



SUSTAINABILITY REPORT 2020

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ABOUT THIS REPORT

(GRI 102-46, 102-48, 102-50, 102-51, 102-52, 102-53, 102-54)

This is DEWA's eighth annual sustainability report. It presents our economic, environmental and social performance and focuses on our commitments, results and future goals, enabling us to communicate our sustainable performance to our stakeholders.

SCOPE

The data and statements contained in this report relate to and include all of DEWA's core operations and processes under DEWA's management control unless otherwise stated. Data from subsidiaries, joint ventures and suppliers have not been included in this report, unless otherwise stated.

The performance data provided in the report covers the reporting period from January 1st to December 31st, 2020. Ongoing initiatives commenced in earlier years as well as information deemed significant from our previous reports have also been included in this report. Note that there have not been any restatements or major changes to data measurement used compared to those employed in the previous report.

DEFINING THE CONTENT

DEWA's 2020 Sustainability Report provides information on our sustainability performance in a reasonable and balanced manner and it is addressed to all our stakeholders. DEWA is committed to reporting on its sustainability performance annually, and this report follows the 2019 Sustainability Report. This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option. GRI provides the world's most widely used standards on sustainability reporting and disclosure, enabling organisations around the world to communicate their sustainability performance and impacts.

This report also aligns with the GRI G4 Electric Utilities Sector Disclosures and the Sustainable Development Goals. In addition, it meets the requirements of the United Nations Global Compact Communication on Progress and follows Task Force on Climate Related Financial Disclosures (TCFD) recommendations. The principles of inclusiveness, materiality, sustainability and completeness were implemented as well as those of the Accountability AA1000 Standard on inclusiveness, materiality and responsiveness.

COMMENTS

At DEWA, we constantly seek to evolve and improve our sustainability performance. Therefore, we greatly value our stakeholders' feedback. We welcome your comments, questions, or suggestions for improvement with regards to our sixth sustainability report at: sustainability@dewa.gov.ae

Please note that an electronic version of this report can be found on our website: <http://www.dewa.gov.ae>



The late

Sheikh Zayed bin Sultan Al Nahyan
Founder of UAE

“ We pay the utmost care and attention to our environment for it is an integral part of our country, our history and our heritage. Our forefathers and our ancestors lived in this land and coexisted with its environment, on land and at sea, and instinctively realised the need to preserve it. ”



His Highness

Sheikh Khalifa bin Zayed Al Nahyan
President of the United Arab Emirates

“ The UAE is striving to develop and boost its rich resources and expertise in the international energy markets and enhance its leading role as a world center for renewable energy research and development ”



His Highness

Sheikh Mohammed bin Rashid Al Maktoum

Vice President and Prime Minister of the UAE and Ruler of Dubai

“

Every investment in
the development of
clean energy sources
is at the same time an
investment to protect the
environment for future
generations

”



His Excellency

Saeed Mohammed Al Tayer

MD & CEO, Dubai Electricity and Water Authority

Message from MD & CEO of Dubai Electricity and Water Authority

(GRI 102-14)



Sustainability lies at the heart of our strategy at Dubai Electricity & Water Authority, stemming from the directives of the leadership of the United Arab Emirates and Dubai. We have made this clear in our purpose to provide modern, reliable and efficient electricity and water services along with innovative smart solutions that help us make them even better, and our vision to become a globally leading sustainable innovative corporation. This is because we have a robust and reliable electricity and water infrastructure in place, and we are working hard to provide our customers, and the citizens and residents of Dubai, with a reliable and efficient supply of electricity and water. This became even more critical during the COVID-19 pandemic. We have mobilised our teams and equipped them with the necessary tools to ensure the continuity of our services while maintaining the health and safety of our employees and customers as a top priority.

DEWA is committed to achieving the Dubai Clean Energy Strategy 2050 to provide 75% of Dubai's total power capacity from clean energy sources by 2050. In fact, we've already exceeded the original target of 7% set for 2020, as today 9% of the energy mix comes from renewable sources. As a result of the increase in the share of clean energy in Dubai's energy mix, fuel consumption has decreased. These savings are reflected in customers' bills since December 2020, when the Dubai Supreme Council of Energy decided to reduce the fuel surcharge for electricity and water by 23% and 33% respectively.

DEWA is one of the pioneers who set up environmental programmes and initiatives to reduce carbon emissions over the past decade. These programmes helped Dubai decreasing its carbon emissions by 22% in 2019 compared to business as usual, two years ahead of the Carbon Abatement Strategy 2021 target to reduce them by 16% by 2021.

Despite the pandemic, DEWA has continued to work to achieve its sustainability projects and goals. In November 2020, DEWA successfully commissioned the 800MW 3rd phase of the solar park using the Independent Power Producer model, in partnership with a consortium led by Abu Dhabi Future Energy

Company, Masdar, and EDF Group. DEWA has also inaugurated 2,367 (11kV) substations across Dubai since the beginning of 2020. In 2020, we also launched the Research and Development Centre at the Solar Park.

We continue to strengthen and increase the efficiency of our water network, and DEWA has achieved one of the lowest water losses of 5.1%.

We manage our AED 40 billion of strategic projects effectively to ensure business continuity according to our strategy. We have worked with over 20,000 employees of suppliers, contractors and other companies. DEWA worked with Dubai Health Authority to do tests for suppliers and contractors. DEWA has also set up quarantine centres to ensure the projects work progress. One of its most important strategic projects is the fourth phase of the Mohammed bin Rashid Al Maktoum Solar Park, which will have the largest energy storage capacity in the world, with a total value of approximately AED 16 billion. Another is the hydroelectric power station at Hatta that will generate electricity from the water stored at the dam, with total value of AED 1.4 billion.

We recognise the impact that DEWA has not only in the UAE but on the region and the world. We have identified the United Nations Sustainable Development Goals as a top priority for DEWA. They include numbers 6, 7, 8, 9, 12, and 13. We are committed to support the UAE's and the world's efforts to achieve the Sustainable Development Goals by aligning our strategies with them.

Looking back on all these achievements, it's clearly evident that the UAE has made considerable progress towards sustainable development.

Even in the face of world-shaking events, we can take pride in the results we have achieved working hand-in-hand with all our stakeholders. We remain committed to our goals, for the citizens and residents of the UAE, and for generations to come.



Chapter 1

About DEWA



DEWA at a Glance

(GRI 102-1, 102-2, 102-3, 102-4, 102-5, 102-45)

Dubai Electricity and Water Authority (DEWA) is a Dubai government owned utility and is the sole provider of electricity and water in the Emirate of Dubai. DEWA's core business is to operate and maintain its power stations, and desalination plants, aquifers, power and water transmission lines and power and water distribution networks in Dubai. Its power generation and water desalination stations are mainly fuelled by natural gas. DEWA buys gas exclusively from the Dubai Supply Authority (DUSUP), which is responsible for procuring, transmitting, storing and delivering to end customers all natural gas in Dubai. DEWA operates as an independent authority regulated by the Dubai Supreme Council of Energy. The Supreme Council of Energy is responsible for energy policy development, planning and coordination in Dubai and has broad regulatory powers, including the power to set the water and electricity tariffs charged by DEWA.

Although its main business activities are the production and supply of electricity and water, DEWA has a portfolio of related business interests:

Core Portfolio (GRI 102-6, 102-7)



DEWA owns 70% of EMPOWER, the largest provider of district cooling services in the region. Its activities include the management, operation and maintenance of central cooling plants and related distribution networks.



Mai Dubai is a water-bottling factory, fully-owned by DEWA. The company distributes bottled water within the UAE and export markets.



ETIHAD ESCO provides buildings with energy-efficiency services and is fully-owned by DEWA. In 2019, Etihad ESCO established Etihad Energy Solutions in partnership with Vision International Investment Company to do business in Saudi Arabia.



دبي الكربون
DUBAI CARBON

Dubai Carbon Centre of Excellence is an energy projects consultancy with a focus on renewable energy and carbon credits trading. In 2020, the consultancy was acquired by Etihad ESCO.



Digital DEWA was created as a holding company aiming at grouping several subsidiaries that deliver digital business solutions in B2B communications infrastructure, renewable energy services, distributed energy storage, artificial intelligence and other digital services. It has Moro and four newly-established digital companies: Digital X, Infra X, Smart Energy X and Secure X.

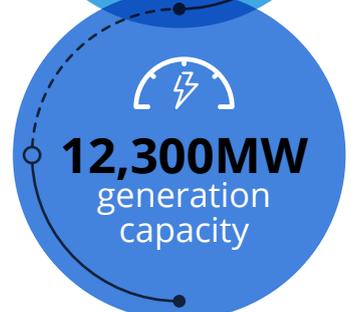
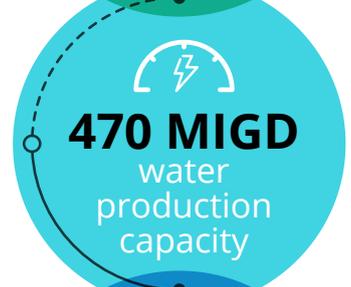
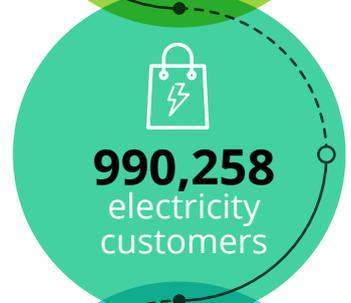


Moro (Data Hub Integrated Solutions) is a wholly-owned subsidiary of DEWA that was formed to provide data centre services, cloud solutions, managed business solutions and managed IT services for DEWA and other external public and private organisations



DUCAB-HV manufactures and supplies high-voltage cables and was established as a joint venture of DUCAB (50%), DEWA (25%) and ADWEA (25%).

Key Facts about DEWA



IPP Portfolio

Jumeirah Energy International, Shuaa Energy 2 Holding, Hassyan Energy Holding, Noor Energy 1 Holding and Shuaa Energy 3 Holding are special purpose vehicles owned 100% by Jumeirah Energy International Holdings LLC, which is DEWA's arm for investments by Independent Power Producers (IPPs).



Shuaa Energy 1 was established in 2015 to complete the 200MW 2nd phase of the Mohammed bin Rashid Al Maktoum Solar Park. DEWA owns 51% through Jumeirah Energy International and ACWA Power Solar Limited owns 49%.



Shuaa Energy 2 is the 800MW solar power plant established in 2016 to complete the 3rd phase of the Mohammed bin Rashid Al Maktoum Solar Park with 60% belonging to DEWA through Shuaa Energy 2 Holdings and 40% to Emirates Solar Power Company.



Hassyan Energy Phase 1 is the region's first clean coal power station. It will provide 2,400MW of power to DEWA's grid. DEWA, through Hassyan Energy Holdings, owns 51% and ACWA Power Harbin Holdings Limited owns 49%.



Noor Energy 1 is the largest single-site Concentrated Solar Power (CSP) plant in the world. Established in 2018, it will have a capacity of 950MW. It is owned by Noor Energy 1 Holdings, of which with DEWA owns 51% and ACWA Power Solar CSP Holding Limited owns 49%.



Shuaa Energy 3 is a 900MW solar power plant established in 2020. 60% belongs to DEWA through Shuaa Energy 3 Holding and 40% to Solar V Holding Company.

Financial Investments Portfolio

Dubai Green Fund Investments is 100% owned by DEWA through Jumeirah Energy International Capital Holdings and was established in 2018 to invest in green projects in Dubai to make the Emirate a global hub for the green economy.

Forward Investments is the corporate venture capital arm of DEWA. It focuses on investments in emerging technologies and new business models that can benefit DEWA and Dubai in the long run.

Jumeirah Energy International Silicon Valley Company is DEWA's outpost office in Silicon Valley owned 100% by Jumeirah Energy International Capital Holdings, DEWA's wholly-owned investment arm. Its primary goal is to look for investment opportunities related to R&D and innovation.

The above related business interests are excluded from the reported data found within this report.

DEWA's Values (GRI 102-16)

DEWA's management believes in the importance of setting a cohesive work environment to enable its workforce to supply electricity and water services with excellence. It has a clearly-defined set of corporate values. They represent DEWA as a corporation, what its employees believe in, and what its priorities are.

Each value has a detailed definition, key behaviours and actions, to enable DEWA's employees to incorporate them into their daily work. These corporate values are reflected in its Code of Conduct, which is shared with all its employees in their employee handbook upon joining and is accessible through its internal portal.

These values are communicated regularly to all stakeholders as part of DEWA's strategic communication plan through awareness sessions, email shots, training sessions and other communication channels in both Arabic and English.

DEWA's management embody, apply and instil these values within the corporation through various means of communication and feedback. Employees are also encouraged to make use of the available communication

channels to share their opinions and feedback on matters relating, but not limited to, breaches of the Code of Conduct, the work environment, and stakeholders' happiness.



Good Governance (GRI 103-1, 103-2, 103-3)

Governance and compliance are considered essential for any organisation. As a fully government owned, utility engaged in the production and supply of two life forces, namely electricity and water in Dubai, DEWA has a dual role both as producer and regulator of public utilities. Good governance therefore is a key component for DEWA being a key driver of Dubai's success story. Governance is the way in which DEWA is directed and controlled in line with its establishment decree No.1 of 1992. It defines the distribution of roles and responsibilities among the different stakeholders (ensuring no conflict of interests or any misuse of authority). DEWA has implemented in letter and spirit the best principles of good Corporate Governance by choice and voluntary action for adoption of best practice. Benchmarks include the OECD, the World Bank, UN organisations and global peer groups.

DEWA has adopted the four classic pillars of good governance, those being Trust, Transparency, Accountability, and Fair practices. Thereafter, building upon the four pillars DEWA's governance drivers have evolved with changing technology and expectations over the last three decades.

Considering the principle of corporate governance excellence followed by DEWA over the years, there have been numerous awards conferred on DEWA for its governance excellence.



Human Rights Assessment

(GRI 103-1, 103-2, 103-3, 412-1)

DEWA, including each of its divisions, business units, and subsidiaries, is firmly committed to conducting business with the highest integrity and in compliance with the provision and spirit of the laws of Dubai and the UAE. DEWA is an ethically driven organisation. As a responsible organisation, DEWA seeks to use its position to promote the highest standards for ethics, conservation of human rights and business conduct wherever DEWA operates.



DEWA has developed a Code of Conduct and Ethics for its suppliers, contractors, and associates. This code mandates that all suppliers shall follow all applicable Laws in Dubai and the UAE and be committed to the value of, and respect for, all people. The supplier is responsible for respecting human rights in its operations and will comply with the standards set forth in the United Nations Universal Declaration of Human Rights. The standards set forth in this code apply to all workers, including, without limitation, temporary, migrant, student, contract, direct employees, and any other type of employee.

DEWA also established law No.12 of 2020 concerning Contracts and Warehouse management which stipulates on the need to conduct procurement operation with responsibility and transparency and prohibits preferential treatment to companies, otherwise than provided under applicable legislations. All new employees working in procurement undergo

a training session on the terms and conditions of contractors, which include the SA8000 requirements. Furthermore, DEWA has introduced a requirement of compliance with the SA8000 Standard on a decent work environment, the Universal Declaration of Human Rights and ILO conventions in all Procurement Contracts. DEWA introduced a special clause on compliance to SA8000 Stand in all its Tender Documents. Tenderers are required to submit a Self-assessment form on Compliance of SA8000 in their offers to ensure that DEWA does not associate with suppliers, contractors and companies that support or practice human rights abuse, in any form or manner.

100% of procurement activities of bulk purchases and projects are subject to Human Rights review. In 2020, all the 314 contracts for bulk purchases and projects with a contract value higher than AED 2 million included the Human Rights clause.

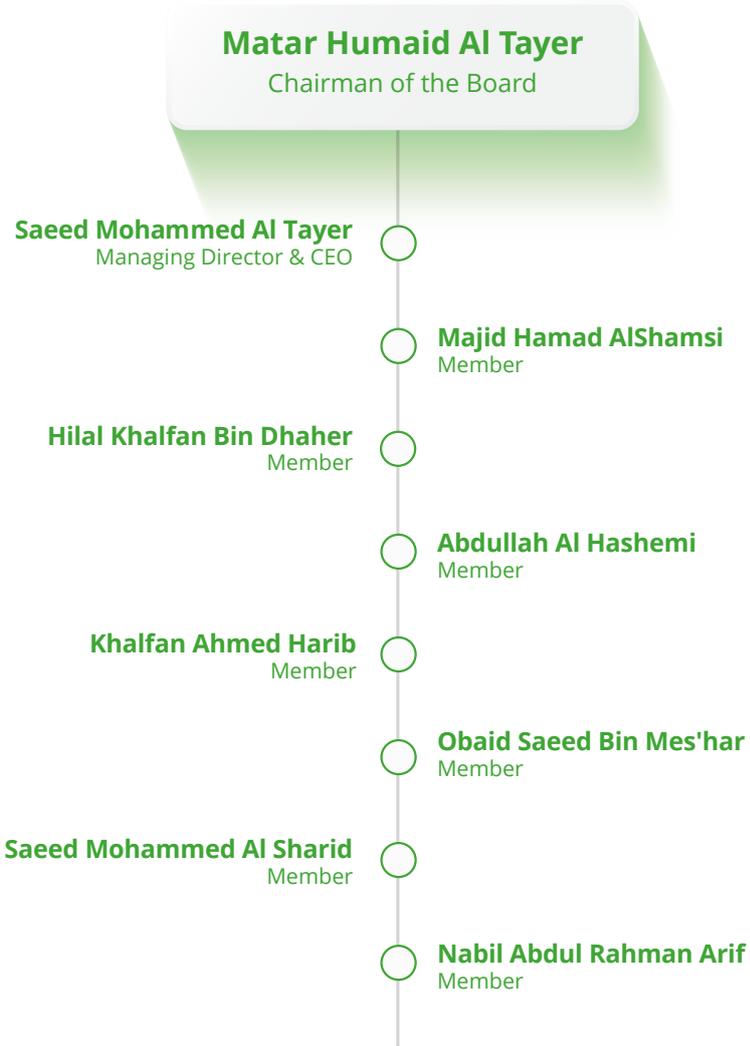
Board of Directors

The Board of Directors of DEWA is appointed by the 100% shareholder, the Government of Dubai. The Board and the Managing Director and CEO are appointed through a decree issued by the Ruler of Dubai for an initial extendable term of three years. The Board along with the Managing Director and CEO sets the tone at the top for a premier successful organisation, with ethics as a key driver. The Board and Management lead governance best practice by example.

The nine members of the Board are chosen after a thorough fit and proper evaluation process. The members are qualified and experienced in engineering, technology, accounting and finance; administration, management and business. They all have extensive experience as members of the boards of organisations and companies. They provide responsible oversight of the organisation and its workings. DEWA is also able to operate based on the proclamation and resolution of conflicts of interests,

clear related party disclosures and its established Code of Conduct. The Board adopts the best in board governance principles.

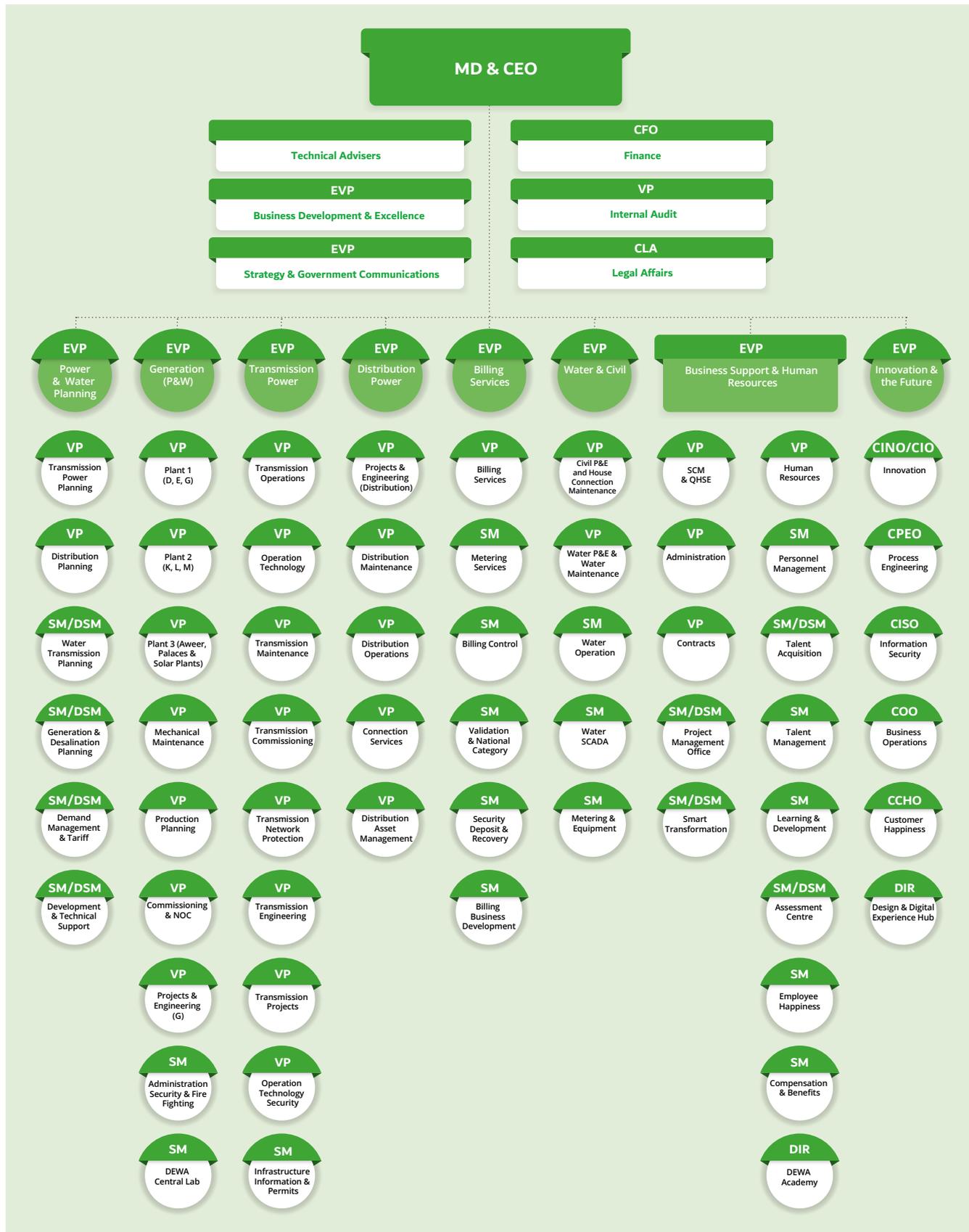
HE Matar Humaid Al Tayer currently serves as Chairman of the Board, while HE Saeed Mohammed Al Tayer is DEWA's Managing Director (MD) & Chief Executive Officer (CEO) and a Member of the Board.



Organisation Chart

DEWA operates through both primary and supportive specialised divisions, and each sector includes its own specialised departments, sections and units that manage the sector's operations in accordance with

key performance indicators, objectives and plans. Collectively these support DEWA in delivering its services competently and efficiently.



Committees

The Management team is supported in its activities by a range of other committees, which consist of either Management team members or other individuals from DEWA's divisions. These committees include but are not limited to: the Grievance Committee; the Women's Committee; the DEWA Youth Council; the Investment Committee; the Takaful and Theqa Committee; the Administration Violation Committee; the Scrap Verification Committee; the DEWA Excellence Award Committee; the Crisis Management Committee; the Group Risk and Resilience Committee; the Health, Safety & Environment Committee; the Corporate Governance Committee; the IT Security Response Team; the Cyber Emergency Response Committee; the ISO 50001 Energy Management System-Top Management Committee, and the Drones Robotics Committee.

Associations & Organisations

(GRI 102-13)

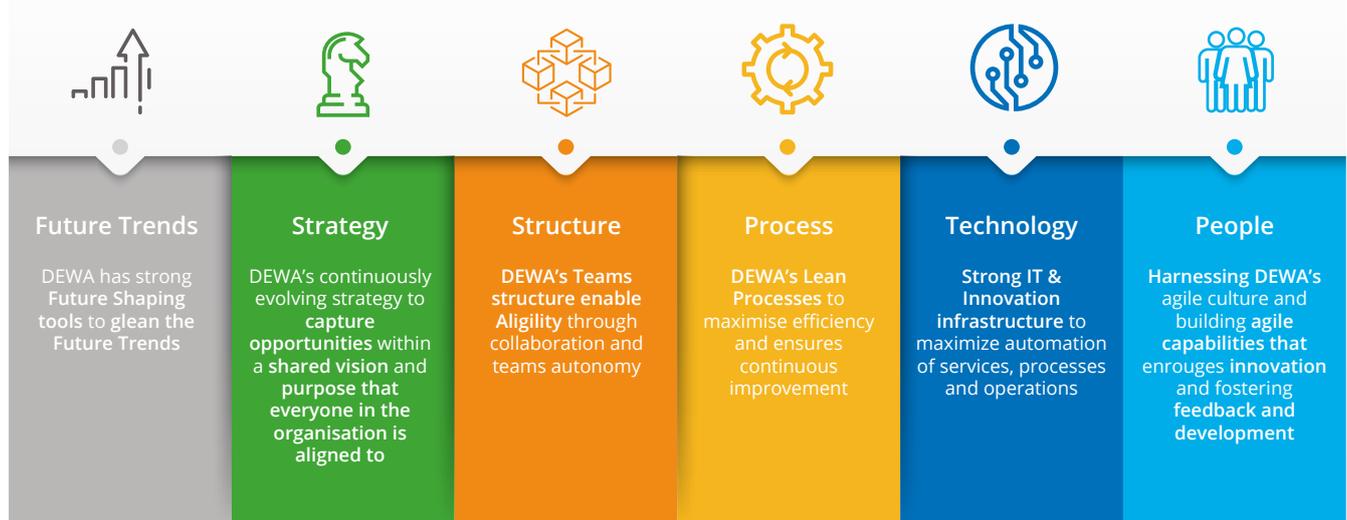
DEWA plays a pivotal role in multiple national and international organisations, councils and committees. These organisations include but are not limited to:



Agility at DEWA

DEWA defines enterprise agility as the ability to foresee change and adapt swiftly to the changing environment. There are four key drivers to achieving agility at DEWA which include an agile visionary leadership, harnessing this agile culture across DEWA, empowered employees and a dynamic strategy. This became more crucial during the pandemic. DEWA

successfully implemented the precautionary measures to ensure employee and customer health & safety while maintaining the continuity and sustainability of its operations with the highest quality and keeping customer satisfaction rate at the same high level. Also DEWA supported many other governmental entities during the pandemic such as DHA, Dubai Municipality and Dubai Police.



Strategically-Driven

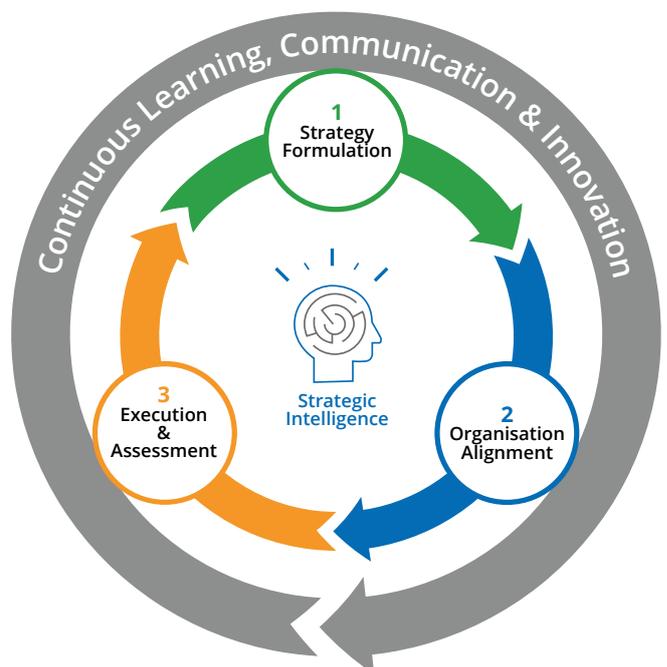
The UAE and Dubai Government continue to set strategies and goals to ensure sustainable development across the UAE.

and assessment focuses on implementing the strategy and evaluating progress to track the business results against set targets.

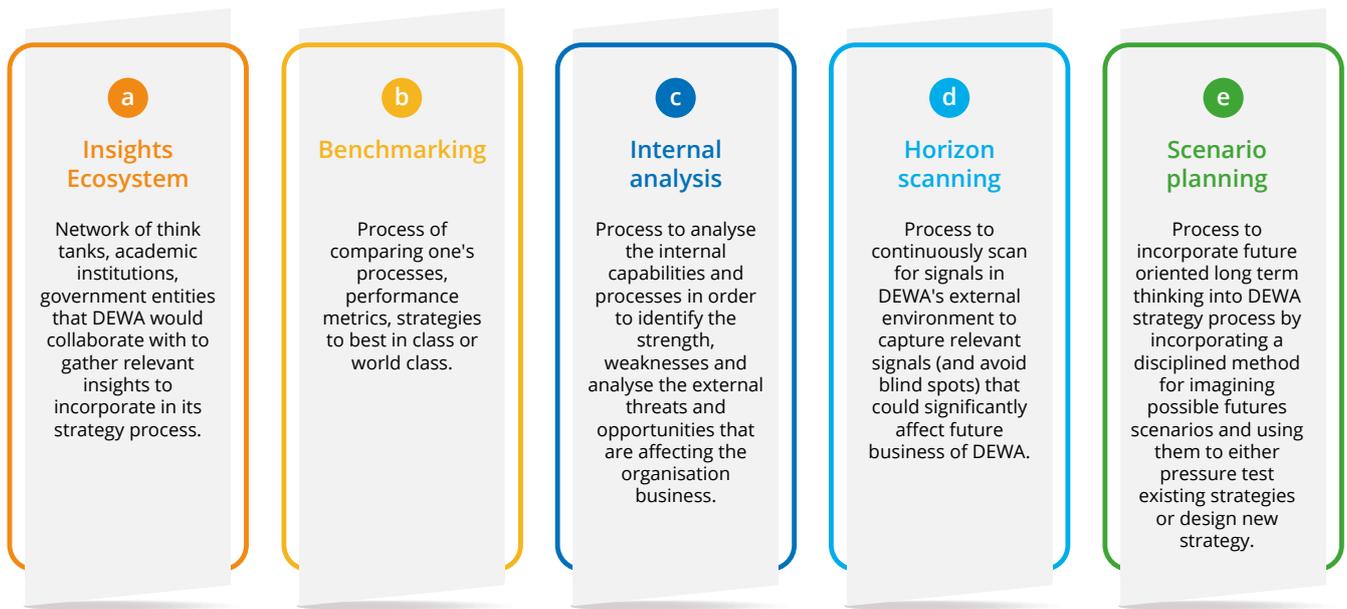
DEWA continuously aligns its strategy with major global developments and trends and national strategies, to ensure its effective contribution to the long-term prosperity of Dubai and ultimately the UAE. This is achieved through DEWA's Strategy and Strategic Intelligence Framework. DEWA's Strategic Intelligence Framework is a systematic continuous past-forward, today-onward and future-back analyses, leveraging an established insights ecosystem, to feed strategic intelligence into the organisation. The Strategy framework consists of three consecutive phases leveraging the right input from strategic intelligence and powered by innovation.

There are DEWA's Strategic Intelligence Framework which include:

DEWA's strategy formulation involves defining the strategic direction and then designing the corporate strategy by leveraging strategic insights. The organisational alignment focuses on aligning its divisions with its overall strategy and planning strategic initiatives for its achievement. Its execution



There are five key pillars to DEWA's Strategic Intelligence Framework which include:



DEWA Strategy Alignment

(GRI 102-12)

DEWA has aligned its strategy to global, UAE and Dubai specific strategies.

United Nations' Sustainable Development Goals

The Sustainable Development Goals (SDGs) came into effect in January 2016 and are a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. Each of the 17 Goals has specific targets to be achieved over the next 15 years.

10 Principles of the United Nations Global Compact

The United Nations Global Compact is the world's largest corporate sustainability initiative with more than 13,000 corporate participants in over 170 countries. The Global Compact is based on ten fundamental principles relating to human rights, labour, environment and anti-corruption.

United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty that came into force in 1994. The main objective of the UNFCCC is to set guidelines and non-binding limits on greenhouse gas emissions by individual countries to avoid any drastic changes to the atmosphere and the climate.

UAE Vision 2021 & National Agenda

The UAE is on a journey to position itself as one of the leading countries in the world, culminating in its golden jubilee in 2021, when the UAE celebrates 50 years and begins the journey for the next 50 years. To achieve its Vision 2021, a set of national KPIs grouped in six themes was developed to track progress.

UAE And Dubai Innovation Strategy

The Dubai Innovation Strategy focuses on ten sectors that are aligned to the National Innovation Strategy and aims to improve living standards in Dubai. For DEWA, innovation is a priority for improving its services and initiatives, and a key element in developing its strategies and work plans.

UAE Centennial 2071

The plan focuses on human development through educational programmes with a concentration on Information Technology and Engineering, promoting the UAE's image and soft power globally, enhancing community cohesion and respect while strengthening Emirati values and ethics and lastly, building a diversified and competitive economy.

UAE Water Security Strategy 2036

The aim of the UAE Water Security Strategy 2036 is to sustain access to water under both regular and emergency conditions in keeping with national regulations and international standards set by the World Health Organisation. Some of the main targets for the strategy include: reducing the demand for water by 21%, increasing the reuse of treated water to 95% and increasing the national water storage capacity up to two days.

UAE Strategy for the Future

Launched under the directives of HH Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE, the long-term strategy will steer the nation's growth by identifying the needs and challenges of the future, addressing them through impactful long-term plans, and successfully leveraging new opportunities for all-round development. The strategy is centred on three main pillars: new operational model for the government, building national capacity and setting strategic priorities for the future.

UAE Strategy for Artificial Intelligence

Launched in October 2017, this strategy is the first of its kind in the world. It aims to achieve the objectives of the UAE Centennial 2071; boost government performance at all levels; use an integrated smart digital system that can overcome challenges and provide quick efficient solutions; make the UAE the first in the field of AI investments in various sectors; and create a new vital market with high economic value.

The UAE Strategy for the Fourth Industrial Revolution

This strategy aims to achieve customer happiness and to position the UAE as a model for interactive cities using AI, innovative education, intelligent genomic medicine and robotic healthcare to achieve sustainability.

UAE Green Growth Strategy

Launched in January 2012, by HH Sheikh Mohammed bin Rashid Al Maktoum, this strategy is a long-term national initiative to build the green economy of the UAE under the slogan 'A Green Economy for Sustainable Development'. It aims to maintain a sustainable environment to support long-term economic growth.

Year of the Preparation for the Next 50 Years

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, and His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, announced 2020 to be the year of preparation for the next 50 years. It is the largest national strategy of its kind to prepare for the next 50 years on both federal and local levels. It also marks the preparations for the UAE Golden Jubilee celebrations in 2021, where citizens and residents, government and private sector entities, take part in formulating life in the UAE for the next 50 years

Smart Dubai

Smart Dubai is a strategy for transforming Dubai into the smartest city in the world by 2021, marking the nation's golden jubilee. It includes 100 initiatives transforming 1,000 government services into smart services. DEWA as a key stakeholder is actively participating in the development of Dubai's Smart City vision.

Dubai Clean Energy Strategy & Demand Side Management Strategy

The Dubai Clean Energy Strategy 2050 sets targets for 7% of clean energy in the generation mix by 2020, 25% by 2030 and 75% by 2050, while the Demand Side Management Strategy (DSM) 2030 aims to reduce energy and water demand by 30% by 2030. DEWA plays an essential role in achieving these goals by reinforcing the renewable energy sector and fuel diversification to meet the objectives of the Dubai Clean Energy Strategy 2050, which maps out Dubai's energy sector over the next three decades.

