<b>1,325</b>	<b>1,374</b>	<b>1,422</b>	<b>1,469</b>	<b>1,503</b>	<b>4%</b>
<i>Change from 2024-2031 Statement</i>	<i>(57)</i>	<i>10</i>	<i>13</i>	<i>16</i>	<i>23</i>	<i>34</i>	<i>46</i>		
<b>Average Demand</b>	<b>1,052</b>	<b>1,132</b>	<b>1,153</b>	<b>1,183</b>	<b>1,222</b>	<b>1,262</b>	<b>1,299</b>	<b>1,328</b>	<b>3%</b>
<i>Change from 2024-2031 Statement</i>	<i>(51)</i>	<i>10</i>	<i>14</i>	<i>18</i>	<i>24</i>	<i>35</i>	<i>46</i>		

<sup>a</sup> The Average Demand is based on actual 2024 outturns (desalination and underground water supply) while the Peak Demand is estimated using peak factor

## 1.2 Water Supply Sources

The sources of water supply include existing water desalination plants, new desalination plants (under development or construction), and NWS sources. The desalination sources under contract with PWP in the MIS are summarized in Table 1.

PWP's contracted sources of desalinated water in the MIS are classified by Zones as follows:

### *Muscat Zone:*

**Ghubrah II IWP.** Owned by Muscat City Desalination Company and operated under a WPA with PWP, the plant has a contracted desalination capacity of 191,000 m<sup>3</sup>/d using RO technology.

**Qurayyat IWP.** Owned by Qurayyat Desalination Company and operated under a WPA with PWP, Qurayyat IWP has a contracted desalination capacity of 200,000 m<sup>3</sup>/d, using RO technology. Qurayyat IWP is currently operated as "pre-COD" water production of 180,000 m<sup>3</sup>/d. Until it achieves its Commercial Operation Date (COD), which is anticipated that the COD will commence in March 2026.

**Ghubrah III IWP.** Awarded in November 2020 to Capital Desalination Company, and to be operated under a WPA with PWP. The plant is under construction, with a contracted desalination capacity of 300,000 m<sup>3</sup>/d using RO technology.

### *Barka Zone:*

**Barka I IWPP (MSF).** Owned by Barka Power and Water company a PWPA with OPWP, the Barka IWPP was originally contracted with a desalination capacity of 91,200 m<sup>3</sup>/d using MSF technology. The purchase agreement for Barka IWPP is renewed on 30 May 2024. The current agreement provides contracted desalinated

capacity of the MSF plant, which is intended to remain on a standby mode, to be utilised as a contingency reserve.

**Barka II IWP.** Owned by SMN Power Barka and operated under a WPA with PWP, the Barka II IWP has a capacity of 120,000 m<sup>3</sup>/d using RO technology.

**Barka IV IWP.** Owned by Barka Desalination Company and operated under a WPA with PWP, Barka IV IWP utilises RO technology with a contracted capacity of 281,000 m<sup>3</sup>/d.

**Barka V IWP.** Owned by GS Inima Barka 5 Desalination Company and operated under a WPA with PWP, the Barka V IWP has a capacity of 100,000 m<sup>3</sup>/d using RO technology.

*Sohar Zone:*

**Sohar IV IWP.** Owned by Myah Gulf Desalination Company and operated under a WPA with PWP, Sohar IV IWP utilises RO technology with a contracted capacity of 250,000 m<sup>3</sup>/d .

**Table 1 Water Desalination Plant - MIS**

	Contracted Capacity	Contract Type	Plant Owner	Plant Status	Technology	Contract Expiry
Barka I IWPP	91,200 m <sup>3</sup> /d	PWPA	Barka Power and Water company	Operational	MSF	2032
Barka II IWPP	120,000 m <sup>3</sup> /d	WPA	SMN Barka Power Co. (SAOC)	Operational	RO	2032
Barka IV IWP	281,000 m <sup>3</sup> /d	WPA	Barka Desalination Co. (SAOC)	Operational	RO	2038
Barka V IWP	100,000 m <sup>3</sup> /d	WPA	GS Inima Barka 5 Desalination Company	Operational	RO	2043
Ghubrah II IWP	191,000 m <sup>3</sup> /d	WPA	Muscat City Desalination Co. (SAOC)	Operational	RO	2034
Ghubrah III IWP	300,000 m <sup>3</sup> /d	WPA	Capital Desalination Company (SAOC)	Under construction	RO	2046
Qurayyat IWP	200,000 m <sup>3</sup> /d	WPA	Qurayyat Desalination Co. (SAOC)	Under construction	RO	2037
Sohar IV IWP	250,000 m <sup>3</sup> /d	WPA	Myah Gulf Desalination Co. (SAOC)	Operational	RO	2038

In addition to the sources under contract with PWP, NWS operates wellfields at various locations within the MIS, which help reduce the reliance on desalination capacity. The required production capacities from these sources are presented in aggregate by year in Figures 3, 4, and 5. It was observed that in 2025 and 2026, the extraction rate from the wellfields increases significantly until Ghubrah III IWP operated full capacity in 2027. This is due to the need for these sources to meet the growing water demand.

### 1.3 Resources Adequacy and Development Plan

The desalination capacity expansion plan aims to meet peak water demand, while maintaining a reserve margin (the headroom factor) to fulfil supply security requirements. NWS periodically re-assesses the reserve margin required to achieve the targeted service level, which may vary by region and year. This re-assessment considers several factors, including planned and forced operational outages and uncertainty in demand forecasts. The reserve margin is set at around 2.7% in 2025 and will increase to 5.7% in 2031, rising by approximately 0.5% annually.

PWP's assessment of sources adequacy and development plans is presented by the supply Zone. This analysis shows the extent of transfers between Zones, inter-zonal reserve sharing, and constraints that are otherwise not evident in a summary presentation of the MIS.

