PWP's POWER 7-YEAR STATEMENT

(2026 – 2032)

(Issue 20)

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GLOSSARY

APSR	Authority for Public Services Regulation, Sultanate of Oman
ASA	Ancillary Services Agreement
BST	Bulk Supply Tariff
BTU/scf	British thermal units per standard cubic foot
CCGT	Combined-cycle gas turbine
COD	Commercial operation date
CRT	Cost reflective tariff
DR	Demand Response
DPS	Dhofar Power System
NDS	Nama Dhofar Services Company
EE	Energy Efficiency
ESS	Energy Storage System
EWEC	Emirates Water and Electricity Company
EV	Electric vehicles
GCCIA	Gulf Cooperation Council Interconnection Authority
GEF	Grid Emissions Factor
HHV	Higher Heating Value
IPP	Independent Power Project
IPCC	Intergovernmental Panel on Climate Change
IWPP	Independent Water and Power Project
IRECs	International Renewable Energy Certificates
kWh	Kilowatt hour(s)
KSA	Kingdom of Saudi Arabia
LOLH	Loss of load hours
MEM	Ministry of Energy and Minerals
MoHUP	Ministry of Housing and Urban Planning
MIS	Main Interconnected System
MMS	Market Management System
MSF	Multi-stage flash (desalination technology)
MW	Megawatt(s)
MPS	Musandam Power System
NEDC	Nama Electricity Distribution Company
NEGC	Nama Electricity Generation Company
OCGT	Open-cycle gas turbine
OETC	Oman Electricity Transmission Company (SAOC)
PDO	Petroleum Development Oman (LLC)
PPA	Power Purchase Agreement
PSPA	Power Supply Purchase Agreement
PWPA	Power and Water Purchase Agreement
PWP	Nama Power and Water Procurement Company
PV	Photovoltaic
RE	Renewable Energy
REF	Residual Emissions Factor
RFP	Request for Proposal
RFQ	Request for Qualification
RTC	Round-the-Clock
SAC	Sohar Aluminium Company
SCOD	Scheduled Commercial Operation Date
Sm^3	Standard cubic metre(s)
Sm^3/d	Standard cubic metres per day
TWh	Terawatt hour(s)
WRA	Wind Resource Assessment
SEZAD	Special Economic Zone at Duqm

Overview

Introduction

The Oman Power and Water Procurement Company (PWP) is pleased to present the 20th edition of its 7-Year Statement, covering the period from 2026 to 2032. This publication outlines expected developments in electricity demand and generation across the Sultanate's key power systems: the Main Interconnected System (MIS), the Dhofar Power System (DPS), and the Musandam Power System (MPS). In accordance with Condition 5 of PWP's license, this statement is issued annually as a strategic reference for planners, investors, and policymakers involved in Oman's electricity sector.

Oman's power sector is undergoing a major transformation aimed at achieving a more balanced and optimal energy mix that aligned with national sustainability goals and decarbonization objectives. A central focus is the transition to renewable energy, with a national target of generating 30% of electricity from renewable sources by 2030. Based on the current pipeline of utility-scale solar and wind projects, this contribution is expected to reach around 30%, positioning Oman to meet and potentially exceed its national target. In parallel, PWP continues to optimize natural gas utilization, ensuring reliable and efficient electricity procurement.

To support future capacity adequacy and diversification, PWP recognizes the role of Energy Storage Systems (ESS) in capacity planning and peak shaving, particularly as renewable energy penetration increases during daytime hours. These technologies could reduce reliance on conventional peaking plants and improve the efficiency of future capacity additions. PWP is considering multiple technologies for energy storage including Battery Energy Storage System (BESS) and pumped hydropower storage, to provide system flexibility and enhance long-term sustainability. PWP is planning to procure its first utility-scale BESS project to support system adequacy, renewable energy integration, and peak demand management, with an anticipated commercial operation date in 2028. In parallel, the first Pumped Hydro Energy Storage (PHS) project is under procurement and expected to achieve commercial operation by the end of 2032. In addition to the ESS, PWP is also assessing the potential of emerging renewable technologies in the Sultanate of Oman, such as geothermal energy to enhance the energy mix and resources diversification.

Another enabler in this transition was the launch of the first Demand Response (DR) program, as a pilot project targeting bulk load consumers to shift or reduce their electricity consumption during peak demand periods

In addition, PWP continues the operation of region's first wholesale electricity spot market which went alive in early 2022. This platform enables generation resources not under contract with PWP to sell electricity into the national grid, fostering competition, transparency, and procurement efficiency.

These developments are foundational to a more resilient, cost-effective, and dynamic electricity sector. The 7-Year Statement provides detailed analysis of peak demand, generation capacity, fuel requirements, reserve margins, and market trends, supported by data visualizations and forecasts. Previous editions are available at Nama Power & Water Procurement.

Electricity Demand Outlook

Electricity demand across Oman's main power systems is projected to grow significantly between 2026 and 2032, driven by sustained economic growth and the development of large-scale industrial and commercial projects.

In the MIS, peak demand is projected to increase at an average annual rate of 8.8%, rising from 7,863 MW in 2025 to 14,147 MW by 2032. This significant growth is primarily driven by robust GDP expansion, major infrastructure developments, and the anticipated connection of large-scale applicants across priority sectors as part of the national economic diversification agenda. In DPS, peak demand is forecasted to grow at an average rate of 7.9%, increasing from 850 MW in 2025 to 1,450 MW by 2032.

Power Generation Requirements

To meet the projected demand, Oman's power system will undergo significant expansion between 2026 and 2032. PWP's strategy prioritizes a balanced generation mix, including utility-scale renewable energy, energy storage system and high-efficiency thermal capacity. The objective is to ensure long-term capacity adequacy, fuel efficiency, system flexibility, and energy security while supporting the sector's evolving renewable energy and decarbonization targets.

A critical enabler is the 400 kV North–South Interconnect, which links Oman's northern and central regions, including Duqm and Al Wusta. By Q3 2026, this interconnection is expected to extend to the DPS, enabling the integration of MIS and DPS into a single unified national grid.

Renewable Energy Contribution and Fuel Efficiency

The deployment of solar and wind projects over the past period enabled renewable energy contribution to reach around 9% of total electricity production in 2025. This contribution is expected to increase to reach at least 30% by 2030 through the continued deployment of renewable energy projects. Current development trajectories indicate that the contribution could slightly exceed this target, depending on project execution, demand growth, and system readiness.

SECTION 1 DEMAND PROJECTIONS AND RESOURCES PLAN

1. Main Interconnection System (MIS) & Dhofar Power System (DPS)

The Main Interconnected System (MIS), is the largest and most critical electricity network in Oman, as per NEDC report supplying over 1.38 million customers across the Governorates of Muscat, Al Batinah North, Al Batinah South, Ad Dakhiliyah, Ash Sharqiyah North, Ash Sharqiyah South, Ad Dhahirah, Al Buraimi and Al Wusta.

The MIS comprises seventeen contracted power generation facilities, of which thirteen are currently operational, owned and operated by independent companies, contributing firm and non-firm capacity to the grid. These generation assets are supported by the 400/220/132 kV transmission network, owned and operated by the Oman Electricity Transmission Company (OETC), and a unified distribution and supply services structure serving all regions within the MIS.

The system is interconnected with the power system of Petroleum Development Oman (PDO) and also linked regionally via the Abu Dhabi Interconnect, which connects Oman to the power system of the Emirate of Abu Dhabi and other GCC Interconnection Authority (GCCIA) member states. These interconnections enhance the system's flexibility, resilience, and capacity to manage peak demand and emergencies.