Carbon Abatement Strategy 2021

Dubai Carbon Abatement Strategy (CAS) sets the course of actions to be adopted by Dubai Government to manage Dubai's GHG emissions until 2021. DEWA aligns with the CAS 2021 to reduce CO2 emissions by 16% by 2021. DEWA's contribution in CO2 emission reduction represent approximately 8.8 % equivalent to 5 MtCO2. The net CO2 emissions of the emirate of Dubai have achieved a 22% reduction compared to Business As Usual (BAU) scenario two years ahead of the targeted date.

Dubai Government Excellence Program

The Dubai Government Excellence Program (DGEP) creates an environment that encourages government organisations to adopt excellence and innovation, respond to the challenges and enhance performance. Towards that, DEWA provides world-class government services and adopts international best practices.

UAE and Dubai Happiness

The UAE leadership launched the visionary ambition of becoming the happiest country in the world. It appointed a Minister of State for Happiness and launched the National Programme for Happiness and Positivity. This happiness ambition is reflected in both the UAE Vision 2021 as well as the Dubai 2021 Plan.

Dubai Plan 2021

Dubai Plan 2021 describes the future of Dubai through holistic and complementary perspectives that were divided into six themes. Each highlights a group of KPIs for Dubai that are aligned with DEWA's 2021 Strategy.

Dubai Paperless Strategy

The Dubai Paperless Strategy aims to build a perfectly integrated paperless government framework, and an administration that sets solid plans and strategies to secure people's happiness and develop their communities to meet the requirements of the cities of the future. The strategy will eliminate over one billion papers that was annually used in Dubai government transactions. DEWA is one of the leading organisations in implementing the Dubai Paperless Strategy. It has cut

its paper usage by 82% in the Large Entities category in Dubai Government. Smart adoption of DEWA's services reached 96% by the end of May 2020.

Dubai 10X

His Highness Sheikh Mohammed bin Rashid Al Maktoum, called on all Dubai Government entities to embrace disruptive innovation, which is exploiting available technologies to deliver new or existing services in radically different ways that are design thinking based and customer-focused. The disruptive innovation should be adopted by all government entities as the basis of their operations and to seek ways to incorporate its methodologies in all aspects of their work.

8 Principles of Dubai

The 8 defining Principles of Governance for Dubai, endorsed by His Highness Sheikh Mohammed bin Rashid Al Maktoum, show the well-being of the UAE's people, the sustained progress of the nation, and the welfare of future generations. The Principles lay a strong foundation for the UAE's future growth, economic conditions, business, law and more.

50-Year Charter

The Charter marks HH Sheikh Mohammed bin Rashid Al Maktoum's 50 years of service to the country and outlines plans to improve the quality of life in Dubai for its citizens and residents over the next 50 years. The Charter represents the pledge and promise to enhance the lives of people in Dubai in 2019. It includes what will be undertaken to improve the quality of life, develop the community of Dubai and ensure a brighter future for generations to come.

Financial Performance

(GRI 103-1, 103-2, 103-3, 102-7, 201-1)

The financial performance of DEWA indicates its alignment with and commitment to the long-term sustainability goals of the UAE Vision 2071 as well as the 50 year charter. The continuous efforts on optimising costs and investments have proven results by way of generating consistent returns to its sole shareholder, the Government of Dubai.

In line with the directives of the Ruler of Dubai in supporting and promoting the economy of Dubai, DEWA provided a discount of **AED 404 million** to all customers and continues to retain profitability and a good liquidity position. As a responsible member taking guidance from Dubai Supreme Council of Energy, DEWA recommended and reduced fuel surcharge by 23% for electricity and 33% for water from 1st of December 2020.

Prudent cash governance has facilitated DEWA to settle the Global Medium Term Note (GMTN) to the tune of AED 5.5 billion and achieve a debt free position with some remarkable financial ratios. Under the leadership of the MD&CEO, DEWA as an industry leader, has achieved its financial KPIs and created equilibrium between financial performance and customer happiness, thus creating sustainable value for stakeholders and customers. Beyond the boundaries, DEWA is creating new challenging standards on efficiency and optimisation. DEWA is continuously investing in diverse new opportunities to achieve its overall vision in the areas of clean energy, digital transformation, water etc. with strategic alliance partners to make a greener planet.



11,489

Number of employees



40,633,473,456 kWh

Units sold electricity



114,604,853,782 IG

Units sold water



AED 8,542 million

Capital Expenditure



5.68%

Return on Equity (ROE)



AED 21,168 million

Total Revenue



0%

Debt to Equity

Corporate Risk & Resilience (GRI 201-2)

DEWA recognises the need to proactively anticipate and react to change.

In doing so, DEWA ensures that power and water demands across Dubai are met at a globally leading level of reliability, efficiency, and safety with minimal environmental impact. This requires an enhanced capability to build agility and sustain resilience in response to potential incidents, threats, and crisis situations.

The Corporate Risk & Resilience Department has developed a Corporate Risk & Resilience Policy & Framework to embed long-term resilience across the organisation so DEWA remains a resilient utility for generations to come. Its approach aligns to local (AE/SCNS/NCEMA 7000:2015) and international (ISO 22301, ISO 31000, and BS 11200) standards and best practices

In August 2020, DEWA launched PAS 60518:2020 - Developing and implementing Enterprise Risk and Resilience Management (ERRM) Guide for Utilities. PAS 60518:2020 provides detailed implementation guidance on Enterprise Risk Management (ERM), Business Continuity and Crisis Management and how integrating a joined-up approach to these disciplines can improve resilience and help withstand unexpected future shocks and extreme events. It has been designed for, and is applicable to electricity, gas, water, and wastewater utilities of all sizes in public and private sectors.

Enterprise Risk Management (ERM)

DEWA may encounter a wide variety of risks which may be Strategic, Operational, Financial or Compliance in nature. Risks are identified using a top-down (corporate) and bottom-up (divisional) approach to ensure the full spectrum of risks to DEWA's business are identified and, where required mitigated to an

acceptable level as articulated in the Enterprise Risk Management (ERM) Framework. Enterprise Risk Management in DEWA is governed by the Group Risk & Resilience Committee (GRRC).

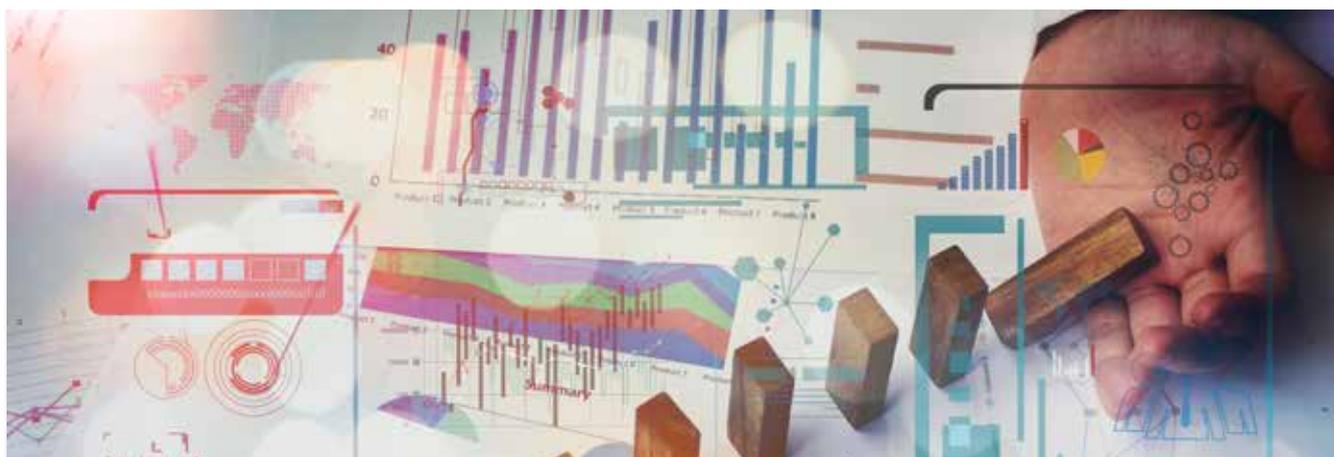
Business Continuity and Crisis Management

DEWA's Divisions are responsible for the development of Business Continuity Plans (BCP) which are reviewed, tested, and updated annually or more frequently if necessitated. During the testing phase, areas for improvement are identified and prioritised by Divisions with support from the Corporate Risk & Resilience Department. For externally facing risks and scenarios, DEWA has developed joint response plans with its strategic partners to ensure collaborative response and critical communication interchange during emergencies. Information sharing between local and national authorities is two-way and regular, ensuring that DEWA's preparedness for emergencies meets the required local and national requirements and standards. Mock drills are carried out on a regular basis to test potential risk scenarios to further bulletproof DEWA's overall preparedness and resilience.

Business Continuity & Crisis Management in DEWA is governed by the Crisis Management Committee (CMC).

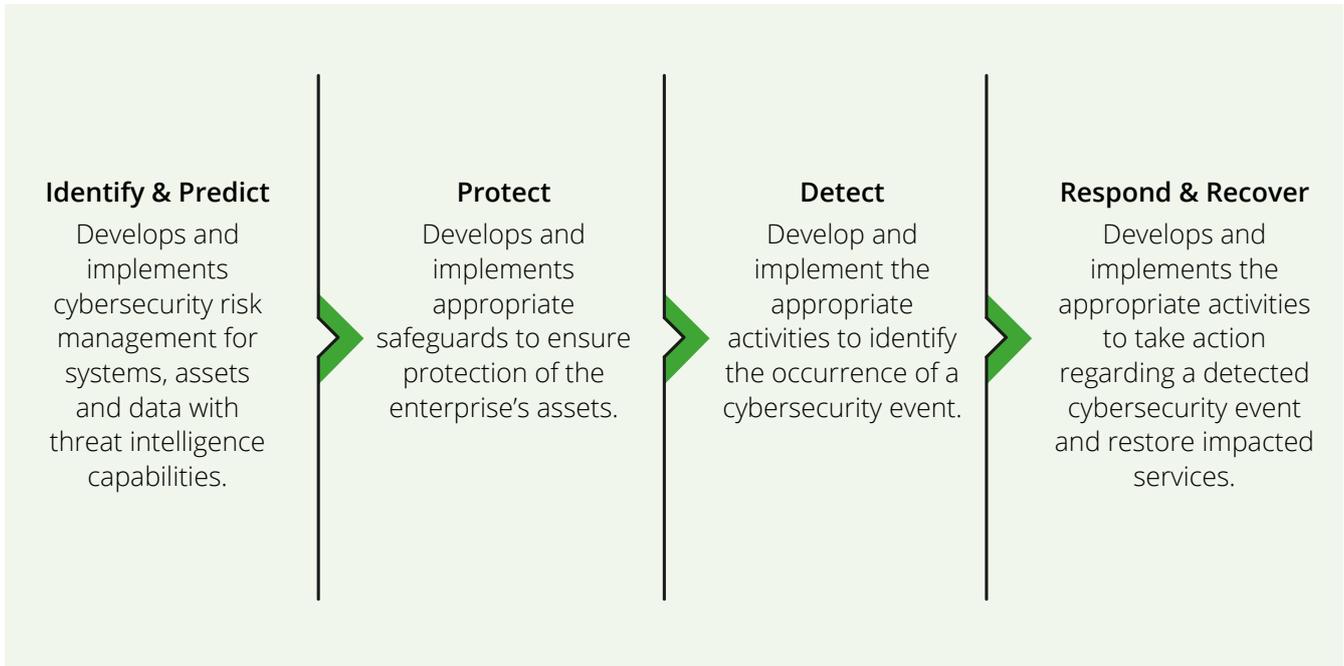
Crisis Media Response & Communications

DEWA has a media response and crisis communications plan in place with pre-defined holding statements to ensure swift and effective communications to employees and the public during emergency situations. DEWA's Crisis Command Centre (CCC) acts as the hub for directing, supporting, and provisioning all the necessary steps during a crisis. The Crisis Command Centre has direct communication links to Dubai level crisis management teams and the Dubai Media Office.



Cyber Security

DEWA information Security is following a holistic cyber security framework that has continuous governance and improvement in terms of Policy Framework, Compliance, Risk Management and Security Architecture. The Cyber security framework is a cycle of four pillars:



DEWA has established security mechanisms to detect and fight attacks, intrusions, work proactively identifying Zero Day and other global attacks happening and addressing them internally with relevant technical, operational and security support teams. These teams include:

- *CERT (Computer Emergency Response Team)*
- *24/7 Cyber Defence Centre Team*
- *IT Emergency Incident and Support Team*

Moreover, DEWA has integrated the objective outcomes of the implemented security governance and assurance frameworks to continuously measure the cybersecurity posture through risk-based security Key Performance Indicator for various Cybersecurity and Information Security functions, domain activities and controls related to monitoring, reporting and responding to Cybersecurity incidents and weakness. This is designed and applied after Risk Assessment and Mitigations related to People, Processes and Technology.

Additionally, DEWA has implemented, applied, and blended Information Security Governance and Management related Frameworks, that are operated under a Risk Management Based approach such as:

- *DEWA Enterprise Risk Management*
- *DEWA Information Security Management System (ISO 27001)*
- *Dubai Information Security Regulation (ISR Ver-2)*
- *Dubai Industrial Control System Security standard*
- *ISO 27014 - Information Security Government Standard*

In addition, DEWA follows international and regional cybersecurity best practices such as:

- *UAE Information Assurance Regulation*
- *Dubai Electronic Security Centre policies (Internet Of Things, Web Security)*
- *National Institute of standards and Technology Cybersecurity*
- *Control for Internet Security (CIS) requirements*

Innovation & The Future

Innovation is one of DEWA's five core values and is a recurring theme in its strategy map. Its efforts in innovation have resulted in pioneering initiatives that have enabled it to shorten time and effort, create cost savings, keep pace with the Fourth Industrial Revolution (4IR), and cope with the new global transformation. Its advanced use of technologies and software enhancements, ensured business continuity during the work from distance transition due to the pandemic.

Amongst the myriad of emerging technologies that are trending, Innovation & The Future division at DEWA has strategically selected and adopted 4IR disruptive technologies such as AI, Robotics, Blockchain, Big Data, Internet of Things (IoT) and Unmanned Aerial Vehicles through Digital DEWA. Its collaborations include:

1. Partnership with Berkeley Artificial Intelligence Research Lab (BAIR), making it the 1st public utility in the world to forge a strategic partnership with BAIR Lab.
2. 1st utility to partner with World Economic Forum (WEF) 4IR Centre to keep pace with the 4IR and develop technologies in the power and water sector.
3. 1st utility in the world and 1st organisation outside the USA to participate in the Microsoft Quantum Computing Programme.
4. 1st Utility in the region to adopt the state-of-art robotics such as the spot robot of Boston Dynamics Inc.
5. The UN E-Government Survey 2020 recognised Rammas, DEWA's virtual AI-based employee, as one of the best practices of local governments. It highlighted it as a model for using emerging technologies. UAE ranked 1st in the Arab World and 8th globally in the Online Service Index within the E-Government Development Index.

Building on the directives of the wise leadership to anticipate and keep pace with the latest developments in strategic sectors, DEWA has adopted various initiatives based on sound scientific foundations and with a clear vision to foresee future challenges and turn them into promising opportunities. DEWA has developed a Future Innovation Agenda which includes Dubai 10X 1.0, Dubai 10X 2.0 and part of several accelerator programmes. Through the Innovation Agenda, DEWA has worked with various government entities, utilities, enterprise-level companies, start-



ups, and innovators on new technologies relevant to the core (power & water provision), adjacent (new technologies for power and water provision) and beyond (digitalisation) businesses.

DEWA Accelerator Programmes

Today, DEWA has become one of the world's leading utilities, not only in anticipating the future but also in creating it. DEWA's participation in global Future Accelerators programmes, including the Dubai Future Accelerators Programme and the Free Electrons Programme, is part of its efforts to increase adoption of disruptive technology, latest trends, and innovative solutions that solve DEWA's current and future challenges, through leading start-ups worldwide. Such a collaboration also creates various opportunities with start-ups who have the agility, fresh ideas, and cutting-edge knowledge to co-create solutions that enhance organisation's operations and bring cost savings, create joint intellectual property opportunities for DEWA, and potential investment & revenue diversification opportunities through DEWA's subsidiaries. Start-ups from around the globe, through such accelerator programmes with DEWA, get to develop a viable pilot side by side with DEWA refining their company's solution, co-creating the future of energy and exploring options to jump start their company's growth.

AI Procurement Framework

DEWA became the first entity in the UAE & the first utility in the world to initiate & deploy Artificial Intelligence framework, which is a worldwide best practice endorsed by the World Economic Forum (WEF). The artificial intelligence framework was published in June 2020 by the WEF procurement in a box.

AI procurement Framework defines the new Artificial Intelligence Procurement guidelines and the steps

to be followed when considering to procure an AI system / solution in a safe, ethical and innovative manner and with shortened time and efforts. The aim is to reshape the normal procurement in the context of AI and what additional requirements should be considered. In addition, it aims to provide an AI system evaluation criteria such as intended use, accuracy of data, fairness and transparency of algorithmic-based decisions flow, data security and effectiveness of the system.

The AI Procurement Guidelines have been designed to help keep up with the rapid developing technologies and mitigate risk. The procedure will empower DEWA to set the right policies, protocols, operational level agreement matrix and assessment criteria that will facilitate effective, responsible and ethical use of AI.

Excellence

DEWA works within the main three pillars of the fourth generation of Dubai Government Excellence Program, to motivate employees on the importance of excellence as one of the most important ways of transforming the government of the future and satisfying stakeholders with an emphasis on customers. It adopted the Balanced Scorecard (BSC) and the Dubai Government Excellence Program (DGEP) principles and guidelines, working according to Dubai Government Excellence. In addition, DEWA takes into account other excellence models including EFQM, Investments in People, Harvard and others.

Its achievements have become a role model for excellence, locally and regionally. These achievements contributed to DEWA receiving over 332 local, regional and international awards and certificates since 2015.

DEWA Awards & Certificates

DEWA has won 47 awards and certificates in 2020 at an international, regional and local level. The awards spanned various fields including Innovation, Governance, Human Resources, Sustainability, Corporate Social Responsibility, Health & Safety, Environment, Business Continuity & Resilience, Smart Government and Artificial Intelligence.

AWARDS WON BY DEWA IN 2020



Chapter 2

Sustainable Development





Management Approach

Sustainability remains a vital part of DEWA's culture. DEWA was the first government organisation to include sustainability within its vision. Sustainability is also embedded in all DEWA's actions and business decisions. Its top management are committed to fostering a culture of sustainability within DEWA and amongst all its stakeholders. DEWA is also working to understand and balance their varied expectations and work with them to achieve the UAE's and Dubai's agenda for sustainability. DEWA's vision is to build a more sustainable future, this is achieved by:

Building unique partnerships

Developing a talented workforce by continuously supporting their growth and development and promote a working culture that encourages equality, integrity and fairness.

Ensuring the highest level of operational reliability, efficiency and deliver sustainable profitable growth as well as integrating environmental consideration into its business operations and strategy.

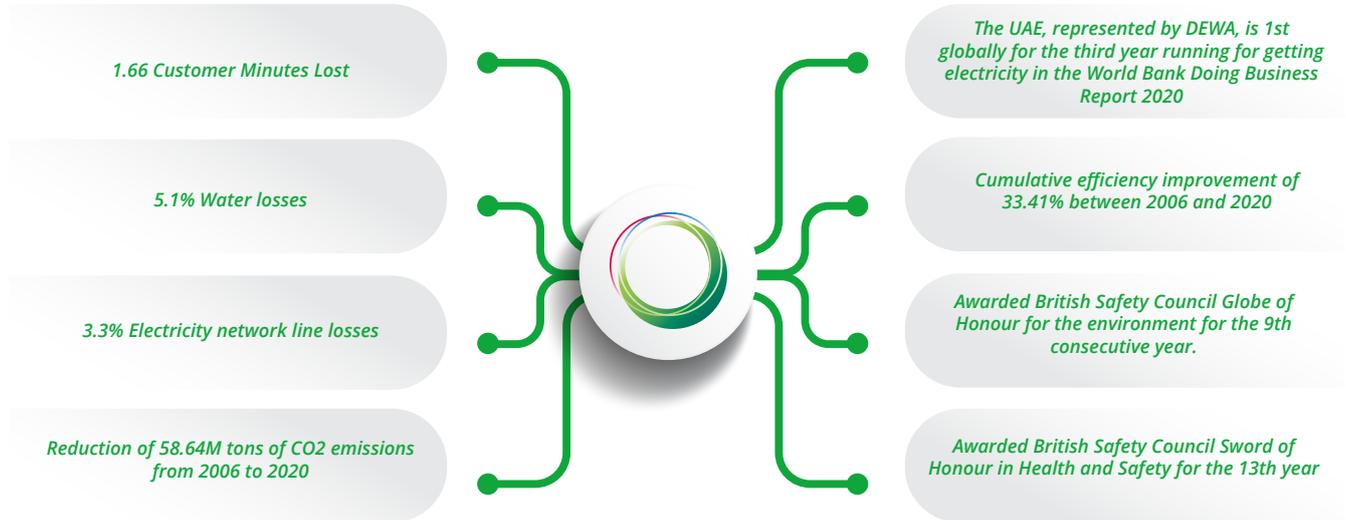
Promoting sustainability internally within its supply chain, thus creating benefit for all its stakeholders.

Undertaking these steps advances DEWA's progress towards becoming an industry leader. These steps include fully embedding the three aspects of sustainability, economy, society and the environment, within its strategy. It also requires a commitment to the wellbeing of the community of Dubai and the UAE; creating sustainable value for everyone.

DEWA works to be a globally leading utility by attaining global and local expertise in adopting the latest and best industry standards and practices in sustainability. It also seeks to create a safe and sustainable environment and a brighter future, for generations to come.

2020 Sustainability Management Highlights

(GRI 103-1, 103-2, 103-3, 102-9, 204-1)



DEWA Ecosystem

The ecosystem is defined as how the local and global external environment affects DEWA's core business and support operations, and how its role in creating and delivering sustainable value to its key stakeholders. On the other hand, it shows how DEWA is impacting and leading in its ecosystem by inspiring others and demonstrating what can be achieved for the benefits of others as well as itself.

DEWA Ecosystem consist of five main components, these components are covering:

- *DEWA's core business and support activities*
- *Subsidiaries*
- *DEWA's Stakeholders*
- *The local environment*
- *The global environment and major trends*



Sustainability Governance

DEWA's top management considers sustainability as an integral and core form of the organisation which is related into and not separate from DEWA's corporate strategy.

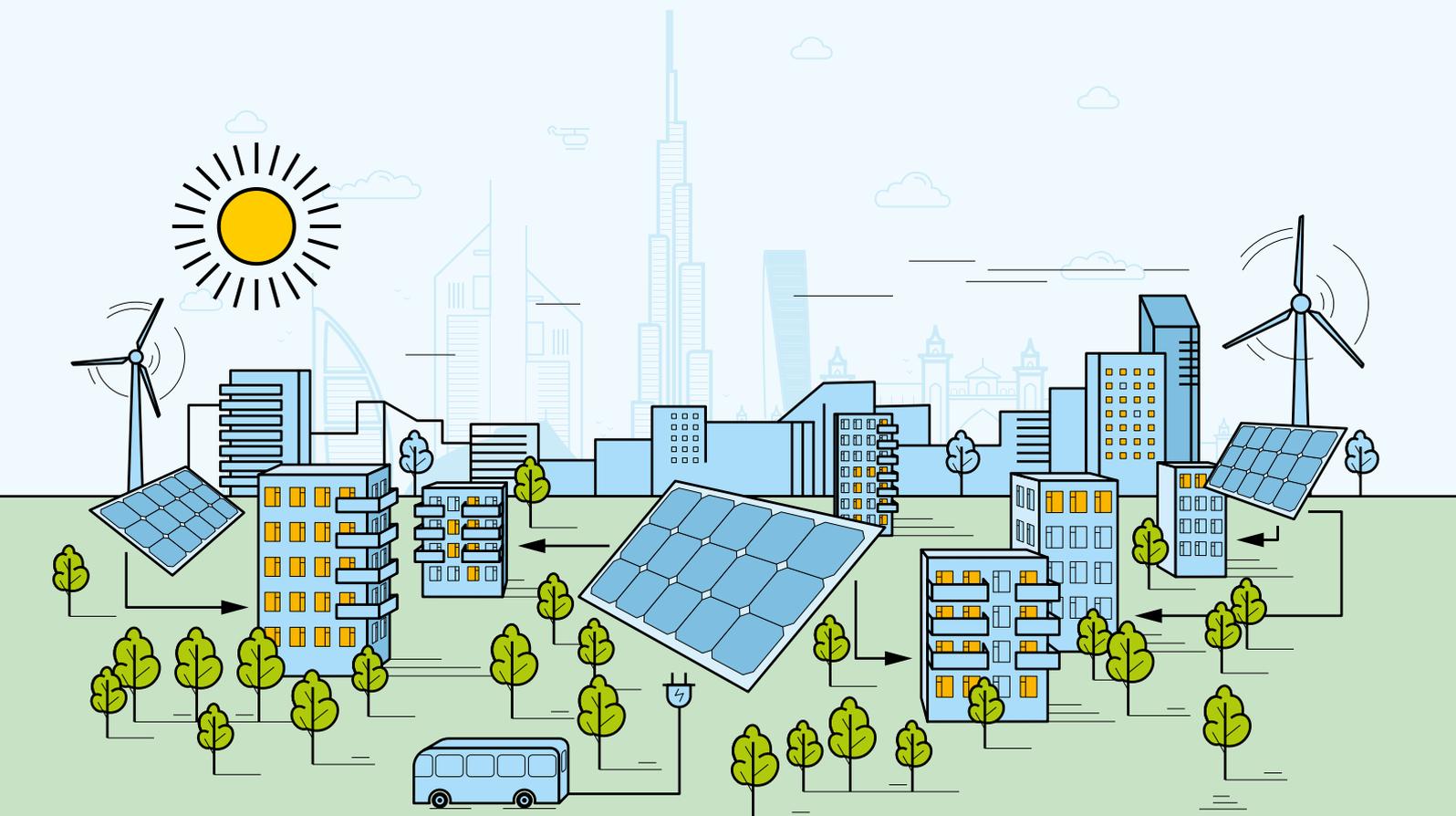
DEWA established the Climate Change & Sustainability department (CC&S), under the Business Development & Excellence division. Its main objective is to establish, develop, and lead DEWA's corporate sustainability programme to address the needs of all stakeholders in a balanced manner, while highlighting the actions and practices that demonstrate DEWA's approach to sustainability.

The department works to align DEWA's strategy and objectives with international goals towards sustainable development. CC&S also manages and implements all sustainability reporting; stakeholder engagement; awareness campaigns; emissions reduction programme; carbon offsetting, identification of climate change risks and their impact on DEWA's operations, setting the relevant climate change resilience plans; mitigation and adaptation programmes within the power and water sector; behavioural efficiency programmes for residential customers, and the ISO50001 Energy Management System (EnMS), and certification of DEWA.

The Climate Change & Sustainability department would not be able to deliver on any of these without linkage, coordination, and collaboration with all DEWA's divisions and departments. To support CC&S, the Sustainability Leading Team (SLT) was established in 2013, which consists of representatives from each division. Their role is to obtain, review and verify data and information. In addition, the team provides valuable insight and expertise for the above-mentioned projects and programmes.

The SLT is chaired by DEWA's Chief Climate Change and Sustainability Officer. The SLT collates updates on sustainability issues for the Executive Vice-President of Business Development & Excellence to present to DEWA management.

During the beginning of the COVID-19 pandemic in 2020, the SLT held 2 virtual seminars to educate DEWA's employees with the latest information and updates about the impact of COVID-19 on the 17 Sustainability Development Goals.



DEWA Supply Chain

(GRI 102-9, 204-1)

DEWA understands that its overall environmental and social impact extends beyond its direct operations. This is why it maintains its policy of procuring plants and systems which have minimal environmental impact, and have a higher efficiency. There are 5,318 suppliers listed on DEWA's suppliers' portal. During 2020, DEWA worked with 2,052 suppliers, of which 36 are strategic suppliers, 236 core suppliers, and 1,780 basic suppliers. To support the local economy, DEWA actively works with local businesses in its operations and supply chain.

During 2020, DEWA conducted 13,425 local transactions, equivalent to approximately AED 412,042,457. This local spending includes all power plants, substations, transmission and distribution networks and DEWA offices across Dubai. DEWA considers local companies as companies who are physically located in the UAE and have a valid trade licence.

DEWA launched its Green Procurement Programme throughout its supply chain. The programme assesses the environmental consequences of products purchased at the various stages of the product's lifecycle to minimise procurement of products with adverse environmental impacts. Well defined strategies and commercial terms and conditions are in place to eliminate, mitigate or transfer procurement related risks. To reduce vulnerability and ensure continuity of its key suppliers, DEWA developed a Supply Chain Risk Management Framework in compliance with ISO31000, which identifies and analyses exceptional risks along the supply chain based on continuous risk assessment.

Green suppliers are screened based on their environmentally friendly products and energy saving concepts, as well as, an internal process based on the following criteria:



DEWA has set an annual KPI to monitor its procurement from green suppliers. The KPI represents the percentage of green suppliers out of the total registered suppliers. In 2020, we have met our target of 10%

In 2020, DEWA received the ISO 20400:2017 for Sustainable Procurement and Supply Chain, making it the first utility in the Middle East to receive this certificate. This certification means DEWA's supply chain is secure; avoiding financial and environmental risks, and enhancing the trust of investors and making customers happy.

Strategic Partnerships

DEWA works to raise Dubai's global position in sustainability and a green economy. It adopts the best international standards for all its projects, in accordance with DEWA's vision to become a globally leading sustainable innovative corporation. This also achieves the UAE Centennial 2071; the Dubai Plan 2021 to establish Dubai as a sustainable city, whose



environmental elements are clean, healthy and sustainable; and the Dubai Clean Energy Strategy 2050 to make Dubai's carbon footprint the lowest in the world. DEWA adopts a responsible strategy to identify its resources in line with the sustainability goals and improving its relationship management with suppliers.

DEWA continues to seek new partnerships with businesses, academic institutions and other organisations to develop and improve its economic, social, environmental responsibilities and operations. To ensure that the partnerships are effective and beneficial to both parties, DEWA has implemented various initiatives to improve partnership performance.

In 2020, DEWA signed 11 MoUs seeking to obtain a reduction in the transaction costs by building trust, enabling economies of scale, fostering the exchange of knowledge, technology, and best practice and supporting risk management.

DEWA selects and groups its partnerships into strategic, operational, financial fit, legal and regulatory, and learning and growth categories. As a result, in 2020, its partnership happiness rate reached 91.78% compared to 91.74% in 2019.

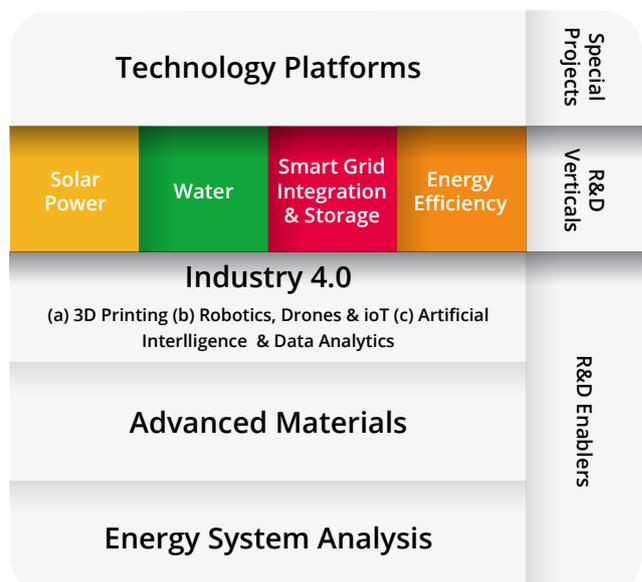
There are two main categories for DEWA's partnerships: strategic partner and main partner.

Research and Development



DEWA's Research and Development (R&D) centre is integrating international R&D best practices and world-class facilities to develop solutions in support of DEWA's Business Units and Dubai's broader stakeholders. The R&D Centre focuses on four pillar areas: solar power, water, smart grid integration, and energy efficiency. In addition, it develops enabler technologies in industry 4.0 including 3D printing, robotics, drones, IoT, Artificial Intelligence and Data Analytics, advanced materials and energy systems analysis. By conducting cutting-edge research based in Dubai's climate, the R&D Centre, located at the Mohammed bin Rashid Al Maktoum Solar Park in Dubai, supports the objectives of the Dubai Clean Energy Strategy 2050 to diversify energy sources and enhance energy efficiency relying on local innovation. The R&D Centre staff had 42 researchers in 2020, 70% of them UAE nationals.

DEWA's Research & Development research framework:



DEWA's Research & Development Journey:



Highlights of Sustainable Research Output

Solar Research In the Outdoor Testing Facilities

DEWA's researchers are continuously testing and benchmarking the long-term reliability and performance of different photovoltaic technologies. This data was beneficial in conducting the first analysis of bifacial PV modules aging characteristics under desert conditions by the solar team.

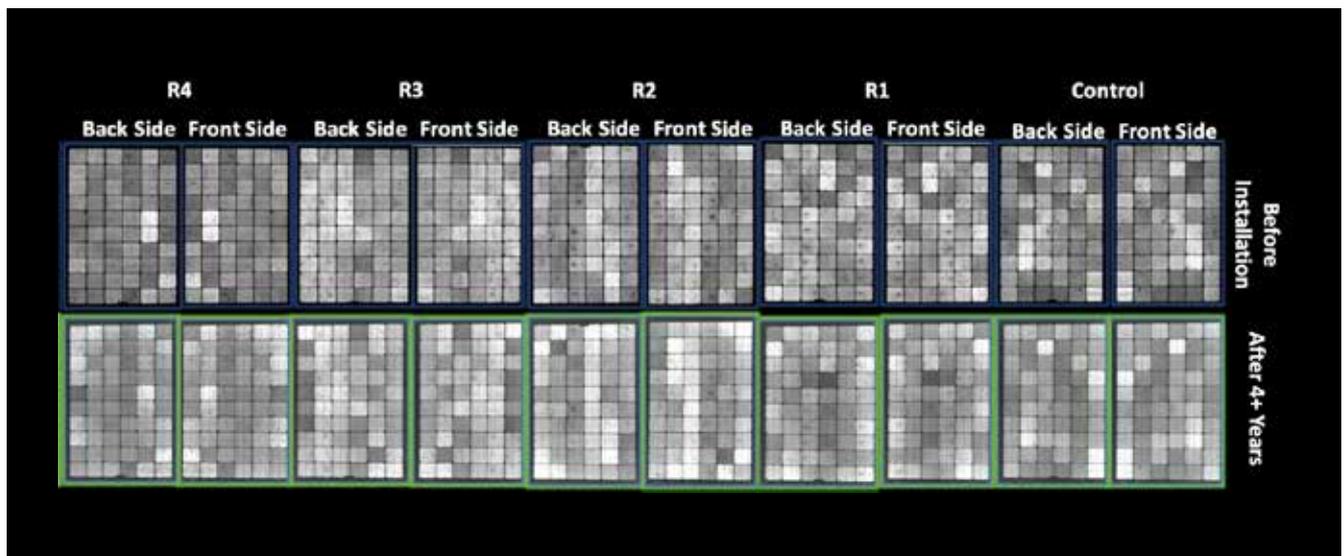


Figure: Electroluminescence (EL) imaging for the PV modules before installation and after 4+ years in field.