#### *Muscat Zone*

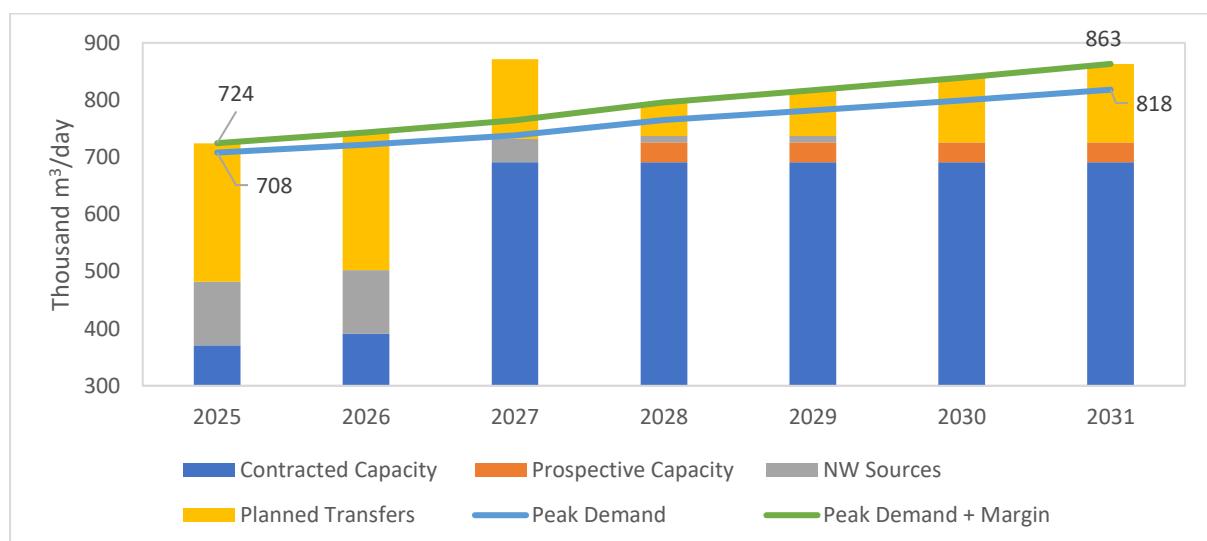
The Muscat Zone will be supplied by Ghubrah II IWP, Qurayyat IWP, NWS sources (Ghubrah Temporary, Wadi Dhayiqah and wellfields), and transfers from Barka Zone. Qurayyat IWP is currently delivering commercial water as "pre-COD" until its COD is achieved, which is expected to start in March 2026. The local sources within the Muscat Zone are not sufficient to meet the forecasted demand, necessitating water transfers from Barka Zone to achieve balance requirements.

There are two existing water transmission lines from the Barka Zone to the Muscat Zone. One is a direct transmission line from Barka to Aseeb with a capacity of 100,000 m<sup>3</sup>/d. The other is a shared transmission line between Muscat and Ad Dakhiliyah governorate with a capacity of up to 312,000 m<sup>3</sup>/d.

The combined transfers of the available capacity of both transmission lines is approximately 242,000 m<sup>3</sup>/d, which is expected to be transferred from Barka to Muscat in 2025. This capacity is expected to decrease to its lowest level in 2028 following the commercial operation of Ghubrah III IWP in 2027 and Wadi Dhayiqah in 2028. However, the transfers will subsequently increase again as a result of the accelerated growth in the water demand in the Muscat Zone.

Figure 3 provides a summary of annual water supply requirements and supply sources in the Muscat Zone. For the Muscat Zone, the Barka transfers are required to meet the peak demand plus margin.

**Figure 3 Sources Adequacy and Development Plan – Muscat Zone**



	2025	2026	2027	2028	2029	2030	2031
<b>Muscat Zone</b>	Thousand m <sup>3</sup> /day						
Average Demand	636	647	661	682	697	711	727
Peak Demand	708	722	738	765	782	799	818
Peak Demand + Margin	724	743	765	796	817	839	863
<b>Contracted Capacity</b>							
Ghubrah II IWP	191	191	191	191	191	191	191
Qurayyat IWP <sup>a</sup>	180	200	200	200	200	200	200
Ghubrah III IWP <sup>b</sup>	-	-	300	300	300	300	300
<b>Prospective Capacity</b>							
Wadi Dhayiqah <sup>c</sup>	-	-	-	35	35	35	35
<b>NWS Sources</b>							
Required Wells Supply <sup>d</sup>	71	71	-	-	-	-	-
Ghubrah Temporary RO	30	30	30	-	-	-	-
Qurayyat Small RO plant	11	11	11	11	11	-	-
<b>Planned Transfers</b>							
Transfers from Barka to Muscat	242	240	140	59	80	113	137
<b>Total Muscat Zone Capacity +/- Planned Transfers</b>	<b>724</b>	<b>743</b>	<b>871</b>	<b>796</b>	<b>817</b>	<b>839</b>	<b>863</b>
Reserve including Planned Transfers over Peak Demand ( <b>shortfall</b> )	16	21	133	31	35	40	45
Reserve including Planned Transfers over Peak Demand + Margin ( <b>shortfall</b> )	-	<b>-1</b>	107	-	-	-	-

<sup>a</sup>The full-capacity of 200,000 m<sup>3</sup>/d is expected to be achieved before summer 2026.

<sup>b</sup>The full capacity of 300,000 m<sup>3</sup>/d is expected to be available before summer 2027.