The MIS plays a central role in Oman's electricity sector, serving as the backbone of national power supply and enabling the large-scale integration of future generation projects both conventional and renewable. Its extensive geographic reach and strategic interconnections support grid stability, industrial development, and the delivery of reliable electricity to key economic zones such as Sohar and Duqm.

Sohar remains a key industrial hub within the MIS, hosting extensive operations in petrochemicals, manufacturing, and logistics. Duqm strategically positioned along Oman's eastern coastline has recently been integrated into the MIS through the successful completion of Phase 1 of the North-South Interconnect project in Q4 2023. This milestone enhances system connectivity and unlocks significant opportunities for regional growth, industrial development, and grid integration.

The Dhofar Power System (DPS), covers the city of Salalah and surrounding areas in the Governorate of Dhofar, serving around 160,619 electricity customers, as per NDS report.

The DPS comprises three generation facilities, the 132 kV transmission grid that is owned and operated by OETC, and the distribution network which is owned and operated by the Nama Dhofar Services. Nama Dhofar Services also acts as the supplier of electricity for consumers in the DPS.

The DPS is interconnected with the Petroleum Development Oman (PDO) power system via a 132 kV link between Thumrait and Harweel, with transfer capacity up to 150 MW. This interconnection provides important reliability benefits through the sharing of generation reserves. The North-South Interconnect is expected to be extended to Dhofar in Q3 2026.

PWP's role in the DPS is similar to its role in the MIS, which is to economically procure power required by Nama Dhofar Services, respectively, in bulk from generation/production facilities connected to the DPS. PWP is required to ensure that sufficient power generation resources are available to meet Nama Dhofar Services electricity demand. If assessed to be beneficial, PWP is also required to co-procure desalinated water with power generation in joint facilities.

1.1. Electricity Demand

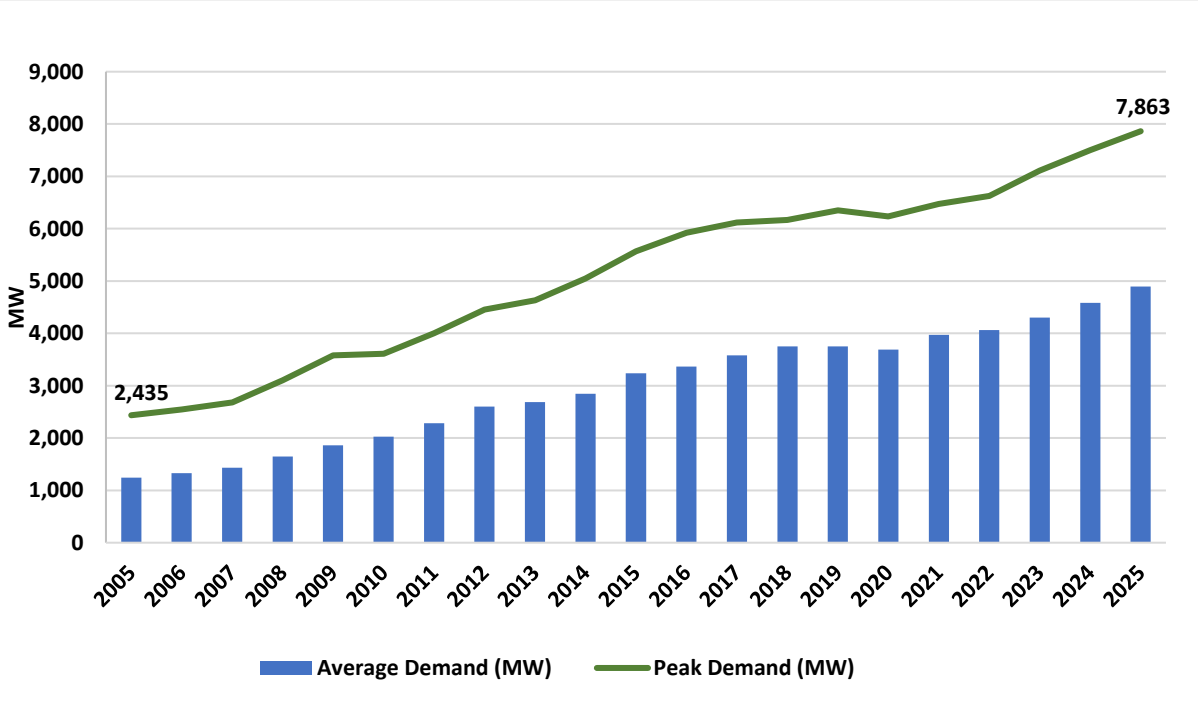
PWP evaluates electricity demand at the system level, including transmission and distribution system losses with consumer-level loads. This must be secured by the total output capacity of power generation plants at the power system delivery points, excluding the internal power consumption of auxiliary systems.[1]

(i) *MIS Historical Demand*

In 2025, electricity energy was slightly higher than what was expected under PWP's previous forecast. The average demand shows 6.7% growth over 2024 demand to reach 4,893 MW in 2025 (corresponding to around 43 TWh of energy). Peak demand grew by about 4.8% to 7,863 MW.

Over the last 7-year period (2018-2025), peak electricity demand in the MIS grew at an average annual rate of about 3.5%, from 6,168 MW in 2019 to 7,863 MW in 2025. Average demand grew by about 3.9% annually during the same period. Single year growth rates have fluctuated widely, influenced strongly by the economic growth and the weather: annual peak demand growth has ranged from a low of -1.8% to a high of 15.6% since 2006. Figure 1 illustrates the growth in peak and average demand in the MIS from 2005 to 2025.

Figure 1 Historical Electricity Demand – MIS



	Average Demand (MW)	*Growth (%)*	Peak Demand (MW)	*Growth (%)*
2005	1,240	-	2,435	-
2006	1,329	7.2%	2,544	4.5%
2007	1,430	7.6%	2,682	5.4%
2008	1,646	15.1%	3,100	15.6%
2009	1,859	12.9%	3,581	15.5%

[1] This approach assures equivalence toward planning the generation supply required to meet consumer demand. However, from the perspective of power system operations, electricity demand and output are monitored at available metering points located at substations and power plants. The system "gross demand" at any point in time is the sum of the metered output at all power generators, although a portion of that generator output must be consumed by plant auxiliary systems. System peak demand is considered as net of plant auxiliaries and any exports to other power systems. The hourly consumption of plant auxiliary systems is not measured directly at some plants and in these cases must be estimated. Consequently, there may be differences in peak demand reports, depending on how auxiliary consumption at each plant is estimated.

