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DIAM SPECIAL FEATURE



MORE THAN 900 KM TO REINFORCE AN INTEGRATED SYSTEM OF WATER TRANSMISSION LINES DESALINATION PLANTS... STRATEGIC GUARANTEE TO COVER WATER DEMAND



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Plans and Strategies for Water Security

The Water Authority (Diam) seeks to enhance sustainability of water security by developing successful plans and strategies. Such plans and strategies have been carefully and thoroughly studied to be suitable and of long-term with a commitment to maintaining the quality of water in the Sultanate, and to make this important and vital sector a stable and safe sector.

This sector is relied on as a basic tributary and support for development in the Sultanate, because this is a large sector that directly touches, serves and targets all categories of consumers of this service, whether they are citizens or residents, and to deliver it to various villages and wilayats in the governorates of the Sultanate.

These big plans and strategies have contributed to the promotion and development of this sector. Diam is always ready to promote this sector quickly, so that everyone can have water supply in accordance with the best and highest international standards, taking into account the availability of financial resources for this sector.

Sustainability of water security is one of the most important pillars since the start of the blessed Renaissance, and it is not a spur of the moment. Nevertheless, there are challenges due to the large distance in which all these different projects are accomplished here and there. This sector is not easy, as it spans from east to west and from north to south in the Sultanate.

Diam is keen to go through steady and elaborate steps in accordance with plans and strategies to develop the sector to include all consumers in terms of the large population and urban expansion witnessed by the Sultanate.

Since we live in hot dry areas, which are considered among the areas in which drinking water resources are scarce, many countries, whether at the level of the GCC countries or those located and classified within these countries with scarcity of water, have resorted to making studies and developing alternative plans to find urgent ways and solutions to obtain sufficient quantities of potable water.

Establishing seawater desalination plants is the strategic choice to achieve water security. The most prominent of those desalination plants are the desalination plants in Sohar, Barka, Al Ghubrah, Qurayyat and Sur, in addition to the desalination plant under construction in the wilayat of Jaalan Bani Bu Hassan and the water purification plant in the wilayat of Ibri.

In addition, construction is going on in 49 small desalination plants feeding areas far from the main networks.

Achieving water security is based on providing sufficient desalination capacities to cover the demand through the establishment and expansion of large and small desalination plants.

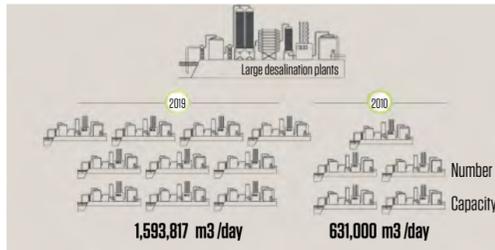
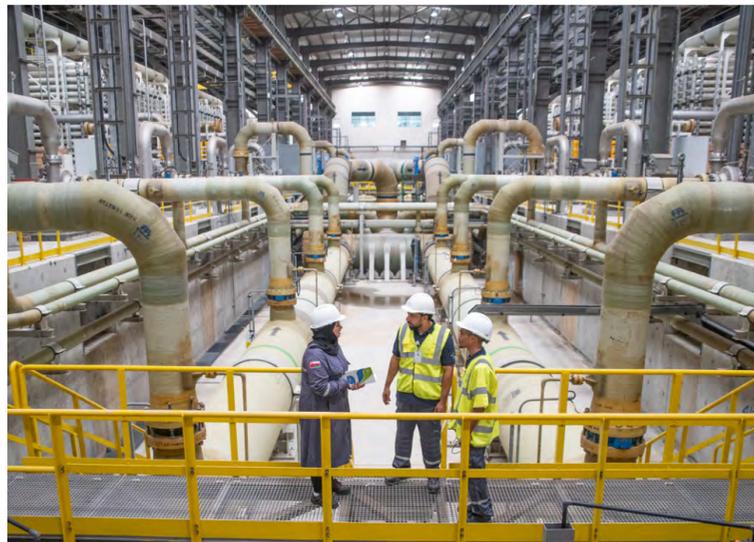
Water security in the Sultanate is one of the most important projects that receive great care and attention. The Public Authority for Water "Diam" bears the responsibility for providing safe, high-quality drinking water in conformity with international standards for all residents in its water supply areas. In its planning of projects to enhance water security, Diam relies on a master plan for the water sector that takes into account the demographic challenges represented by the steady increase in population, and the challenges related to the rapid urban growth and expansion of all residential, commercial, industrial, tourist and other activities, and to ensure that this plan is consistent with the future Oman Vision 2040 and its goals. The strategic plan on which Diam is working revolves around boosting water production from desalination plants, linking them to an integrated transportation system and expanding service provision by extending water networks to meet the increasing demand for drinking water.

On the most important strategic projects implemented by Diam to ensure water security in its water supply areas, Eng. Abdulaziz bin Said bin Hamad Al Shidhani, Director General of Planning and Asset Management and Acting Director General of Customer Services, said: "The Sultanate has adopted a clear policy based on relying on seawater desalination as a main source of providing drinking water and maintaining underground reservoirs to be a reliable strategic reserve in emergencies. Therefore, achieving water security and ensuring the continuity of supplies is based on providing sufficient desalination capacities to cover water demand through the establishment and expansion of large and small desalination plants in various regions."

Al-Shidhani added that water security can only be achieved by strengthening the water transmission systems and enhancing the interconnection between various desalination plants, in addition to enhancing water storage capacity through the establishment of main collection tanks, which greatly contributes to enhancing water security.