<sup>c</sup>Wadi Dhayiqah , NWS sources with prospective capacity 35,000 m<sup>3</sup>/day , expected SCOD in 2028

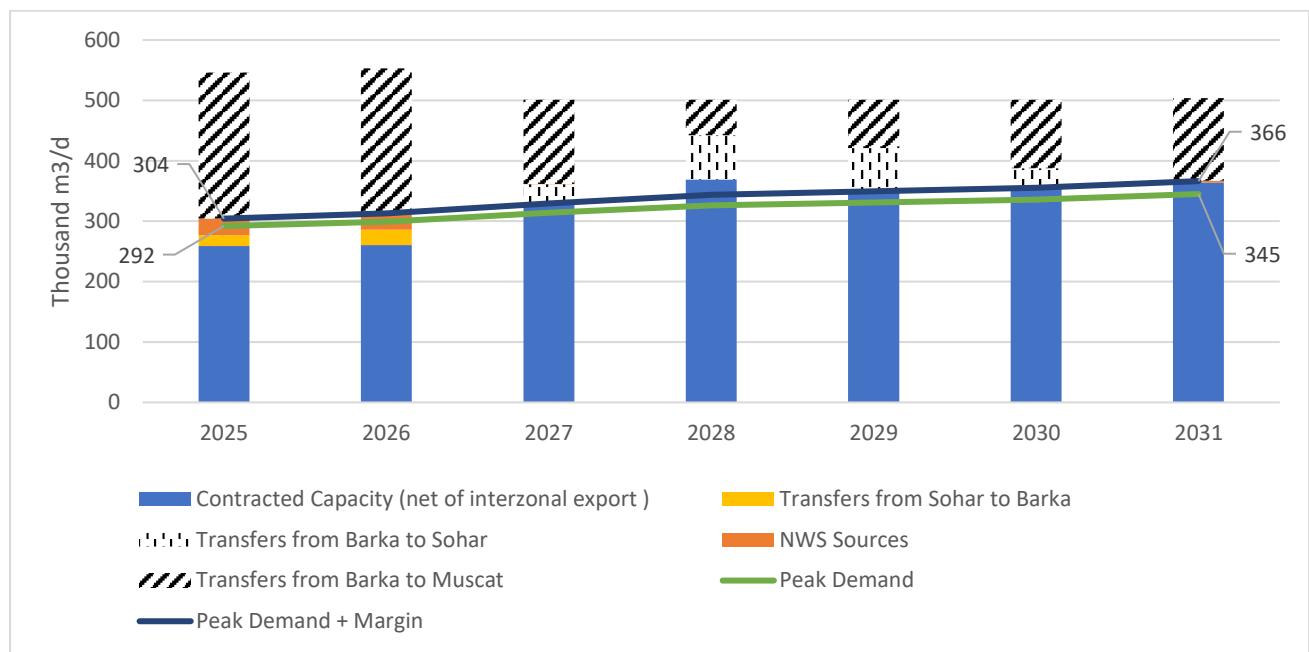
<sup>d</sup>The wells will be used up to the maximum capacity during peak demand periods when the desalination capacity is not sufficient to meet the demand. NWS is responsible of maintaining and operating these wells to overcome supply deficit.

<sup>e</sup>Qurayyat Small RO plant was Majis temporary plant in Sohar zone with the same capacity.

## Barka Zone

The Barka Zone is currently supplied by Barka II IWP, Barka IV IWP, Barka V, NWS -operated wellfields source, and transfers from Sohar Zone. These sources currently exceed the demand requirements within the Barka Zone and enable transfers to support the needs of Muscat Zone and Sohar Zone.

Figure 4 below presents the annual water supply requirements and sources in the Barka Zone. Barka IWPP (MSF) PPA was renewed in 2024, for emergency support. The total contracted capacities of around 591,000 m<sup>3</sup>/d are expected to secure sufficient capacity to provide for demand growth in this supply Zone up to 2031.

**Figure 4 Sources Adequacy and Development Plan – Barka Zone**

	2025	2026	2027	2028	2029	2030	2031
<b>Barka Zone</b>	Thousand m3/d						
Average Demand	263	269	282	291	294	298	305
Peak Demand	292	299	314	326	331	336	345
Peak Demand + Margin	304	313	329	344	349	355	366
<b>Contracted Capacity</b>							
Barka I IWPP (MSF) <sup>a</sup>	-	-	-	-	-	-	-
Barka II IWP <sup>b</sup>	120	120	120	120	120	120	120
Barka IV IWP	281	281	281	281	281	281	281
Barka V IWP	100	100	100	100	100	100	100
<b>NWS Sources</b>							
Required Wells Supply <sup>c</sup>	27	27	-	-	-	-	3
<b>Planned Transfers</b>							
Transfers from Barka to Muscat	-242	-240	-140	-59	-80	-113	-137
Transfers from Sohar to Barka	18	25	-	-	-	-	-
Transfers from Barka to Sohar	-	-	-32	-73	-72	-32	-
<b>Total Barka Zone Capacity +/- Planned Transfers</b>	<b>304</b>	<b>313</b>	<b>329</b>	<b>369</b>	<b>349</b>	<b>355</b>	<b>367</b>
Reserve including Planned Transfer over Peak Demand ( <b>shortfall</b> )	12	14	15	43	18	19	22
Reserve including Planned Transfer over Peak Demand + Margin ( <b>shortfall</b> )	-	-	-	26	-	-	-

a Barka IWPP MSF The contract was renewed in May 2024 for a period of 9 years, with renewals every 3 years. Its is available as emergency support.

b Barka II IWP will expire on 31st March 2032.

cThe wells will be used up to the maximum capacity during peak demand periods when the desalination capacity is not sufficient to meet the demand. NWS is responsible of maintaining and operating these wells to overcome supply deficit.