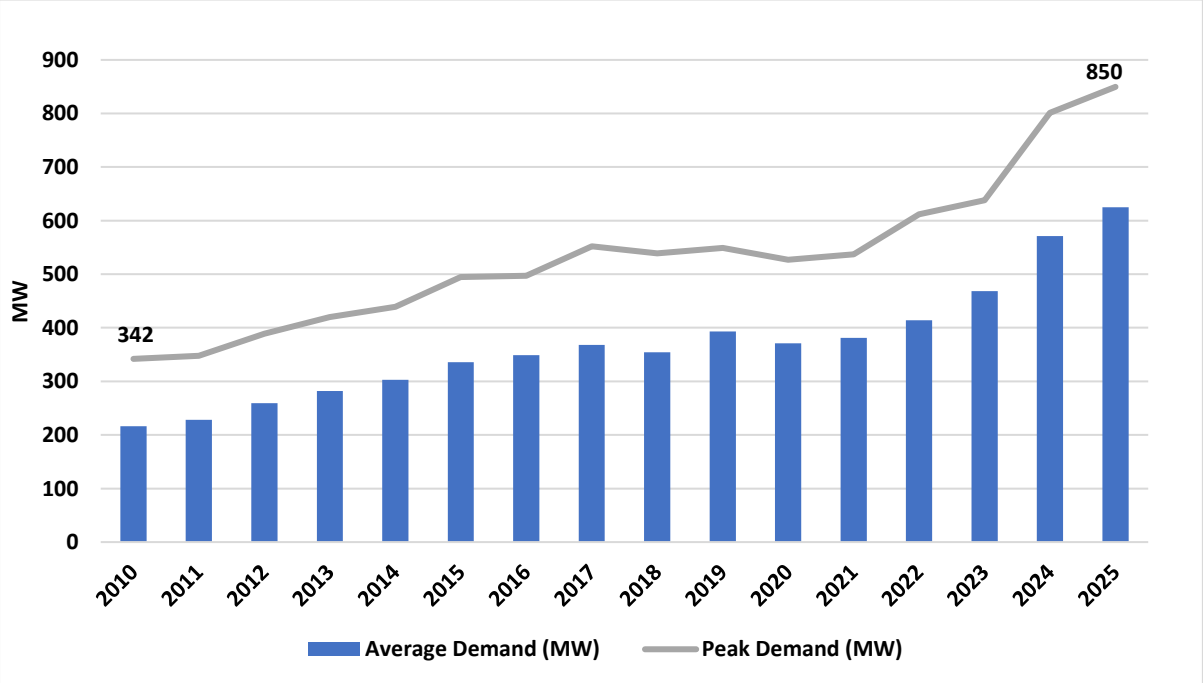
	Average Demand (MW)	*Growth (%)*	Peak Demand (MW)	*Growth (%)*
2010	2,028	9.1%	3,613	0.9%
2011	2,285	12.7%	4,000	10.7%
2012	2,599	13.7%	4,455	11.4%
2013	2,684	3.3%	4,634	4.0%
2014	2,845	6.0%	5,047	8.9%
2015	3,237	13.8%	5,565	10.3%
2016	3,364	3.9%	5,920	6.4%
2017	3,578	6.4%	6,116	3.3%
2018	3,748	4.8%	6,168	0.9%
2019	3,748	0.0%	6,353	3.0%
2020	3,690	-1.5%	6,237	-1.8%
2021	3,971	7.6%	6,473	3.8%
2022	4,062	2.3%	6,628	2.4%
2023	4,303	5.9%	7,112	7.3%
2024	4,585	6.6%	7,503	5.5%
2025	4,893	*6.7%*	7,863	*4.8%*
Average Growth (%)	***7.1%***		***6.0%***	
The data from 2005 to 2023 represents MIS historical demand without Duqm Power System. Duqm Power System has been connected to MIS in Q4 2023.				

(ii) *DPS Historical Demand*

Average electricity demand in 2025 is higher than 2024 by 9.4%. The average demand increased to 625 MW (corresponding to 5.5 TWh) in 2025. Peak demand increased by 6.1% to 850 MW when compared against the 2024 peak demand. PWP notes that the increase in demand is due to a combination of factors tourism, commercial developments, and large investments.

Figure 2 shows that the historical average demand has grown since 2010. The annual average demand over the past seven years is 8.5%. While peak demand in the DPS has grown at an annual average of 6.7% over the last 7-year period.

Figure 2 Historical Electricity Demand – DPS



	Average Demand (MW)	*Growth (%)*	Peak Demand (MW)	*Growth (%)*
2010	216	-	342	-
2011	228	*5.6%*	348	*1.8%*
2012	259	*13.6%*	389	*11.8%*
2013	282	*8.9%*	420	*8.0%*
2014	303	*7.4%*	439	*4.5%*
2015	336	*10.9%*	495	*12.8%*
2016	349	*3.9%*	497	*0.4%*
2017	368	*5.4%*	552	*11.1%*
2018	354	*-3.8%*	539	*-2.4%*
2019	393	*11.1%*	549	*1.9%*
2020	371	*-5.6%*	527	*-4.2%*
2021	381	*2.6%*	537	*2.0%*
2022	414	*8.7%*	612	*13.9%*
2023	468	*13.0%*	638	*4.3%*
2024	571	*22.0%*	801	*25.5%*
2025	625	*9.4%*	850	*6.1%*
Average Growth (%)	**7.3%**		**6.3%**	

(iii) *Demand Projections*

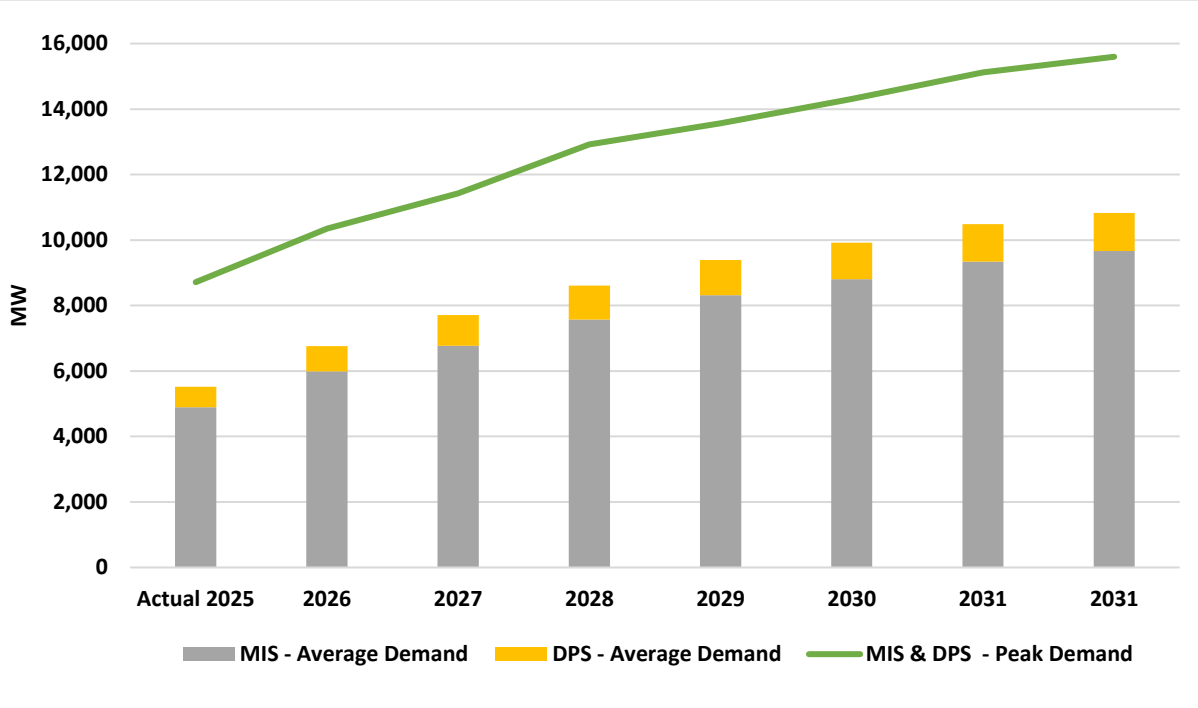
PWP's 7-year electricity demand projections cover energy, average demand, and peak demand requirements. Peak demand is the most relevant parameter for purposes of assessing capacity expansion requirements. The projections of energy demand are crucial to align the renewable energy development with the sector's long-term renewable energy share targets.