Finally, in collaboration with Stanford University, DEWA is developing a 15-minutes-ahead forecasting system for photovoltaic solar power output using sky images processed by AI algorithms.

Water Research

In collaboration with Khalifa University, DEWA is developing advanced models for predicting desalination membrane fouling. Once the model is validated at the testing solar photovoltaic and Reverse Osmosis (PVRO) facility, it can be made commercially available. In collaboration with the UAE Water Aid Foundation (Suqia), DEWA is testing technologies for harvesting atmospheric water.

Energy Systems Analysis

The R&D researchers have designed a detailed optimisation of green ammonia production plants using solar power at large-scale that preceded the announcement of the largest green ammonia initiative in Neom, Saudi Arabia.

Smart Grid Integration Research

Two research projects are directly supporting the integration of renewable energy by testing and validating the performance of energy storage solutions and the aggregation of controllable loads, renewable energy and storage in the form of a Virtual Power Plant (VPP). Two utility scale battery technologies (NaS and Li-Ion) with 7.2MWh each are installed and under testing for their ability to provide utility services including ramp-rate control, frequency control, constant power from variable sources. The VPP integrates a total of 1.8MW of assets including chillers, batteries and other Distributed Energy Resources (DER). It is undergoing tests for its capability of scheduled demand response and reliable power control.

Energy Efficiency Research

DEWA is working on developing and testing the next generation of energy-saving technologies across the utility value chain, with an emphasis on demand-side waste reduction and advanced cooling technologies. The EE team is instrumental in developing proposed standards for Zero Energy Buildings in Dubai and for supporting regulatory acceptance of Building Integrated Photovoltaics (BIPV).

The DEWA R&D Energy Efficiency team began organising the second Solar Decathlon Middle East (SDME) in 2020 in coordination with Expo 2020. The 2020 SDME will assess the sustainable performance of solar-houses.

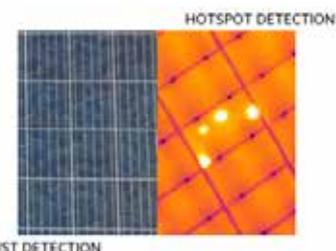
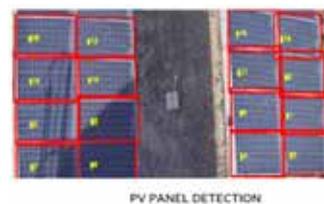
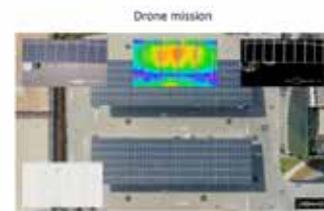
Fourth Industrial Revolution

DEWA is developing and using robotics, AI, IoT, 3D printing and advanced materials to support the needs of the four research areas above. Notable developments in 2020 include a system for the autonomous detection and inspection of large photovoltaic plants using drones which led to winning two IdeasAmerica awards.

Figure: Drone used for aerial inspection and detection of PV panels with in-house developed AI algorithm imbedded into the drone.

Another development is a granted patent on the measurement of light attenuation due to atmospheric aerosols using drones and rovers that are being turned into products. Another one is a rover to measure the albedo (reflectivity) of the ground surface. These systems are going under constant improvements to support the design and operation of solar parks.

Additionally, DEWA R&D continues to build a strong ecosystem of local and international partnerships

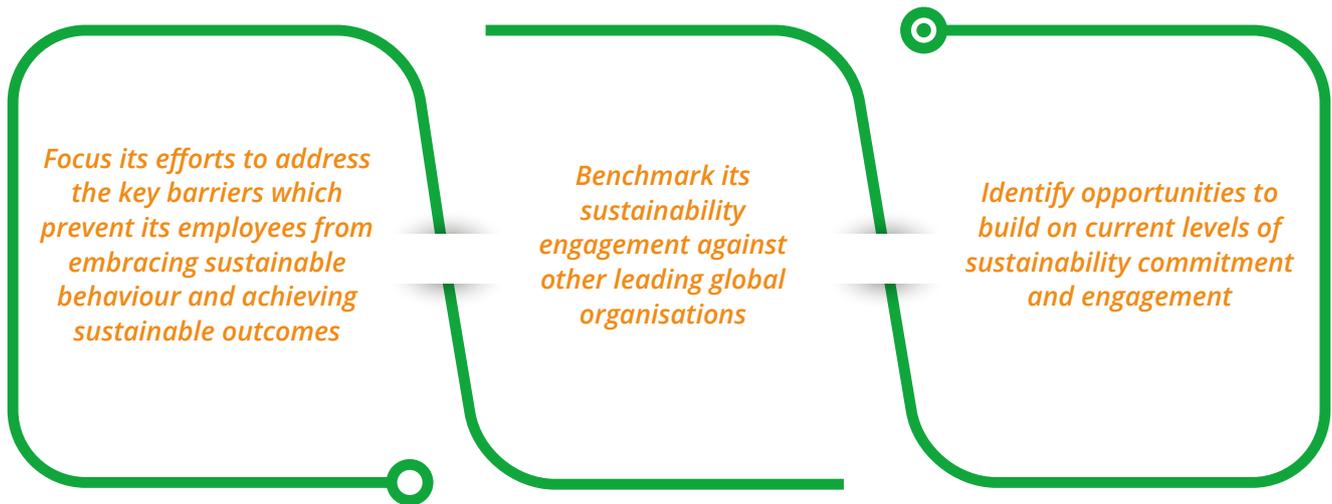


and collaborations with government, industry (major corporations, SMEs and start-ups) and academia. The quality of its work has already been recognised internationally with 15 contributions in 2020 to international conferences and publications in international journals, and involvement in world-class scientific and technical networks with 61 made in total.

Sustainability Culture Indicator 2020

DEWA has used the Sustainability Culture Indicator (SCI) for the past 7 years to measure the effectiveness and the impact of its efforts in raising awareness and engagement on sustainability among its employees. The SCI is an assessment tool created by a third party that measures the extent to which sustainability has been integrated within an organization's culture. This includes factors that quantify organisational enablers, individual enablers, and behaviours inside and outside the organisation.

The tool outcomes will enable DEWA to:



In 2020, over 2,600 employees participated in the survey. The results showed that DEWA continues to embed sustainability strongly in its culture. In response to the pandemic, DEWA is also seen as having communicated its role well, and effectively supported employees to keep engaged in training on a virtual basis, on both sustainability and general topics.

As further evidence of the effectiveness of DEWA in supporting virtual training, analysis shows that those who attended sustainability awareness training in 2020 were consistently more likely to score more highly on every enabler and behavioral item measured. Although this difference was relatively minor, it was a highly consistent trend.

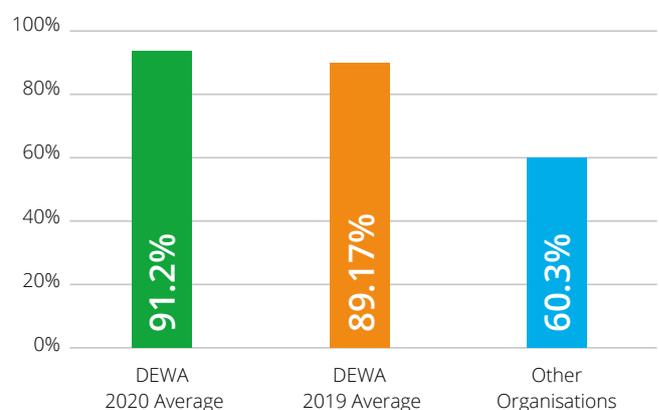
In 2020, DEWA exceeded its 2019 results (89.17%) and achieved a score of 91.2%.

The following key findings have been identified:

- *DEWA met or exceeded its 2019 results on all enabler items, on a percentage basis*

- *Sustainability-related behaviour continue to be performed on a frequent basis, despite the extra challenges of the pandemic*
- *DEWA's efforts to support training during the pandemic received strong endorsement*
- *Attendees of training are more likely to score highly for enablers and behavioural items*

DEWA's Overall Sustainability Effort Level:



DEWA's Commitment For a Sustainable Future

DEWA is committed to improving its sustainability performance and therefore has set the following commitments for sustainable development to:

- *Ensure sustainability is fully embedded into its business strategy*
- *Ensure constant alignment with national and international strategies and best practices*
- *Increase its direct and indirect economic contribution to the Dubai economy*
- *Maintain worldclass standards of quality, reliability, efficiency, availability of electricity and water supply for Dubai*
- *To invest in, and develop, renewable-energy technologies*
- *To continue to improve its stakeholders' happiness*
- *To minimise its environmental footprint and ensure that our operations satisfy all environmental regulatory controls*
- *To increase the share of renewable and clean energy to 7% by 2020, 25% by 2030 and 75% by 2050*
- *To contribute to the Dubai Carbon Abatement Strategy that targets the reduction of CO2 emissions by 16% in 2021*
- *To improve water efficiency within its production and distribution networks*
- *To reduce its employee turnover rate and increase the proportion of UAE nationals in the workforce*
- *To further integrate green procurement into its entire supply chain*
- *To further implement new Corporate Social Responsibility projects to create shared value and assess DEWA's social impact*
- *To contribute to Dubai's smart city initiatives with:*
 - *Shams Dubai (connecting solar power to buildings)*
 - *Smart Applications via Smart Grid and Smart Meters Infrastructure*
 - *Electric Vehicle Charging Stations*



The United Nations Sustainable Development Goals

The United Nations Sustainable Development Goals provide a global blueprint for dignity, peace and prosperity for people and the planet, now and in the future. They address the global challenges the world faces, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.

Five years into the implementation of the Agenda, and communities all over the world were hit with the impacts of the COVID-19 pandemic in 2020. It has become more crucial than ever to reinforce global commitments and unify efforts towards achieving the SDGs. These include joint efforts of governments and businesses alike.

The UAE's leadership have clearly articulated their long-term vision and strong commitment to sustainability. The country has set in place aspirational goals and practical plans to ensure that it can achieve a sustainable trajectory in all aspects of its development and expansion. This vision has been encapsulated in a number of documents and plans, such as: the UAE Centennial 2071, the Dubai Plan 2021, the 50 Year Charter, and the Dubai Clean Energy Strategy 2050.

DEWA's approach towards aligning its strategies and operations with the SDGs include:



Since 2016, DEWA has made a decisive effort to systematically explore how it can increase its alignment to the SDGs and be better positioned to contribute to their effective delivery.

DEWA has reviewed all 169 targets to identify those it is best placed to contribute to in the short- (1-2 years), medium- (3-5 years), and longer-term (6+ years), as well as identify the targets of 'high' or 'moderate' priority given its position as an electricity



and water utility in the UAE. It is important to note that this mapping was not only about correlating existing activities to the targets, but also identifying targets that reflect its vision to be a globally leading, sustainable, innovative corporation.

In 2020, DEWA started a project to update and review the mapping exercise to strengthen its contribution to the SDGs. This will be done by introducing new commitments as well as key performance indicators (KPIs) and initiatives to address any gaps in DEWA's contributions to the priority targets.

DEWA has identified the following six SDGs where it can have the greatest impact. These goals are also critical for DEWA as a power and water provider:

Some examples of DEWA's contribution to the priority goals are:

Goal 6: Ensure access to water and sanitation for all

- DEWA provides a high reliability of water supply, decreasing the unaccounted for water (UFW) year on year. In 2020, DEWA achieved 5.1% UFW saving 61.7 billion IG of water from UFW reduction since 2010
- DEWA meets 100% of customer demand for water in Dubai.

- In 2020, 97.8% of the total recoverable wastewater generated was reused within the facility
- The UAE Water Aid Foundation (Suqia), an entity under the Mohammed bin Rashid Al Maktoum Global Initiatives Foundation and annexed to DEWA, provides humanitarian aid around the world and helps communities that suffer from water scarcity by providing them with access to clean and safe water through sustainable and innovation solutions with the following:
 - Annual monetary contribution;
 - Providing human resources and volunteers to support with operations, marketing and projects management; and Collaborations on research & development

Suqia has positively influenced the lives of over 13 million people in 36 countries

Goal 7: Affordable and clean energy for all

- DEWA meets 100% of customer demand for electricity in Dubai.
- The availability and reliability of electricity supply is of top priority for DEWA, where it achieved 3.3% electricity line losses in 2020.
- Shams Dubai is DEWA's first smart initiative to connect solar energy to buildings. By the end of 2020, 6,619 buildings were connected with a capacity of 259.6 MWP.
- DEWA achieved a cumulative efficiency improvement of 33.4% between 2006 and 2020.
- In 2015, Mohammed bin Rashid Al Maktoum Solar Park Phase II tender achieved world record electricity price of 5.84c/kWh while the global average was above 10c/kWh. A second world-record was registered in 2017 as the first below 3c/kWh project for MBR Phase III. A third near-world record was achieved for Phase IV tender at 1.69c/kWh. These projects demonstrated that solar energy without subsidies can be competitive even with low-cost domestic fossil fuels. By doing so, Dubai's success paved the way to other similar projects in the region.

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- DEWA has a number of subsidiaries which contribute to greater economic diversity
- DEWA's Hatta Pumped Storage Hydro Power Plant

will provide the basis for a tourist complex and create new job opportunities. Around 2,000 job opportunities are expected. The expected capacity for the plant is 250 MW x 6 hours with cycle efficiency of 78.9%.

- DEWA has a policy for happiness and engagement of people of determination. It developed the People of Determination Innovation Incubator initiative aiming to enable its subsidiaries to adopt inclusive employment practices as well.
- DEWA offers equal pay for employees at the same level/grade.
- DEWA launched DEWA Academy as part of its strategy to shift Dubai's energy sector to a new stage of growth and progress. Around 190 students enrolled in DEWA Academy for the academic year 2020-2021.

Goal 9: Build a resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

- Provide reliable power and water supply to businesses and households in Dubai
- The first Green Hydrogen Project was launched at the Mohammed bin Rashid Al Maktoum Solar Park
- Building-Integrated Photovoltaics technology for the R&D Centre.
- DEWA's Water & Civil Division had a significant role in research and development of new technologies including solar technologies and AMI metering systems using battery systems which then helps to reduce the commercial costs of energy systems and allows suppliers to expand their sales to developing countries at lower costs. This indirect support helps in sustainable energy costs.
- DEWA has an active role in the reinforcement of the electrical interconnection with UAE utilities through Emirates National Grid (ENG)

Goal 12: Ensure sustainable consumption and production patterns

- DEWA issues a Sustainability Report on an annual basis
- Safe handling of chemicals to minimise release to atmosphere, ensure availability of suitable PPEs for chemical handling staff. 3R initiative to reduce wastes.
- DEWA increase plant efficiency, decrease fuel consumption

- DEWA supports the implementation of the Dubai Demand Side Management Strategy (DSM) 2030. It has an active role in contributing to several pillars including: Shams Dubai, Consumer Behaviour and Tariff Rates.
- DEWA has established a committee for Energy Management of its premises
- DEWA developed various systems to ensure that people everywhere have the relevant information and support environmental sustainability such as: Smart office application, Smart correspondences, SDGs Smart Awareness, Rammas Virtual Agent powered by AI available 24/7.
- In 2020, DEWA started working on a project to establish a Circular Economy Roadmap to assess, understand and develop DEWA's transition to circular economy and its relation to the Dubai's broader circular economy potential.

Goal 13: Take urgent action to combat climate change and its impacts

- DEWA plays an essential role in achieving the targets set by the Dubai Clean Energy Strategy (DCES) 2050 by working to generate 75% of Dubai's total power output from clean energy by 2050
- DEWA shares the global response to climate change by reducing or avoiding greenhouse gas emissions through initiatives like: Diversification of Fuel Mix, Supply Side Energy Efficiency, Demand Side Management and CO2 Emissions Reduction Programme.
- DEWA contributed to the achievement of the Dubai Carbon Abatement Strategy (CAS) 2021 target two years ahead of the targeted date achieving 22% reduction in tons CO2 compared to business as usual.

DEWA's secondary goals

Goals 5, 11, 14, 16 and 17 are also considered important priorities for DEWA as a leading sustainable innovative corporation:



These priorities go beyond what a water or electricity utility would see as directly material and instead reflect DEWA's status as a major employer, community partner and player in the country and markets within which it operates. Examples of DEWA's contribution towards the secondary goals:

- Ensure that wastewater quantity and quality discharged in to marine environment are within the permitted level all the time.
- DEWA designed the "For Her Ambassador Leadership Programme" in collaboration with the University of Cambridge Institute for Sustainability Leadership (CISL)
- DEWA has a Women's Committee to empower female employees in the workplace and support them in creating a work-life balance.
- DEWA has strong partnerships with government entities, the private sector and academia to ensure there are collaborative efforts towards achieving sustainable development for Dubai.

SDG awareness campaign

In line with DEWA's efforts in spreading the awareness about the United Nations Sustainable Development Goals (SDGs), DEWA launched a campaign for the public and its employees highlighting its efforts to support the achievement of these global goals, especially the goals that has been identified as top priority for DEWA. The campaign ran in to two phases. The first phase was around the COVID-19 pandemic. It showcased the UAE, Dubai and DEWA's efforts to respond to the pandemic. It also address the potential impacts that the pandemic could have on achieving the SDGs. DEWA used its various internal communications channels to reach its employees through informative emailers and webpages, interactive competitions, webinars and quizzes. It leveraged on its social media platform to spread that knowledge to its customers and the public.

Following a similar engagement approach, the second phase of the campaign focused on showcasing DEWA's contributions to the SDGs and how it addresses challenges facing the utility sector today.



DEWA & the UN Global Compact: Communication on Progress 2020

DEWA is a signatory of the UN Global Compact (UNGC) since 2017, which constitutes the world's largest corporate sustainability initiative with more than 13,000 corporate participants in over 170 countries. The Global Compact is based on 10 fundamental principles relating to human rights, labour, environment and anti-corruption. In February 2019, DEWA was invited by the UNGC to take a seat and chair the UNGC UAE Local Network. This came as a result of DEWA's proactive role in contributing to the Global Agenda and in recognition for the support DEWA has shown to the UN Global Compact since joining in 2017.

DEWA is committed to the 10 principles of the UNGC, which are integrated in the policies and processes of the organisation. DEWA uses the 2020 Sustainability Report as its Communication on Progress for the UN Global Compact (UNGC). Throughout the report, there is information related to DEWA's social and environmental practices which underline its commitment to the Global Compact. The following table lists the compliance of DEWA with the 10 Global Compact Principles, by making reference to the relevant chapters and GRI indicators of the Sustainability Report.

The Ten Principles of the UN Global Compact	The Sustainable Development Goals	Material Topics	Reference on the Sustainability Report or Description of the Management approach	GRI Standards Indicator
HUMAN RIGHTS				
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights		Occupational health and safety	Chapter 1, 6 Full compliance with relevant federal and local legislation and international conventions.	102-8; 102-16; 102-41; 403-1; 403-2; 403-3; 403-4; 403-5; 403-6; 403-7; 403-9; 403-10; 412-1; 412-2
Principle 2: Businesses should make sure that they are not complicit in human rights abuses.		Human Rights Assessment	Social accountability policy, governance policy, occupational health and safety policies and procedures; DEWA employee code of conduct, DEWA code of conduct and ethics for its suppliers, contractors and associates	
LABOUR				
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining			Chapter 1,6 Full compliance with relevant federal and local legislation and international labour standards worldwide. Social accountability policy	102-16 102-41
Principle 4: Businesses should uphold the elimination of all forms of forced and compulsory labour.		Socio-economic Compliance	Chapter 1,6 Full compliance with relevant federal and local legislation and international labour standards worldwide. Social accountability policy	102-16 419-1
Principle 5: Businesses should uphold the effective abolition of child labour.		Occupational health and safety	Chapter 1,6 Full compliance with relevant federal and local legislation and international labour standards worldwide. Social accountability policy	102-16 419-1
Principle 6: Businesses should uphold the elimination of discrimination in respect to employment and occupation.			Chapter 1,6 Full compliance with relevant federal and local legislation and international labour standards worldwide. Social accountability policy	102-16; 401-1; 401-2; 401-3; 405-2
ENVIRONMENT				
Principle 7: Businesses should support a precautionary approach to environmental challenges.		Energy	Chapter 3, 4, 5 Full compliance with relevant federal and local legislation. Sustainability policy	102-11; 102-16; 201-2; 302-4; 303-1; 303-2; 303-4; 305-1; 305-2; 305-4; 305-5; 305-6; 305-7; 307-1
Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility		Water and Effluents	Chapter 3,4,5 Full compliance with relevant federal and local legislation. Sustainability policy	102-16; 201-2; 302-4; 303-1; 303-2; 303-4; 305-1; 305-2; 305-4; 305-5; 305-6; 305-7; 307-1 and demand side management
		Emissions		
		Environmental Compliance		
		Procurement Practices		
		Innovation		
		Research and development		
Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies			Chapter 1, 2 Full compliance with relevant federal and local legislation. Sustainability policy	102-16; R&D; and Innovation
ANTI-CORRUPTION				
Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery		Values, principles, standards, and norms of behaviour Anti-Corruption	Chapter 1 Full compliance with relevant federal and local legislation Whistle Blowing policy, Conflict of Interests and Non-Disclosure of Information Regulation, Code of conduct	102-16 205-3

Stakeholder Engagement

(GRI 102-42)



Stakeholders represent a key element in any strategy, as they are the most involved and influential in helping to achieve it. DEWA's strategy and objectives centre on its stakeholders, as well as continuous communication and collaboration with them. This is why stakeholder engagement is so important, along with understanding their needs and expectations. This enables DEWA to keep improving its performance, services, and initiatives to ensure the best possible happiness and service delivery.

DEWA regularly engages with its stakeholders through a range of initiatives and communication channels, such as satisfaction surveys, roadshows, joint ventures, and partnerships with government agencies on regulatory matters, as outlined in this report.

DEWA uses its stakeholder management framework to identify the methods of delivering the best and most inclusive engagement to ensure valuable outcomes, in alignment with the principles of both the AA1000 Stakeholder Engagement Standard 2015 and the Global Reporting Initiatives' Sustainability Reporting Standards. DEWA's key strategic objectives relating to its stakeholders include:

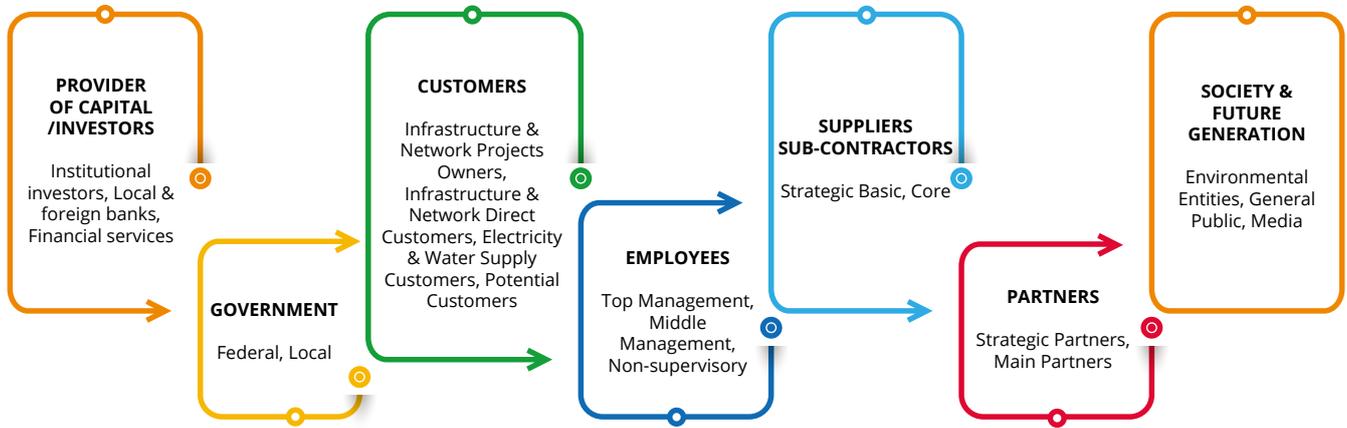


Stakeholder Analysis 2020

(GRI 102-40)

DEWA conducted a stakeholder prioritisation exercise to categorise and rank its stakeholders in terms of Involvement (the importance of the relationship for the stakeholder), and Influence (the importance of the

relationship for DEWA). DEWA's Corporate Strategy department is responsible for reviewing the list on an annual basis and updating it if necessary as well as ensuring that DEWA's strategic plan includes fulfilling the needs and expectations of prioritised stakeholder groups.



DEWA Stakeholder Engagement Activities GRI 102-43, 102-44



Stakeholders' Needs And Expectations

DEWA takes both a consistent and transparent approach to engage directly with its stakeholders in the most suitable manner. So, DEWA engages with its stakeholder groups in a variety of ways. For each stakeholder category, the following table shows the most important needs expressed during its engagement activities. For example, in 2020 the Stakeholder Happiness department and Corporate Strategy department conducted 7 creativity labs with the 7 main stakeholders (Government, Customers, Employees, Partners, Society and Future Generations, Suppliers, and Investors and Capital providers).

STAKEHOLDER	NEEDS & EXPECTATIONS
Government	<ul style="list-style-type: none"> Aligning with national development plans & programmes Commitment to good citizenship Regulatory compliance
Customers	<ul style="list-style-type: none"> Quality safety and cost - effectiveness of service Ethical business Reducing the environmental impact of organisation activities
Employees	<ul style="list-style-type: none"> Secure working environment Competitive salaries Ethical behaviour Career progression & recognition Non-discrimination & equal opportunities Investment in professional development
Partners	<ul style="list-style-type: none"> Sharing best practices Continuous and systematic dialogue and engagement MoUs to collaborate on issues
Society and Future Generation	<ul style="list-style-type: none"> Transparency and effective communication Raising awareness on sustainability issues Supporting social and cultural initiatives Management of environmental impacts of organisation activities
Suppliers	<ul style="list-style-type: none"> Supplier qualification based on cost and quality including environmental and social assessment Transparent procurement processes Profitability
Providers of Capital/ Investors	<ul style="list-style-type: none"> Creating value in the short and long term Reliability, profitability and transparency

Stakeholders' Happiness



Creating a culture of happiness and positivity among stakeholders is one of DEWA's strategic objectives, and a key component of its mission and corporate values.

DEWA's annual Stakeholder Happiness Survey is one of its main tools to understand stakeholders' expectations. It also measures the effectiveness and improvement of DEWA's work. The survey addresses key issues relating to overall sustainability, including specific questions addressed to each stakeholder group. DEWA used the outcomes from the survey to analyse gaps in its approach to Stakeholder Happiness and evaluate areas for further improvement.

The results of the 2020 Stakeholder Happiness Survey show that the majority of DEWA's stakeholders were happy with its sustainability performance, and that the majority of its suppliers intend to promote more environmentally friendly products. Another finding is that the providers of capital and investors emphasised that sustainability performance is crucial as it affects their investment decisions.

Results Of Stakeholder Sustainability Satisfaction Survey 2020

Please rate your happiness with DEWA acting as pioneer for sustainable solutions



- DEWA meets my expectations regarding sustainability. Employees 91.2%
- I am aware of DEWA sustainability initiatives role in contributing to the achievement of the 17 UN Sustainable Development Goals 84.34%
- I understand DEWA's role in contributing to reducing the spread of (COVID-19) through taken all preventive measures and actions. Employees 92.04%
- In response to the pandemic, DEWA has effectively adapted its efforts to educate its employees about sustainability issues on a virtual platform 91.18%.
- How sustainability performance of an organisation affects your investment decisions (Providers of Capital 71.4%)
- I am ready to supply more sustainable and environmentally products/ and services to DEWA. (Suppliers 87.6%)

The Stakeholder Happiness Department in the S&GC division is working on a new organisational Index for Corporate Stakeholders Happiness in DEWA. This will use a new dashboard that collects the results of DEWA stakeholder happiness surveys on an annual basis. This index provides DEWA's top management with the results of the happiness surveys and the projects that support happiness. The index will include results of the following stakeholder happiness surveys:

1. Customer Happiness Surveys	2. Suppliers Happiness Surveys	3. Investors Happiness Surveys
4. Employees Happiness Surveys	5. Government Happiness Surveys	6. Society Happiness Surveys
7. Partners Happiness Surveys		

Materiality Assessment (GRI 102-47)

One of the fundamental guidelines of the Global Reporting Initiative is the concept of materiality. An organisation is required to report on those matters which have the most significant economic, environmental and social impact on both its operations and the community where it works. The material topics are identified as per those found to be most significant by both its internal and external stakeholders.

In 2020, DEWA used an innovative online platform, Mentimeter to run the materiality engagement workshop with its stakeholders. The platform allows participants to log in through their smart phones or laptops to cast their votes on the significance of material topics in real time. This approach has

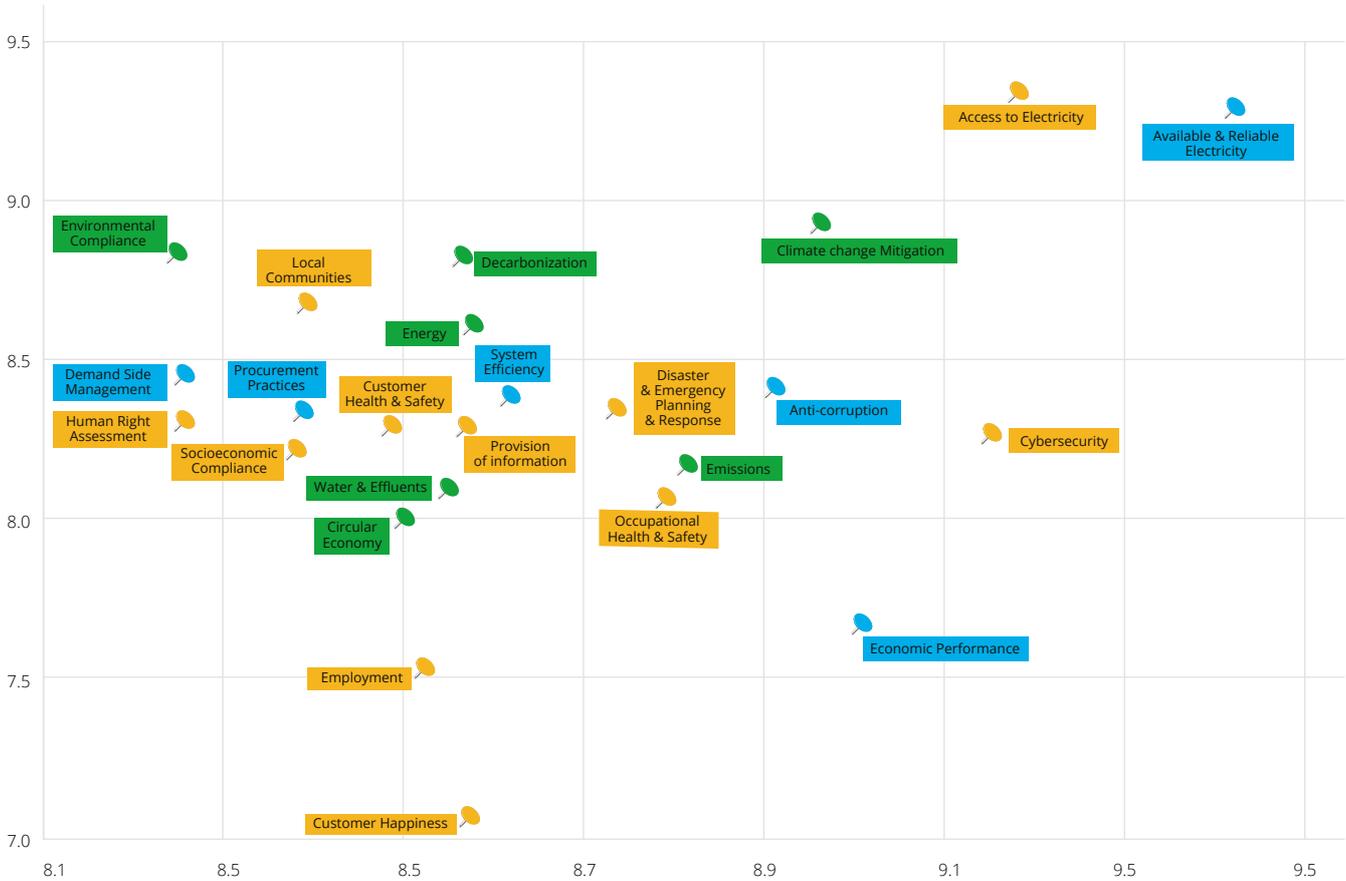
been found to encourage more engagement with stakeholders during workshops.

The workshops had a total of 39 internal stakeholder participants, of which 25 are employees and 14 represent higher management and 21 external stakeholder participants attended the workshops. Participants were invited to share their feedback on DEWA's sustainability approach and the sustainability report.

The topics classified in three categories: economic (blue), environmental (green) and social (orange), were assessed on the basis of their relevance by both stakeholders and by DEWA.

The results of the 2020 materiality assessment process are illustrated in the materiality matrix below. The horizontal axis shows DEWA Management's views while the vertical axis shows the opinions of DEWA's stakeholders. The boundaries for each material aspect can be found in Appendix 1.

DEWA's 2020 Materiality Assessment



DEWA and EXPO 2020 Dubai

DEWA built the electricity and water infrastructure to support Expo 2020 Dubai, and is its official Sustainable Energy Partner to ensure the latest best practices in sustainability.

To achieve that, DEWA has invested AED 4.26 billion towards the development of power and water infrastructure at the Expo site; which includes various projects including:

Building 3 132/11kV substations

They are called Sustainability, Mobility and Opportunity after the three sub-themes of Expo 2020 with 45 kilometres (km) of high-voltage (132kV) cables. As a part of its commitment towards sustainability,

solar panels have been installed in the 3 substations and it was built according to the Leadership in Energy and Environmental Design (LEED).

Green Charging Stations

DEWA has completed the installation of two green charger stations for charging electric vehicles at the Expo site office, and is installing 15 stations at each of the pavilions: Opportunities, Sustainability Pavilion and Mobility Pavilion to serve electric vehicles for exhibition visitors.

Green Hydrogen

DEWA is developing a 'green hydrogen' project in cooperation with Expo and Siemens, at the external testing facility in DEWA's Research and Development

Centre at the Mohammed bin Rashid Al Maktoum Solar Park. This pilot project is the first of its kind in the Middle East and North Africa to produce hydrogen using clean energy. The project will contribute to developing the concept of green economy in the UAE and exploring the potential of green-hydrogen production technology.

Risk and Emergency Planning

DEWA has an integrated system for risk management and organisational resilience that includes crisis management and business continuity. It has obtained accreditation from international organisations compatible with the most appropriate best practices. DEWA prepares plans and strategies necessary to deal with various types of risks and threats in relation to the energy sector, and it also carries out strategic exercises periodically in cooperation with its strategic partners to ensure the efficiency of capabilities and raise the level of Readiness in general.

From this standpoint, DEWA has the necessary capabilities to deal with emergency situations at Expo, by providing the relevant teams at sites before, during and after Expo 2020. This ensures that it can immediately respond to any energy-related situations. DEWA also provides the highest levels of service to customers and participants at the exhibition, with a number of mobile power generators allocated to facilitate the connection to the Expo 2020's power grid in anticipation of any emergency.

Solar Decathlon Middle East 2020



DEWA is providing additional support to Expo 2020 Dubai on national and international platforms and is encouraging DEWA employees to participate in the EXPO 2020 Dubai Volunteers Programme.