## Sohar Zone

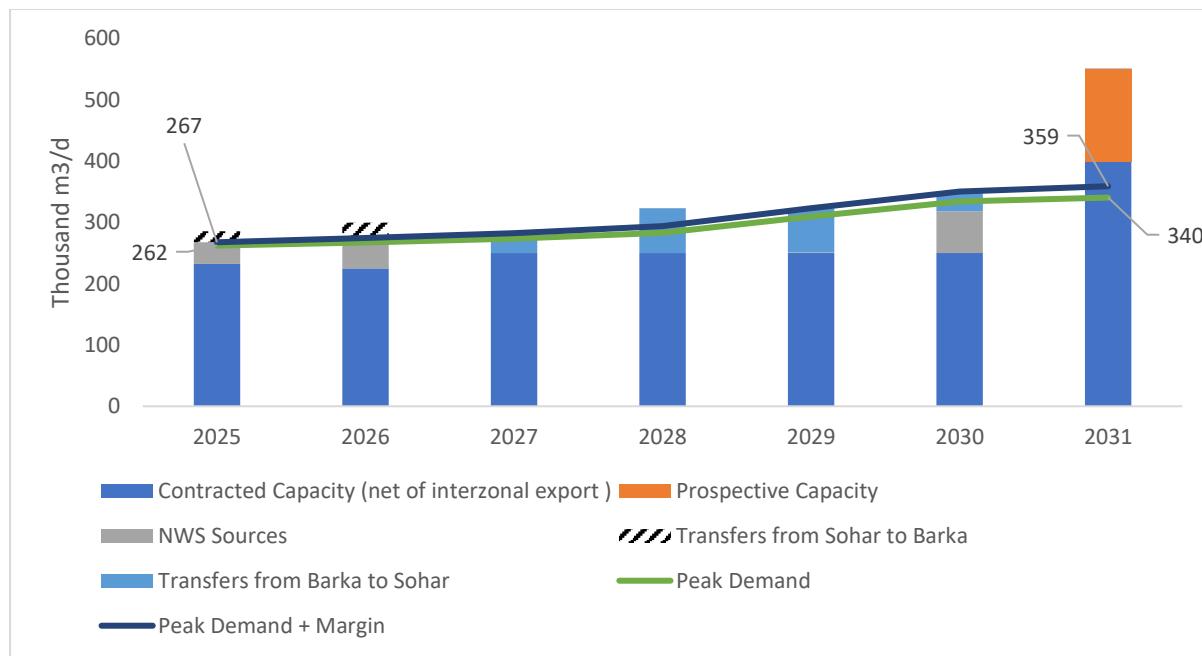
The Sohar Zone is currently supplied by the existing Sohar IV IWP, NWS sources which include wellfields supply and transfers from Barka Zone.

The available sources have sufficient capacity to meet water requirements until 2030. NWS wellfields capacities are needed to meet the peak demand plus reserve margin.

In 2031, a new Northern Batinah IWP is also being considered with a capacity of 150,000 m<sup>3</sup>/d, which would be sufficient to cover the demand growth in the coming years. Procurement activities would begin after receiving a confirmation of the capacity requirement from NWS.

Figure 5 provides a summary of annual water supply requirements and supply sources in Sohar Zone. The peak demand with the reserve margin in Sohar Zone during the years 2025 -2031 can be met with the existing and planned capacities.

**Figure 5 Sources Adequacy and Development Plan – Sohar Zone**



	2025	2026	2027	2028	2029	2030	2031
<b>Sohar Zone</b>							
Thousand m3/d							
Average Demand	232	236	241	248	270	290	295
Peak Demand	262	267	273	283	310	334	340
Peak Demand + Margin	267	275	282	294	323	350	359
<b>Contracted Capacity</b>							
Sohar IV IWP	250	250	250	250	250	250	250
<b>Prospective Capacity Contracts</b>							
Northern Batinah IWP							150
<b>NWS Sources</b>							
Required Wells Supply <sup>a</sup>	35	50	-	-	1	68	1

	2025	2026	2027	2028	2029	2030	2031
<b>Planned Transfers</b>							
Transfers from Sohar to Barka	-18	-25	-	-	-	-	-
Transfers from Barka to Sohar	-	-	32	73	72	32	-
<b>Total Sohar Zone Capacity +/- Planned Transfers</b>	<b>267</b>	<b>275</b>	<b>282</b>	<b>323</b>	<b>323</b>	<b>350</b>	<b>401</b>
Reserve including Planned Transfers over Peak Demand ( <b>shortfall</b> )	5	7	9	40	13	16	61
Reserve including Planned Transfers over Peak Demand + Margin ( <b>shortfall</b> )	-	-	-	29	-	-	42
a The wells will be used up to the maximum capacity during peak demand periods when the desalination capacity is not sufficient to meet the demand includes Batinah North wells, Buraymi wells, and Dhahirah wells. NWS is responsible of maintaining and operating these wells to overcome supply deficit.							

## SECTION2: SHARQIYAH ZONE

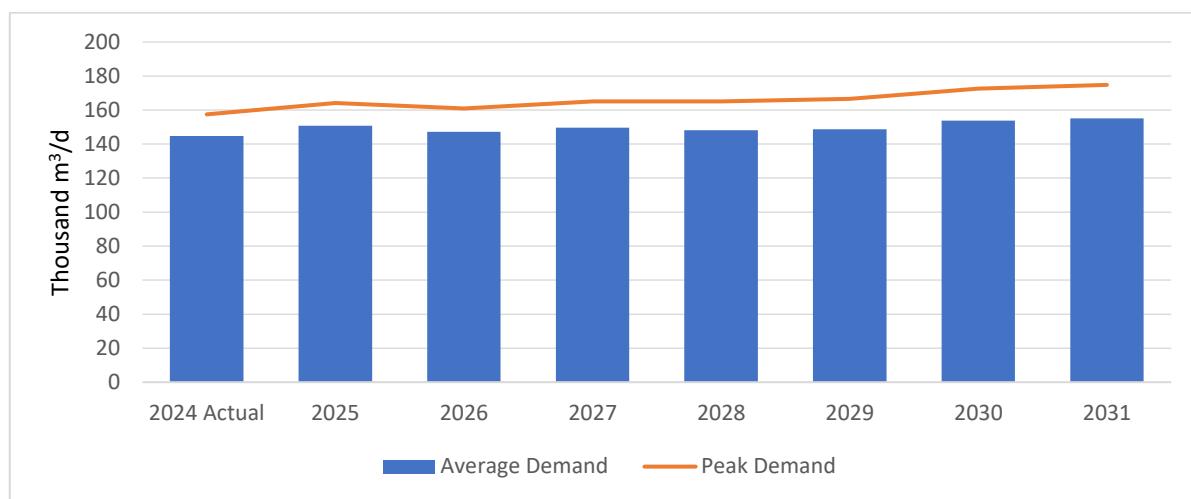
Sharqiyah Zone includes the water demands of the Sharqiyah North and Sharqiyah South Governorates excluding Wilayat Musairah. The Zone is not connected with the MIS. Currently, PWP supplies desalinated water to NWS from two plants Sur II IWP and Aseelah IWP with a total capacity of 212,000 m<sup>3</sup>/d.