The demand projections for the MIS have been developed on the basis of: (1) quantitative analyses of weather, macroeconomic, and demographic demand drivers; (2) assessment of demand drivers' uncertainty (3) consultations with the electricity distribution company and other relevant entities such as large industries; (4) historical growth trends; and (5) assessment of past forecasts against out-turns.

Energy demand is modelled separately for the residential and non-residential sectors. The residential demand projections are derived from population growth scenarios while the non-residential demand projections are derived principally from scenarios of economic growth in the Sultanate of Oman, using an econometric model of the relationship of electricity demand to real Gross Domestic Product (GDP) over a recent period, with adjustments for weather and price. Economic growth relatively slowed during the oil prices fell in 2014 and 2015 and has been affected by the impacts of the COVID-19 pandemic in 2020. However, the economy has recovered and anticipated to moderately grow in the coming period. The GDP growth estimates for 2025 and 2026 are 2.8% and 3.8% respectively.[2]

[2] International Monetary Fund (IMF), *Oman: 2025 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for Oman*, IMF Country Report No. 26/4, Washington, DC, 2026. Available at: IMF Oman Country Report 26/4.

Figure 3 Electricity Demand Projections – MIS and DPS



	Actual 2025	2026	2027	2028	2029	2030	2031	2032	Average Growth (%)
MIS									
Annual Energy (TWh)	**43**	**52**	**59**	**66**	**73**	**77**	**82**	**85**	**10.2%**
Average Demand (MW)	**4,893**	**5,988**	**6,774**	**7,568**	**8,315**	**8,799**	**9,339**	**9,660**	**10.2%**
Distribution Loads	3,964	4,096	4,295	4,476	4,657	4,818	5,039	5,270	**4.2%**
Bulk Loads	929	1,892	2,479	3,091	3,657	3,980	4,300	4,389	**24.8%**
Peak Demand (MW)	**7,863**	**9,273**	**10,289**	**11,615**	**12,223**	**12,938**	**13,711**	**14,147**	**8.8%**
DPS									
Annual Energy (TWh)	**5.5**	**6.8**	**8.2**	**9.2**	**9.4**	**9.8**	**10.1**	**10.3**	**9.4%**
Average Demand (MW)	**625**	**774**	**937**	**1,042**	**1,077**	**1,123**	**1,148**	**1,173**	**9.4%**
Distribution Loads	324	346	367	383	401	419	444	469	**5.4%**
Bulk Loads	301	428	570	659	676	704	704	704	**12.9%**
Peak Demand (MW)	**850**	**1,073**	**1,138**	**1,306**	**1,339**	**1,368**	**1,408**	**1,450**	**7.9%**

MIS energy demand (i.e., average demand) is projected to grow at an annual rate of 10.2%, while peak demand is expected to rise at an average of 8.8% per year reaching 14,147 MW by 2032 from 7,863 MW in 2025 driven by sustained economic expansion. Notably, peak demand is anticipated to register high growth during 2026, 2027 and 2028, reflecting a surge in commercial developments and large-scale investments across the Sultanate.

Consistent with growth assumptions used for the MIS, the peak demand of DPS increases at about 7.9% per year, from 850 MW in 2025 to 1,450 MW in 2032. Energy consumption is projected to grow from 5.5 TWh (corresponding to 625 MW average demand) in 2025 to 10.3 TWh (1,173 MW average demand) in 2032, with an average increase of 9.4% per year. The areas of AlMazyounah, Mudhai and Shahb Asaib and Motorah which are currently supplied by Nama Electricity Generation Company plants will be connected to DPS by 2026. In addition, the impacts of confirmed bulk load projects are included in the years in which they are expected to occur.

1.2 Power Generation Resources

PWP purchases power from number of sources via power purchase agreements (PPAs), power and water purchase agreements (PWPAs) and other similar agreements. The contractual arrangements for power delivery under these agreements may be differentiated as firm capacity, reserve-sharing, non-firm capacity, and energy-only. These terms are relevant for generation planning purposes.

All of the main power plants in the MIS are contractually committed to provide a specific generation capacity (in MW) upon demand, to be dispatched by the OETC, and to maintain specific availability levels. These are firm capacity contracts, also termed **"contracted capacity"**.

PWP also purchases power from number of sources where the contractual arrangements do not provide a guaranteed level of capacity upon demand. They may be termed collectively as **"non-firm resources"**. They currently include: (1) reserve-sharing arrangements with other power systems via international interconnection agreements; (2) capacity exchanges/energy purchases from industries with captive power generation facilities, where such industries use their embedded generators mainly for self-supply; and (3) renewable energy (RE) projects from intermittent sources, such as solar PV and wind. Collectively, non-firm resources provide reliability benefits to the MIS, and that capacity is generally available according to pre-arranged schedules or during contingency events. Accordingly, a portion of this capacity can be considered to provide contributions towards meeting peak demand requirements.

The sector renewable energy share target is to reach 30% of electricity generation by 2030 and around 60-70 % by 2040. A key objective of this target is to release domestic gas committed to the power sector, to be available to stimulate industrial and economic development and contribute towards achieving Oman net zero target by 2050. Driven by the continued decline in renewable energy costs and their increasing economic competitiveness, PWP is aligning its long-term procurement and planning strategy with this direction. Solar and wind projects are non-firm resources to the extent that their energy output is intermittent and non-dispatchable. PWP has estimated the energy production and expected contribution to system reliability standards of RE projects on the basis of power system simulations using ground measurement data collected over a number of years and correlations with satellite data where no such ground measured data is available. Once specific projects are under development, and later in operation, PWP will look to re-assess these estimates on the basis of specific locations, technology being deployed, and production out-turns.

1.3 Resource Adequacy and Mitigation Plans

(i) *Statutory and Regulatory Requirements*

PWP is required by the Sector Law and its license to ensure the adequacy of generation resources to meet future power demands. The Sector Law establishes PWP's general responsibility to secure sufficient generation resources to meet the aggregated demands of licensed electricity suppliers. Further to this, the license issued to PWP by APSR stipulates a specific generation security standard for the national power system that PWP must comply with.

The generation security standard sets the target for the aggregate duration of power outages for the system, termed Loss-of-Load Hours (LOLH). PWP must enter into agreements for enough production capacity to ensure that expected demand does not exceed expected available capacity for more than 24 hours in any year. This LOLH measure considers relevant uncertainties such as the reliability of generation units, the availability of non-firm generation resources, and the level of demand. On a short-term basis, PWP must demonstrate to the APSR that sufficient supply agreements are in place to meet the 24 LOLH standard. On a long-term basis, PWP must demonstrate that it has credible plans to put such agreements in place (via the procurement of new capacity or otherwise).

PWP conducts computer simulations of power system performance to assess LOLH under a wide range of conditions that fluctuate randomly. The simulations are the basis for determining the expected level of LOLH and the adequacy of generation to meet the statutory standard. Generally, the number and type of generating units and the demand profile affect the expected LOLH level, which may also be sensitive to generation technology and other factors.

(ii) *Resource Adequacy*

During the 7-year planning horizon PWP commits to meeting the minimum reliability standard of 24 LOLH. The capacity plan is developed to ensure that, after accounting for demand variability, potential forced outages from generators, and RE generation fluctuations, the potential occurrences of insufficient supply are expected to be less than 24 hours in each year.