Desalination plants to enhance service sustainability and ensure water security

The Director General of Planning and Asset Management emphasized that desalination plants are the best strategic option to provide safe, high-quality drinking water due to the scarcity of renewable fresh water resources in the Sultanate. The current demand for water is being met mainly from the existing desalination plants with the continuation of establishing new desalination plants with different production capacities to meet the future demand for water. Among the existing desalination plants which are being relied upon in Muscat governorate is



Al Ghubra desalination plant, which has a production capacity of 191,000 cubic meters per day, and Quriyat desalination plant, with a production capacity of 200,000 cubic meters per day. In North Al Batinah Governorate there are also two plants with a production capacity of 400,000 cubic meters of water per day. In South Al Batinah Governorate there are a number of desalination plants, the total water production of which is 400,000 cubic meters per day. In South Al Sharqiyah Governorate, the desalination plant in Sur produces 131,000 cubic meters of water per day. In Al Dhahirah Governorate, the well water purification plant in Ibri produces about 40,000 cubic meters of water per day. The demand for water from these plants is met along with the desalination plants of small production capacities, the number of which is 49 plants, with a total production capacity of 40,000 cubic meters per day, feeding the areas far from the main water networks.

The current desalination plant system will include new plants which will enter service in the future, including the desalination plant in the Wilayat of Jaalan Bani Bu Ali in South Al Sharqiyah Governorate

with a production capacity of 80,000 cubic meters per day and is expected to be operational during 2021; the new desalination plant in Al Ghubrah with a production capacity of 300,000 cubic meters per day and it is planned to be operational in 2023; and a new desalination plant in North Al Batinah Governorate with a production capacity of 150,000 cubic meters and it is planned to be operational in 2025.

Water transmission and interconnection system

Eng. Abdulaziz Al-Shidhani explained that Diam pays great attention to strengthening the interconnection system linking between desalination plants spread in a number of the Sultanate's governorates by connecting them to a network of strategic transmission lines that transport large quantities of water between the plants and governorates of the Sultanate.

Al-Shidhani said that work on the water transmission line project between Bausher and Al Seeb is proceeding at an accelerated pace. "The project includes a 30 km water transmission line that reaches the main collection tanks in the Wilayat of Al Seeb (Al Khoud area). The

new line will work as a supplementary for the current water transmission line from the existing water desalination plant in the wilayat of Sur to North Al Sharqiyah Governorate. This project is relied upon to raise the capacity of the existing infrastructure and develop it to cope with the increase in the volume of water demand and raise the level of water security for these two governorates," he said.

Al Shidhani added that work on the project to strengthen the water transmission line for Al Dakhiliyah Governorate is underway at an accelerated pace to raise the efficiency of the water transmission system in the short term. "Now the project is in its final phases. It aims to pump larger quantities of water to the governorate by strengthening the existing pumping stations and implementing some parts of the new water line in the implementation phase of the project. The first phase of the project includes the extension of a line with a length of 14 km, while the second phase includes lines of pipelines with a total length of about 190 km, which are relied upon in developing long-term solutions represented in extending a main line auxiliary to the existing transmission line and establishing new pumping stations and water tanks. This phase aims to enhance the security of the system of water transport to the governorate in the long term," he said.



Abdulaziz Al-Shidhani

project will contribute to transfer water between the wilayats of Bausher and Al Seeb, and will act as a link in the water supply system and the interconnection between desalination plants through transfer of water between the governorates of Muscat, Al-Batinah and Al-Dakhiliyah. Large parts of this project have been completed during the current year. Work is underway at a regular pace in the strategic project to transport desalinated water from the desalination plant in Sohar to Al Dhahirah Governorate. The project includes the construction of main water transmission lines, with a total length of 225 km. The project's pipeline path will be parallel to the current water transmission line from Sohar to Al Buraimi, so that the water transmission system will be linked between the governorates of Al Batinah, Al Dhahirah and Al Buraimi. The project is expected to be completed during 2021," he added.

"Work is also underway on a project to strengthen the vital water transport system between the two largest areas in which desalination plants are located: the wilayats of Barka and Sohar. The project includes extending a network of water transmission lines between Barka plants and Sohar plants with a length of 140 km. The project is expected to be completed in 2022," Al-Shidhani said.

Al Shidhani pointed out that Diam has started implementing a project to strengthen the water transmission system between Al Sharqiyah desalination plant (under construction) in the Wilayat of Jaalan Bani Bu Ali in the South Al Sharqiyah Governorate, up to the wilayat of Al Mudhaibi in North Sharqiyah Governorate. "The project includes laying pipelines with a total length of about 310 km. It is planned to complete the implementation of the project in 2022. The

Enhancing water storage capacities

On enhancing water storage capacities, Engineer Abdulaziz Al Shidhani explained that Diam has established a number of main collection tanks, with a total storage capacity of more than one million cubic meters distributed in various governorates of the Sultanate. "Diam has completed the preliminary study for the establishment of artificial underground reservoirs based on injecting water produced from all currently available sources during non-peak periods and re-using it during peak and emergency periods, which came out with promising results. Diam recently floated a tender to appoint a specialized expert house to complete the technical and economic studies that pave the way for the implementation of these tanks, which will provide new options that are more economically feasible and more effective to enhance storage capacities and reduce operational costs for Diam systems," he said.