Case Study

DEWA

Innovation Centre

DEWA's Innovation Centre is located at the heart of the Mohammed bin Rashid Al Maktoum Solar Park. On 24 November 2020, HH Sheikh Mohammed bin Rashid Al Maktoum inaugurated the centre as a clean technology innovation hub to promote sustainable energy future in Dubai and beyond. Through the Innovation Centre, DEWA aims to raise awareness about sustainability, while building national capabilities and increasing competitiveness. The Innovation Centre supports the Dubai Clean Energy Strategy 2050 to diversify the energy mix and supply 75% of Dubai's total power output from clean energy by 2050. Its goals focus on Innovation, Education, and Inspiration as it promotes the latest innovations in clean and renewable energy, develops skills and build the next generation of innovators in clean technology by focusing on growing and promotes local talent and builds strong collaborations with local and international schools, universities, start-ups and companies on innovation, knowledge exchange and exhibitions. The Innovation Centre also acts as an education centre by hosting events, conferences, seminars and workshops.

The Innovation Centre received a platinum rating from LEED (Leadership in Energy and Environmental Design) with 101 points out of a possible 110 in the first quarter of 2020. This is the highest score in the world for a new government building in the new construction category. The Centre received

this recognition by achieving high scores in water efficiency, internal environment quality, energy efficiency, innovation, and design. The Centre also collects rainwater and treats it on-site. One of the ways DEWA is supporting young people is that it has a team of young Emiratis leading the centre. As such, it is the first and largest government centre to receive the 'Done by Youth' seal from the Federal Youth Authority in the UAE.

The Centre provides 30 interactive displays on DEWA's journey and also the most prominent inventions in electricity as well as the latest developments in renewable and sustainable energy. The exhibition area includes several sections: The first section displays the history of DEWA and the evolution of technology for generation of electricity and water. The second section highlights the properties of light and the components of the light spectrum. The third section focuses on solar powered technologies and their evolution over the years. The fourth section focuses on the future of energy and the possibilities for further exploration. The Centre also includes labs, training halls, lecture halls and a knowledge centre, in addition to a state-of-the-art exhibition hall for various displays such as holograms, and drones. In addition to labs for brainstorming and creativity with a view of the Mohammed bin Rashid Al Maktoum Solar Park.



Chapter 3 Energy



75%

Clean energy generation capacity will be achieved by 2050



Cumulative efficiency improvement of 33.41% equivalent to 64.7million tons of CO2 emission reduction between 2006 and 2020



12,300MW Generation capacity for 2020



3.3% electricity line losses for 2020, 25% improvement since 2006 (EU12)



Jebel Ali Power and Water Desalination Complex

Management Approach

(GRI 103-1, 103-2, 103-3)

DEWA's management approach includes a commitment to ensuring the reliability of its electricity supply across Dubai. To ensure this, DEWA is investing in new technologies, applying international best practices and continuously improving its power generation, transmission and distribution facilities. The UAE, represented by DEWA, has maintained its first place globally for the third consecutive year for Getting Electricity, with scores of 100% for all the indicators in the World Bank's Doing Business 2020 report. The report measures the ease of doing business in 190 economies around the world.

DEWA implements innovative solutions to improve supply-side efficiency, reduce transmission and distribution losses and diversify energy sources to support sustainable economic growth without damaging the environment and natural resources.

In line with ISO 31000:2018 Risk Management Guidelines and DEWA ERM framework, 17 business risks are identified by Dewa's Generation Division (GD). These include Tier 1 (2) and Tier 3 (15) risks. Mitigation plans are prepared for all business risks. The risk & mitigation details are managed by GD through SAP GRC (Governance, Risk & Compliance) system.

Risk management is also an important aspect of various other management systems such as Integrated Management System (covering Quality, OH&S and Environment Management Systems), Asset Management System etc. GD departments based on their scope and discipline are responsible to ensure that relevant risks (asset, financial, operations, quality, health & safety, environment, objectives & reputation) are systematically identified, assessed and controlled by effective risk assessment.

In line with the above, GD has expanded the implementation of the ERM framework to the asset level by analysing the risks related to identified critical assets within the Generation Division. Definition and evaluation criteria for identifying critical assets pertaining to GD is also established. The list of critical assets are updated periodically to reflect changes to the assets managed by GD. Asset Risk & Treatment registers are prepared based on asset risk assessments conducted for all critical assets in D, E, G, H, K, L & M stations, in line with ERM framework. Changes in asset-related risks with time are taken into consideration during the development and implementation of asset management plans by respective departments.

Crisis management and contingency plans are also developed by Generation Division as part of its Business Continuity and Disaster Recovery Plans, focusing on minimising the impact on safety, reliability and availability and ensuring availability of proper backup facilities, wherever applicable.

Crisis Management Plans

Generation Division identified the following crises and developed management plans based on their impact on power and water production facilities that could lead to partial or total loss of power generation or water production.

- 1. Partial / Total Loss of Power Generation
- 2. Partial / Total Loss of Water Production, wherein demand cannot be met with well-field assistance / modified operation
- 3. Fire / Explosion in Liquid Fuel Storage Tanks, NG pipeline due to breakage/leakage or Hydrogen Cooled Generator System

Additionally, multiple crisis management plans were prepared by plants and departments covering different scenarios pertaining to the respective stations. All plants and departments ensure that the requirements as per crisis management plans are in place and implemented, as applicable to prevent occurrence of any identified crisis.

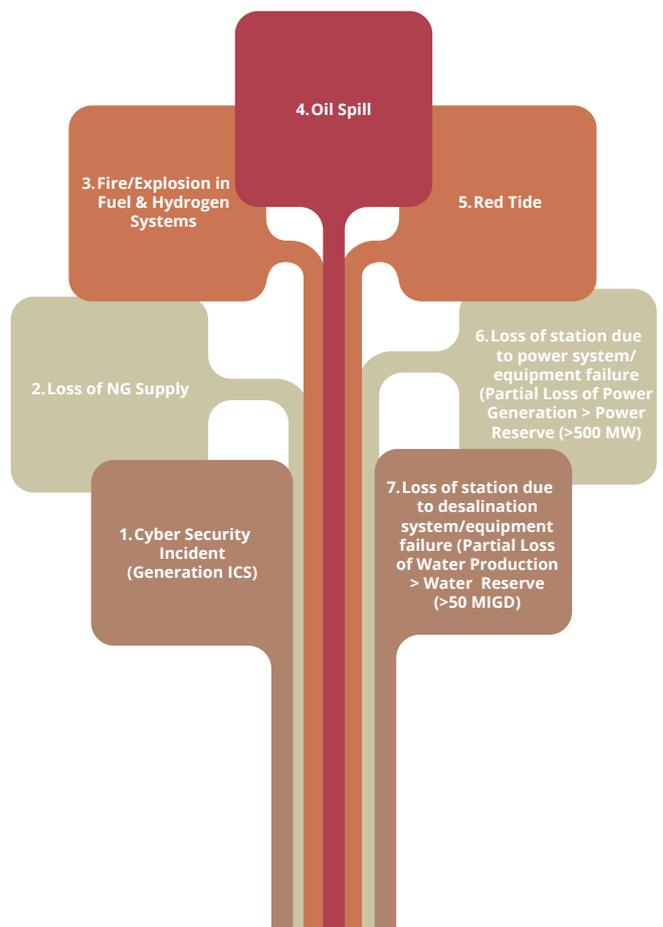
Contingency Plans

Generation Division has also developed contingency plans for the following scenarios identified by the division:

- 1. Blackout Contingency Plan
- 2. Water Contingency Plan
- 3. Fire Contingency Plan
- 4. Oil Spill Contingency Plan
- 5. Red Tide Contingency Plan

Business Continuity Management and Disaster Recovery

As part of the Business Continuity Management System (ISO 22301:2012) implementation, Business Impact Analysis was done covering all GD processes. This includes identification of business impacts covering Financial, Operations, Health & Safety, Environment, Objectives and Reputation, IT Services, Resources & Process Flows. Accordingly, Business Continuity Plan covering the following scenarios is developed by GD, taking into consideration division's main function to generate power and produce water:



This is to ensure continuous delivery of power and water at a minimum acceptable level during and following any kind of crises, incident or business disruption.

Mock Drills

Periodic mock drills are also planned and conducted at periodic intervals covering Crisis, Contingency & Business Continuity related scenarios. Inter-station audits are also conducted as per yearly schedule. Reports highlighting Action Plan and Corrective Actions and periodic updates on the implementation status are also submitted till closure of identified corrective action.

Legal & Regulatory Requirements

Identification of applicable legal and regulatory requirements is carried out as per Integrated Management System Procedure (IMSP04). Compliance with the identified legal and regulatory requirements is also periodically verified and confirmed by all plants and departments, in line with procedure IMSP10.

Energy Adaptation during COVID-19

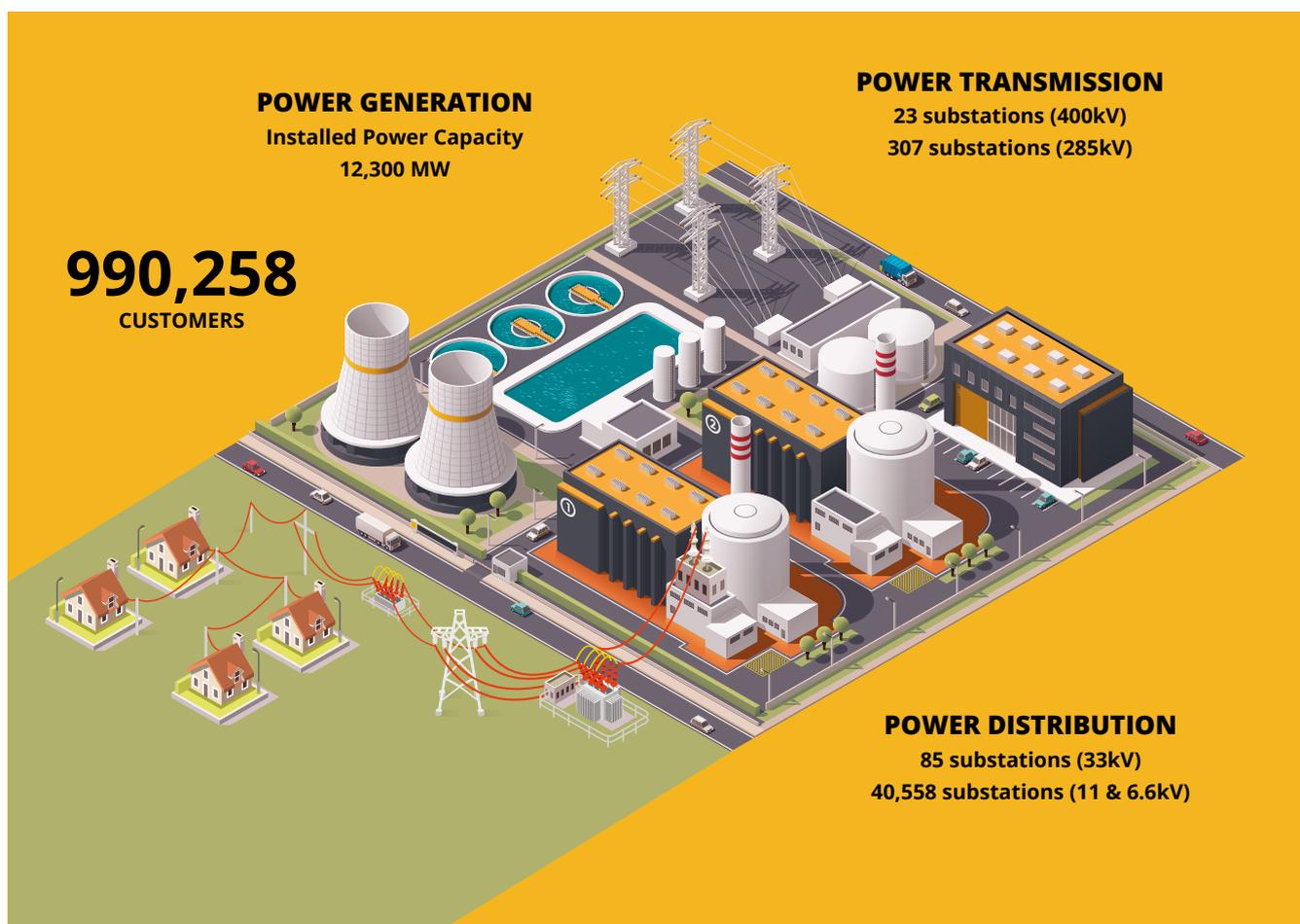
DEWA maintained its work progress at 100% without recording any electricity or water interruptions for all Dubai residents during COVID-19. It has developed plans in line with the current situation and undertaken a set of precautionary measures to protect customers, staff and all stakeholders. DEWA's corporate agility plays a key role in overcoming the pandemic's challenges, in addition to its effective leadership and partnerships, strong financial resources, technological leadership and advanced digital system. DEWA also activated its emergency plans, which have been tested many times to ensure business continuity, so Dubai continues to have an uninterrupted supply of electricity and water.

Power Generation

(GRI 103-1, 103-2, 103-3, EU10)

DEWA is the sole utility and provider of electricity and water services to the Emirate of Dubai, and ensuring the availability and reliability of these remains its key priority. DEWA's power stations and desalination plants, transmission networks and distribution networks ensure the uninterrupted supply of services to all its customers.

The total gross power generation in DEWA for 2020, was 44,901,542 kWh, produced mainly from natural gas. Natural gas is the primary fuel for power generation and water desalination operations. DEWA purchases natural gas from the DUSUP, which runs the Emirate's gas importation and distribution infrastructure.





Mohammed bin Rashid Al Maktoum Solar Park

Net Energy Output Broken Down by Primary Energy Source (GRI EU2)

Year	Total Gross Generation (MWH)	Natural Gas		Diesel Fuel Oil		Medium Fuel Oil		Solar	
		Generation (MWH)	% of total generation						
2018	45,960,803	44,995,189	97.90	27,723	0.06	69	0.0001	937,823	2.04
2019	46,703,722	45,184,886	96.75	42,779	0.09	42	0.0001	1,476,015	3.16
2020	44,901,542	42,025,853	93.60	20,547	0.05	0.4	0.000001	2,855,142	6.36

Note: Diesel fuel oil and medium fuel oil are backup fuels used only during an emergency (i.e. interruption of gas supply). The consumption during the year is due to testing and commissioning purposes.

Installed Capacity (EU1)

In line with Dubai Clean Energy Strategy 2050, DEWA is transforming Dubai into a global hub for clean energy and green economy by diversifying its energy mix to include 75% of Dubai's total power output from clean sources by 2050. DEWA owns a world-class infrastructure with an installed capacity of 12,300 megawatts (MW) of electricity.

DEWA Installed Capacity		
Site	Station	Installed Power Capacity(MW) at 50°C & 30% R.H
Jebel Ali, Dubai	D	1,026.99
	E	615.50
	G	818
	K	948
	L	2,400.6
	M	2,885
Aweer, Dubai	H	1,995.86
Seih Al Dahal, Dubai	Mohammed bin Rashid Al Maktoum Solar Park *	1,010
Hassyan	Hassyan Clean Coal Power Plant	600
Total (MW)		12,300

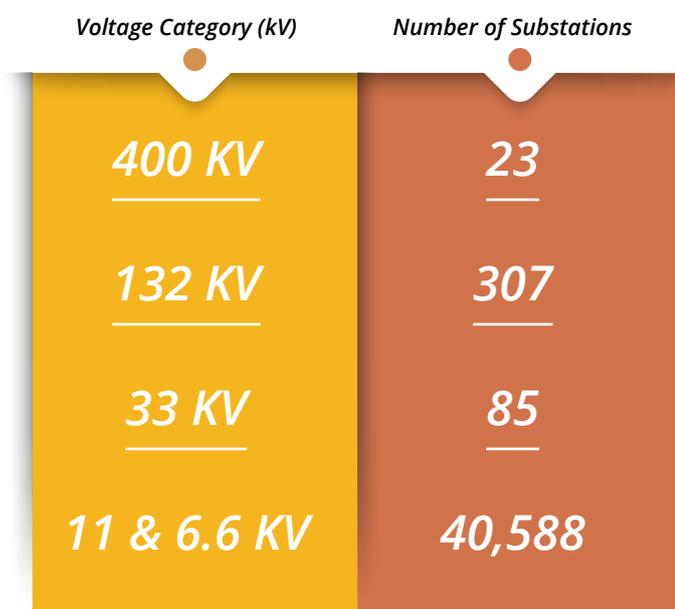
*Solar PV Plant Capacity Maximum MWac.

Power Transmission & Distribution

(GRI 103-1, 103-2, 103-3, EU12)

DEWA achieved a score of 100% of the transmission system availability in 2020. DEWA prioritizes the reliability of the electricity connections. Therefore, to achieve the safest electricity transport with very low interruption DEWA invests considerably in network transmission and the distribution substations.

Table: Total number of Transmission and Distribution Substations, 2020



DEWA Inaugurated 20 New Substations in 2020

Despite the restrictions imposed by COVID-19. DEWA inaugurated 20 new electricity substations in 2020 according to plans, as part of its efforts to provide electricity and water services according to the highest standards of availability, reliability and efficiency. These include a 400kV substations that include 23 stations with four new substations under construction in Dubai South with a conversion capacity of 2020 megavolt-amperes (MVA), and 19 132kV substations that include 302 substations with 42 substations under construction in several areas across Dubai with a conversion capacity of 2,700 megavolt-amperes. The total cost of the substations has reached AED 2.6 billion.

Electricity Line Losses



DEWA continuously works to improve the operational efficiency of its Transmission and Distribution (T&D) network. Through DEWA's Intelligent Metering System and Smart Grid, its continued efforts have resulted in the 2020 electricity line losses lowered to 3.3%, a 25% improvement since 2006.

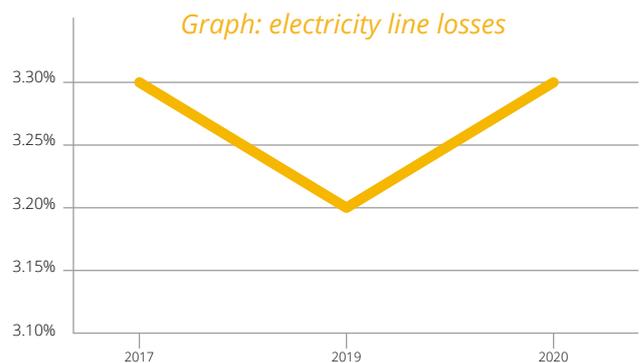


Table: Length of Transmission and Distribution Lines, 2020 (EU4)

Type	Voltage Category (kV)	Length of Transmission and Distribution lines (km)
Overhead Lines	400	1,168
	132	402
	33	104.33
	6.6 & 11	608.26
Underground Lines	400	24
	132	2,249
	33	2,119.49
	6.6 & 11	3,4475

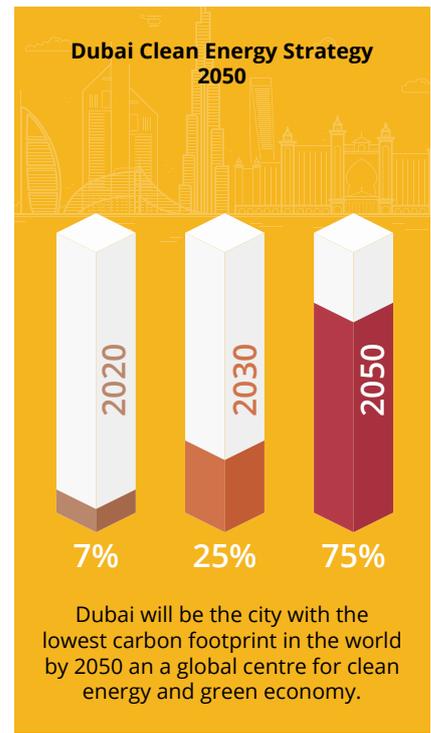
In spite of the coronavirus pandemic, DEWA continues its Heating, Ventilation and Air Conditioning (HVAC) packaged units at its substations; replacing its packaged units using Refrigerant (R-22) with the more eco-friendly R407C. As of the end of 2020, DEWA has retrofitted 393 packaged units, with the full phase-out of R-22 and retrofitting the remaining 441 Packaged Units is expected to be completed by 2027.

Diversifying the energy mix

Diversifying the energy mix reduces dependence on a single energy source, which improves energy security and increasing the total power generated from clean energy sources in line with the Dubai Clean Energy Strategy 2050.

In 2020, the share of clean energy in Dubai's energy mix has increased to 9%, exceeding the target set in the Dubai Clean Energy Strategy 2050, which aimed to provide 7% of Dubai's total power output from clean energy sources by 2020 and 75% by 2050.

This is in thanks to major projects such as DEWA's Mohammed bin Rashid Al Maktoum Solar Park. In 2020, Dubai's total installed capacity reached 12,300MW of electricity, of which, 1,010MW is from photovoltaic solar panels at the Solar Park. The clean energy share is on track to increase, with projects under construction at the Solar Park having a total capacity of 1,850MW from photovoltaic and Concentrated Solar Power (CSP), bringing the Park's installed capacity to 2,860MW. Future phases are planned to expand the Solar Park's total installed capacity to 5,000MW by 2030.



H-Station at Al Aweer

In spite of COVID-19, DEWA has completed 78.5% of the 4th phase of H-Station at Al Aweer, which is one of its most important projects to meet the reserve margin criterion set for peak electricity demand in Dubai. The project includes importing, installing, testing, supplying, and commissioning 3 Siemens gas turbines with a total capacity of 829 megawatts (MW). Under current climate conditions and high temperatures of up to 50 degrees Celsius The current total capacity of H-Station at Al Aweer is 1,996MW. Once the 829MW 4th phase is complete, the station will have a total capacity of 2,825MW.

By the end of 2021, The project is expected to be operational, while maintaining DEWA's commitment to the highest standards of health, safety, quality and efficiency. So far, DEWA has completed over 6 million safe working hours on this project without recording any injuries.

Mohammed bin Rashid Al Maktoum Solar Park

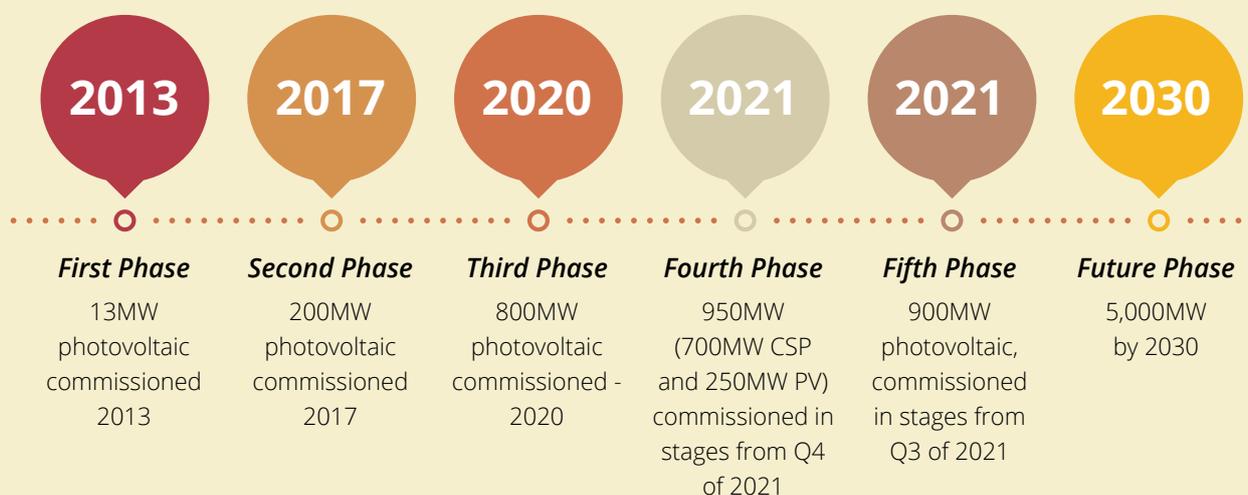
The Mohammed bin Rashid Al Maktoum Solar Park is the largest single-site solar park in the world. It supports the Dubai Clean Energy Strategy 2050 that aims to provide 75% of Dubai's total power capacity from clean energy to make Dubai a global centre of clean energy and green economy.

DEWA is managing the Solar Park, which is located in Seih Al Dahal in Dubai, and is the largest renewable-energy project on a single plot in the world with a planned production capacity of 5,000 MW by 2030. Upon completion, the solar park will cut 6.5 million tons of carbon Dioxide emissions a year.

The current capacity of the solar projects at the solar park is 1013MW. In addition, DEWA is building two other projects with a total capacity of 1850MW by 2023 (4th phase 950MW (700MW CSP & 250MW PV) and 5th phase 900 MW PV) of the solar park, which will increase its capacity to 2,863MW.



Energy Production Projects



First Phase

- On 22 March 2013, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, inaugurated the 13MW first phase of the solar park.
- The project uses about 153,000 photovoltaic cells connected to 13 step-up transformers in inverter buildings. The output voltage is transformed to 33 kilovolts.
- Generate over 28 million kilowatt-hours of electricity annually.
- It reduces 15,000 tonnes of carbon emissions each year

Second Phase

- On 20 March 2017, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai inaugurated the 200MW second phase of the solar park
- It was implemented in partnership with the consortium led by ACWA Power from Saudi Arabia (main developer) and Spain's TSK (main contractor), with an investment of AED 1.2 billion. The efforts of Shuaa Energy 1, which was established by DEWA and the consortium led by ACWA Power and TSK, have been vital in completing the work efficiently and professionally
- A total of 1.5 million Safe Man Hours without Lost Time Injury
- The second phase generates clean energy for 50,000 residences in Dubai
- It reduces 214,000 tonnes of carbon emissions each year
- This phase installed 2.3 million photovoltaic solar panels over 4.5 square kilometres
- DEWA set a world record, obtaining the lowest price globally for the second phase of the solar park, at USD 5.6 cents per kilowatt hour at the time of the bid

Third Phase

- The 800MW third phase of the solar park using photovoltaic solar panels became operational in 2020
- The consortium bid the lowest cost of electricity of USD 2.99 cents per kilowatt-hour (kWh), to be constructed based on the IPP model
- Shuaa Energy 2 was formed as the Independent Power Producer (IPP) company to implement the project. DEWA owns 60% stake in the company, Masdar owns 24%, and EDF 16% with EDF Energies Nouvelles
- DEWA received the world's lowest Levelised Cost of Energy (LCOE) of USD 2.99 cents per kilowatt-hour
- This phase is the first of its kind in the MENA region, with an advanced solar tracking system that increases generation by 20%-30%, compared to fixed installations
- This project has 3 million modules with advanced types of PV technologies

- Advanced robotic cleaning methodology is utilised for operation and maintenance of PV modules
- This phase provides clean energy to over 240,000 residences in Dubai
- It reduces around 1.055 million tonnes of carbon emissions annually
- Total investments for this project are AED 3.47 billion
- Around 6,100 people worked to build the 800MW plant
- A total of 11 million safe man-hour without Lost Time Injury
- The overall project covers an area of around 18 square kilometres (kWh), to be constructed based on the IPP model
- The Solar Power Tower will use molten salt, and will be the world's tallest at 260 metres
- The project will have 70,000 heliostats in CT Unit, and 63,600 Parabolic Trough collector modules in the three PT Units
- Thermal storage capacity of 15 hours, means energy availability around the clock
- Commissioning of the fourth phase project starts in Q4 2021
- Clean energy generation for 320,000 residences and reduction in annual CO2 emissions of 1.6 million tonnes

Fourth Phase

- The Fourth Phase installed capacity is 950MW: 700MW CSP and 250MW Photovoltaic
- DEWA awarded the project to a consortium comprising of Saudi Arabia's ACWA Power, The Silk Road Fund, and China's Shanghai Electric as the main contractor.
- DEWA and the ACWA Power-led consortium formed the project company (Noor Energy 1) to design, build, and operate the plant. DEWA owns 51% of the company, ACWA Power owns 25%, and the Silk Road Fund owns 24%.
- Levelised Cost of Electricity (LCOE) of Fourth Phase: 7.323 USD cents/kWh
- Total estimated investment of fourth phase: AED 15.78 billion
- The project includes Parabolic Trough (PT) technology with three 200MW units and one 100MW Concentrated Solar Power Tower

Fifth Phase

- The fifth phase Capacity is 900MW using photovoltaic (PV) solar panels based on the Independent Power Producer (IPP) model
- DEWA awarded the project to a consortium led by ACWA Power and Gulf Investment Corporation as the Preferred Bidder to build and operate the 900MW 5th phase
- Estimated Fifth Phase investment of USD 564 million
- Levelised Cost of Energy (LCOE) USD 1.6953 cents per kilowatt hour (kWh) which is lowest competitive price
- The project will use the latest bifacial PV technologies, that uses reflected solar rays on both sides; with a single axis tracking system to increase energy production.
- Reducing about 1.18 million tonnes of carbon emissions annually
- Powering about 270,000 residences
- Estimated around 2.7 Million Crystalline Bifacial PV modules
- Total fifth phase area is 10.17 square kilometres





Shams Dubai



Shams Dubai is DEWA distributed renewable generation program and supports the vision of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to make Dubai the smartest and happiest city in the world. The initiative implements Executive Council Resolution number 46 of 2014, issued by HH Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of the Dubai Executive Council, to regulate the connection of solar energy to Dubai’s power grid. Shams Dubai encourages household and building owners to install photovoltaic panels to generate electricity, and connect them to DEWA’s grid. The electricity is used on site and the surplus is exported to DEWA’s grid under a net metering scheme.

Shams Dubai supports Dubai Demand Side Management Strategy, Dubai Clean Energy Strategy 2050 and Dubai Carbon Abatement Strategy. DEWA is leading by example on Shams Dubai, having installed solar panels on rooftops and carports at a number of DEWA buildings, sponsored a number of solar photovoltaic projects for other Dubai Government agencies, and also installed solar systems for more than 5,000 Dubai and Hatta residents.

Shams Dubai Indicators' Progress	2016	2017	2018	2019	2020
Connected Capacity at Year End, MW	7.3	22.8	71.4	165.2	261.9
Est. Annual Generation, GWh*	5.2	17.8	61.4	142.3	311.4
Grid Emission Factor, tCO2/MWh	0.4382	0.4333	0.4258	0.4178	0.4041
Est. Annual Emissions Savings, ,000 t of CO2**	2.3	7.7	26.2	60.6	125.9

Note: *Based on Grid Emission factor. Actual savings likely higher as solar typically displaces daytime generation only

Clean Coal

For decades, coal has been one of the main energy sources that many different countries are highly dependent on for electricity generation. The term ‘Clean Coal’ refers to several technologies that are integrated together to reduce the negative environmental impact of burning coal. These technologies mainly focus on reduction of emissions such as NOx, Particulate Matters (PM), SOx and CO2. DEWA’s Hassyan Clean Coal Power Plant will be the first plant of its kind in the Middle East and North

Africa. It will generate electricity from clean coal based on the Independent Power Producer (IPP) Procurement model. The Hassyan Clean Coal Power Plant started operations with its 1st unit 600 MW Net, and will have 2,400MW Net capacity by 2023. The plant will use ultra-supercritical technology in its operations, in full compliance with set international standards. The plant also meets flue gas emission limits that are more stringent than those of both the Industrial Emissions Directive of the European Union and the International Finance Corporation Guidelines.

Supply Side Energy Efficiency

(GRI 103-1, 103-2, 103-3, EU11)

DEWA produces electricity and water through cogeneration. HRSGs (Heat Recovery Steam Generators) are used by DEWA to produce steam by utilising the heat waste from gas turbines. The steam is used for generating the additional free power for producing the water by multi-stage flash. The backpressure steam turbine is used for producing it. In recent years, DEWA invested a considerable amount for improving efficiency and converting simple cycle gas turbine plants into more effective cogeneration cycle plants. It is done by installing the cooling system in gas turbines. The gross efficiency (Power Only) was 45.09%, and overall efficiency was 95.45% in 2020 for DEWA. From 2006 to 2020, DEWA achieved the milestone of improving the cumulative efficiency of 33.41%, which is equivalent to 64.7 million tonnes of CO₂ emission reduction. The combination of optimum power plant design, innovative upgradation of gas turbines, optimised outage planning, power augmentation and optimised operations are the main factors for DEWA to achieve it effectively. It signifies that DEWA is improving continuously through reducing carbon emission and efficiency measurements.

Optimum Power Plant Design

To achieve a minimised cost and the highest efficiency of plant's lifecycle, the optimum power and water production design would be in a hybrid system where water production is shared between several technologies including multi-stage flashing desalination and reverse osmosis.

Power Augmentation

In the summer months, with ambient temperatures reaching 45°C, gas turbine generation capacity typically drops by around 20%, which reduces power output and efficiency, and increases emission intensity and costs. The recovery of this power loss and efficiency is possible using several cost effective and proven power augmentation options. Through the use of these technologies, DEWA has cost-effectively increased capacity by over 720 MW by 2020 with respect to 2006 and improved efficiency in the process, which reduced our emission intensity.

Innovative Upgrades for Gas Turbines

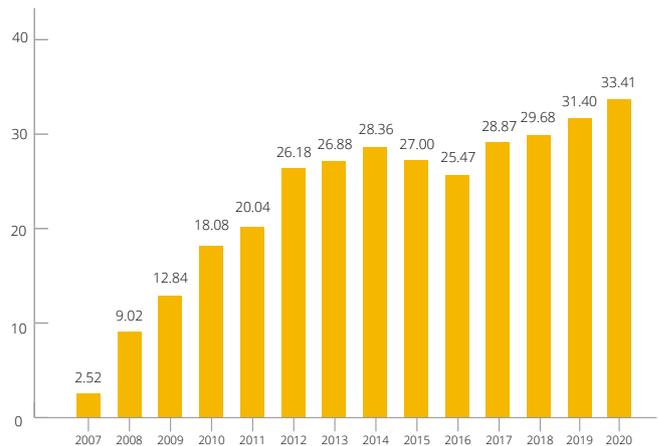
After installing any gas turbine, DEWA continuously follows up with the original equipment manufacturers with regards to any new proven and cost-effective technologies and upgrades that have become available during the lifecycle of the gas turbine, to increase capacity as well as improve efficiency and reliability.

Optimised Operation

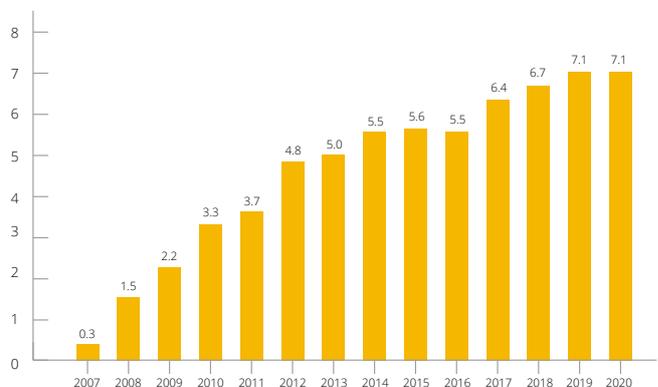
During times of low demand, some electricity generation units are shut down to avoid running inefficiently at low load levels.

Outage Planning

DEWA uses a management tool that coordinates all maintenance outage requests to minimise outages and meet demand with the highest efficiency and minimum fuel cost.



Graph: Efficiency Gains from improvement % in Gross Heat Rate 2007-2012 with respect to 2007



Graph: Carbon reduction (Million Tons CO₂) due to efficiency improvements with respect to 2007

Demand Side Management (GRI 103-1, 103-2, 103-3)

The supply-side efficiency programmes of DEWA are crucial for adopting the best practices in generation and desalination for reducing power and water consumption. It is also significant for diversifying the fuel mix. Demand-side management is considered as one of the energy-efficient and consumption targets of DEWA. In 2013, the Dubai Supreme Council of Energy implemented the Dubai Demand Side Management strategy to increase the efficiency of energy by reducing electricity and water consumption to influence Dubai's sustainable development.

The strategy has been updated and enforced for implementation in January 2020 through the Supreme Council of Energy's Directive number 1 of 2020.