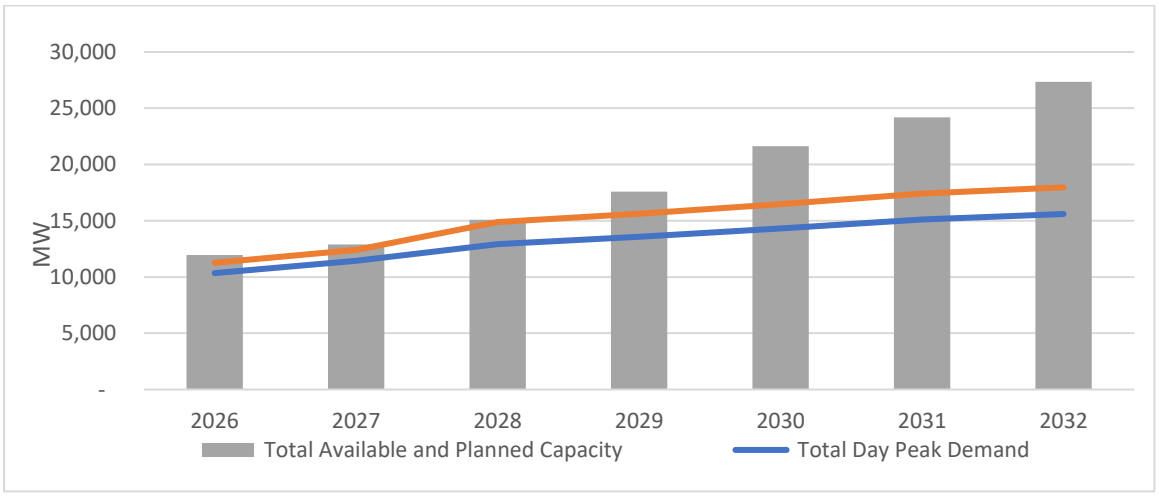
Over the next 7 years, capacity requirements to meet the 24 LOLH standard are expected to change, because demand is projected to grow, the load profile is expected to evolve as consumers respond to tariff changes, and new intermittent RE resources are planned toward reducing the cost and gas consumption of power generation. This is evident in Figure 4, which shows the capacity target during the day and night peaks that is required to meet the security standard under the Expected Demand scenario.

The capacity needed for MIS to meet the security standard is equivalent to a reserve margin of about 8.5% during both day and night peaks in 2026 and 12% for the DPS. This is due to a combination of the output intermittency of the Ibri II Solar IPP, Manah I Solar IPP, Dhofar I Wind IPP and Manah II Solar IPP during the hours around the day peak period in the afternoon, and the emergence of the night peak as a more critical and longer duration period of reserve needs. The reserve margin requirement is expected to progressively increase in the following years to reach approximately 15.2% from 2028 onwards based on the latest system risk assessment analysis outcomes and in line with the targeted system security and reliability standards.

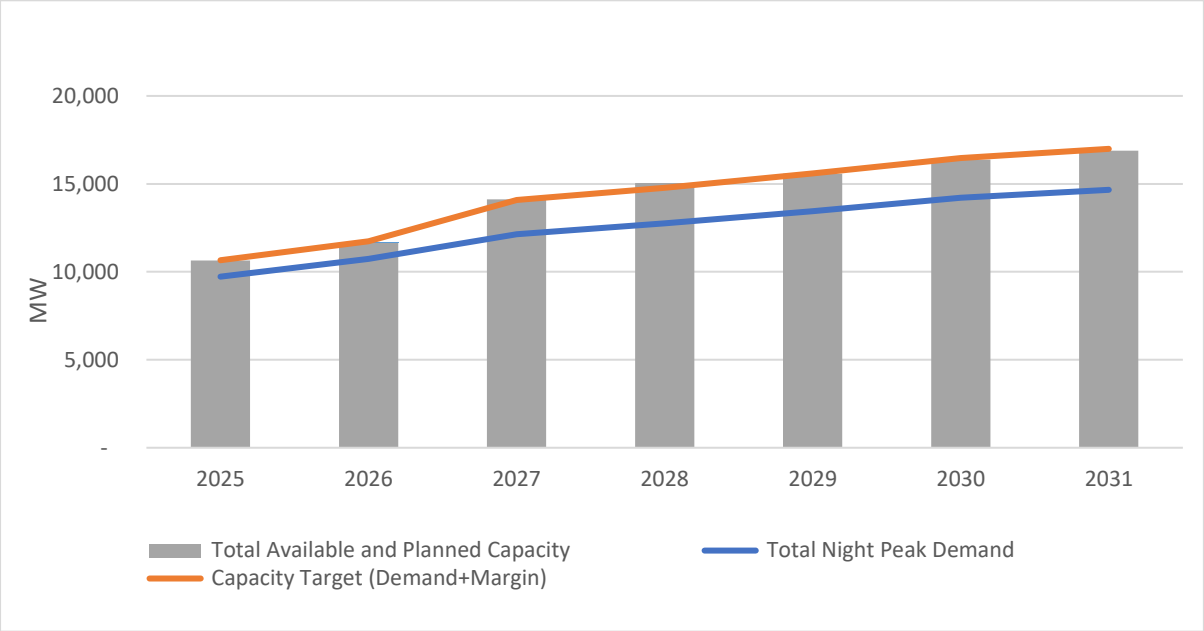
Phase II of the North-South Interconnector is planned to be commissioned by Q3 2026. This phase will support the security of DPS. As can be noticed from Figure 4 that it is expected to export/import up to 570 MW from DPS to MIS under the expected case requirement through this interconnector. The maximum capability of this link as per OETC declaration is about 860 MW considering N-1 security.

The resource development plan is structured to meet the generation security standard under the Expected Demand scenario. As shown in Figure 4, the contracted and planned capacity is sufficient to meet both day and night peak demand across the period, including allowances for expected capacity exports to the DPS system from 2027 onward.

Figure 4 Resource Adequacy for the Day Peak – MIS and DPS



Night Peak Resources:



2. MUSANDAM POWER SYSTEM

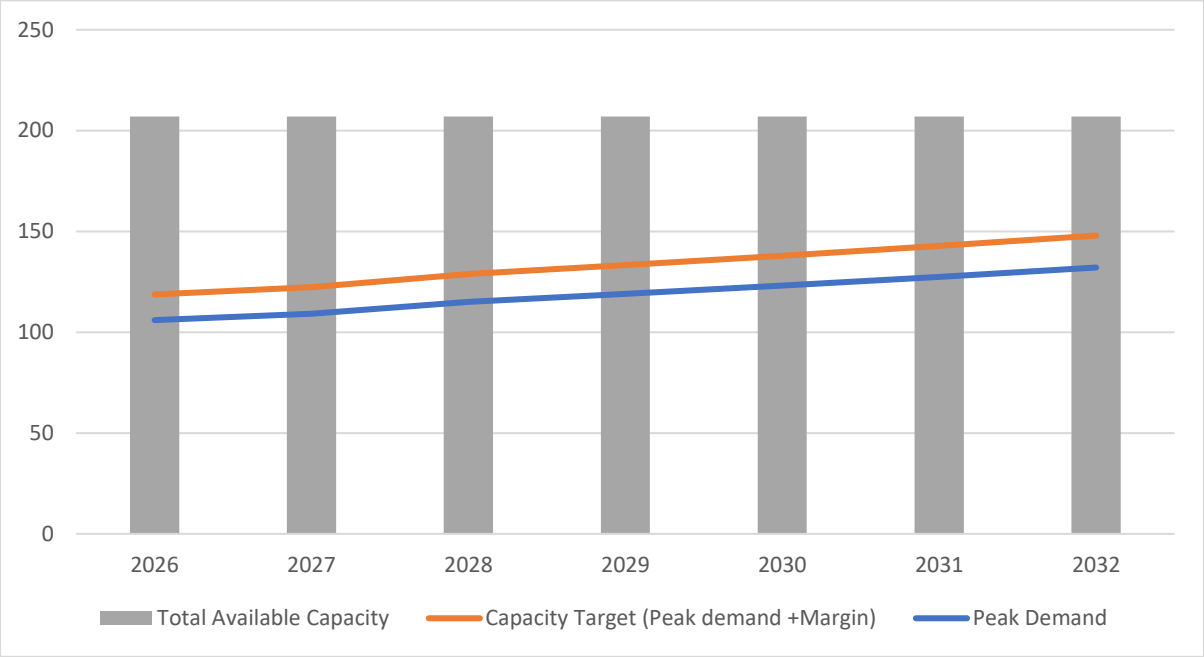
The Musandam Governorate is located in the northern-most region of the Sultanate of Oman and extends into the Strait of Hormuz. The Musandam Governorate is an exclave of Oman, separated from the rest of the country by the United Arab Emirates. The latest population data from the National Centre for Statistics & Information reports that the total population is estimated at around 56,002[3] which is expected to grow steadily over the coming years.