### 2.1 Demand for Water

Figure 5 below shows NWS water demand forecast for Sharqiyah Zone. Sharqiyah Zone served by Sharqiyah Water Network that is connected to water desalination plants under contract with PWP.

The average actual water consumption in Sharqiyah Zone for 2024 is lower by only 1,000 m<sup>3</sup>/d compared with the estimates provided in the last 7 Year Statement, resulting in an average consumption of approximately 145,000 m<sup>3</sup>/d and a peak consumption of 157,000 m<sup>3</sup>/d in 2024. The significant increase in water demand anticipated for 2025 is attributed to the planned expansion of the distribution networks in the Wilayat of South Sharqiyah (Al-Kamil and Al-Wafi, Jalan Bani Bu Ali, and Jalan Bani Bu Hassan). Additionally, the growth in water demand is expected to slow down in the coming years due to anticipated improvement in reducing losses.

As shown in the Figure 6 below, the average annual water demand is expected to grow by 1% over the forecast period to reach 155,000 m<sup>3</sup>/d in 2031, while the peak demand is growing slightly faster rate of 2% per year to reach 175,000 m<sup>3</sup>/d in 2031.

**Figure 6 Water Demand Projections – Sharqiyah Zone**

	2024 <sup>a</sup>	2025	2026	2027	2028	2029	2030	2031	Average Growth (%)
<b>Sharqiyah Zone</b>									
<b>Peak Demand</b>	<b>157</b>	<b>164</b>	<b>161</b>	<b>165</b>	<b>165</b>	<b>167</b>	<b>173</b>	<b>175</b>	<b>2%</b>
<i>Change from 2024-2031 Statement</i>	<i>(1)</i>	<i>6</i>	<i>3</i>	<i>4</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	
<b>Average Demand</b>	<b>145</b>	<b>151</b>	<b>147</b>	<b>150</b>	<b>148</b>	<b>149</b>	<b>154</b>	<b>155</b>	<b>1%</b>
<i>Change from 2024-2031 Statement</i>	<i>(1)</i>	<i>6</i>	<i>3</i>	<i>4</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	

<sup>a</sup> The Average Demand is based on actual 2024 outturns (desalination and underground water supply) while the Peak Demand is estimated using peak factor.

## 2.2 Water Supply Sources

The supply sources presented to meet water demand include existing water desalination plants and NWS sources. The sources that are under contract with PWP in Sharqiyah Zone are indicated in Table 2 and described as follows:

**Sur II IWP.** Owned and operated by Sharqiyah Desalination Company under a WPA with PWP, Sur II IWP has contracted capacity of 132,000 m<sup>3</sup>/d, using RO technology.

**Aseelah IWP.** Owned and operated by Al Aseelah Desalination Company under a WPA with PWP, Aseelah IWP has contracted capacity of 80,000 m<sup>3</sup>/d, using RO technology.

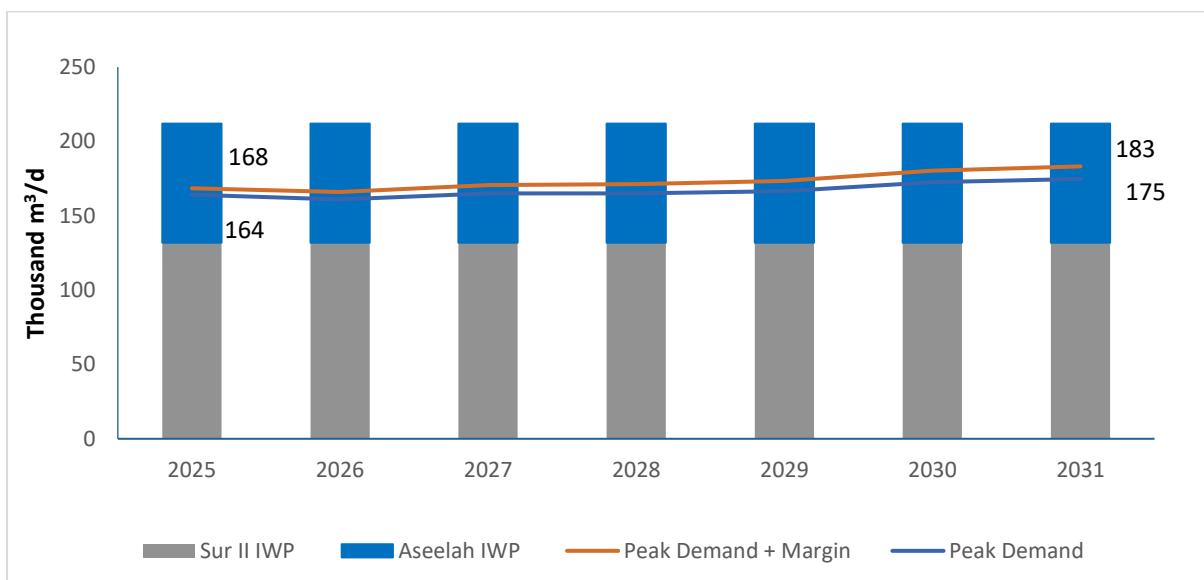
In addition to the contracted capacity with PWP, NWS has wellfield resources in various locations. These resources can be used, to a limited extent, for water supply when desalinated water capacity does not meet the peak demand plus margin in the Sharqiyah Zone.