The updated strategy speeds up efforts to achieve or exceed the savings of 30% by 2030. The updated DSM strategy includes 11 DSM programmes, namely P1-Green building Regulations, P2-Building Retrofits, P3-Outdoor Lighting, P4- Efficient Cooling, P5-ESMA Standards and Labels, P6-Consumer Behaviour, P7-Shams Dubai, P8-Electricity and Water Tariffs, P9-Recycled & Ground Water Demand Management, P10-Efficient Mobility and Smart Charging and P11-Fuel and Engine Efficiency. The first 9 programmes target electricity and water savings while the last two programmes target emission reduction in the transportation sector.

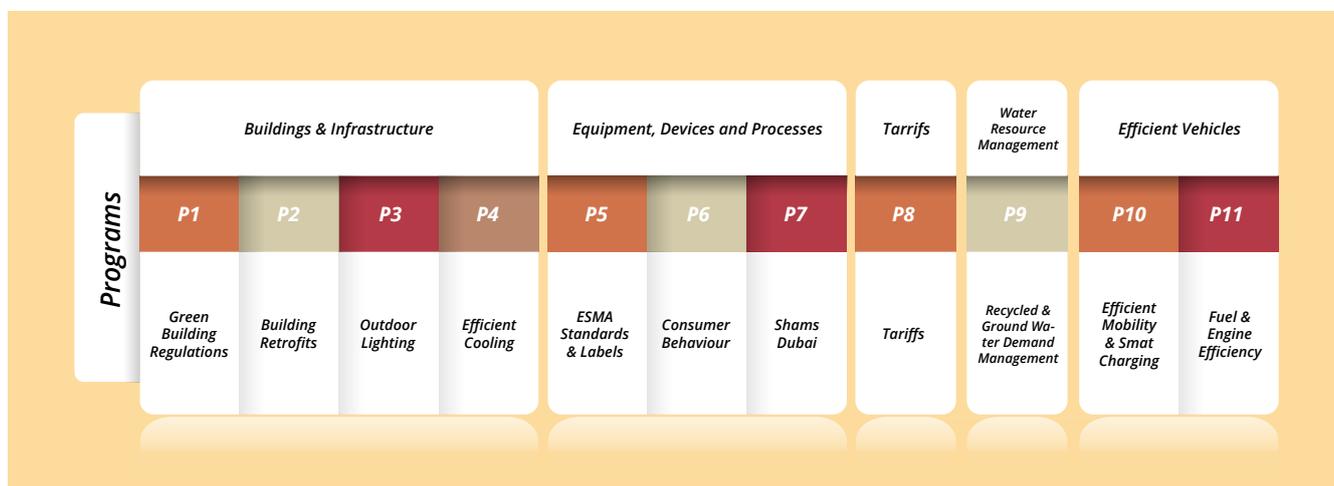
Each programme has a Programme Owner (a member company of the Supreme Council of Energy) which is responsible for the programme implementation under the management of the DSM Project Management Office (PMO) - Taqati and supervision of the Supreme Council of Energy. DEWA is the owner for the Shams Dubai Programme and Tariff Rates. In 2020, both programmes achieved 240 GWh and 1,449 GWh in electricity savings respectively, and 2,667 MIG water savings from Tariff Rates programme.

Tariff Rates Programme

Pricing is a signalling tool that is often used to induce energy-efficient behaviour in customers and encourage them to optimise their usage. Price signalling is a key driver to encourage customers to be energy-efficient.

The objective of the tariff Rates Programme is to adjust Tariff structure to be cost reflective, promote energy efficiency and give the right signal to reduce consumption.

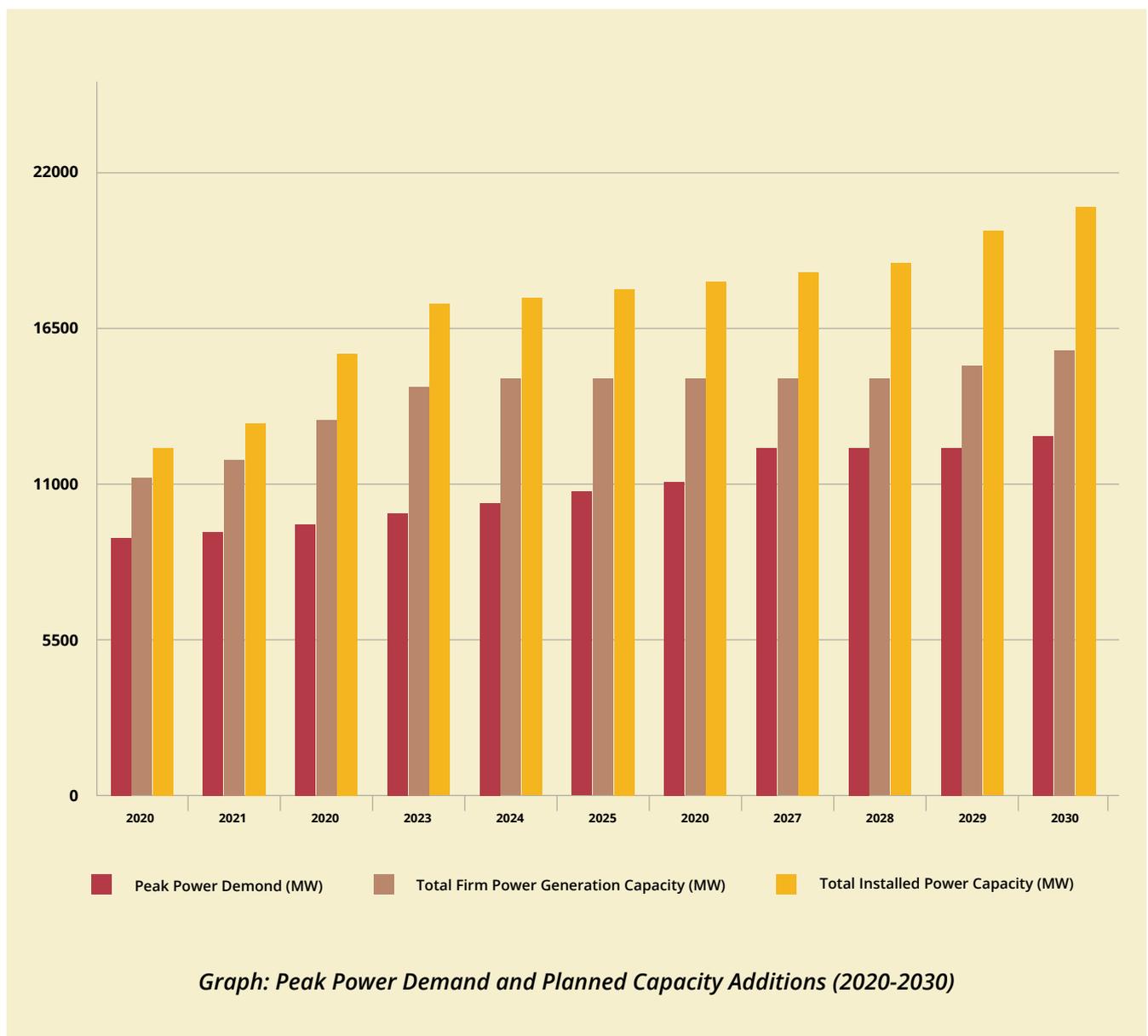
The tariff currently in place is designed in an inclining slab structure, which moves consumers to a higher tariff slab as their consumption rises. The last tariff review was in 2011. The Tariff Rates Programme started the DSM Strategy 2030, as the major contributor to savings in the first years of Dubai DSM strategy implementation. A fuel surcharge component in the tariff structure has been added, which varies based on the actual fuel cost supplied to DEWA's generation plants. This allows for more transparency with consumers on drivers of price changes.



Meeting Future Demand

DEWA has forecast the demand for power & water up to 2030. The Power and Water Planning (P&WP) division is responsible for the short-, medium- and long-term demand forecasts and Master Plans. P&WP updates demand forecasts every year using recognised international practices and state-of-the-art tools considering demographic and econometric growth, and captures the effect of future uncertainties through scenario planning. This ensures that DEWA maintains its world-class level of reliability, efficiency and safety and optimises its resources. Based on these demand forecasts, DEWA develops all its Master Plans, which are updated annually to meet Dubai's power and water demands while maintaining a reserve margin of minimum of 15% for water and

25% for power. Master Plans set the course for the technical planning of future infrastructure expansions of electricity and water production, transmission and distribution systems. The plan takes into consideration Dubai's future developments in commercial and industrial sectors and major future events such as Dubai Expo 2020 (which is now scheduled to begin in October 2021 in light of the COVID-19 pandemic), as well as, projected normal growth of power and water demand associated with increases in population. The plans include power generation and water desalination capacity expansion plans and power and water transmission network expansions plans up to 2030 as well as DEWA's power distribution network over the next 7 years.





Case Study

World's First Gas Turbine Intelligent Controller (GTIC) and Thermodynamic Digital Twin Co-developed by DEWA & Siemens Energy.

In another world-first for DEWA, a team of Emirati engineers from DEWA, in collaboration with Siemens Energy, developed the Gas Turbine digital twin and Intelligent Controller (GTIC) which uses, Artificial Intelligence (AI) and Machine Learning (ML) to control the Gas Turbines at M-Station in Jebel Ali, the largest power and water desalination plant in the UAE.

Gas Turbines pose many challenges, such as degradation of turbine capacity and efficiency due to ageing, and the necessity for manual seasonal tuning of the Turbines' combustion twice-yearly to ensure proper operational performance. These challenges in turn have financial impacts and require many efforts such as, communication with OEM to schedule resources in advance and mobilising experts globally to the site.

Thus, the team of DEWA engineers led by Emirati subject matter experts in GT technology, control systems and operation, came up with the idea of the Intelligent Controller to recover performance degradation, increase generation capacity and reduce fuel consumption, which in turn reduces emissions. The purpose of the initiative was to develop a real time, autonomous Gas Turbine control to recover inherited degradation & improve Efficiency of the gas turbine units, and achieve Self-healing (stabilisation of combustion and Auto Tuning) and avoiding manual seasonal tuning which improves unit availability. In principle, implementing Intelligent Controllers make gas turbines that can learn from their own data over



time make them more valuable, changing the game for the industry in the near future.

The innovative idea, which pioneers the deployment of AI in the power industry, was evaluated at-site using the Thermodynamic Diagnostic System (TDY), Gas Turbines Diagnostics System (WinTS), and Distributed Control System (DCS T3000). Also, evaluation was performed in parallel with Siemens energy simulators in Germany.

This technology has already been implemented in 9 Gas Turbines (6 GTs in M-station and 3 GTs in K-station), and has resulted in a Power Gain (MW) of 18.4 MW, an efficiency Improvement in the range of 0.2% - 0.3%, 10% NO_x Reduction, 90,000 Tonnes of CO₂ emissions reduced (equivalent to planting 4,133,664 trees). The system also achieved AED26.3 million and AED25.5 million in Capital Cost Savings and Operational Cost Savings, respectively. It has an ROI payback of less than 2 years.

DEWA intends to scale the technology to 6 more GTs in Generation Division, and extend the functionality to Combined Cycle Co-Generation Assets (Plant Intelligent Controller (PIC) in M Station.

The GTIC has added a new accolade to DEWA's record of global achievements by winning the 'Innovative Power Technology of the Year 2020' award at the 16th Asian Power Awards, considered one of the most prestigious electricity awards in Asia.

Chapter 4

Water



5.1%

During 2020, DEWA reduced its water losses to 5.1%, one of the lowest worldwide.



884,820

DEWA installed 884,820 Smart Water Meters in Dubai by 2020.



100%

DEWA has met 100% of Dubai's water demand by operating and managing its water network and reservoirs.

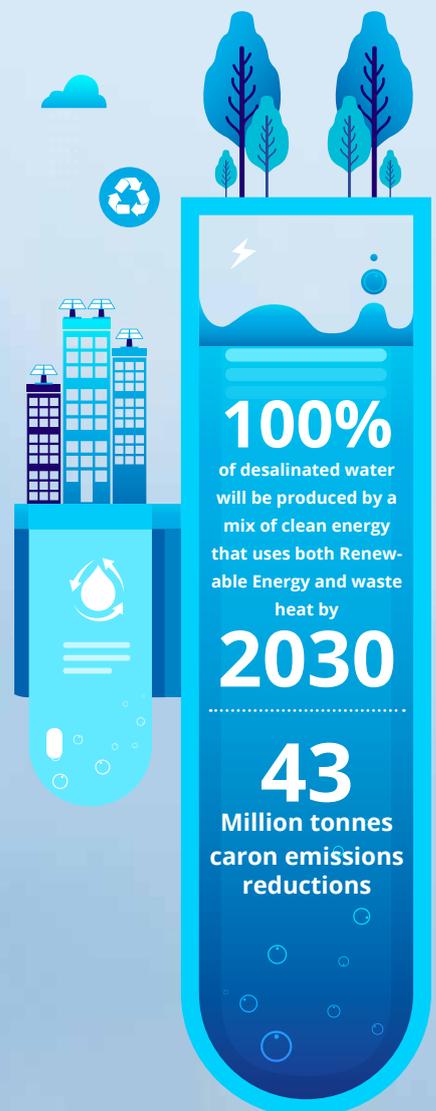
Management Approach (GRI 103-1, 103-2, 103-3)

Life is directly connected to water and the quality and availability of water are main indicators on modern and advanced cities in the world. With the continuous growth of Dubai, DEWA is always on the run not only to catch up to the needs of the city, but to stay one step ahead and anticipate the future needs in the water demand to be able to sustainably provide the required capacity for years to come, to fulfil the vision of the leadership.

DEWA adopts a clear strategy to ensure that by 2030, 100% of desalinated water will be produced by a mix of clean energy that uses both renewable energy and waste heat. This will allow Dubai to exceed global targets for using clean energy to desalinate water. Increasing the operational efficiency in decoupling desalination from electricity production will save around AED 13 billion and reduce 43 million tonnes of carbon emissions by 2030.

DEWA uses the latest Supervisory Control and Data Acquisition (SCADA) systems, smart monitoring, and control and automation systems to provide water services according to the highest international standards. This involves considerable focus on expanding the water network, and monitoring and managing the age of pipelines and extreme weather conditions. DEWA frequently faces emergencies in the form of pipeline breakages and leakages, which can result in huge water losses. To overcome this challenge, DEWA has built the SCADA System, to monitor and control pipelines remotely. The system enables skilled operators to instantly detect and isolate breakages and emergencies by observing the changes in pressure and flow transmitter readings.

DEWA follows international and local policies and regulations, such as the W&C Asset Management Mechanism, Electricity and Water Supply policy, Jebel Ali Power Station (JAPS) potable water specifications, GSO 149/2014 drinking water guidelines (Standardization Organisation for GCC), World Health Organisation (WHO) drinking water guidelines, and the National Electronic Security Authority (NESA) standards.



DEWA Jebel Ali Power Station Potable Water Specifications

Sl. No.	Particulars Of Analysis			WHO Guideline	DEWA-JAPS	
				Value(Max)	Updated Specification	Typical Figure
1	pH value	at 25°C		6.5 - 8.5	7.9 - 8.5	8.35
2	Conductivity	at 25°C	µS/cm	-	200 - 900	377.7
3	Total Dissolved Solids		mg/L	1000	100 - 450	207.8
4	Chlorine Dioxide	as ClO ₂	mg/L	-	0.40 - 0.50	0.48
5	Turbidity		NTU	-	< 5.0	0.7
6	M-Alkalinity	as CaCO ₃	mg/L	-	40 - 60	48.3
7	Carbonate	as CaCO ₃	mg/L	-	0 - 10	0.5
8	Bicarbonate	as HCO ₃	mg/L	-	30 - 75	58.3
9	Total Hardness	as CaCO ₃	mg/L	500	40 - 120	59.9
10	Calcium Hardness	as CaCO ₃	mg/L	-	30 - 65	41.0
11	Calcium	as Ca	mg/L	-	10 - 25	16.4
12	Magnesium	as Mg	mg/L	-	2 - 20	4.6
13	Chloride	as Cl	mg/L	250	25 - 250	77.0
14	Sulphate	as SO ₄	mg/L	250	2 - 35	9.1
15	Free Carbon dioxide	as CO ₂	mg/L	-	≤ 1.5	0.4
16	Fluoride	as F	mg/L	1.5	≤ 1.5	0.07
17	Chromium	as Cr	mg/L	0.05	< 0.05	< 0.0020
18	Iron	as Fe	mg/L	-	≤ 0.3	0.056
19	Copper	as Cu	mg/L	2	≤ 1.0	0.052
20	Nickel	as Ni	mg/L	0.07	≤ 0.07	0.010
21	Cadmium	as Cd	mg/L	0.003	≤ 0.003	< 0.0020
22	Mercury	as Hg	mg/L	0.006	≤ 0.006	< 0.0020
23	Sodium	as Na	mg/L	200	10 - 200	46.4
24	Lead	as Pb	mg/L	0.01	≤ 0.01	< 0.0020
25	Boron	as B	mg/L	2.4	≤ 2.4	0.096
26	Cyanide	as CN	mg/L	-	≤ 0.07	< 0.01
27	Selenium	as Se	mg/L	0.04	≤ 0.04	< 0.0020
28	Arsenic	as As	mg/L	0.01	≤ 0.01	< 0.0020
29	Manganese	as Mn	mg/L	-	≤ 0.4	0.003
30	Molybdenum	as Mo	mg/L	-	≤ 0.07	< 0.0020
31	Antimony	as Sb	mg/L	0.02	≤ 0.02	< 0.0020
32	Barium	as Ba	mg/L	1.3	≤ 0.7	0.001
33	Uranium	as U	mg/L	0.03	≤ 0.03	< 0.0020
34	Nitrate	as NO ₃	mg/L	50	≤ 50	0.109
35	Nitrite	as NO ₂	mg/L	3	≤ 3	< 0.01
36	Bromate	as BrO ₃	mg/L	0.01	≤ 0.01	< 0.0002
37	Chlorite	as ClO ₂	mg/L	0.7	≤ 0.7	0.344
38	Chlorate	as ClO ₃	mg/L	0.7	≤ 0.7	0.133
39	TTHMs (Concentration ratio)			1	≤ 1.0	0.168
a)	Chloroform	as CHCl ₃	mg/L	0.3	≤ 0.3	< 0.001
b)	Bromoform	as CHBr ₃	mg/L	0.1	≤ 0.1	0.016
c)	Dibromochloro methane	as CHBr ₂ Cl	mg/L	0.1	≤ 0.1	0.002
d)	Bromodichloro methane	as CHBrCl ₂	mg/L	0.06	≤ 0.06	0.002
40	Dissolved hydrocarbons		mg/L	-	< 0.01 (*)	< 0.01
41	Total Coliform Bacteria	Col/100 ml		-	Nil	Nil
42	Fecal Coliform Bacteria	Col/100 ml		-	Nil	Nil
43	Saturated pH			-	7.8 - 8.5	8.28
44	Saturation Index			-	Positive	Positive

Remarks:

- (*) The taste and smell threshold value varies widely according to product and it is 0.0005 ppm (mg/L) for hydrocarbons and distillate should be dumped if it is having smell or taste of oil.
- DEWA JAPS typical figure is the average of individual station averages during the year 2020.
- WHO guideline values is based on W.H.O drinking water guidelines values 4th dition with Addendum 1 of 2017.

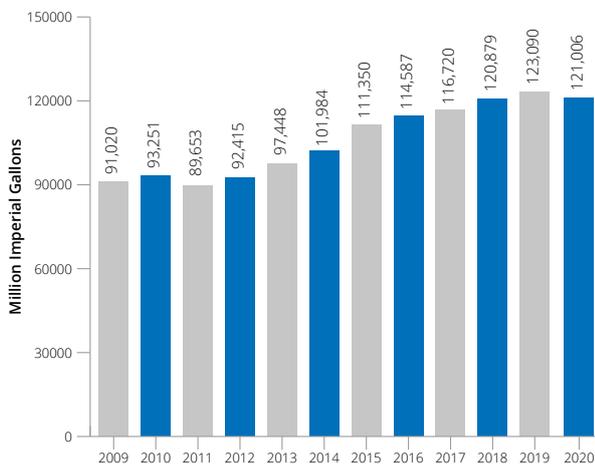
Sustainability of Water Production

(GRI 303-1, 303-3)

As Dubai's sole provider of efficient electricity and water, DEWA continues to construct production plants that uses reverse osmosis (RO) system. This is a much more sustainable solution in water desalination as it uses less energy than multi-stage flash desalination (MSF) plants. DEWA strongly believes in the importance of water conservation and the importance of demand side management to have a sustainable water supply for future generations.

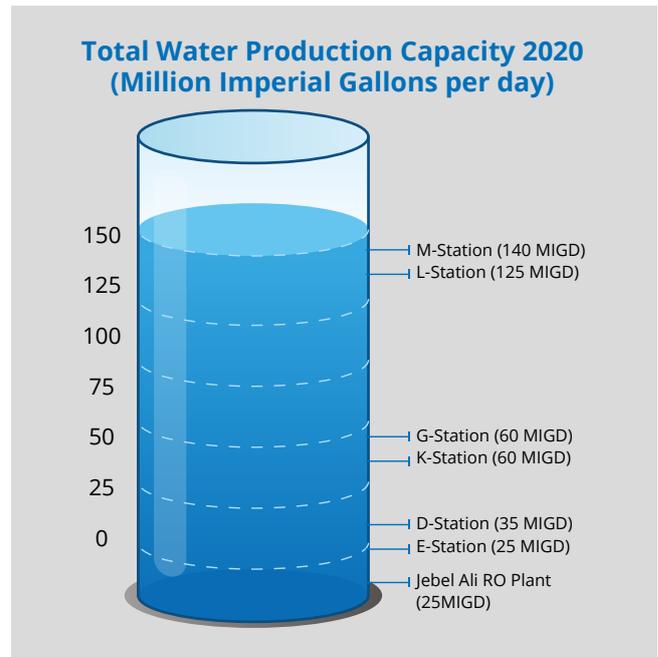
In 1992, DEWA's installed capacity was 65 Million Imperial Gallons Per Day (MIGD). Today, to keep pace with Dubai's growing demand and prosperity, DEWA's installed capacity is 470 MIGD. Under construction and planned reverse osmosis plants will help expand production capacity by 280 million gallons of desalinated water per day, to 750 MIGD by 2030.

Total Water Produced from 2009 to 2020 (Million Imperial Gallons)



In 2020, DEWA's installed capacity from its desalination plants was 470 MIGD with a total seawater withdrawal of 5,767.6 Million cubic metres at an average flow of 3,476.3 MIGD. The peak daily water demand of 387MIG was on 14 July, 2020, an increase of 0.05% growth compared to 2019.

The average daily water demand in 2020 was 343.402 MIGD compared to 337.320 MIGD in 2019, which is an increase of 1.8%. The peak monthly average of 378 MIGD occurred in July 2020, a decrease of 0.17% compared to 2019.



DEWA's installed capacity from underground wells was 32 MIGD, with a total production of 461.585 MIG. However, this is a strategic reserve for emergencies. During 2020, DEWA used approximately 1.28 MIGD from underground wells. The underground water production is measured through meter readings on the respective pumps.

DEWA's installed capacity from at Hatta was 0.35 MIGD and its total well production was 2.144 MIG. In Hatta, most of this well water is used as feed for Hatta's Reverse Osmosis plant which is a secondary source of potable water for local communities. In 2020, the total RO production was 0.387 MIG.

The total amount of water withdrawn from DEWA water wells was 461.585 MIG, which was approximately 1747.289 megalitres. This is considered as Other Water as the average Total Dissolved Solids level was 1,286 mg/L.

Water Data	Unit	2016	2017	2018	2019	2020
Installed capacity of desalination plant	MIGD	470	470	470	470	470
Installed capacity (underground wells)	MIGD	32	32	32	32	32
Seawater Withdrawal	Million cubic metres	3,403	5,741.5	5,919.1	5,872.5	5,767.6
Peak daily water demand	MIG	356	372	379	387	387
Increase in peak daily water demand compared to the Previous year	%	2.07%	4.33%	1.97%	2.14%	0.05%
Monthly average peak demand	MIGD	347	362	368	379	378
Increase in peak monthly average compared to the Previous year	%	2.89%	4.39%	1.54%	2.97%	0.17%

Desalination Plants

Desalination Technologies

Multi-Stage Flash (MSF) technology

In 2020, DEWA has 43 Multi-Stage Flash (MSF) water desalination units with a total production capacity of 445 million imperial gallons per day (MIGD) of water located at the D, E, G, K, L, and M Stations.

Reverse-Osmosis water desalination technology

DEWA aims to increase its SWRO production capacity to 305 MIGD by 2030; reaching 41% instead of its current share of 5%. The desalinated water production capacity will reach 750 MIGD in 2030. SWRO desalination units require less energy than MSF.

To ensure the sustainability of water desalination, DEWA plans to build RO desalination plants which require 90% less energy than MSF stations. This makes it a more sustainable option for water desalination.

Sea Water Reverse Osmosis (SWRO) based desalination plant in Jebel Ali

DEWA awarded an AED 871-million contract for the construction of the SWRO-based desalination plant in Jebel Ali to a joint venture comprising ACCIONA Agua SA and Belhasa Six Construct (BeSIX). The project is 79% complete and making significant progress, wherein the project main buildings are at finishing stage. Most of the marine works were complete and commissioning works started after the successful operation of the first main power transformer.

DEWA is committed to the highest standards of safety, health and security and delivering a high-quality project on time. The SWRO plant includes different technologies and treatments such as an advanced pre-treatment, double-pass reverse osmosis, post-treatment process and storage facilities which are connected to the water network. In order to meet the reserve margin criterion set for peak water demand for 2021 and beyond, the plant is scheduled for operation in Q1 2021.

This project supports DEWA's decoupling of water production and power generation by using electricity generated from solar power for desalination using SWRO technology. These big solar projects launched by DEWA achieved several times the lowest Levelized

Cost of solar power globally and contributed in reducing the global costs of generating electricity from solar power. By 2030, 100% of desalinated water will be produced by a mix of clean energy that uses both renewable energy and waste heat.

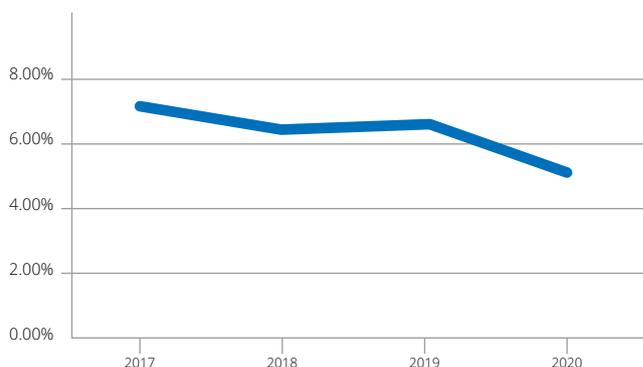
Water Transmission and Distribution (GRI-303-1)

DEWA works accordance with the vision and directives of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to consolidate the competitiveness of Dubai and raise its global position. This is achieved by providing an advanced infrastructure as per the highest international standards. DEWA constantly work to increase the capacity and efficiency of the transmission and distribution networks to provide electricity and water according to the highest standards of availability, reliability, efficiency, and sustainability.

DEWA's global achievements confirm the success of its effective and sustainable practices in improving on the water network and infrastructure. DEWA is one of the top 10% utilities worldwide in decreasing Unaccounted-For Water (UFW). DEWA succeeded in reducing UFW from 7.1% in 2017 to 6.5% in 2018, and 6.6% in 2019. DEWA reduced this to 5.1% in 2020 due to its various initiatives and projects such as the Smart Distribution Management System, HydroNet and i-service.

This achievement underlines the success of DEWA's strategy to prepare for the future with scientific planning, innovation, using the latest technologies in the generation, transmission, distribution, and control of water networks. It also aligns with DEWA's strategy to raise the efficiency and reliability of electricity and water networks to meet the growing demand in Dubai. This enhances the social and economic growth of Dubai.

Annual Unaccounted for Water (UFW) As Percentage Of Total Water Supplied



Smart Distribution Management System (SDMS)

As a globally leading corporation, DEWA aims to ensure the highest levels of efficiency in reliability of water supply, as well as transmitting and distributing water. After successfully building and implementing a remote monitoring and control system for the water transmission network, DEWA's Water & Civil division is developing an advanced operational technology for real time monitoring and control of the water distribution network (i.e., 300 mm pipeline diameter). The Smart Distribution Management System (SDMS), which is considered an extension of the water transmission SCADA system, plays a critical role in the enhancement of water technologies, reliability of water supply and achievement of higher customer satisfaction levels.

Since DEWA is committed to promote sustainability through its business operations, it is necessary to highlight the benefits of the SDMS project to the economy, environment, and society. First, by using real-time and remote monitoring and control features, the SDMS project is expected to decrease the response and isolation time of broken pipelines from hours to just a few minutes. This will directly lead to savings on water loss and decrease of the Unaccounted For Water (UFW %), an effect that counts for both, the environment and the economy.

Other benefits that rise from the SDMS project include improved fault location as well as isolation and service restoration capabilities, which also result in shorter outage spans, happier customers, and lower outage costs. In addition, the automation of the distribution network simplifies the management of the water network. This reduces support costs and improves the security of the water supply within Dubai, demonstrating its that the SDMS is a sustainable project.

Innovation in Water

HydroNet

DEWA is aligned to the National Innovation Strategy that launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, to make the UAE one of the most innovative countries in the world. Besides this commitment, DEWA is also highly involved in achieving the Dubai Plan 2021, which intends the city to become happy, creative, and empowered by people who adopt innovation within its operations.

In line with the above strategies and city-wide plans, DEWA's Water & Civil division is currently building a system that monitors the water network autonomously to improve efficiency, effectiveness and situation awareness of operators, through the integration of artificial intelligence within its current system. DEWA is automating its water transmission and distribution networks to operate them remotely. However, these systems still require human operation in real time for situational awareness.

When part of a live network is no longer stable, human operators must manually analyse the circumstances to understand what could be happening within a live network, and then decide on the response based on

previous experience or trial and error. This may delay the response, an is avoided as much as possible to insure the continuation of clean water transmission and distribution.

The solution presented through this initiative is to create a system that works autonomously, built on artificial intelligence. It provides a means of learning the behaviour and monitoring the dynamic network without human intervention by using neural networks. This includes sensors to detect wave propagation and monitor the behaviour of fluids across the water network. This then analyses the steady state, dynamic state, and transient state, of pipelines within the network. The events that lead to state changes and its propagation can then be detected and monitored by the system. As a result, the solution provides a cockpit view of the network with geospatial context and pipelines with colour-coding of the different inherent states.

The solution is expected to reduce remote isolation time from minutes to seconds as well as reduce the cost of operation by 3.5 million AED per annum. Other benefits also include reduction of Unaccounted For Water (UFW %) and decreasing financial losses incorporated with loss of desalinated water wasted during emergencies. This solution means DEWA can invest in Water & Civil division employees differently for other purposes.

On 7 February, 2021, DEWA registered a new patent for its HydroNet project. The project won the Silver Team Idea of the Year Award at Ideas America 2020.

i-Service

In line with DEWA's vision and mission, which ensures its leading projects represent innovation and sustainability, the Water & Civil Division launched the i-Service initiative to use artificial intelligence to increase stakeholders' and customers' satisfaction.

The initiative proactively monitors water service continuity to detect any service interruptions within three hours of their occurrence, using existing Advanced Metering Infrastructure (AMI) data from customers' smart meters without deploying any new devices or sensors; thereby avoiding any added cost.

The i-Service uses two neural networks, where the output of the first acts as the input to the second, designed as follows:

- 1. First Neural Network:** This focuses on temperature. Its task is to read ambient and medium temperatures and measure their rate of change, mainly to confirm if changes are happening in parallel with each other. Medium temperature trends are also evaluated to confirm the absence of sudden drops.
- 2. Second Neural Network:** The second network measures 6 other parameters: (1) daily consumption, (2) historical data, i.e., customer average behaviour on hourly basis, (3) nearby interruptions, (4) last flow detection time, (5) air in pipe alarm and (6) cyclic case, i.e., the times during which customers do not use water.

i-Service's main advantages lie in its early detection feature, which enables concerned teams to become aware of and resolve unplanned outages, as breakages and leakages, in the water network before receiving a customer complaint. This does not only decrease the number of complaints raised by customers due to unexpected outages, but also decreases the UFW %, a worldwide KPI that accounts for DEWA's efficiency and effectiveness in supplying water as a utility, as well as any associated water costs.

Launched in May 2019, the initiative is currently in the design and early testing phase. Future phases will focus on achieving 100% accuracy in detecting emergency location coordinates, as well as decreasing the time of detection. With the project currently being implemented in certain locations only, its technical team of engineers aim to expand its implementation radius to eventually include all of Dubai.

Smart Water Meters



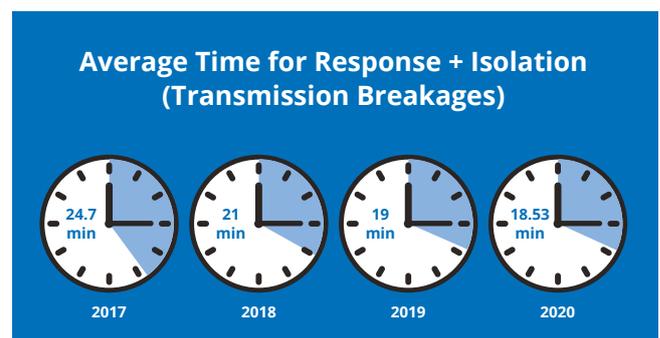
As of 31 December 2020, DEWA succeeded in installing 884,820 smart meters in record time, with 842,181 of them monitored and read remotely every 15 minutes. This allowed DEWA to improve the availability of meter readings to 99.1%. with 839,216 water meters remotely billed in SAP. The Advanced Metering Infrastructure improves meter reading and billing accuracy, customer happiness, and reduces Unaccounted for Water.

Minimisation of water loss

With considerable activities related to expansion of the water network because of pipeline age and extreme weather conditions, DEWA frequently faces emergencies in the form of pipeline breakages and leakages, which result in huge water losses. Delays in arriving on-site to isolate broken pipeline segments, especially due to the heavy traffic in Dubai, can make leakages worse. To overcome this problem, DEWA built a Supervisory Control and Data Acquisition (SCADA) system, to monitor and control pipelines remotely. The system enables skilled operators to detect and isolate breakages and emergencies instantly through observing changes in pressure and flow transmitter readings.

As a result of using SCADA, DEWA's Key Performance Indicators (KPIs) show that the organisation decreased the response and isolation time and can measure the percentage of the network that can be isolated remotely.

As a result, W&C division was able to decrease the 'Response & Isolation Time' considerably as shown below



Waste Water Discharge Management

(GRI 103-1, 103-2, 103-3, 303-1; 303-2; 303-4; 306-1; 306-5)

DEWA is committed to reducing its environmental impact by integrating environmental consideration into its business and operations. DEWA embedded an efficient wastewater management system within its procedures and ensure to apply for wastewater discharge permits from Dubai Municipality (regulator in Dubai) every year. DEWA is responsible for the management of the wastewater generated within the scope of its operation at Jebel Ali Power and Desalination Stations complex. DEWA follows the

guidelines and permits from Dubai Municipality to help uphold water quality to protect ecosystems, wildlife, and people's health and welfare.

As per the wastewater discharge permit issued by Dubai Municipality to DEWA, the wastewater discharge is the effluent released from power generation, desalination processes, water treatment plants, and treated sewage into the marine and land environment. As per the requirements of the permit, bimonthly and quarterly ecological assessments (phytoplankton, zooplankton and macro benthos respectively) are carried out at 500m and 2.0 km away from the discharge points by a specialist environmental service provider.