MPS Electricity Demand and Resource Adequacy

The pace of demand growth in Musandam is driven by distribution level load and projects that aim to boost tourism, economic, and commercial activities. Demand scenarios for Musandam Power System have been prepared by NEDC with a slight adjustment by PWP.

Similar to the demand forecast presented for the other power systems, under MPS Demand forecast, peak demand is expected to grow from 97 MW in 2025 to 132 MW in 2032, an average increase of 5% per year. As it is shown in Figure 5 The average demand growth is expected to grow from 57 MW in 2025 to 78 MW in 2032, with an average increase of 4% per year.

Figure 5 Electricity Demand Projections and Resource Adequacy– MPS



Expected Demand	Actual 2025	2026	2027	2028	2029	2030	2031	2032	Average Growth (%)
Average Demand (MW)	**57**	**61**	**64**	**67**	**70**	**72**	**75**	**78**	**4%**
Annual Energy (GWh)	**503**	**538**	**562**	**586**	**609**	**633**	**657**	**681**	**4%**
Peak Demand (MW)	**97**	**106**	**109**	**115**	**119**	**123**	**127**	**132**	**5%**

[3] National Centre of Statistics & Information *Data Portal, – Musandam total population registered in March 2025*

SECTION 2
DECARBONIZATION AND RENEWABLE ENERGY PROJECTS

Overview

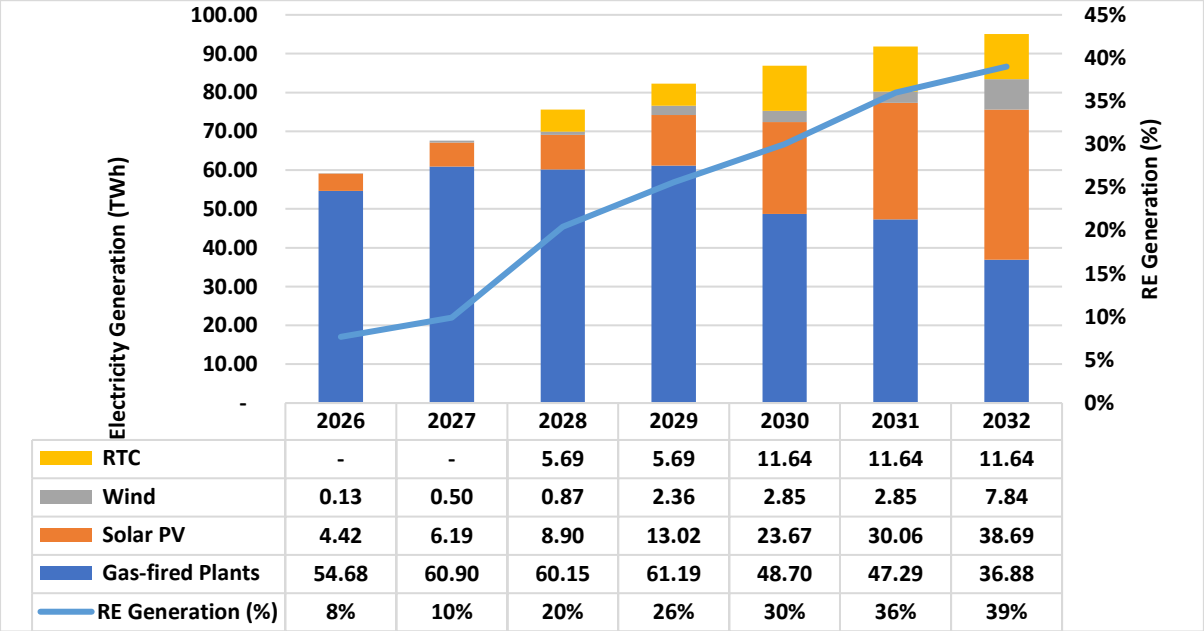
The Sultanate of Oman is advancing decisively toward a more sustainable and resilient energy future. In support of Oman renewable energy share target by 2040 and the national net-zero emissions target by 2050, PWP is taking a central role in steering the transformation of the electricity sector. As the single buyer and long-term planner for power generation capacity in Oman, PWP's focus is to ensure adequate, reliable, and least-cost power supply while accelerating the shift toward low-carbon technologies.

In recent years, PWP planning has increasingly prioritized clean energy sources. Building on Oman's solar and wind resources, the power system has begun a gradual transition away from full reliance on gas-fired generation toward a more diversified and cleaner energy mix.

2.1 Projected Energy Mix

Figure 6 below illustrates the expected evolution of the national generation mix, with an accelerated increase in renewable energy (solar and wind) and a declining share of natural gas. The figure shows PWP's outlook toward achieving 30% renewable energy contribution by 2030, followed by further increases in renewable penetration in support of the 2040 targets.

Figure 6 Projected Energy Mix in the Sultanate of Oman (2026–2032)



	2026	2027	2028	2029	2030	2031	2032
RTC	-	-	5.69	5.69	11.64	11.64	11.64
Wind	0.13	0.50	0.87	2.36	2.85	2.85	7.84
Solar PV	4.42	6.19	8.90	13.02	23.67	30.06	38.69
Gas-fired Plants	54.68	60.90	60.15	61.19	48.70	47.29	36.88
RE Generation (%)	8%	10%	20%	26%	30%	36%	39%

PWP renewable energy development is supported by a detailed and forward-looking project timeline that outlines the addition of capacity across key technologies. Table 1 summarizes the existing and projected capacities of solar, wind, and RTC IPPs from 2025 to 2032:

Table 1 Renewable Energy Projects

Renewable Energy Projects	SCOD	2025	2026	2027	2028	2029	2030	2031	2032
Solar and Wind Projects									
Ibri II Solar IPP	In Operation	500	500	500	500	500	500	500	500
Manah I Solar IPP		500	500	500	500	500	500	500	500
Manah II Solar IPP		500	500	500	500	500	500	500	500
Dhofar I Wind IPP		50	50	50	50	50	50	50	50
Ibri III Solar IPP	Q2, 2027			500	500	500	500	500	500
JBB Wind IPP	Q3, 2027				105	105	105	105	105
Al Kamil Solar IPP	Q3, 2027				500	500	500	500	500
Dhofar II Wind IPP	Q3, 2027				125	125	125	125	125
Marsa Solar IPP	Q4, 2028					280	280	280	280
Sinaw Solar IPP	Q4 2028					500	500	500	500
Wind I IPP 2029	Q2, 2029					220	220	220	220
Wind II IPP 2029	Q2, 2029					100	100	100	100
Duqm III Wind IPP	Q2, 2029					250	250	250	250
Al Kamil II Solar IPP	Q2, 2029					1,000	1,000	1,000	1,000
Adam Solar IPP	Q3, 2029						1,000	1,000	1,000
Dhofar Solar IPP	Q2, 2030						1,000	1,000	1,000
Solar PV IPP I 2030	Q2, 2030						1,000	1,000	1,000
Solar PV IPP II 2030	Q2, 2030						1,000	1,000	1,000
Solar PV IPP I 2031	Q2, 2031							1,000	1,000
Solar PV IPP II 2031	Q2, 2031							1,000	1,000
Solar IPP I 2032	Q2, 2032								1,000
Solar IPP II 2032	Q2, 2032								1,000
Solar IPP III 2032	Q2, 2032								1,000
Wind IPP 2032	Q2, 2032								1,800
Total Solar and Wind Projects		**1,550**	**1,550**	**2,050**	**2,780**	**5,130**	**9,130**	**11,130**	**15,930**
RTC Projects									
Duqm II RTC IPP:									
Solar	Q2, 2028				702	702	702	702	702
Wind					384	384	384	384	384
BESS (4h)					250	250	250	250	250
Mahout RTC IPP:									
Solar	Q2, 2028				803	803	803	803	803
Wind					778	778	778	778	778
BESS (4h)					214	214	214	214	214
RTC 2030 IPP:									
Solar	Q2, 2030						1,300	1,300	1,300
Wind							800	800	800
BESS (4h)							375	375	375
Total RTC REs Projects					**2,667**	**2,667**	**4,767**	**4,767**	**4,767**
Total RTC BESS (4h)					**464**	**464**	**839**	**839**	**839**

2.2 International Renewable Energy Certificates

In 2025 PWP played an active role in supporting national decarbonization efforts, through the conduct of an auction for the sale of International Renewable Energy Certificates (IRECs) generated by Dhofar Wind IPP, Manah I Solar IPP and Manah II Solar IPP, as well as engaging in direct sales of these certificates to local companies in strategic sectors. Through the sale of these certificates, strategic sectors such as aluminums, manufacturing and telecommunications are enabled to credibly account for renewable energy use and reduce the carbon intensity of their operations, in line with recognized international standards. This initiative supports broader national and decarbonization objectives while enabling stakeholders to demonstrate measurable progress toward their sustainability targets.

2.3 Energy Efficiency

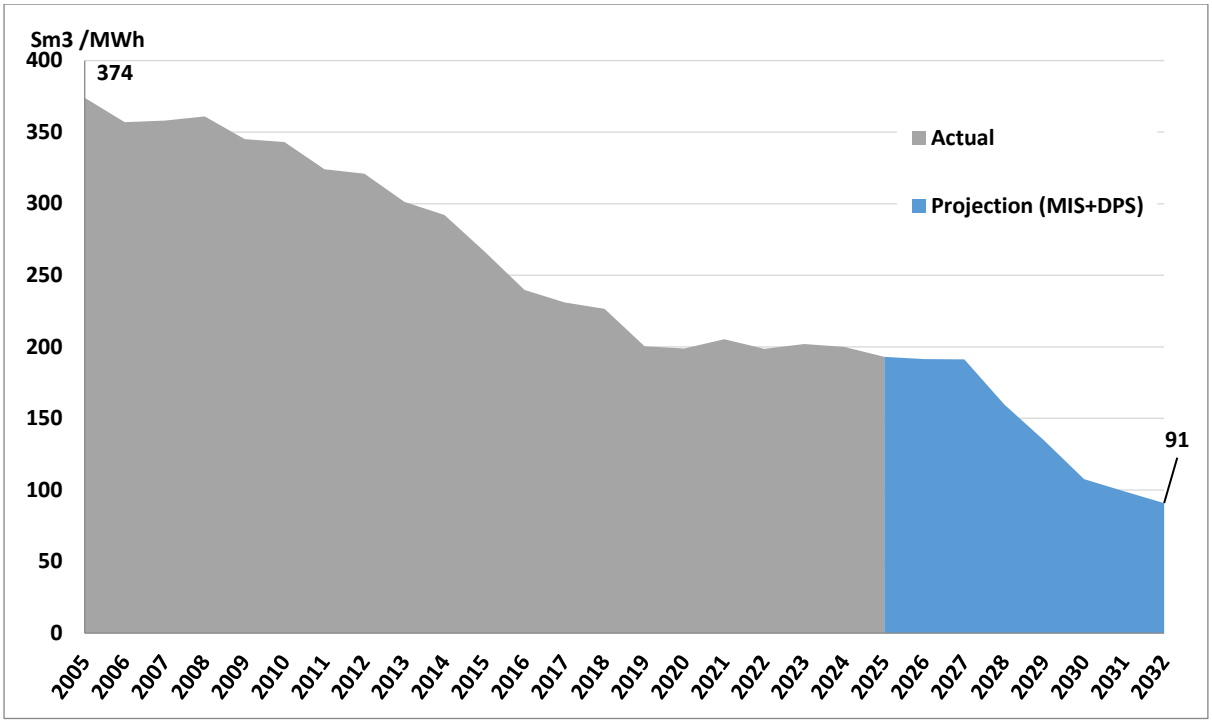
Since 2005, PWP has made significant strides in improving energy efficiency across the power generation sector. Through the deployment of progressively more efficient generation technologies, the gas required to produce one megawatt-hour (MWh) of electricity has been reduced by 48%, from 374 standard cubic meters (Sm^3/MWh) in 2005 to just 193 Sm^3/MWh in 2025.

These results have been achieved through a multifaceted strategy that includes the integration of renewable energy projects, and the procurement of advanced combined-cycle gas turbine (CCGT) plants commissioned in 2019. Additionally, ongoing efforts to enhance dispatch efficiency in coordination with the OETC have contributed to overall system optimization.

Building on these achievements, PWP continues to play a central role in advancing Oman's national decarbonization agenda. In close coordination with the Ministry of Energy and Minerals (MEM), the Authority for Public Services Regulation (APSR), and the Oman Net Zero Centre (ONZC), PWP ensures that energy efficiency, fuel utilization, and emission reduction objectives are fully reflected in long-term electricity planning. This includes monitoring fuel consumption across the generation fleet, supporting national CO_2 emission factor studies, and aligning demand forecasting with efficiency measures such as demand-side management. PWP is also actively exploring alternative renewable energy technologies including utility-scale battery storage, hybrid systems, and green hydrogen ready units to support system flexibility and lower carbon intensity. Through this integrated and collaborative approach, PWP contributes to ensuring that electricity sector planning remains economically viable and environmentally aligned with Oman's 2050 net-zero target

Looking ahead, with the planned commissioning of utility-scale solar and wind projects and the interconnection of the MIS with the DPS by Q3 2026, PWP forecasts a further decline in gas intensity. By 2032, gas consumption for electricity generation is expected to fall to approximately 91 Sm^3/MWh representing a 76% reduction compared to 2005 levels.

Figure 7 Gas Required per Unit of Electricity Generation – MIS + DPS



2.4 Decarbonization and CO_2 Emissions

A critical component of Oman's energy transition is the reduction of carbon dioxide (CO_2) emissions from the power sector. Between 2019 and 2025, PWP's renewable energy initiatives have contributed to a measurable decline in emissions intensity, as clean energy projects began to displace gas-fired generation.