**Table 2 Water Desalination Plants - Sharqiyah Zone**

Project Name	Contracted Capacity	Contract Type	Project Company	Project Status	Technology	Contract Expiry
<b>Sur II IWP</b>	132,000 m <sup>3</sup> /d	WPA	Sharqiyah Desalination Company (SAOG)	Operational	RO	2036
<b>Aseelah IWP</b>	80,000 m <sup>3</sup> /d	WPA	Al Asilah Desalination Company (SAOC)	Operational	RO	2042

**2.3 Resource Adequacy and Development Plan**

The annual average growth for the forecasted peak demand plus margin (capacity target) for the Sharqiyah Zone is expected to be 1%.

**Figure 7 Resource Adequacy and Development Plan – Sharqiyah Zone**

	2025	2026	2027	2028	2029	2030	2031
<b>Sharqiyah Zone</b>							
Average Demand	151	147	150	148	149	154	155
Peak Demand	164	161	165	165	167	173	175
Peak Demand + Margin	168	166	171	171	173	180	183
<b>Contracted Capacity</b>							
Sur II IWP	132	132	132	132	132	132	132
Aseelah IWP	80	80	80	80	80	80	80
<b>NWS sources</b>							
Required Wells Supply	-	-	-	-	-	-	-
<b>Total Sharqiyah Zone Capacity including NWS Sources</b>	<b>212</b>						
Reserve over Peak Demand ( <b>Shortfall</b> )	48	51	47	47	45	39	37
Reserve over Peak Demand + Margin ( <b>Shortfall</b> )	44	46	41	41	39	32	29

### SECTION 3: DHOFAR ZONE

NDS is responsible for potable water supply to consumers, and managing the development, operation, and maintenance of the Dhofar Water Network (Wilayat of Salalah, Wilayat of Taqah, and Wilayat of Mirbat). PWP supplies desalinated water to NDS from the contracted capacities of Salalah IWPP and Salalah III IWP.

#### 3.1 Demand for Water

The water demand projections for Dhofar water network, as provided by NDS and shown in Figure 8, include the aggregated potable water demands of Wilayats Salalah, Taqah and Mirbat.

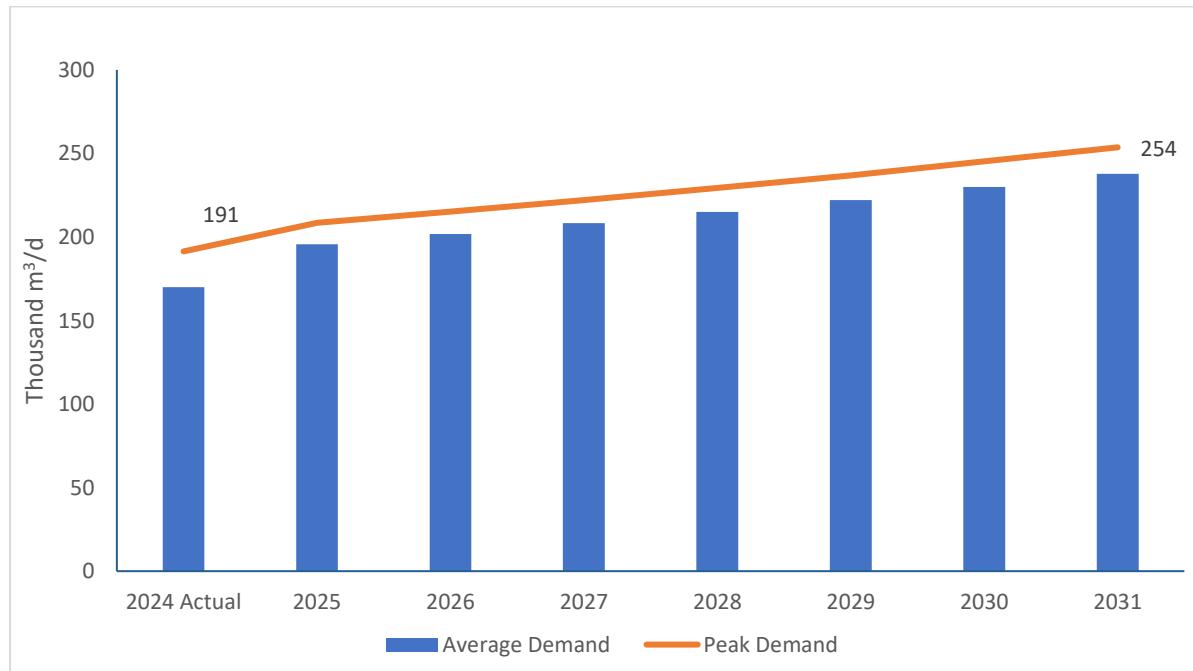
The forecast demand consists of two parts:

- (1) Cities of Salalah, Taqah, and Mirbat, which comprise demand served by the existing water distribution network; and
- (2) Jabal of Salalah, Taqah, and Mirbat, which represents the demand in Jabal areas (mountains) that are partially connected to the network. At present, the Jabal demand is mostly served by local wellfields. NDS plans to expand its network to supply the Jabal communities during the forecast period.

NDS intends to expand the existing water network to cover all areas in the Jabal (mountain) and also evaluating the feasibility of expanding the network to neighbouring Wilayats such as Thumrait and Sadah. The water supply plan includes a scenario accounting for potential development.

The average actual water demand (including losses) for 2024 was 19,000 m<sup>3</sup>/d lower than the projections provided in the previous 7 Year Statement, Issue 18. Meanwhile, the peak demand is expected to grow at a rate of 4% per year, resulting in a peak demand of 254,000 m<sup>3</sup>/d in 2031.