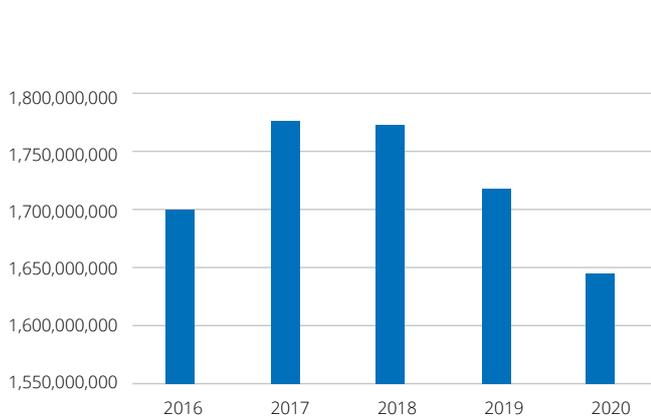
Water Discharge from Desalination and Wells

Desalination

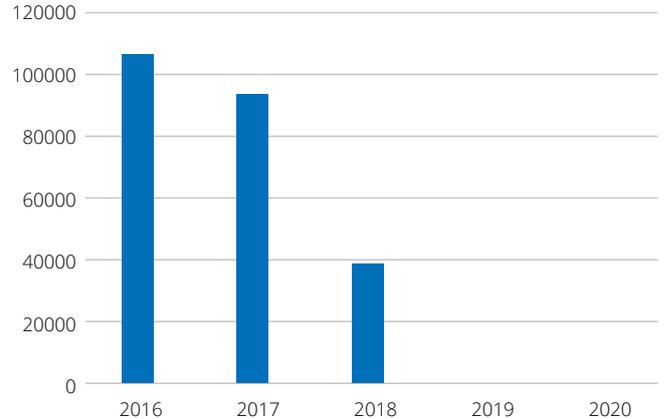
In 2020, our total volume of wastewater discharge was 5,219.4 million cubic metres, primarily comprising process wastewater from our power and desalination plants, which is discharged to the Arabian Gulf. We also produced smaller volumes of effluent from our water treatment plants (68,406 m³) and on-site treated sewage effluent (15,849.0 m³). A total of 97.8% of the recoverable wastewater (process wastewater and treated sewage effluent) generated was re-used in the Jebel Ali Power Station Complex.

Volume of wastewater discharge (m³) – Different Types of effluent

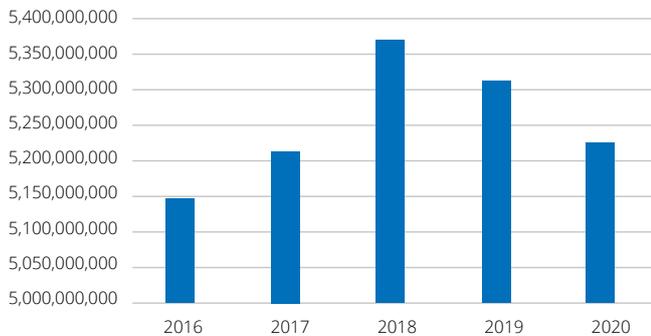
Process Water from Power plant (m³)



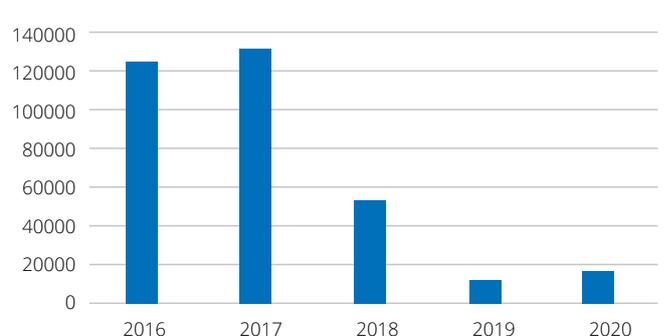
Treated Sewage Water to Land (m³)



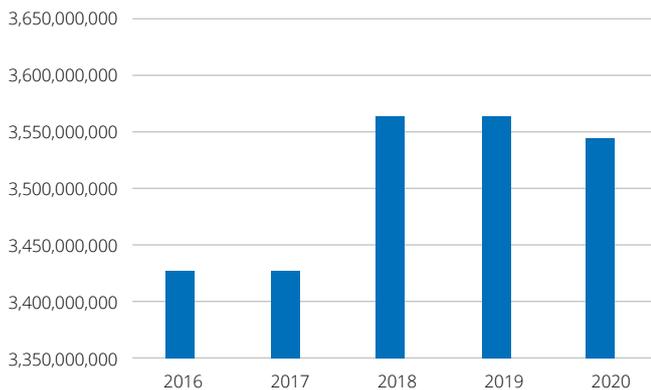
Waste Water Discharged to Marine and Land (m³)



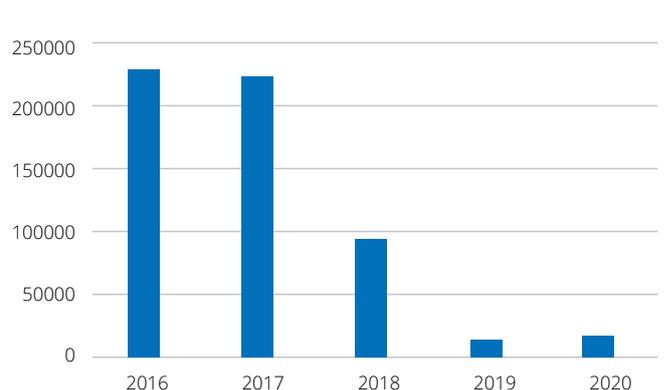
Treated Sewage Water to Sea (m³)



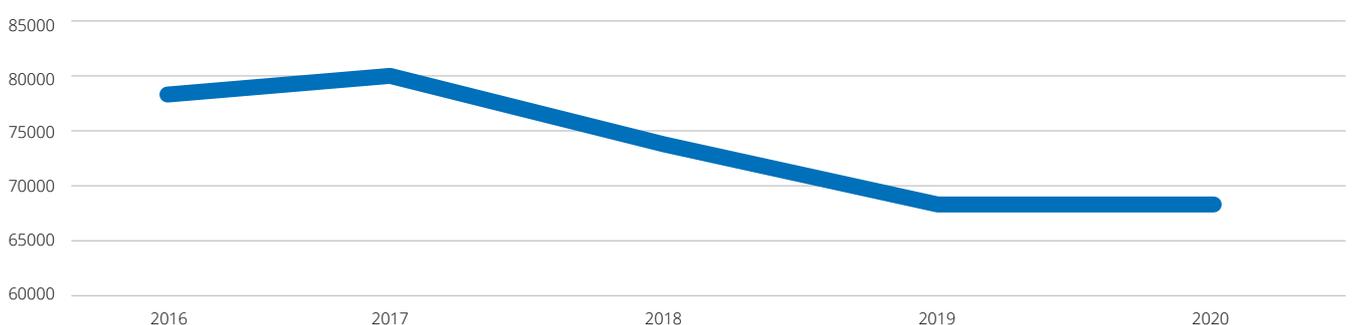
Process Water from Desalination plant (m³)



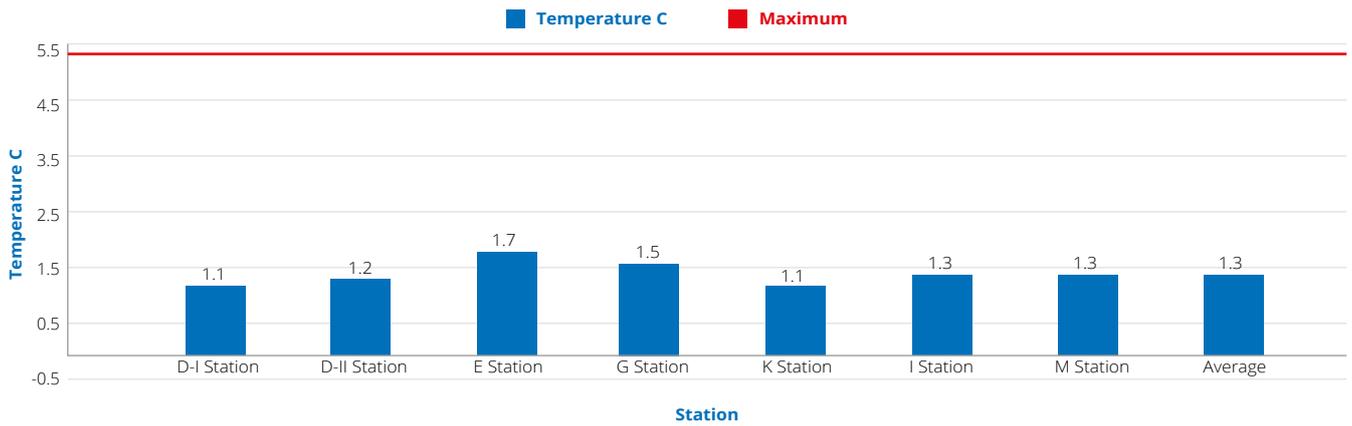
Treatment Sewage Water (m³)



Water treatment plant effluent (m³)



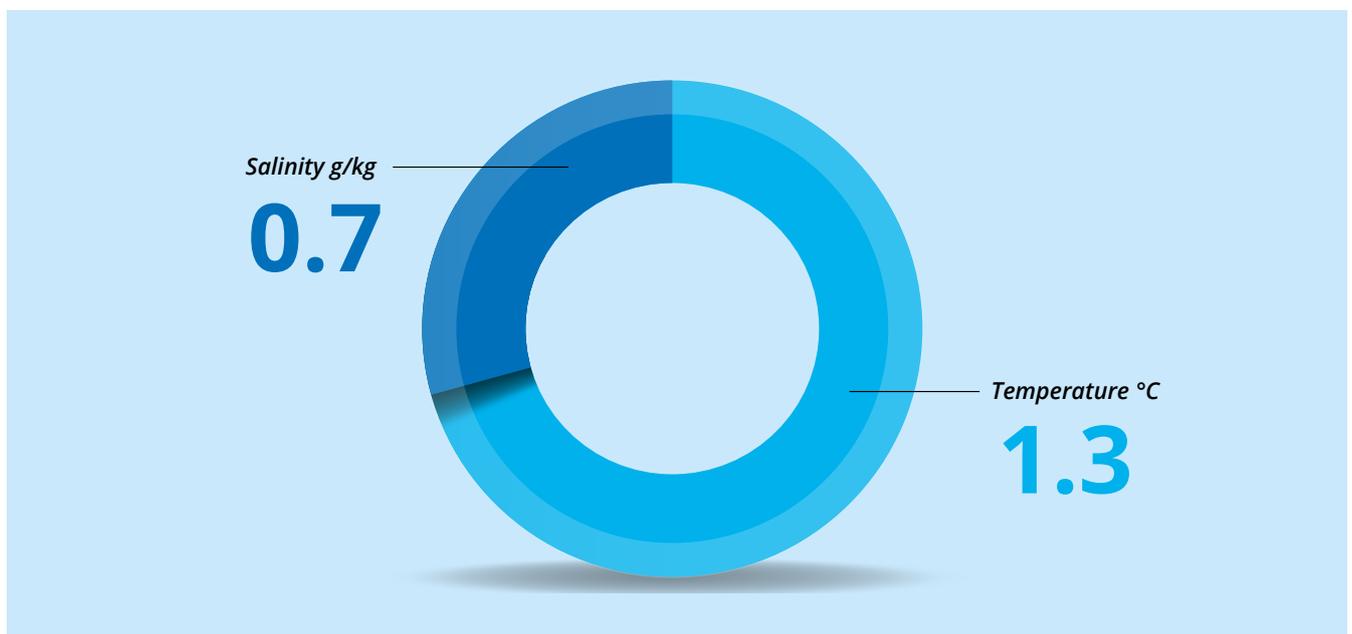
Temperature difference between the seawater at mixing zone and ambient ater 2020



Salinity difference between the seawater at mixing zone and ambient seawater (g/kg)

Particulars Sample	2016	2017	2018	2019	2020
D-I Station	0.5	0.7	0.7	0.7	0.6
D-II Station	0.8	1	1	0.9	0.6
E Station	0.7	0.7	0.5	0.5	0.6
G Station	0.7	0.9	1	0.5	0.9
K Station	0.4	0.4	0.6	0.5	0.7
L Station	0.8	0.7	0.8	0.5	0.4
M Station	1	0.7	0.4	0.6	0.7
Average	0.7	0.7	0.7	0.6	0.7

The Average of Temperature and Salinity Difference Between the Seawater at Mixing Zone and Ambient Seawater 2020



Wells

In 2020, the total rejected water released from Hatta RO Plants was 1.757 MIG (the difference in total amount of well water pumped, 2.144 MIG and the permeate production from the RO plant, 0.387 MIG). This rejected water is released from RO units and transported through pipelines to exclusively irrigate the local UAE local farms in Hatta . The specifications of the quality of rejected water are that turbidity is 1.50 NTU, conductivity is 1950 μ S/cm, and the pH is 7.20.

At DEWA, we know that the underground wells should be overseen cautiously so we guarantee that it will, for the most part, be used in a crisis, to serve individuals who live in regions where other water systems are unavailable.

Water Storage

Storing desalinated water in a subterranean basin

As per DEWA's plan to launch an Aquifer Storage & Recovery Scheme (ASR), Currently, DEWA is building a subterranean water basin to store 6,000 million gallons of water that can be retrieved when needed. This will provide the Emirate with a strategic reserve of over 50 MIGD in emergencies, while ensuring the quality of the stored water remains unaffected by external factors.





Hydroelectric power station at Hatta

In July 2019, DEWA awarded a consortium comprising Strabag Dubai LLC, Strabag AG, Andritz Hydro and Ozkar with contract value of 1.421 billion AED for pumped-storage hydroelectric power station in Hatta. The project aligned to Dubai Clean Energy Strategy (DCES) 2050 and part of the Comprehensive Development Plan for Hatta, launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum. The project currently under construction with progress 15% till end of 2020 and the completion of the project will be in 2024.

The plant will contribute to the storage of excess solar energy to be used when needed. Water is pumped from the lower reservoir to upper reservoir when the demand is low using the surplus and cheap solar energy. When more power is needed at peak load time or during evening / night time, water is released from the upper reservoir to generate the required

electricity, the storage capacity of the plant will be 1500MWh and generate 250 MW for 6 hours. The efficiency of the power generation and storage cycle 78.9% within 90 seconds of the response to demand for electricity.

Water reservoir at Al Nakhli and Al Lusaily

DEWA aims to increase the water storage capacity in Dubai to 1002 MIG by 2021 compared to the current capacity of 815 MIG. DEWA has been building a reinforced concrete with as storage capacity 60 MIG reservoir in Lusaily alongside the existing one, which stores 120 million gallons of desalinated water. This project will be completed by the end of the first half of 2021 with investment totalling AED 175.4 million. During 2020, DEWA has completed 72% of the Lusaily water reservoir. DEWA is building another 120 MIG reservoir at Nakhali to increase the water flow and raise the volume of the Emirate's water reserve.



Chapter 5

Climate Change & Environment



124,301 I-RECs

In 2020, DEWA had successfully contracted 124,301 I-RECs from the Mohammed bin Rashid Al Maktoum Solar Park



AED11.66 M

DEWA invested AED 11.66 million to phase out all Ozone depleting substances (ODS) by 2020.



21.39 MtCO₂e

21.39 MtCO₂e were the total carbon emissions in 2020 compared to 28.11 MtCO₂e BAU



Management Approach (GRI 103-1, 103-2, 103-3, 307-1)

In line with the UAE Vision 2021 and the National Agenda, the UAE has been a strong supporter in mitigating climate change at national and international levels. The UAE Government focuses on environmental protection while achieving robust economic and social development.

DEWA has an integrated management system policy supervised by the top management. In this context, DEWA is committed to becoming a globally leading sustainable innovative corporation with excellent Quality, Occupational Health, Safety, and Environment Management Systems (QHSE) governance adhering to: Fully protect the environment, prevent air, land, and water pollution.

DEWA plays a pivotal role in protecting the environment with the Mohammed Bin Rashid Al Maktoum Solar Park. The park will have a capacity of 5,000 megawatts by 2030 to increase its share of clean and renewable energy with several programmes that encourage conservation to protect the environment and natural resources and ensure their sustainability for generations to come.

DEWA plays a pivotal role in achieving the targets of Dubai Carbon Abatement Strategy and reduced carbon emissions by 19% during 2018, two years ahead of the 2021 target to reduce them by 16% by 2021. DEWA is also following international and national guidelines such as the Montreal Protocol and the Dubai Municipality Technical Guideline #7 to phase out all Ozone Depleting Substances (ODS) by 2020.

In addition, DEWA recognises its role to mitigate the impact of climate change, in its operations by minimising its environmental footprint, while still maintaining a reliable delivery of electricity and water services. The strategies and policies have been set in place in order to reduce air emissions, minimise waste, and ensure compliance with UAE federal and Dubai level legislation, regulations and policies.

In 2020, DEWA was not in violation of any environmental regulations nor did it receive any complaints relating to environmental matters.



Sustainably manage natural resources.



Consider life cycle perspective in all stages of activities, raw material acquisition, utilising resources and managing waste by reducing, reusing and recycling, where appropriate.

Climate Change Resilience

Continuing temperature rise caused by global warming contributes to the vulnerability of the UAE's power and water sector. Climate change drivers may have both, a physical impact on DEWA's operations, and an economic impact on its business. This is why climate change mitigation is one of DEWA's top priorities, and in efforts to evaluate, understand and respond to the climate change impact on its assets and operations, DEWA has developed a comprehensive Climate Change Resilience Plan. DEWA is the first entity in the region to develop such a Resilience Plan that identifies existing mitigation measures, preventive controls and future resilience actions that address potential impacts of various climate change drivers.

In 2020, DEWA was highly adaptive to the potential impacts of climate change. This is achieved through

DEWA's preventive controls and mitigation measures integrated within DEWA's Enterprise Risk Management (ERM) system. Such measures include: adequate power and water reserve margins, medium and long term master plans for power and water infrastructure expansions, equipment design considerations, strategic bulk storage, efficiency improvement programs, and power augmentation measures.

DEWA is continuously monitoring the climate change drivers to be able to mitigate climate change impacts on its business ahead of time. The climate change resilience team at DEWA analyses climate change trends, prioritise hazards, studies vulnerabilities and opportunities from projected climate change scenarios.

CO₂ Emission Reduction Programme (GRI 305-1, 305-4, 305-5, EU5)

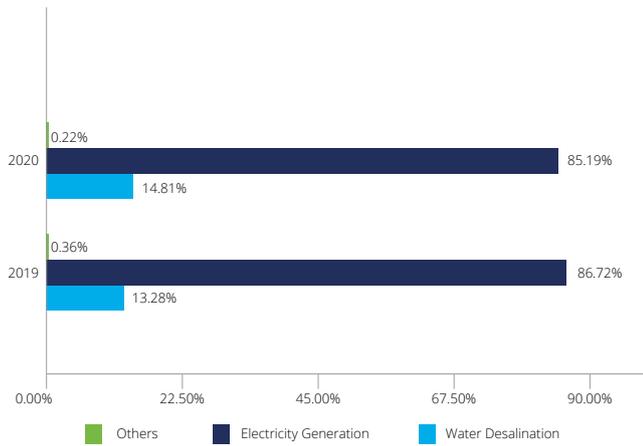
DEWA is known for its strategic thinking and proactive approach to global challenges. In 2012, DEWA launched its Carbon Dioxide Emission Reduction programme that created a roadmap for short, medium and long-term emission reduction actions up to 2030. DEWA's efforts have led to a significant reduction in carbon emissions in Dubai. Net carbon dioxide emissions in Dubai decreased by 19% in 2018, 22% in 2019, two years ahead of the Carbon Abatement Strategy 2021 target to reduce them by 16% by 2021.

DEWA's Emission Reduction Programme is a comprehensive programme that considers reductions from both the demand and supply side. It considers several key factors: Dubai's rising demand for electricity and water, existing rationalisation initiatives, DEWA's supply side efficiency improvements and the diversification of its energy mix. DEWA was the first in the region to develop a comprehensive Monitoring, Reporting and Verification (MRV) framework of its Greenhouse Gas (GHG) emissions since 2012, establishing that year as the baseline for reporting on emissions. The MRV framework enables reporting of emissions through the Carbon Footprint Report, which is prepared in accordance with the Greenhouse Gas (GHG) Protocol, the most widely used international carbon calculation methodology, compatible with the ISO 14064-1, which also allows for integration

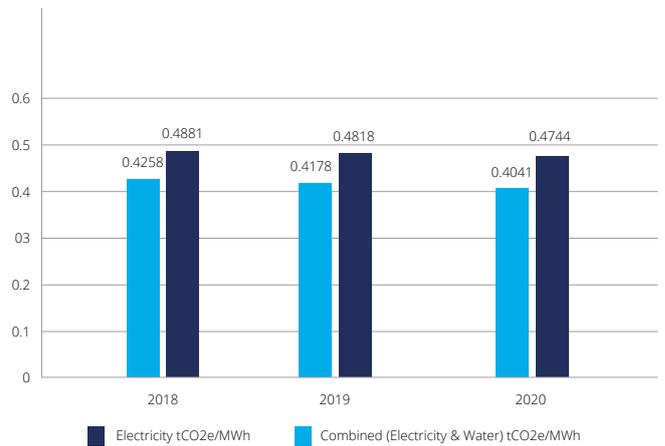
with national and international GHG registries. The 2018 Carbon Footprint Report was finalised using productivity data management processes within the Monitoring, Reporting and Verification framework across all DEWA's divisions.

The Carbon Footprint Report is intended to quantify and calculate DEWA's annual direct and indirect GHG emissions, which include CO₂, CH₄, N₂O, SF₆, HFCs and PFCs and electricity import. The emissions' sources include fuel combustion during power generation and water desalination, Sulphur hexafluoride (SF₆) usage in circuit breakers, fuel combustion in vehicles, and refrigerants usage for air conditioning and maintenance operations. DEWA follows an operational control approach in consolidating, monitoring and reporting on its GHG emissions, quantifying them in terms of CO₂ equivalent. In 2020, DEWA's total carbon emissions were 21,390,401 ((21.39) million metric tons of CO₂ equivalent (MtCO₂e)) compared to 28.11 MtCO₂e business as usual estimate based on DEWA's Emission Reduction Programme 2020 targets review. The majority of its carbon emissions comes from the combustion of natural gas to generate power and desalinated water. DEWA is also meeting environmental and operational goals through cost-effective solutions to manage SF₆ in high voltage circuit breakers and phase out restricted refrigerants.

Mt of CO₂ and percentage of CO₂ emissions by source, 2019-2020



Carbon emission intensity, tCO₂e/MWh of electricity generated, 2018-2020



Minimisation of Air Emissions

(GRI 102-11, 305-4; 305-5; 305-6; 305-7)

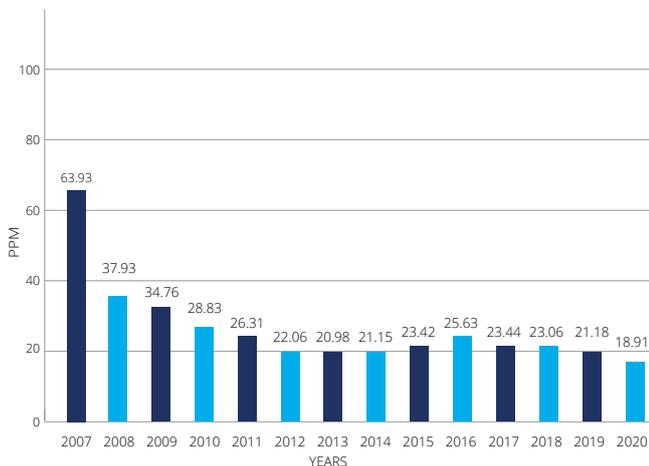
Air emissions have a damaging impact on our local climate, ecosystems, human health and air quality. DEWA reduces air emissions by minimising and limiting all types of harmful emissions such as nitrogen oxides (NO_x) and Sulphur dioxide (SO₂). In 2020, the average annual NO_x emissions from all units including all types of fuel, gas, turbines and boilers was 18.91 ppm (parts per million), which is an improvement of 70% in NO_x emission levels in 2020 with respect to 2007. The NO_x annual average emissions remained below the UAE Federal Government requirement and the European Union requirement (Large Combustion Plant Directive 2001 for Plants Built after 2003, which are 37 ppm and 27 ppm respectively).

In line with the Montreal Protocol and Dubai Municipality Technical Guideline 7, which seeks to phase out ozone depleting substances completely

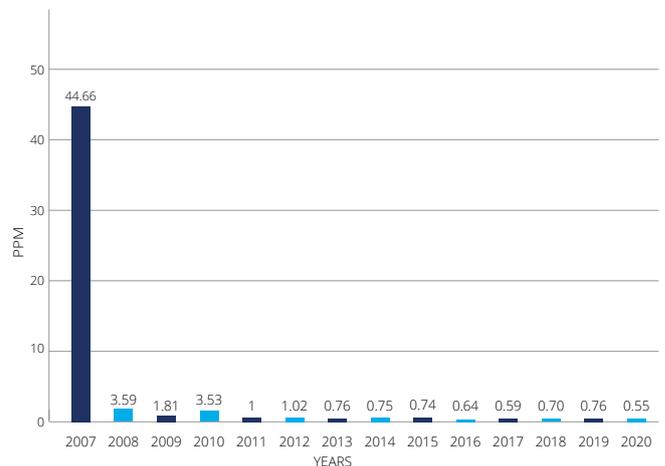
by the year 2030, DEWA invested AED11.66 million to phase out all Ozone depleting substances (ODS) by the year 2020.

In 2020, DEWA's Generation division achieved a 100% phase out of the R-22 refrigerant since 2013. It has implemented various initiatives to reduce leakage of SF₆ (Sulphur Hexafluoride) from switch gears used to control, protect and isolate electrical equipment. As per the fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC), SF₆ has a global warming potential of 23,500 times that of carbon dioxide and so any leakage could be significant. All SF₆ gas leaks from 132 & 400 kV GIS are promptly attended by DEWA's maintenance team with the aim of achieving 100% rectification of identified SF₆ gas leaks.

Annual NO_x Air Emissions (2007-2020)



Annual SO₂ Air Emissions (2007-2020)

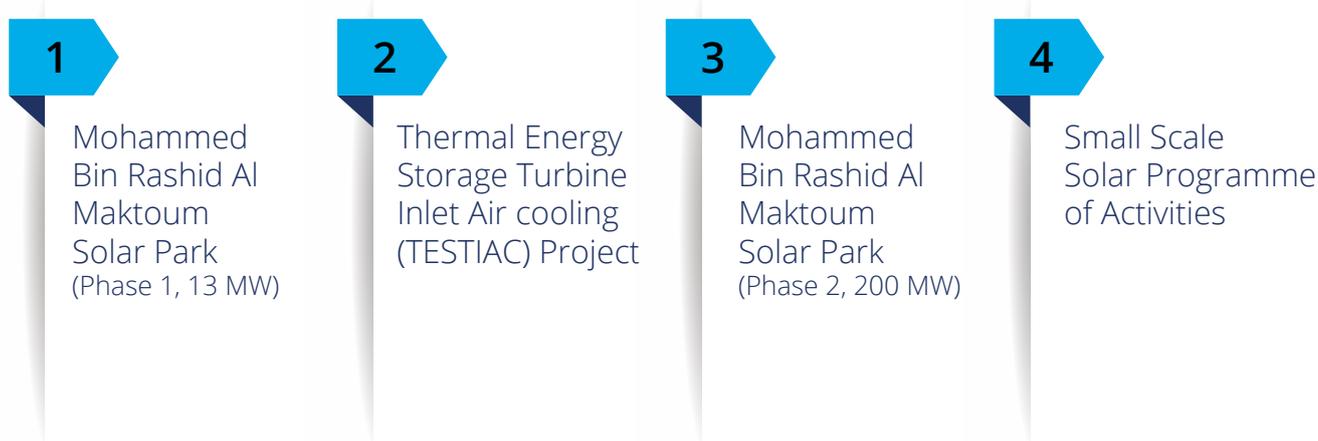


Emission Reduction and Renewable Energy Certification

(GRI 302-1,302-4)

In 2012, DEWA started building one of the largest Clean Development Mechanism (CDM) Portfolio in the UAE by registering several projects as CDM projects under the United Nation's Framework Convention on Climate Change (UNFCCC). By registering the projects as CDMs, this allows DEWA to obtain Certified Emission Reduction (CER) credits, which are also known as carbon credits, as an additional form of revenue over the years owning and trading carbon credits are considered. This policy is in line with the vision and directives of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, to transform Dubai into a global hub for clean energy and green economy.

Up to date DEWA has registered four different projects under the clean development mechanism, which are the following:



In addition, DEWA became the first entity in the Middle East and North Africa in 2017, to acquire International Renewable Energy Credits (i-RECs). The main concept behind the i-REC system is to encourage the world's utility companies to increase the investments in renewable energies, which by default will decrease the dependency on fossil fuels. Therefore, i-REC underlines DEWA's efforts and achievements in renewable energy, environmental, sustainability and green economy sectors.

In 2020, DEWA has successfully contracted 124,301 I-RECs international renewable energy certificates (I-RECs) from Mohammed bin Rashid Solar Park 13 MW PV Plant, 200 MW and 800 MW PV Plants.

Sustainable and Energy Efficient Buildings

Energy Management of DEWA Premises and Assets

DEWA aims to improve energy efficiency to manage its energy use and consumption efficiently, effectively, and economically at its premises. At DEWA, several initiatives that includes energy efficiency were implemented at its premises, within the framework premise energy management committee such as the conservation measures, retrofitting, light replacements and reuse of Treated Sewage Effluent (TSE) water for irrigation. These initiatives supports the Demand Side Management Strategy and are in line with DEWA's Energy Management Policy.

Since 2018, DEWA has successfully implemented, certified and maintained an Energy Management System for its Head Office building to ISO 50001:2011 standard. This enabled DEWA to quantify and establish realised benefits based on its energy performance, and was the ideal flagship project to showcase its pioneering role in effective and economical management of energy use.

DEWA is also currently expanding the boundary of the Energy Management System to cover major operations that would include generation plants, substations, customer happiness centres and administration buildings and fleet.

This system will allow us to periodically review the energy performance, and identify and implement energy conservation opportunities with cost benefits.

Looking into its key operation facility in Jebel Ali, DEWA's total auxiliary energy consumption from power & water generation is as follows:

	Auxiliary Consumption (MWh)				
	2016	2017	2018	2019	2020
Solar	1,736	1,692	1,685	1,636	1,642
Gas, DFO and MFO	3,593,564	3,622,710	3,689,613	3,761,614	3,715,408
Total	3,595,300	3,624,401	3,691,298	3,763,250	3,717,049

Note: DFO: Diesel Fuel Oil, MFO: Medium Fuel Oil

Year	Efficiency Gains from improvement in Gross Heat Rate with respect to 2006	Auxiliary Power Consumption Reduction (MWh) with respect to 2006	Carbon Reduction (Million Tons of CO ₂) due to efficiency improvement with respect to 2006	Fuel saving due to efficiency improvement with respect to 2006 - MMBTU
2016	25.47	253,508	5.5	103,700,697
2017	28.87	409,297	6.40	199,943,316
2018	29.68	413,745	6.7	124,173,523
2019	31.40	408,148	7.1	132,295,018
2020	33.41	293,385	7.1	133,309,503

DEWA has achieved a reduction in auxiliary consumption of 293,385 MWh in 2020 with respect to 2006. In addition, it have achieved fuel savings of 133,309,503 MMBtu in 2020 with respect to 2006 due to Gross Efficiency Improvement.

Sustainable Practices in Green Buildings

DEWA works with Dubai Municipality and is applying green building specifications for all its buildings. This paves the way for a healthier, pollution-free and clean city that encourages efficient electricity, water and energy consumption. Moro Hub has the first LEED Platinum certified data centre in the region.

DEWA Sustainable Building

The Dubai Electricity and Water Authority's (DEWA's) Sustainable Building at Al Quoz is the largest Government building to successfully integrate and implement many sustainable features, achieving a high-performance green building.

DEWA Green Garage

DEWA Green Garage completed in June 2015, the DEWA Garage and Workshop which houses the DEWA's fleet vehicles, repair and maintenance workshops and other associated facilities necessary to carry out complete vehicle repair and maintenance activities, was awarded of a LEED Gold certification from the US Green Building Council.

Moro Hub

MORO Hub, Data Hub Integrated Solutions LLC, provides state-of-the-art solutions and innovative business services. The Hub is a new subsidiary of DEWA to exceed the expectations of customers by providing data centre and cloud-based solutions.

DEWA R&D Centre

The R&D Centre provides office and meeting space for researchers and administration staff, and researches into the integration and implementation of sustainable

features and achieving a high performance green building.

Parksmart

Parksmart is the world's only rating system that targets parking design and operation via advancements in sustainable mobility. In 2019, DEWA Sustainable Building in Al Quoz has once again proven its commitment by achieving Parksmart Pioneer certification with 102 points. while the Pioneer certificate requires merely 90 points.

Distribution Power division complex

The Distribution Power division complex has been designed and constructed following LEED guidelines. The design process approach to implement sustainable and cost-effective strategies to synergise high performance in energy, water, materials, and well ensure healthy spaces for the building occupants. Water consumption in the building was reduced by 52%, and the of energy use reduced by 30%.

New DEWA HQ Al Shera'a

This initiative is to build the new DEWA Headquarters, called Al Shera'a at Jadaf. It is set to be the tallest, largest and smartest net Zero Energy governmental building in the world. The building is aiming to be LEED platinum, WELL silver & Al Safa'at Platinum-certified.



Innovation Centre

The Innovation Centre has a LEED Platinum certification awarded in 2020. The centre shows the latest renewable and clean energy technologies to attract individual's tourist, university students, schools, and businesses. This establishment will also serve as a permanent conference centre for events, conferences, business meetings, training courses, and seminars to discuss green and sustainable initiatives. The centre has 100% of the building annual energy consumption covered by onsite photovoltaics, and 54% of water use reduction in all fixtures in the building.

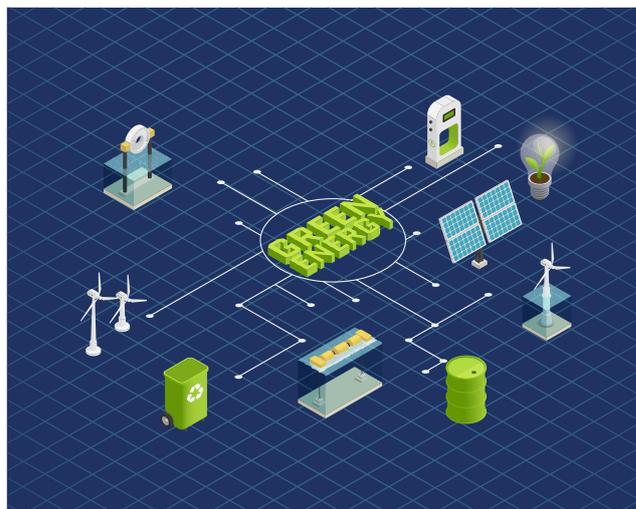


Building / Initiative	DEWA Sustainable Building	DEWA Green Garage	Moro Hub	DEWA R&D	DEWA sustainable building (Park Smart)	Innovation Centre
Year	2012	2014	2017	2018	2019	2020
Certification	World Largest government LEED Platinum Building	The 1st group gold certified service facility in the Middle East	First LEED Platinum Data Center in the Middle East	Target Certification level was gold, final certification was platinum	First Building in the Middle East and North Africa to receive Parksmart certification (Pioneer Category)	The Innovation Centre has a LEED Platinum certification awarded in 2020. The centre shows the latest renewable and clean energy technologies
Key Sustainability Outcomes and the benefits achieved by the initiative	Annual energy saving 66.08% Annual Water Saving 48.82%	Annual energy saving 34% Annual Water Saving 48.22%	Annual energy saving 37.76% Annual Water Saving 46% Reduce 4,320 metric tons of CO2 and decreased passenger driven vehicles per year Diverted 95.26% of construction waste from landfill	Annual energy saving 25.5% 18.23% of the energy is provided by Onsite renewable energy consisting of Solar Photovoltaic Panels as Annual Water Saving 50.84% 52% of potable water used for flush fixtures has been reduced. 51% of the indoor water usage has been reduced by using efficient fixtures. The building is made up of 52.73% Regional materials by cost, 31% Recycled content, and 100% Forest Stewardship Council FSC Certified wood.	Reduce the environmental impact Encourage alternative mobility Manage Parking Spaces efficiency	Reduce DEWA's cost through cost cutting and cost-efficiency measures.