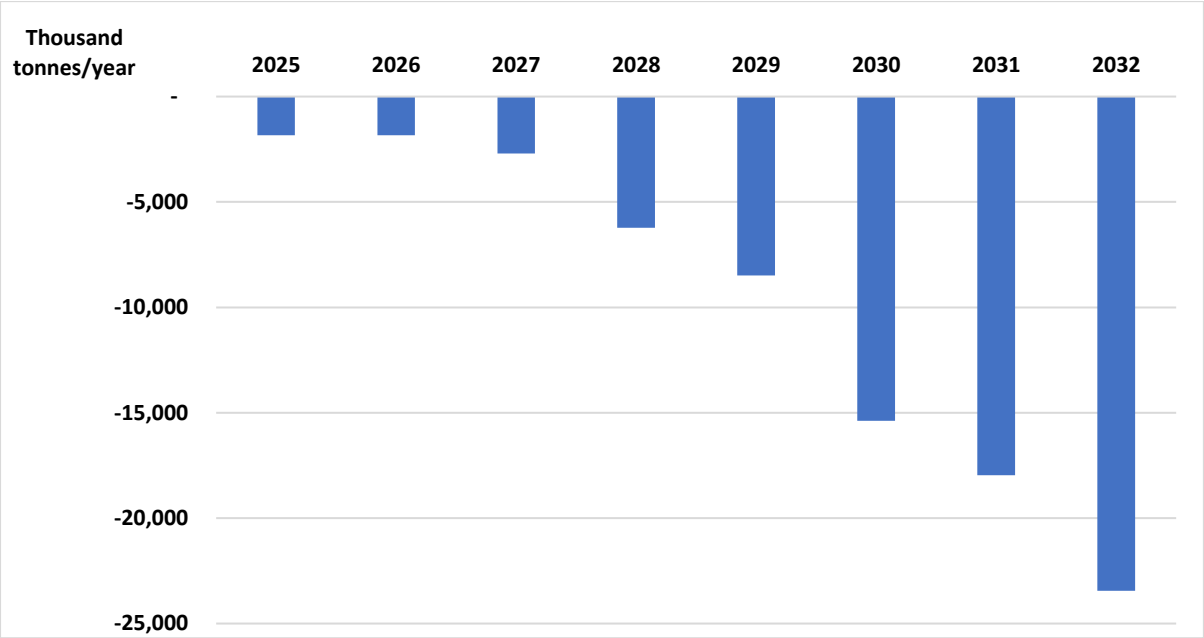
The deployment of projects such as Ibri II Solar IPP (500 MW), Manah I & II Solar IPPs (1,000 MW combined), and Dhofar I Wind IPP (50 MW) has enabled Oman to avoid thousands of tonnes of CO_2 annually. Preliminary estimates suggest that for every 1,000 MW of solar PV replacing thermal generation, Oman could reduce CO_2 emissions by over one million tonnes per year, assuming an average displacement factor and emissions intensity of gas-fired plants.

PWP has developed a calculation mechanism to calculate the Grid Emissions Factor (GEF) and Residual Emissions Factor (REF) for power plants under its contracts. The GEF helps grid-connected entities estimate their CO_2 emissions based on electricity consumption, while the REF will reflect ongoing grid decarbonization as more renewable energy projects are added.

The mechanism follows international best practices, using primary fuel and electricity data, and applies Intergovernmental Panel on Climate Change (IPCC) standard emission and conversion factors to calculate CO_2, CH_4, N_2O, and CO_2-equivalent emissions. These calculations support entities in determining their Scope emissions. The mechanism is currently under review with key stakeholders.

As more renewable capacity and storage technologies are integrated into the national grid, Oman is expected to continue achieving significant reductions in CO_2 emissions contributing both to national environmental goals and broader global climate efforts. Figure 8 below shows estimated CO_2 reduction from 2025 to 2032 due to deployments of RE projects. The estimates are based on the current planned energy mix, demand projections, measured grid emissions factor, and thermal plant efficiency. The estimates will change according to any changes in the mentioned factors. The estimated avoided emissions factor associated with the deployment of RE projects is approximately 0.403 tCO_2/MWh.

Figure 8 Estimated CO_2 Reduction due to deployments of RE projects (2025-2032)



PWP has achieved substantial reductions in the carbon intensity of electricity generation through improved gas efficiency and the integration of cleaner technologies. As shown in Figure 9 below, CO_2 emissions intensity has decreased by 44% from 0.722 tonnes CO_2/MWh in 2005 to 0.372 tonnes CO_2/MWh in 2025, corresponding to a drop in gas consumption from 374 to 193 Sm³/MWh. By 2032, this figure is projected to fall further to 0.175 tonnes CO_2/MWh, based on a forecasted gas intensity of 91 Sm³/MWh. Overall, this represents a 76% reduction in CO ₂ emissions intensity between 2005 and 2032, underscoring PWP's role in supporting national decarbonization goals through cleaner power generation.

Figure 9 Estimated CO_2 Emissions Intensity of Power Generation (2005–2032)

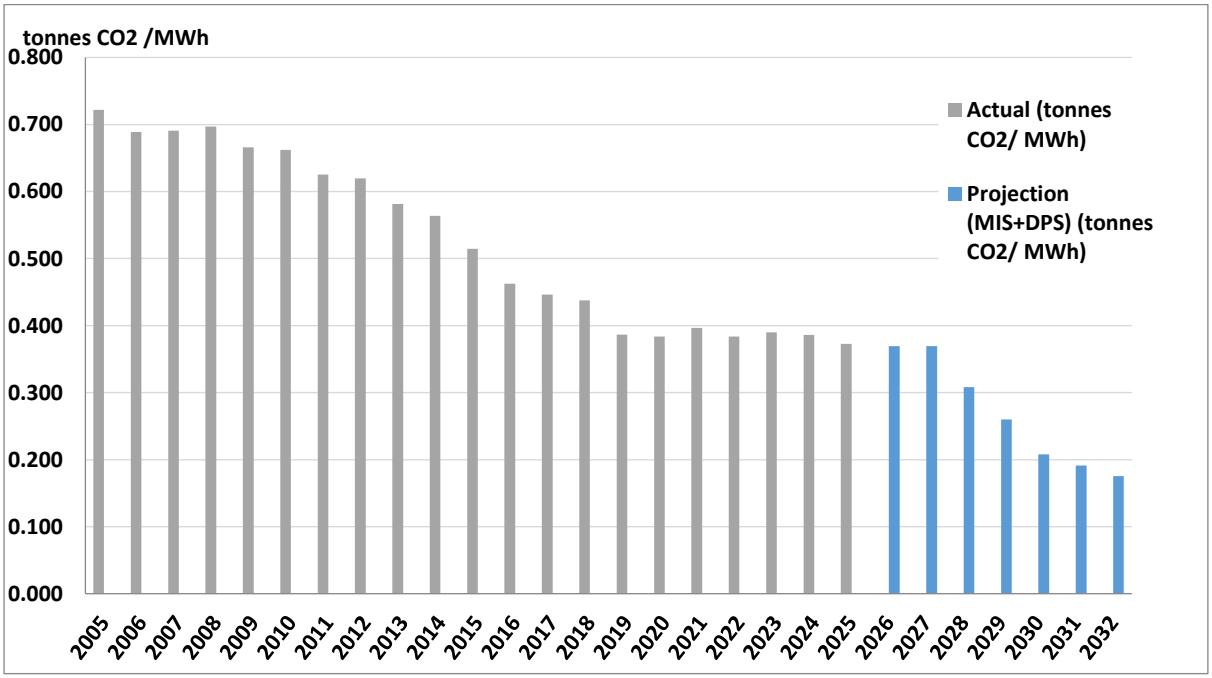


Figure Note: Based on a factor of 0.00193 tonnes CO_2 per Sm³ of natural gas