**Figure 8 Water Demand Projections – Dhofar Zone**



	2024a	2025	2026	2027	2028	2029	2030	2031	Average Growth (%)
<b>Peak Demand</b>									
Thousand m <sup>3</sup> /d									
Cities	133	152	155	158	161	164	168	171	4%
Jabal	58	57	60	64	68	73	77	82	5%
Total	191	209	215	222	229	237	245	254	4%
Change from 2024-2030 Statement	(10)	-	-	-	-	-	-	-	
<b>Average Demand</b>									
Cities	120	142	145	148	150	153	157	160	4%
Jabal	50	54	57	61	65	69	73	78	7%
Total	170	196	202	208	215	222	230	238	5%
Change from 2024-2030 Statement	(19)	-	-	-	-	-	-	-	
a The Average Demand is based on actual 2024 outturns (desalination and underground water supply) while the Peak Demand is estimated using peak factor.									

### 3.2 Water Supply Sources

The sources of water supply include water desalination plants under contract to PWP and groundwater sources operated by NDS. PWP has two water desalination plants under contract for water supply to NDS. These are described in Table 3 and detailed below:

**Salalah IWPP.** Owned and operated by Sembcorp Salalah Power and Water Company under a PWPA with PWP, Salalah IWPP has a capacity of 68,190 m<sup>3</sup>/d, using RO technology.

**Salalah III IWP.** Owned by Dhofar Desalination Company under a WPA with PWP, Salalah III IWP has a capacity of 113,650 m<sup>3</sup>/d., using RO technology.

In addition to the existing desalination capacity, NDS relies on its groundwater sources to meet the remaining water demand. NDS intends to use desalinated water to meet both average and peak demand requirements while reserving groundwater from wells exclusively for emergency supply.

**Table 3 Water Desalination Plants - Dhofar Water Network**

Project Name	Contracted Capacity	Contract Type	Project Company	Project Status	Technology	Contract Expiry
Salalah IWPP	68,190 m <sup>3</sup> /d	PWPA	Sembcorp Salalah Power & Water Company (SAOC)	Operational	RO	2027 <sup>a</sup>
Salalah III IWP	113,650 m <sup>3</sup> /d	WPA	Dhofar Desalination Company (SAOC)	Operational	RO	2040

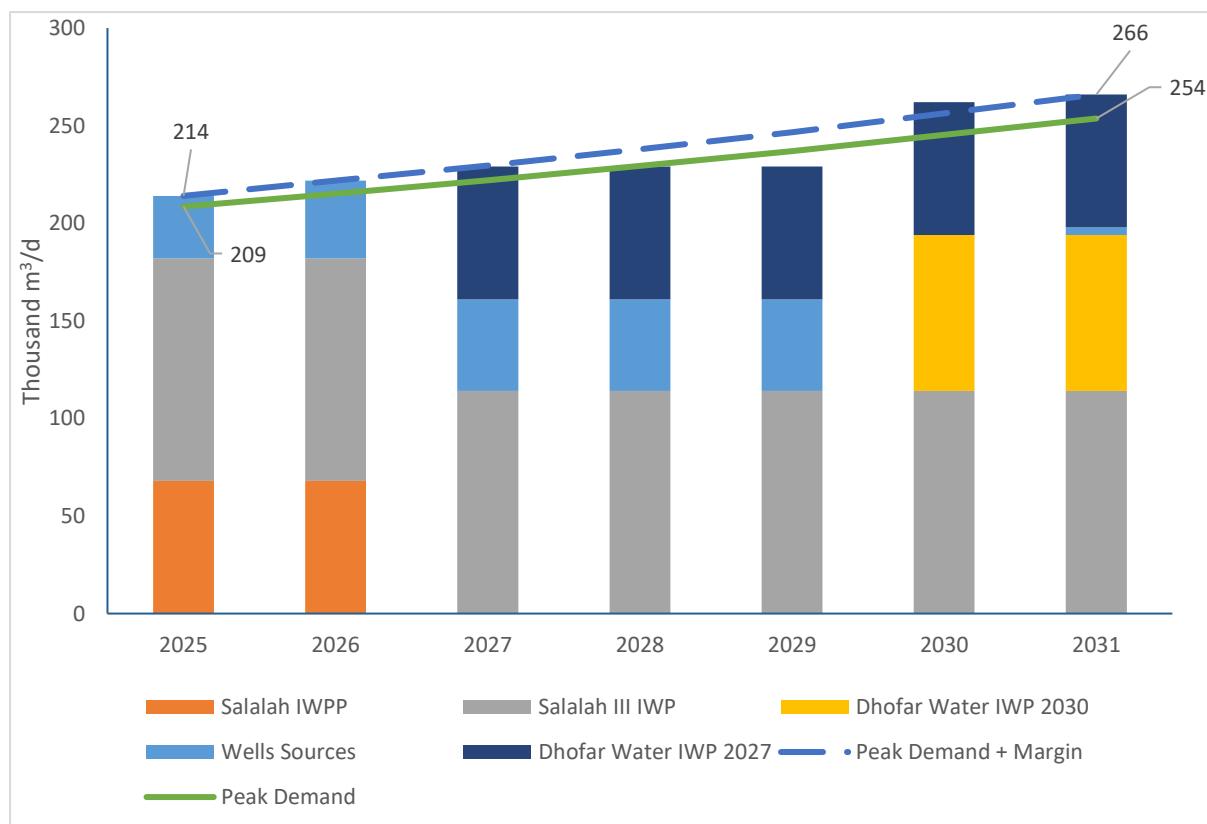
<sup>a</sup> The contract expiry date for Salalah IWPP is in April 2027.