Waste Management

DEWA has a set of rules and guidelines to decrease its impact on the environment. Therefore, an effective waste management system focuses on solid and liquid waste produced at its generation site. The aim of the system is to reduce the amount of solid and liquid waste produced by efficiently utilising resources, recycling or recovering wherever possible. It is fully compliant with all applicable national and international regulations, policies, and procedures. The organisation follows international best practices and standards to ensure that, and constantly compares its waste management system with other global organisation. Furthermore, it applies for a wastewater discharge permit annually from Dubai Municipality to ensure that the quality and quantity of the wastewater discharged from Jebel Ali Power and Desalination Complex are within the permitted discharge quality and quantity,

DEWA's approach to environmental management has also been economically profitable. In 2020, it earned AED 1,239,140.17 from selling scrap waste materials from its Jebel Ali Power Station Complex. DEWA significantly reduced its consumption of new oil and minimised its waste and the associated costs for waste disposal by using recycled oil in its Jebel Ali Power Station Complex. One example is to recycle waste oils from the lubricant, transformer and hydraulic oils in



boiler furnaces when oil firing is required. In addition, DEWA recovered 18,184 litres of oil for reuse.

In 2020, a total of 188.74 tons of hazardous waste was collected, transported and processed by Dubai Municipality as per its procedures and guidelines. The sources of hazardous waste came from generation process and DEWA's fleet.

Moreover, DEWA identifies the opportunities for waste prevention and for adopting circularity measures. This means the measures taken to retain the value of products, materials, and resources and redirect them back to use for as long as possible with the lowest carbon and resource footprint possible, so that fewer raw materials and resources are extracted and waste generation is prevented. In 2020, the scrap revenue of DEWA was AED 57,294,667.

The table below reflects the hazardous and non-hazardous waste generated and methods of disposals from the (2017-2020):

Waste Figures	Unit	Year			
		2017	2018	2019	2020
General Waste Disposed At Dubai Municipality Site	Tons	2,341.20	2,628.63	2,699.98	2,869.30
Volume Of Hazardous Waste Transported And Disposed At Dubai Municipality Site	Tons	138.75	49.25	68.89	188.74
Percentage Of Hazardous Waste Shipped Internationally	%	0	0	0	0
Filter Disposed At Dubai Municipality Site	Tons	251.67	169.78	276.00	97.00
Reuse, Reduce & Recycle Initiatives					
Wooden Pallets Reused	Tons	-	-	-	30
Waste Water Recovered	MIG	195.97	226.59	193.24	200.93

Reuse, Reduce & Recycle Initiatives

Waste Oil Recovered For Use	Litres	16,900.00	60,566.6	23,636	18,184.4
Wooden Packing Reused	Cubic Foot	14,629.00	16,409.00	7,049	6462
Recycled Waste Paper	Tons	39.00	38.4	73.63	202.755
Reusing Of Hazardous Waste By Minimising The Grp Drums Waste & Converting It Into Plantation Usage	NO.	200	0	45	0
Reuse Of Ibc Drums To Make Spill Pallets And Segregation Waste Bins	NO.	97	100	231	117
Revenue From Scrap/Waste Materials	AED	2,082,713.95	1,126,817.32	5,548,069.48	57,294,667
Savings From Selling Waste Oil	AED	16,560.00	30,432.00	138,880.00	45296

Moreover, DEWA has an effective management procedure for the proper handling & further utilisation of its non-hazardous and waste materials to preserve valuable landfill space, and natural resources and to promote waste minimisation.

Impact of COVID-19 on climate

World Environment Day, which is celebrated on 5 June annually, and focuses on biodiversity, is particularly significant as climate change has become the most pressing issue for the global community today. Its widespread effects and consequences are already seen in our daily lives. Changing weather patterns threaten food production and rising water levels increase the risk of catastrophic floods or irreversible changes in major ecosystems. They may also affect health, agriculture, economy, society, and biodiversity among others.

The coronavirus (COVID-19) pandemic led to lockdowns, and cessation of air travel and transportation. This resulted in a decrease in greenhouse gas emissions around the world. Before the pandemic, global emissions were expected to increase by at least 1% this year. But the question remains: Are the continuous emission reductions on this scale enough to prevent global temperatures from rising above pre-Industrial Revolution temperatures as stipulated in the 2015 Paris Agreement to help achieve the UN Sustainable Development Goals for 2030?

It is clear that people staying at home is in the interest of the planet. This may lead us to say that despite the current pandemic, the consequent restrictions on unnecessary travel and transportation and imposing full closures in some countries have enabled us to see positive changes in Earth's climate.



Satellite images published by NASA and the European Space Agency, show a decline in nitrogen dioxide emissions in China in January and February during the quarantine period. These emissions are mostly caused by the use of fossil fuels.

In addition, over 6,7 million COVID-19 cases have been reported globally and the death toll has exceeded 393,000 since the beginning of the spread on 31 December 2019. The UAE reported its first COVID-19 cases on 16 January 2020 after which the government kept a close watch over the situation in order to reduce the spread. Aligned with the World Health

Organisation's (WHO) announcement of characterising the virus as a pandemic and similar to global efforts in crisis management; the UAE decided to issue an order of movement restriction in the form of the National Disinfection Programme.



A number of countries have reported a decline in observed pollutants and Greenhouse Gases (GHG) as they have entered into partial or full lockdown mode. Studies investigating satellite images of various indicators of air quality such as nitrogen dioxide have reported an average decline of 40%-50% in the USA and China. Those emissions are normally associated with economic activities and are fundamentally related to transportation, power generation and industrial manufacturing.

The International Energy Agency (IEA) reported a decline in the global energy demand by 3.8% during the first quarter of 2020 and expects it to continue declining till 6%. IEA also predicts the most significant year-on-year reduction in CO₂ emissions ever of 8%.

Available satellite images from NASA of selected countries, including the UAE, as well as mobility data reports generated by Apple Inc, show that the UAE exhibits similar trends of declining emissions of nitrogen dioxide.

In the UAE, the observed results of reduction coincide with the National Disinfection Programme, which controlled the mobility of individuals within the country. The findings were found to be a decently high-level representation of the expected COVID-19 environmental impact on the UAE.

Studying the sectoral pollutants and GHG emissions can potentially add further insights for detailed and localised impact and analysis. Related data from competent stakeholders, other than DEWA, such as Roads and Transport Authority (RTA), and Dubai Municipality among others will quantify the potential impact.

Furthermore, collaboration with Mohammed Bin Rashid Space Centre (MBRSC) could be enhanced to investigate and develop potential methods of monitoring (by satellite imaging and remote sensing) various air pollutants and GHG emissions such as nitrogen dioxide or carbon dioxide emitted from Dubai's various economic activities.

In conclusion, the positive change the Earth's climate is witnessing and the resulting effects on the environment, require extensive action from governments and countries. It also requires taking comprehensive and wide-ranging measures to exchange information about changes in the carbon footprint and emissions, for a bright future in which our future generations enjoy a clean, healthy, and sustainable environment.



Case Study

New Ducab Solar Plant to boost clean energy mix at UAE based industrial unit



Ducab Group, one of the UAE's largest manufacturing businesses, has taken a significant step towards increasing its sustainability with the official opening of its Solar Plant.

The Solar Plant, a 2MWp (megawatt peak) Renewable Generation Project located at Ducab's head office site in Jebel Ai, Dubai, was developed in partnership with Etihad Energy Service Company (Etihad ESCO), in alignment with the UAE's ambitions to harness the potential of solar power. Comprising of both rooftop and ground mounted solar PV, the combined plant has a capacity to produce 3.5GWh (gigawatt hours) annually, which is enough to meet the energy needs of 500 homes, or sufficient enough to run the Ducab PVC plant on site.

Energy generated by Ducab's Solar Plant will lead to savings of approximately 660 tonnes per year of

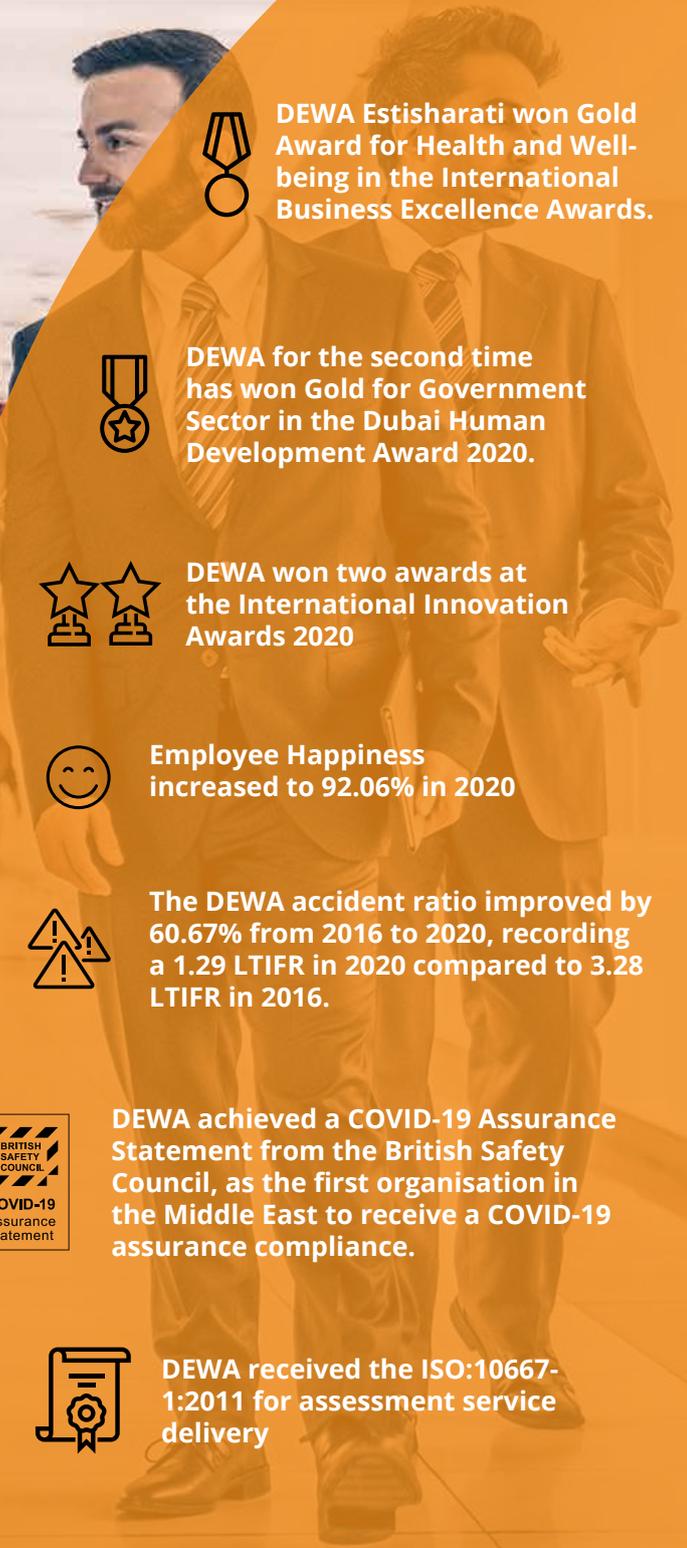
carbon dioxide – equivalent to the quantity of carbon dioxide processed by 40,000 trees over 10 years.

Designed to last the 25 years design life, over 150kms of Ducab's specialist UL certified SolarBICC range of wires have been supplied for the Solar Plant, that also includes 300 Sq. mm low voltage copper cables which have been an integral part of this power plant construction.

From design approvals, to testing and inspection right up to energisation for both the rooftop and ground mounted PV plant, DEWA's support has been testament of a true partnership. The project utilises the latest smart technology applications including DEWA Smart Metering, remote monitoring of power output using a web or mobile app, and automated self-cleaning solar panels using solar-powered cleaning robots.

Chapter 6

Employees



DEWA Estisharati won Gold Award for Health and Well-being in the International Business Excellence Awards.



DEWA for the second time has won Gold for Government Sector in the Dubai Human Development Award 2020.



DEWA won two awards at the International Innovation Awards 2020



Employee Happiness increased to 92.06% in 2020



The DEWA accident ratio improved by 60.67% from 2016 to 2020, recording a 1.29 LTIFR in 2020 compared to 3.28 LTIFR in 2016.



DEWA achieved a COVID-19 Assurance Statement from the British Safety Council, as the first organisation in the Middle East to receive a COVID-19 assurance compliance.



DEWA received the ISO:10667-1:2011 for assessment service delivery

Management Approach (GRI 103-1, 103-2, 103-3)

DEWA provides its employees with fair opportunities that gives the push for competitiveness and innovation and contributes to a sustainable growth for the long-term development by making sure that all the employees are treated fairly and equally without the discrimination on sex, race, nationality , age or creed. Some relevant policies for valuing and managing diversity include its Human Resources policy and code of conduct to support and empower women. DEWA’s regulations and policies comply with the UAE government’s regulations. DEWA understands the importance of its employees. This is why it has provided every resource available for the employee development. It imparts training to employees and ensures that the employee skills are enhanced in a manner that they become beneficial for the organisation.

One of the top priorities of DEWA is to aid its employees in a way that allows them to perform their job effectively and competently in every manner by ensuring them a happy, safe, and positive work environment. Our aim is to be one of the most responsible, trustworthy, and preferred employers in Dubai. DEWA’s leadership and management are committed to the development of its employees by launching many employee-relations programmes that recognise and reward employees for their



achievements. Throughout its history, DEWA has always met the needs of its employees while promoting its organisational goals and dealt with any aspect that affects its employees’ welfare, recognition, development, security, happiness, and planned job targets. DEWA has also maintained a culture of innovation and excellence to meet the highest levels of quality and efficiency in a positive work environment. In 2020, DEWA won for the second time Gold for Government Sector in the Dubai Human Development Award 2020. This new achievement shows DEWA’s commitment to providing a positive and inspiring working environment. It also shows DEWA’s efforts to invest in its workforce to achieve the highest standards of excellence and efficiency.

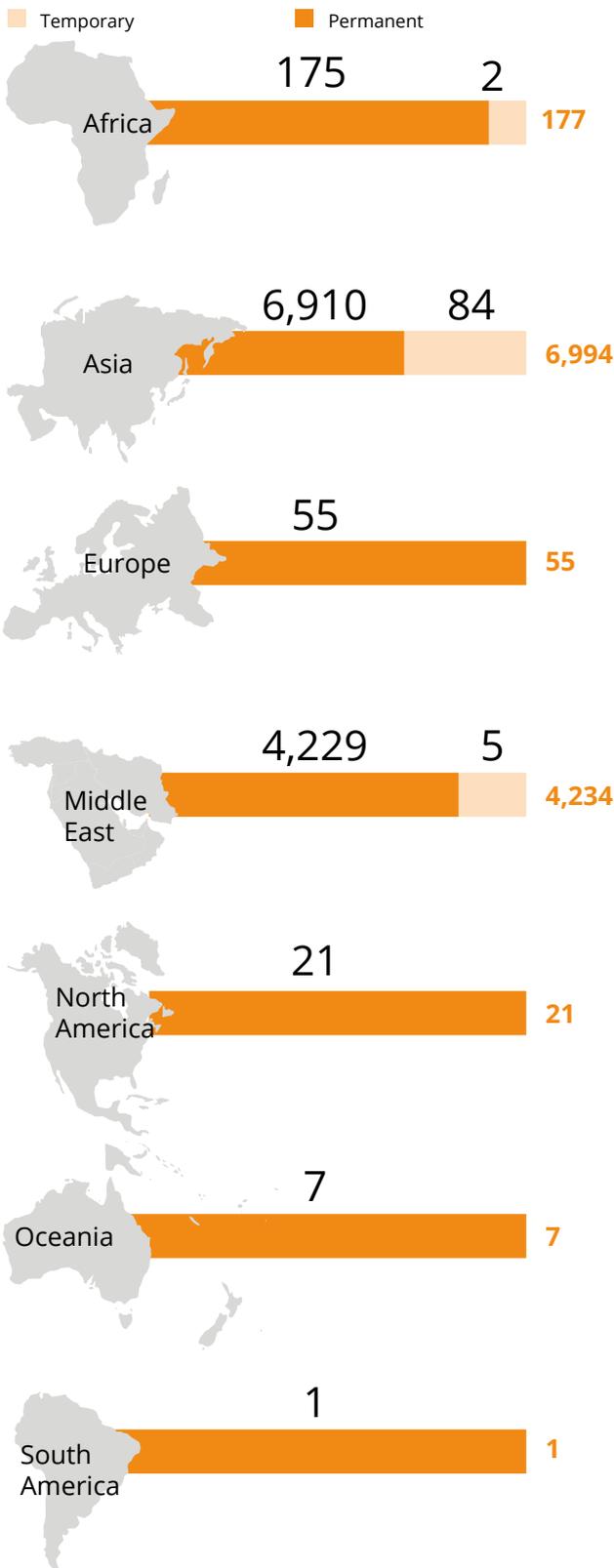
A World-Class Workforce

DEWA is a major employer of Dubai with 11,489 employees in 2020. Its foremost profession is engineering. This is not due to the importance that it holds in the utility sector but it being a base for creativity and innovation. It is crucial for engineering in the UAE. DEWA is committed to recruiting other areas of expertise, such as management, finance and business modelling. DEWA ensures that its employees are trained by providing all its departments and divisions with innovative programmes and special training in different courses. This provides employees with the chance of being innovative and using the latest business practices. The retirement rate of DEWA



employees is also calculated so that the proficiency of the skill set is determined and new joiners are trained accordingly. This helps to achieve DEWA’s long-term objectives while improving its productivity.

Total Number of Employees by Employment Contract (Permanent and Temporary), by Region 2020 (GRI 102-8)



11,398 Total Permanent **91** Total Temporary

11,489
Grand Total

New Employee Hires by Age Group, Gender and Region in 2020 (GRI 404-1)

Gender	Count
Female	44
Male	172
Total	216

Region based on the world's 7 regions	Count
Africa	2
Asia	210
Europe	2
North America	2
Total	216

Age Group	Count
18-29	170
30-39	35
40-49	9
50-59	2
60-69	0
70-79	0
Total	216

*Note: The special contracts category has been included in the calculations of new employee hires and employee hires.

Total Number of Employees by Employment Contract (Permanent and Temporary), by Gender 2020 (GRI 102-7)

Status	Gender		Total
	Female	Male	
Permanent	1,947	9,451	11,398
Temporary	6	85	91
Grand Total	1,953	9,536	11,489

Total number of employees by employment type (full-time and part-time), by gender 2020 (GRI 102-8)

Status	Gender		Total
	Female	Male	
Full Time	1,953	9,536	11,489
Part Time	0	0	0
Grand Total	1,953	9,536	11,489

Employee Turnover 2020* (GRI 401-1)

Category	Number of Employees
By Gender	
Male	156
Female	18
By Age	
Under 20	12
30-50	133
over 50	29
By Region	
Africa	14
Asia	119
Australia	0
Europe	3
North America	2
Middle East	36
Total	174

Note: *Special contracts category has not been included in 2020

Percentage of employees eligible to retire in the next 5 years broken down by Region and Job in 2020 (EU15)

Retirement 5 Years				
Continent	Engineers	Operators	Lineman	Mechanics
Africa		1		
Asia	22	16	1	5
Europe				
Middle East	1	2		2
North America	1			

Percentage of employees eligible to retire in the next 10 years broken down by Region and Job in 2020 (EU15)

Retirement 10 Years				
Continent	Engineers	Operators	Lineman	Mechanics
Africa	7	2		
Asia	278	147	18	71
Europe				
Middle East	24	5		5
North America	2			



Inclusion and Empowerment of People of Determination

DEWA's innovative initiatives in including, empowering, and employing People of Determination enhances its position as a prominent, leading government organisation in this area. Every year, DEWA launches several corporate, social, smart, and innovative initiatives to include People of Determination in the work environment and society. As a socially responsible corporation, DEWA started its inclusion journey for them in 2015. DEWA accomplished all government requirements in regards with physical, information and services accessibility, inclusive employment, and community initiatives for People of Determination. In 2020, DEWA sponsored several initiatives and social programmes to include and empower them. This is part of its corporate social responsibility to provide People of Determination with an inclusive environment; providing 58 programmes and initiatives from 2015 to 2020. These initiatives reached 3,475,409 people. The Society Happiness score for DEWA's support to People of Determination was 94% in 2020. DEWA also sponsored the Access Abilities Expo 2020.



As part of its strategy to include and empower People of Determination, in 2020 DEWA developed the Employee Happiness programme, which comprises a group of inclusive programmes according to the

highest international standards. These include Estisharati, an employee-counselling programme with individual and group consultations, and provides an active problem-solving approach to tackling the issues at hand. Estisharati received the Gold Award by International Business Excellence Award (IBXA-2020) in the Wellbeing & Health category.

DEWA has achieved strategic and operational indicators in inclusive employment. It launched 16 channels to recruit and establish a database of job seeking People of Determination. In 2020, the total number of employees trained in how to deal with People of Determination rose from 4,458 employees to 6,137. DEWA also updated all its Human Resources procedures to be inclusive for all employees and ensure equality in the work environment. In addition, DEWA developed technical competencies for People of Determination increase their abilities in inclusion-related skills.

DEWA aligned its strategies with national and federal strategies in this area. It has also implemented inclusive programmes, initiatives inclusive policies, and procedures such as:

- 
Human Capital Policy
- 
DEWA's Policy for Valuing and Managing HR Diversity
- 
DEWA Policy for the happiness, accommodation and empowerment of the People of Determination
- 
Work behaviour and discipline booklet
- 
Inclusion and Accommodation of People of Determination Manual
- 
Developing inclusive policies in HR such as talent acquisition, training and case management system.

These policies and procedures that align with the highest international standards and practices ensures that People of Determination are employed in the most suitable positions. To achieve this, DEWA has implemented an inclusive hiring process that gives

them equal working opportunities and provides a robustly appropriate environment for them to unleash their potential and prove their abilities. The number of Employees with Determination of various disabilities in DEWA rose from 19 in 2017 to 29 in 2020. All its Employees of Determination completed their annual training plan for 2020, As well as providing 100% of the supplies, equipment, and devices that enable them to carry out their duties in the best and equal opportunities with others. Employees of Determination rated their happiness at 99.05% in 2020, while the happiness of their relatives reached 95.71%.

In addition, DEWA Academy supports its Students of Determination to prepare them to join DEWA after graduation. DEWA has opened an Innovation Centre at Dubai Rehabilitation Centre for People of Determination to train 150 Students of Determination on using modern technologies to qualify them to work at DEWA after their graduation. DEWA Academy has

its own Inclusive Education Policy that reaches out to all students; including Students of Determination.

DEWA promotes the social and economic inclusion of everyone, irrespective of age, sex, race, ethnicity, origin, religion or wealth. DEWA also enforces equal opportunities and reduces the inequality of outcome, by eliminating discriminatory laws, policies and practices, and promoting the appropriate legislation, policies and action for People of Determination.

DEWA considers transferring the culture of including and empowering People of Determination into society as everyone's responsibility. DEWA will continue its journey of sharing and transferring knowledge, and sponsoring success stories in including and empowering them. DEWA's programmes and Government Excellence programmes for Dubai include and empower People of Determination within an inclusive integrated society and the preferred place to live and work.



Promoting Emiratisation

DEWA has taken up the commitment of promoting Emiratisation to achieve the UAE Vision 2021. DEWA plans on infusing more nationals in the workforce with the most suitable academic qualifications through a number of policies that have been introduced for that purpose which are:



Increase the retention of Emirati staff and encourage them to join DEWA.

Facilitate the employment of Emiratis by giving them priority for available vacancies.

Replace expatriate staff with UAE Nationals as soon as the appropriate qualifications are available, provided that it does not affect the standard of service.

Equip Emirati staff with the necessary expertise, and training, and help them grow with the transference of the knowledge and skill.

Empower and provide Emirati staff with all the appropriate conditions and requirements for them to stay in DEWA.

hires were UAE Nationals, and 87.93% were able to secure top management and leadership roles with; 59.18% in middle management, and 36.96% in non-supervisory positions.

DEWA developed a clear strategy for the production and training of its UAE national employees so they take responsibility in various leadership positions. This is achieved by providing employees with the proper knowledge they need and the following comprehensive training and developing programmes:

Higher Studies Scholarships programme in the UAE and overseas. In 2020, 5 DEWA employees from different divisions pursued higher education.

Online micro master's programme at the Massachusetts Institute of Technology (MIT), USA: in 2020, 24 employees participated in this programme.

Open discussions with MD&CEO: Emirati employees of DEWA can build a shared consensus on the current status of DEWA and possible future opportunities for change through open and straightforward discussion and seminars

To prepare the leaders of tomorrow, it is necessary to train, invest and encourage them and future generations to grow their career path. DEWA promotes this concept as one of the main pillars for its sustainable development. In 2020, 83.8% of new

Training and Career Development

DEWA ensure the highest standards of professionalism and efficiency in its services, by qualifying its staff to have a positive role in all technical and non-technical work. DEWA firmly believes in developing employees' skills and capabilities. On yearly basis, DEWA offers number of training opportunities based on various input such as DEWA's direction, divisions and employees' needs, new technology and competency development. Accordingly, training programs provided are in the areas of management and administrative skills, competencies development, IT-related courses, behavioural and supervisory skills, technical training, and leadership development programmes. DEWA also provides courses on Health, Safety and Environment.

Internal and external trainers use various methods, such as classroom, virtual, and seminars. In addition, DEWA employees can have off-the-shelf and customised smart training.

Future Shaping

Dubai Electricity and Water Authority (DEWA) organised a specialised training programme with the Institute for the Future to shape and anticipate the future. This is part of DEWA's commitment to providing an ideal and inspiring work environment to create and innovate and for staff to understand the future and its tools. The training took place at DEWA Campus for Occupational and Academic Development in Al Hudaiba, Dubai. Around 30 DEWA employees from different sectors attended the training.

The specialised training programme showed ways to shape and anticipate the future and ways of implementing them. It highlighted developing and managing strategies and policies to anticipate the future in partnership with stakeholders internally and externally. The training also discussed planning ways to improve and organise internal and external work procedures, and build effective partnerships locally, regionally, and globally, to enhance DEWA's role in shaping the future.

In 2020, DEWA was able to attain the training targets as well were able to identify the increment that link with the training hours in the management, UAE national categories and non-supervisory roles in comparison to 2019.

Average Training Hours Per Employee (GRI 404-2)					
Grade/Year	2016	2017	2018	2019	2020
Leadership	97.23	65.24	109.48	90.39	85.62
Management	51.4	47.74	49.31	55.98	52.96
Non-supervisory	33.39	34.52	42.22	43.68	42.83
UAE Nationals	55.37	54.45	58.39	65.58	57.94

Average Training Hours by Gender (GRI 404-2)			
Gender/Year	2018	2019	2020
Male	26.27	28.26	27.01
Female	55.35	65.62	65.88

To maintain its world-class workforce, DEWA provides its employees with opportunities to advance their careers. Performance evaluations help DEWA consistently analyse the performance of employees and understand their ability to further improve them.



Assessment and Development Centre (A&DC)

In 2020, DEWA's Assessment & Development Centre (A&DC) received the ISO: 10667-1:2011 for assessment service delivery, and became the first organisation in the Middle East to receive this certificate. This Centre assesses and develops DEWA's workforce. The certificate supports DEWA's strategy in smart transformation in all procedures for selecting the best-qualified staff.

DEWA's assessment and development centre (A&DC) is one of the important development centres among government departments in the Emirates. The centre follows a systematic and accurate programme of identifying competencies for employment, promotion, development, and training needs. The Centre employs a number of analytical performance tools and reporting techniques to attract talented youth, and support human resources management in hiring new employees, as well as providing training and development recommendations for employees. This is in addition to supporting human resources operations, including employment, educational scholarships, and

outlining different training plans. DEWA uses a mixed-method approach to train its employees based on pre-determined criteria. Its activities include business simulations and psychometric tests. They are designed to create the development and strengths a part of the development plan in contrast to traditional pass and fail of a test. These tests have been certified by the British Psychological Society (BPS) and follow BPS assessment criteria. The outcome of these tests include bespoke development plan for a period of 24 months which include many development activities and is not limited to job training etc.

The Centre plays a key role in Human Resources operations. It has evaluated over 1,900 candidates for various vacancies. The Centre has also evaluated over 1,440 students applying for scholarships, and 1,430 employees of different positions, for development. The Centre is currently evaluating DEWA's behavioural and technical competencies; in addition to determining the level of the current candidates within these competencies, to ensure an objective and fair evaluation that reflects employee performance and supports DEWA's strategic objectives.

For Her programme

DEWA launched its For Her programme in collaboration with the Cambridge Institute for Sustainability Leadership to prepare female leaders in all its areas and specialisations. In 2020, DEWA graduated 25 female employees from the second batch of the programme.

The programme is part of DEWA's strategy to empower women and provide a positive and encouraging work environment that supports working women and helps them balance their professional and personal lives. This helps them maintain success, excellence, and effective participation in building the nation and bringing up future generations. DEWA currently has 1,948 female employees in all its divisions including 701 technicians and engineers. Emirati women comprise 81.6% of DEWA's female workforce. Emirati women at the R&D Centre comprise 32% of its staff, including women who have high educational degrees in science and engineering.



Knowledge Management

DEWA implements knowledge management activities and programmes in line with the directives of the Dubai Government and DEWA's vision, strategy, and global best practices based on accessibility, availability, accuracy, appropriateness, and sharing of knowledge. DEWA is committed to supporting and developing a culture of creating, learning, sharing, and exchanging of knowledge among its employees, departments, and divisions, to support creativity, innovation, and excellence.

The purpose of Knowledge Management is that an organisation's employees can use their skills, tools, and techniques to complete their respective job roles.

To plan, implement and track knowledge-related initiatives and projects, DEWA has an integrated knowledge management system that includes a Knowledge Management policy, strategy, structure, quality procedures and a professional Knowledge & Intellectual Capital (K&IC) department. DEWA's K&IC department promotes the growth of employee awareness, abilities, and practices through the following:

Activities such as knowledge days, Knowledge Management training, Share an Hour, Annual ShareK, Recognition award, Communities of Practice, Marifa Collaboration Platform, Expert Knowledge Sessions, LinkedIn Learning and the iAsk Reference & Research Service promote the transfer of knowledge between individuals and groups.

Access for all DEWA stakeholders to physical collections and creative spaces through the 7 DEWA Knowledge Centres, 6 Knowledge Chairs and 3 Reading Trees.

Through the DEWA Smart Library, Smart Office Application and DEWA Online Catalogue for all DEWA employees, digital access to high quality, secure, curated external information resources.



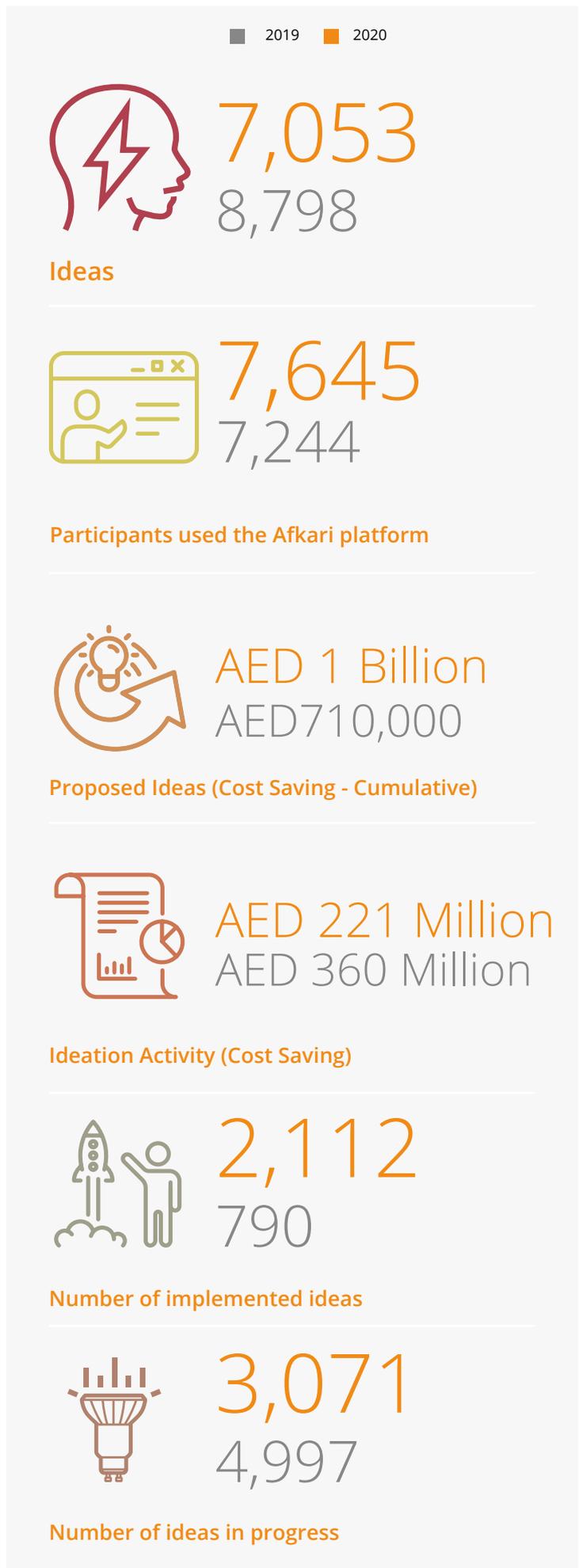
Fostering Innovation

Throughout the years, DEWA maintained its position as one of the biggest supporters of innovation in the UAE and Dubai. This achieves the National Innovation Strategy launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, to make the UAE one of the most innovative nations in the world; the Dubai Innovation strategy to make Dubai the most innovative city in the world.

DEWA has become one of the world's largest innovative utilities. In 2020, DEWA won two awards at the International Innovation Awards 2020, organised by Enterprise Asia to recognise outstanding organisations in innovative services, entrepreneurship, sustainability, and promoting a culture of innovation. DEWA won both awards in the Solution and Service category for its Duroob GIS Field Mobile Solution and Rammas, its virtual employee that uses Artificial Intelligence (AI). The new achievement underlines DEWA's global excellence in innovation. This new achievement adds to DEWA's achievements in adopting AI and disruptive technologies, supporting the Dubai 10X initiative.

DEWA promotes a culture of innovation among its employees; it adopts innovation in its work through an institutional approach and is moving steadily toward the next 50 years by building a sustainable future. One of DEWA tools to foster innovation among its employees is enabling them to submit their innovative ideas on "Afkari", its online platform and first of its kind in the government in Dubai. It enables employees to submit their suggestions as well as enhance ideas from colleagues and vote for them. This promotes collaboration and sharing best practices. The platform has provided a central repository to manage innovation, ensuring continuous improvement in DEWA to achieve its developmental objectives.