### 3.3 Resource Adequacy and Development Plan

The resource adequacy addresses the demands of Dhofar Cities and Jabal, aligning with NDS's proposed network expansion plan. Due to absence of specified headroom factor, which should be provided by NDS along with the water demand projections, PWP has estimated the capacity target by assuming the same reserve margin (headroom factor) for Sharqiyah Zone. This assumption is based on the similarity between the Sharqiyah and Dhofar zones in terms of water demand levels, the number of desalination plants, and the volume of their contracted capacities. The estimated headroom factors start at approximately 2.6% in 2025, increasing to 4.5% by 2031.

Figure 9 below shows the balance of supply and demand, taking into account the network expansion to include water demand in the mountain areas. The figure also indicates that the network continues to rely on groundwater available in the mountain, with demand projected to increase from 32 m<sup>3</sup>/d to 47 m<sup>3</sup>/d, which represents the maximum groundwater available in the mountain. Any additional capacity needed can be secured from groundwater available in some cities. However, this should not be considered as a long term solution.

It is worth mentioning that, as evident from the figure below, PWP seeking to renew the expiring contract of Salalah IWPP, which will expire in April 2027. Additionally, PWP has received a request from NDS to provide an additional capacity estimated between 80,000 and 100,000) m<sup>3</sup>/d by 2030, to be located in the western region of Salalah, specifically in Raysut area. Figure 9 Resource Adequacy and Development Plan – Dhofar Zone



	2025	2026	2027	2028	2029	2030	2031	Thousand m <sup>3</sup> /d
Peak Demand - Cities								
Peak Demand - Cities	152	155	158	161	164	168	171	
Peak Demand - Jabal	57	60	64	68	73	77	82	
<b>Total Peak Demand</b>	<b>209</b>	<b>215</b>	<b>222</b>	<b>229</b>	<b>237</b>	<b>245</b>	<b>254</b>	
<b>Total Peak Demand + Margin</b>	<b>214</b>	<b>222</b>	<b>230</b>	<b>238</b>	<b>247</b>	<b>256</b>	<b>266</b>	

	2025	2026	2027	2028	2029	2030	2031
<b>Contracted Capacity</b>							
Salalah IWPP	68	68	-	-	-	-	-
Salalah III IWP	114	114	114	114	114	114	114
<b>Prospective Capacity</b>							
Dhofar Water IWP 2027 <sup>a</sup>	-	-	68	68	68	68	68
Dhofar Water IWP 2030 <sup>b</sup>						80	80
<b>NDS Sources</b>							
Required Wells Supply <sup>c</sup>	32	40	47	47	47	0	4
<b>Total Dhofar Zone Capacity including NDS Sources</b>		<b>214</b>	<b>222</b>	<b>229</b>	<b>229</b>	<b>229</b>	<b>262</b>
<hr/>							
Reserve over Peak Demand (Shortfall)	5	7	7	(0)	(8)	17	12
Reserve over Peak Demand + Margin (Shortfall)d	-	-	(1)	(9)	(18)	6	-
<hr/>							
a NDS requested a capacity requirement beyond 2027.							
b NDS considered in its capacity planning an additional capacity requirement of 80,000 m <sup>3</sup> /d in 2030. However, due to the uncertainty of the water demand projections, the additional capacity is expected to be between (80,000 - 100,000) m <sup>3</sup> /d.							
c The expected capacity requirement to be supplied by NDS Mountains Wells (a maximum capacity @ 47,345 m <sup>3</sup> /day) to meet the Peak Demand + Margin.							
d Any Shortfall is expected to be supplied by NDS Cities Wells (a maximum capacity @ 80,416 m <sup>3</sup> /day).							

#### Procurement Activates

PWP's current and near-term procurement activities for water projects include the following, and are summarized in Table 4:

**Dhofar Water IWP 2027.** Following the expiration of Salalah IWPP PWPA in 2027, PWP notes that additional capacity will be required to cover the resulting deficit. Accordingly, PWP will follow the approved procurement strategy by the Authority to procure a capacity of 68,000 m<sup>3</sup>/d for COD in Q2 2027 to prevent any production gap after the expiration of Salalah IWPP.

**Dhofar Water IWP 2030.** PWP initiated the procurement process for this project for a capacity of 80,000 – 100,000 m<sup>3</sup>/d as requested by NDS. The project development process is subjected to confirmation of site allocation and other approvals.

**North Batinah IWP.** In response to the growing demand in the Sohar Zone, PWP expects to start the procurement process for Northern Batinah IWP with a capacity of (150,000 m<sup>3</sup>/d) in 2026, targeting an operational date of 2031 to address the capacity deficit in Sohar Zone. The procurement process is subjected to the confirmation of the site location and other approvals.

**Table 4 Procurement Activities in 2025-2031 - Water Projects**

	System	Capacity (m <sup>3</sup> /day)	RFQ	RFP	Bids Due	Award Anticipated	SCOD
<b>Dhofar Water IWP 2027</b>	Dhofar Zone	68,000	Completed	Completed	Completed	TBD	2027
<b>Dhofar Water IWP 2030</b>	Dhofar Zone	80,000-100,00	TBD	TBD	TBD	TBD	TBD
<b>North Batinah IWP</b>	MIS	150,000	N/A	N/A	N/A	N/A	N/A

### *Summary*

The supply plan meets peak demand and margin requirements in the MIS, Sharqiyah, and Dhofar Zones throughout the forecast period across all three water networks and in different years. Dhofar Zone depends on NDS's resources (wells) to meet the peak demand until the Dhofar water 2030 IWP is available in 2030. Similarly, Sohar Zone depends on transfers from Barka Zone to meet peak demand until the water capacity of Northern Batinah IWP becomes available in 2031.

The margin indicates the percentage rate over the peak demand. The shortfall in some years may be affected by delays in the development of planned projects, necessitating contingency plans with NWS and NDS.

PWP will collaborate with NWS and NDS to identify potential challenges and develop supply mitigation plans as necessary.