DEWA allocated an innovation fund to properly support employees in implementing and developing creative ideas. There are 7 cycles, 27 projects of which 14 have been completed, and 13 are in progress.



Virtual Reality Studio and Self Service Kiosks

DEWA's commitment to continuing its digital transformation by providing an ideal work environment to stimulate creativity and innovation, along with individual and corporate capability. In 2020, DEWA launched a virtual reality studio and self-service kiosks for its staff. The virtual reality studio shows simulations for first aid, fire and safety and information on DEWA projects, strategies, and services for employees and customers. The self-



service kiosks provide HR services such as salary certificates, pay-slips and others. Fifteen such kiosks are now spread across DEWA's Head Office and its other buildings in Jebel Ali, Hatta, Al Warsan, Al Quoz, Al Hudaiba, Ruwayyah, and DEWA Academy.

The virtual reality studio and the self-service kiosks also support DEWA's 'My Portal' and 'Smart Office' which is a breakthrough in providing smart and digital services. It enables resilience among our staff to work remotely, enhancing their experience and skills, as they can obtain internal approvals easily to ensure a smooth workflow round the clock.

DEWA invests in its employees to make them happy and in turn also make all its stakeholders happy as well. We use the latest smart technologies to facilitate staff work, help them complete their tasks, and get HR services anytime and anywhere.

Remote Learning

Due to the COVID-19 pandemic, DEWA used the latest solutions and systems for smart and interactive learning for its employees, which includes LMS and TEAMS from Microsoft and Cisco Webex. DEWA advanced digital infrastructure has helped to continue the educational process at DEWA remotely, according to the highest international standards amid the exceptional circumstances of the COVID-19 outbreak to protect the health and safety of its staff. DEWA



Organised 1,675 virtual training courses for its staff to strengthen their skills in collaboration with major public and private organisations from 1 April to 31 December 2020. A total of 31,673 trainees attended the workshops with 181,811 training hours.

DEWA's Smart Document System

DEWA's smart document system met two of the strategic objectives of DEWA 2021 strategy: a 'smart and sustainable city' and 'pioneering and excellent government'. DEWA I&TF integrated enterprise requirements into smart mobile application called Smart office. The basic drive of the application is to ensure a variety of services and processes for DEWA employees. All employees can access the application easily at anytime and anywhere to perform their day to day activities that is supported via the application.

In 2020, 1,398,725 procedures were completed and 96 services were provided through the application. This saved 152 tonnes of CO2 emissions and AED 114,467,550. DEWA staff used the application 17 million times with actions such as approve and reject, with 90 processes and 350 services available on DEWA's SAP platform.

Smart Office Application

- A Mobile Application for DEWA Employees
- Support Various platforms and devices
- Real time integrated with SAP, SharePoint, Hype, BMC Remedy, Documentum, Tableau etc.
- Single Login to multiple systems
- Active directory integration
- Promote social responsibility for people of determination
- Available 24/7 from anywhere at anytime.
- 11,000 + Active users
- 350+ Services and 90+ Processes
- 100% In-house development
- The App is downloadable with Zero Configuration



Recognising and Rewarding Employees

To encourage a positive competition in the employees. DEWA created a culture of excellence internally with the various awarding schemes to spread an excellence culture among the employees.

In 2020, DEWA Women's Committee launched the Edhaa (Spotlight in Arabic) initiative to recognise the professional, voluntary, and community achievements of its female employees. Through its internal online newsletters, the committee highlights the successful female role models in DEWA and the community.

DEWA's Excellence Award and Recognition Programme recognised individuals and teams who excelled in their work. In 2020, DEWA honoured 1,983 employees and 68 teams with a percentage of 17.77% of total DEWA staff. The happiness rate of recognition programs in 2020 had reached 89.27%.

For the DEWA Internal Award, DEWA recognised 81 of its illustrious employees and 13 teams in the second half of 2020 in these categories: Distinguished Specialized Employee, Distinguished Technical or Technological Employees, Distinguished Supervisory Employee, Distinguished Innovative employee, Distinguished field employee, Distinguished New Employee, Distinguished Administrative Employee, Unknown Soldier, and Innovative Administrative Initiative.

In addition, DEWA rewarded 44 employees, 24 individuals and 3 teams, who won the SHAREK Award 2020, and also thanked 738 employees for their long service, and 2 individuals and 1 team of 466 employees won Special Act awards in 2020. The Special Act award recognises outstanding performance by employees who saved DEWA resources, made cost savings, completed various projects, or won local and international awards.

Employee Benefits (GRI 401-2, 405-2)

DEWA's aim is to reward employees fairly based on their performance. The personal committee at DEWA reviews the applications such as employee performance appraisals, salary increments, promotions, and other personal matters. The committee also analyses job roles, coordinates them with individuals with talent, skills, and abilities, and offers equal opportunities to meet the job requirements. All staff from grade 7 onwards can view their results and performance through SAP in my portal page. They can also review their information about their performance awards, training, and knowledge management related learning and others.

According to set DEWA policies, the compensation is based on the position or the grade that the employee holds, and not their gender. DEWA also provides permanent employees a wide range of benefits listed below, including medical care, leave, allowances, and accommodation privileges in order to provide an ideal working atmosphere and a safe working environment for its people and to reinforce commitment and efficiency.

Allowances – house rent deduction, duty car, Nature of Work allowance, mobile phone allowance, shift allowance, and special shift allowance	Life Insurance: voluntary in DEWA if the employee wishes to enroll in the scheme. It is voluntary due to sharia. Only about 50 employees take this option up
Retirement Provision (Gratuity & Pension schemes)	Bonus
Leave – (Earned, special, accident, condolence, sick, parental, maternity or paternity, study or exams, Hajj, Idda, etc.)	Joining and repatriating tickets
Accommodation and Air passage payments	Disability & Invalidation Coverage
Children Education Allowance	Residence Visa costs for employees & family
Medical Insurance and Healthcare	Salary Advance for New joiners

As a result of the current COVID-19 pandemic, DEWA adapted to the drastic changes to ensure business continuity. Management has allowed remote work practices and employees are allowed to work from home.

To further support the world-class workforce, DEWA employees are entitled to parental leave. In 2020, 558 of the staff used parental leave.

Employee Parental Leave and Resumed Duty, 2020 (GRI 401-3)

Leave Type	Total parental Leave Availed	Returned to work	Returned to work Rate*	Retained Employees	Retention Rate**
Maternity Leave	205	204	99%	204	99%
Parental Leave	353	353	100%	345	97%
Total	558			549	

The period considered for the parental leaves considers the following:

- Male employees returning to work immediately from 5 January, 2020 to 5 January, 2021
- Female employees returning to work immediately from 1 January, 2020 to 1 May, 2021

**Male and female employees who availed parental leave between 1 January to 31 December 2019 and were still employed with DEWA 12 months after end of parental leave in this duration.

Total Number of Employees Entitled to Parental Leave by Gender, 2020:

Gender	Total
Female	1,175
Male	7,585
Total	8,706

Employee Happiness

One of DEWA's strategic priorities is employee happiness. It has been attained from HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, that employee happiness is important for attaining the happiness of the community. Happy employees improve the happiness of the people who are dealing with them. DEWA is a leader in the establishment of employee happiness in the UAE. DEWA increased productivity due to the employee happiness commitment. Positivity is a fundamental value of community and it supports the vision to make Dubai the happiest city of the world. This is the reason that DEWA still carries out a happiness survey for employees so that their views and suggestions are gathered on topics that interest them. The survey is also used for the purpose of measuring employees' overall happiness with their working lives.

Happiness Operating Model and Governance Cycle



In 2020, DEWA's overall employee happiness score was 92.06%. In 2019 it was 89.9%, 2018 87.75%, and in 2017 it was 83.22%. The analysis of the results of this study was used to benchmark and realign DEWA's initiatives to meet employees' expectations. DEWA also held exit interviews with employees to find out the main reasons for their resignation to solve any issues. In 2020, there were 144 resignations, and 110 exit interviews. To improve the level of transparency and reduces challenges the Post Exit interviews were held so the process of employee exit is improved, and the employee can provide relevant information. Most of the ex-employees wanted to re-join DEWA and 90% have recommended it as the best employer to their family and friends.

Four building blocks are used as the basic framework for the DEWA's Employee happiness. They have been broken down into 10 different categories. It is a starting point for DEWA to understand what it needs to accomplish for the happiness of employees. It is

important for building a sustainable motivating, productive and collaborative work environment. The Happiness Lounge and Creative Rooms are made to improve the physical work environment for employees.

DEWA's Happiness department manages the Employee Assistance programme to provide emotional help for workers going through psychological stress. To ensure that employees go through a holistic experience in their careers at DEWA, there are other employee engagement initiatives, such as the Wesal Greeting programme, the Barzatna social gatherings and the Tejori Al Saada spot reward programme.

Here are some more initiatives that DEWA incorporates to increase employee happiness:

International Day of Happiness

DEWA celebrated the International Day of Happiness for the first time in 2016 with the Happiness Garden theme. Throughout the years, DEWA continued celebrating this day among its employees through various activities that were organised in DEWA head office and other DEWA branches.

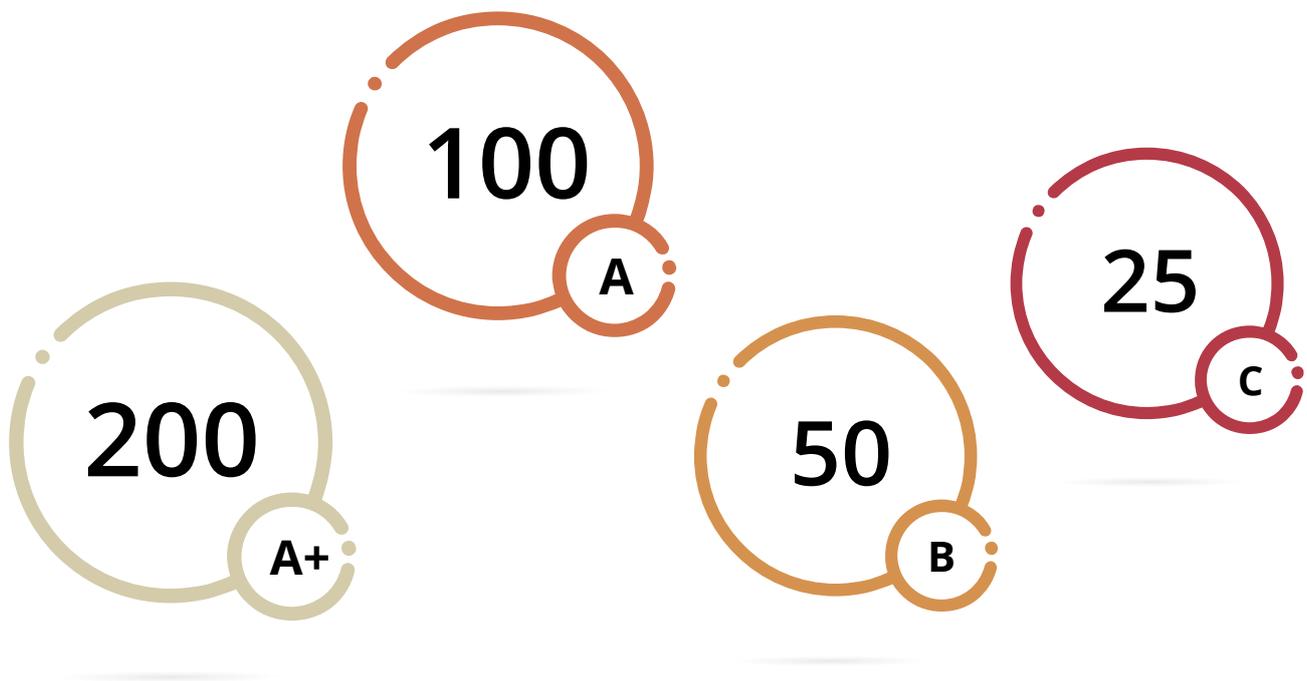
DEWA Child Care Centres

DEWA has the largest number of childcare centres compared to other government departments in Dubai. There are four Child Care Centres for the working parents where one can register their children from 2 to 4 years of age. It has been a successful initiative to help the employees create a balance between their professional and personal lives. Preference is given to female employees with children for admissions. From 2010 to 2020, 1,264 female employees, and 1,803 children benefitted from these nurseries. The happiness rate for the childcare centre in 2020 was 98.73%.

Al Khair Fund

Al Khair Fund, a co-operative programme, was launched on 7 October 2009. The main objective of the programme is to provide financial support to the participating employees whenever they have any urgent needs that falls under the approved entitlement. DEWA contributes AED 500,000 annually to Al Khair Fund. In 2020, 546 staff received help from the Al Khair Fund.

The programme subscription fees are charged from the subscribers to the programme by deducting their salaries on a monthly basis based on the following four categories:



Annual Staff Wedding

In 2020, due to the COVID-19 pandemic, DEWA did not organise its annual mass wedding for Emirati staff, due to social distancing and precaution to reduce the spread of the pandemic. Traditionally, the wedding is part of DEWA's CSR strategy, and its efforts to strengthen families and develop a cohesive society that preserves its national identity.

Happiness Lounge

DEWA has a happiness lounge at Head Office for employees to relax and use their creative abilities in a comfortable environment. This lounge gives different services such as brainstorming, online booking for workshops and different activities.

Tejori Al Sadaa

Employees with an exceptional performance are reinforced and encouraged through instant recognition by the Tejori Al Sadaa programme to foster a positive working environment. The rewards of the programme can be Happiness Cheques, DEWA Store vouchers, or cash gift cards. In 2020, 8,876 staff received Tejori Al Sadaa rewards.

Estisharati

Estisharati (DEWA Employee Assistance programme) is designed to provide emotional wellbeing support to DEWA employees through various services to help employees to help themselves by providing an active problem-solving approach to overcome the problems in hand to live a happy, stress free, fulfilled, and a more meaningful life.



In 2020, Estisharati won a Gold Award for Health and Well-being at the International Business Excellence Awards.

Annual Gatherings

Many events such as Barzatna Programme, Suhoor gathering during Ramadan, and Gala dinner are held by DEWA to bring employees together. However, to counter the COVID-19 pandemic, these were cancelled.

Wesal Programme

The Wesal programme builds closer ties between DEWA and its employees by sending SMSs and emails to celebrate their social occasions and their personal and professional achievements. Wesal also sends supportive messages when staff are ill and consolations on the loss of a relative. Occasions where staff receive an SMS or an e-shot include the birth of children, Umrah, marriage, graduation, confirmation, long-term sick leave, joining DEWA, accident leave, retirement, condolences for Muslims and Non-Muslims, and UAE National Service.

DEWA Store

The programme provides competitive offers and discounts for DEWA staff from various shops, hotels, services, etc. Any new offers are announced and circulated to all employees through:



DEWA Sports Committee

The DEWA Sports Committee promotes participation in sports, supports sporting excellence and enhances the happiness and wellbeing of DEWA employees. The Sports Committee organises internal inter-divisional sports tournaments, promotes, and manages employees to represent DEWA in external competitions.

In 2020, DEWA organised multiple sports events such as Virtual Tournaments for Cycling where 131 DEWA employees took part in the 16km race, and for Running where 128 employees had participated in 5km and 10km races. Moreover, DEWA organised the first trip to hike and discover the picturesque mountains of Hatta, covering 10km of hiking and 3km of kayaking, with 125 employees.

DEWA Women's Committee

DEWA Women's Committee organised a series of virtual workshops to increase the awareness of female employees on mental anxiety and stress relief especially amid the psychological stress of COVID-19. Female employees learned about deep breathing and simple exercises to help them relax and enjoy a healthy and positive life. The Women's Committee also organised virtual awareness lectures on adapting prioritising and turning Covid-19 challenges into opportunities. The female employees learned about positive change and how to apply it.

DEWA Women's Committee supports the vision of the wise leadership and the top management at DEWA to preserve gains and record new achievements. DEWA provides psychological, professional, and social support to all female employees. This is in addition to providing an inspiring and happy work environment that balances their professional and social lives. Throughout the year, the Women's Committee conducts

multiple initiatives to encourage female employees to perform their roles to the fullest at work and home. We also provide support for their safety and of others around them. This builds cohesive families and a strong society that can keep pace with new changes. Amid the new responsibilities of female employees due to the COVID-19 epidemic, the Committee has increased its efforts so female employees can adapt to the new normal while ensuring their happiness and knowledge, especially for working mothers. This makes them national

role models and key partners in the sustainable development of the UAE.

More than 300 participating employees praised the Women Committee's efforts in supporting their mental, professional and personal stability to meet their needs and maintain their excellence and success.

DEWA Youth Council

DEWA Youth Council aims to communicate with DEWA's youth and provide a nurturing environment, focusing on their ideas and talents, in addition to developing initiatives related to their interests. It also utilises their capabilities for the development of DEWA and the community.

DEWA is committed in empowering young employees and enhancing their leadership capabilities, enabling them to be the cornerstone of sustainable development, and build a brighter future for generations to come. DEWA provides young employees with an effective platform for their views on various issues, to communicate their ideas and employ them to serve the UAE and its people.

DEWA vision aligns with the directives of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to empower young people and involve them in the development process. its workforce includes 1,865 employees between the ages of 18 and 29. They make up to 15% of the overall workforce, with 66.54% men and 33.46% women. Furthermore, DEWA has empowered 88% of its young employees to take on productive roles. DEWA supports its youth in several leading initiatives to elevate their contributions, and establish the leading position of DEWA's Youth Council among its national counterparts.

In 2020, the council worked with the Federal Youth Authority (FYA) to launch an awareness campaign with the hashtag #StayResponsible, for all precautionary measures, in accordance with the highest standards of efficiency and resilience. The Youth Council distributed FYA's Youth Councils Manual. This is a guidebook with 100 ideas on how to invest young people's energy and time during the implementation of the UAE's National Sterilisation Programme.



During Innovation Month 2020, the Council organised a forum on innovation, with the theme 'Let's innovate with DEWA's youth'. The Council organised several specialised workshops on AI and machine learning basics, AI research at DEWA, creativity excellence journey, disruptive innovation, and the creative personality. The Council organised a brainstorming session that highlighted '2020: Towards the next 50', as well as ways to develop further initiatives.

During the Holy Month of Ramadan 2020, DEWA's Youth Council launched the 'Our Youth... Our Pride' initiative honouring pioneering young people in the volunteer work.

Employee Health and Safety

(GRI 103-1,103-2,103-3,403-1)

For ISO 9001, ISO 14001 and OHSAS 18001 DEWA has a strategy that is focused on writing with minute details and communicated DEWA's integrated management system. DEWA integrated management system policy is well aligned with corporate IMS procedures and process maps. It also has a dedicated communication policy, risk management policy, social responsibility policy, information security policy, and implementation and monitoring guidance to improve the framework. The system is needed by Dubai's government as well as Dubai Vision 2030. It's all in line with Federal Law No. 8 of 1980, Ministerial Order No. 32 of 1982, Dubai Municipality Code of Construction, Dubai Municipality Guidelines, and the fourth-generation Dubai Government Excellence Programme, and it's backed up by Dubai Accelerators' 10X Strategy, for generations to come. DEWA has divided departmental risk management approach in to high, medium, and low. It is aligned with the DEWA's health and Safety monitoring crisis management system. DEWA's OHSMS Manual contains all relevant information for OH&S Management Systems' scope of jobs, operations, and workplaces. Both temporary staff, consultants, and contractors working on DEWA property are included in this category.

In 2020, DEWA provided the strictest precautionary measures to prevent the spread of COVID-19 in the workplace. It adopted guidelines from British Safety Council and British Standards International for COVID 19 Management. In October 2020, DEWA received a COVID 19 Assurance Statement from British Safety Council, and was the first organisation in the Middle East to do so.

Hazard Identification and Risk Assessment (GRI 403-2)

DEWA has a detailed risk management procedure in place, as well as a risk management strategy regulated by DEWA's Enterprise Risk Management. Risk assessment, risk management, and risk reduction are both covered qualitatively and quantitatively in IMS protocol IMSP03. It also includes a section on environmental impact analysis. According to the HSE's HSG 65 guidance, it protects both routine and non-routine risks.

DEWA ensures employee competency through internal training and refresher trainings, as well as British Safety

Council accredited trainings, for which DEWA is an affiliate trainer. Line managers, HSE coordinators, and all other DEWA employees are expected to go through this training during the year.

DEWA evaluates the Health and Safety outcomes and success using the RADAR approach. A Balanced Scorecard is used to compile all DEWA's key performance indicators, as well those of its divisions and departments. It is then shown on a dashboard for all employees to see.

The OHSMS Manual, Integrated Management System, and HR regulations all provide H&S policies and procedures for employees. Workers are shielded from retaliation under local law and the transparency procedures of DEWA's HR regulations, which are regulated by DEWA's Legal department. DEWA's Security department also lends its support.

The procedures for investigating work-related accidents are protected by DEWA's IMSP-10 protocol, which defines the hierarchy of controls and is compatible with organisational crisis management policies as well as external local authorities, such as Dubai Police and Dubai Civil Defence, where applicable. IMPS 03 aids in the identification of threats, dangers, and control steps, as well as mitigation steps. In February 2020; DEWA developed and incorporated the COVID-19 risk assessment and mitigation plan in the workplace. The risks were evaluated and accordingly, the steps of precautions and measures were taken into consideration, such as sanitisation, isolation of employees, PCR screening, employee scans at workplaces and likewise.

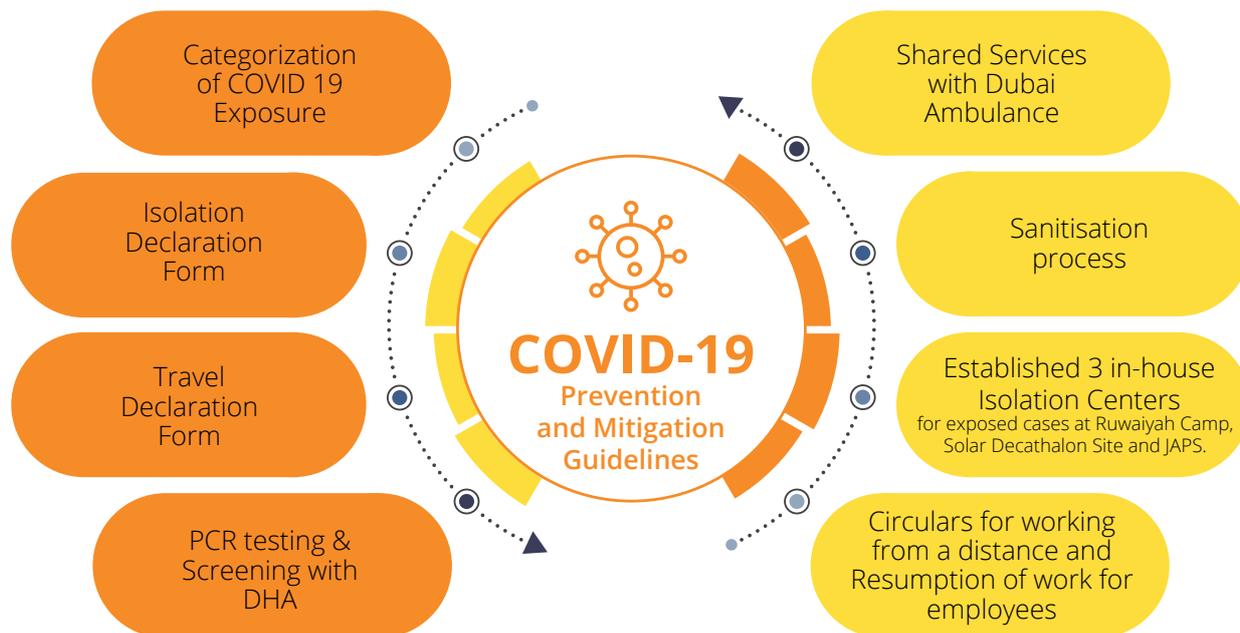
Occupational Health Services (GRI 403-3)

DEWA has a dedicated Occupational Health (OH) section that governs occupational health and wellbeing at DEWA. DEWA's corporate counselling and employee happiness and wellness departments collaborate closely with it.

The Occupational Health Protocol (SP12) is a workplace procedure that is consistent with the Integrated Management System. It also has procedures for stress management and counselling, welfare, wellbeing, and sanitation, , and regulation of toxic chemicals, This protocol supports People for Determination, as well as anyone with vibration, and musculoskeletal disorders.

In close coordination with HR, the OH team performs regular health checks for employees, nutrient checks, stress testing and well-being. It has a dedicated OH awareness operation, as well as workshops and trainings that all employees can access. The protocol is in line with corporate risk management, evaluation of compliance, incident management, and crisis management procedures.

DEWA intricately formulated its in-house COVID-19 prevention and mitigation guidelines which was cascaded to all its divisions, departments, sections, contractors and vendors. The following were the key highlights:



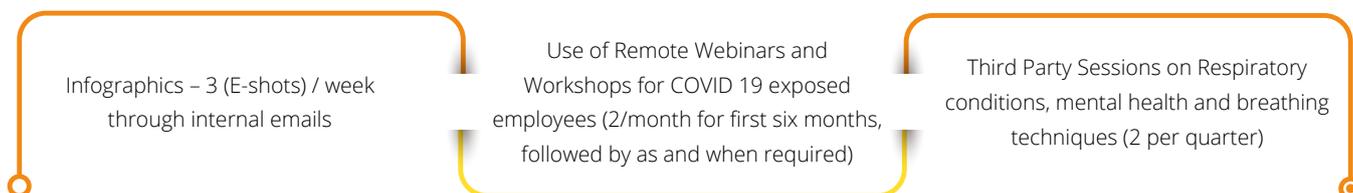
H&S Communications and Representation (GRI 403-4)

As a part of the IMS and to meet OSHAS 18001 and DGEP criteria, worker participation is one of the key drivers of DEWA's strategic intent. A dedicated process for the DEWA employee participation, development planning and consultation causes vertical alignment to all the functional procedures. There is also a horizontal alignment to operational procedures.

The main clauses and sub-clauses of IMS and H&S procedures are employee contact, engagement, and growth. These cover strategic development, training, workshops, and awareness along with annual participation in the DEWA Employee Happiness Survey. To market H&S among its employees, H&S uses an internal and external communication approach. They participate in performance evaluations, risk assessments, management worker involvement initiatives, and H&S training, and all employees have access to the Intranet platform and the HSE mobile app.

DEWA's Health and Safety Committee is responsible for preventing work-related injuries and incidents in all of its branches. It is also responsible for enforcing occupational health and safety practices in the workplace in accordance with the protocol (IMSP01-16), which include delegated KPIs with Target Achievement Levels (percent TAL) in addition to actual ones that make it more robust. It also ensures that steps to assist in the implementation and maintenance of health and safety laws, regulations, and procedures are followed. For high-risk departments, the committee members meet at least once a month, every two months for medium-risk departments, and at least quarterly or as needed for low-risk departments.

Since the onset of the pandemic, DEWA communicated with:



H&S Training (GRI 403-5)

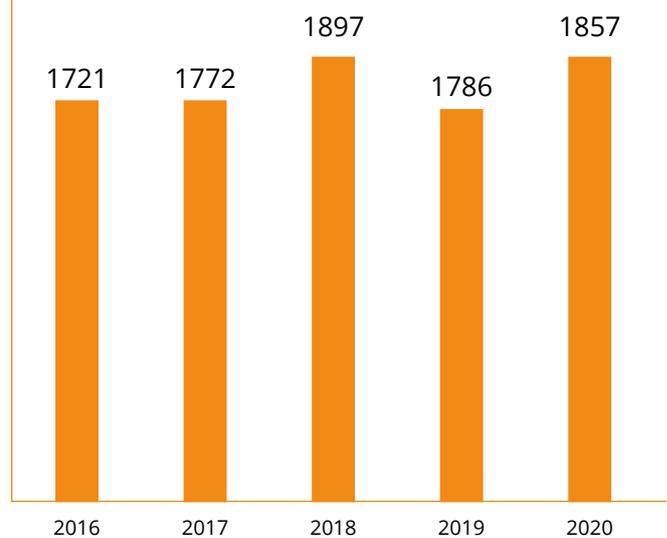
OH&S Staff extensively conduct training in DEWA both formal and In-house that including customised training and training on specific work-related hazards, hazardous activities, or hazardous situations. As per the scope of job, external parties conduct specific OH&S training as per the Training Needs Analysis (TNA). The OH&S training section and departmental HSE coordinators ensure that the workforce understands the importance of hazard communication and identification, and how to recognise and minimise unsafe acts and conditions at the workplace. They also try to teach the skills and necessary attitudes to meet Departmental OH&S objectives. OH&S Training section provided the following 17 courses. Since 2015 DEWA has been an approved BSC training centre, and OH&S staff provided H&S training on behalf of BSC.

Sr. No.	Title
1	Hazard identification & Communications
2	Office Ergonomics
3	Emergency Planning & Preparedness
4	Risk Assessment
5	Accident Prevention, investigation & Reporting
6	Preventing Back Injury
7	Health & Safety Induction Training
8	The Essentials of Health & Safety at the Workplace
9	BSC Level 1 Award in Health and Safety at Workplace
10	BSC Level 2 Award in Health and Safety in the Workplace
11	BSC Level 2 Award in Risk Assessment
12	BSC Level 2 Award in DSE Risk Assessment
13	Defensive Driving
14	Supervising Staff Safely in the Workplace
15	Foundation I - Workshop on Health & Safety Induction for GT/T's
16	E Learning- Back safety Training
17	E Learning – Display Screen Equipment

In 2020, 1,857 staff attended 113 training sessions. After every course, an evaluation report was prepared with graphical representations of feedback from participants scoring less than average marks, who were asked to attend the training programme again.

The OH&S training section also prepares monthly staff awareness program on various OH&S topics and sent them to all HSE coordinators to share and conduct toolbox talks for their departmental staff.

Number of DEWA Staff attended H&S Training conducted by H&S Department from 2016 - 2020



Promotion of Employee Health & Safety (GRI 403-6)

DEWA employees' non-occupational and occupational healthcare is covered by Enaya, a government-run organisation. It protects the medical needs of DEWA workers all over the world. Both on-duty and off-duty accidents are tracked and mitigated in DEWA. DEWA's premises are all secured in the event of a healthcare emergency or an injury to one of its stakeholders. First aid bins, evacuation seats, and provisions for People of Determination, such as braille text, tactile paving, vibration loops, and voice assist at customer service centres, are all included.

Workshops, campaigns, distributor programmes, awareness sessions, and staff engagement in health campaigns for basic screenings, eye tests, and other resources are all part of DEWA's OH&S promotion.

DEWA's H&S services include infographics, intranet emails, campaigns, third-party counselling sessions, and sports activities, with dedicated participation and satisfaction rates published annually in the H&S Departmental calendar and shared throughout DEWA. Screenings, surveys, and monitoring tools

were used to create these plans. The Occupational Health section organizes campaigns based on the World Health Organization's, Dubai Health Authority's, and United Nations' calendars. DEWA's health initiatives address chronic illnesses, heat stroke, stress, wellbeing, metabolic disorders, haemodynamic and musculoskeletal conditions, as well as non-work-related conditions.

Organising HSE week:

H&S department has been organising and conducting internal HSE Week annually since 2003 and the Public HSE Week since 2009 to enhance OH & Safety awareness. The H&S Week provides a platform for creating and enhancing awareness on Occupational Health and Safety aspects between employees and the public. This event instils employees to have a H&S-focused culture through leadership involvement and drive towards strategic direction. In 2020, the H&S week was conducted virtually. Each division, department and contractor delivered their own set

of HSE activities such as quizzes, handmade posters and HSE-talks with an estimated 5,400 participants. H&S department representatives use set criteria to evaluate and reward distinguished achievers.

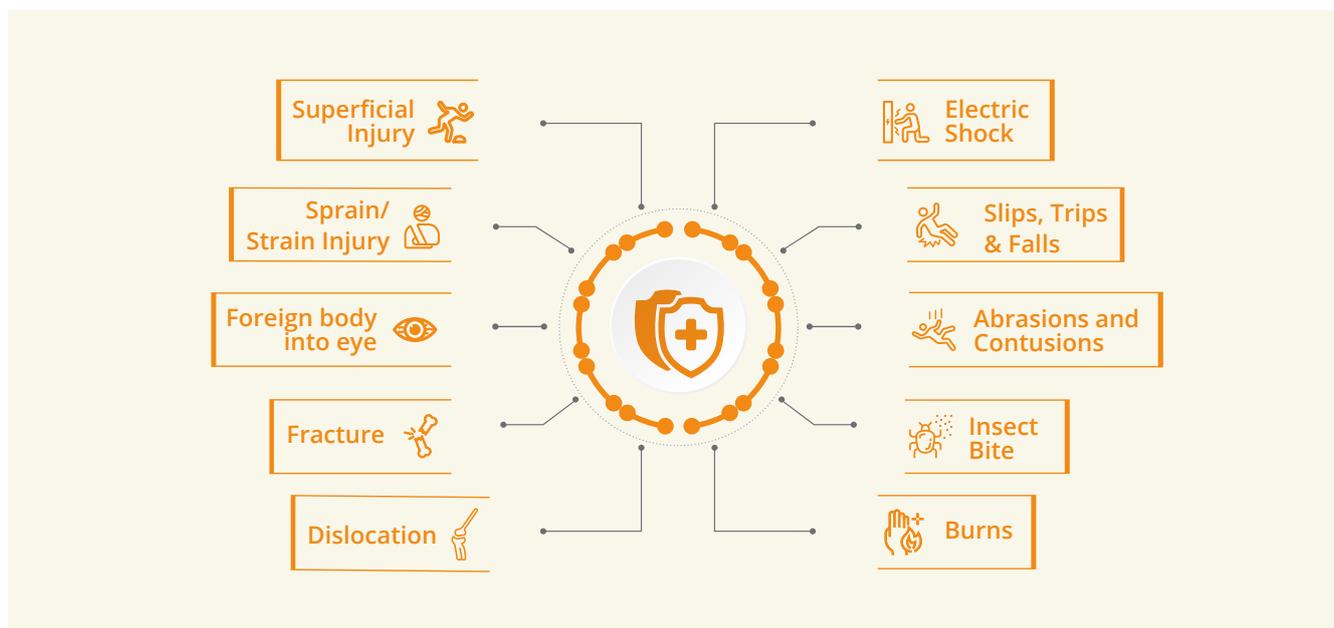
Annual Contractor Awareness Day:

Since 2011, H&S department has hosted an annual health and safety awareness day for suppliers, contractors and consultants to reinforce its mission, vision and policy of integrated administrative systems at DEWA. The main learning outcome is to share the latest health and safety systems and best practice developments in this high-priority area for the benefit of DEWA suppliers, consultants, and contractors. This event is part of DEWA's strategy to improve health and safety standards for all suppliers, projects, activities and operations. In 2020, DEWA did a virtual event that received an overwhelming response from its contractors and consultants. In total, 90 participants took part.

DEWA's Responsibilities (GRI 403-7, 403-9, 403-10)

DEWA's OH&S policy applies to all employees who operate on its premises. DEWA is responsible for preventing and mitigating negative workplace health and safety consequences associated with its activities. DEWA owes its contractors, subcontractors, and suppliers a duty of care, and it follows OHSAS 18001 and 18002 to ensure health and safety. DEWA also has a dedicated SP06 Health and Safety Procedure for Contractors and Consultants in place to foster a health and safety culture and increase standards in all of its programs, events, and operations. DEWA conducts routine audits of its activities to determine how well they are doing in terms of health and safety. A corporate Global Hazard Code is aligned to processes, products, and facilities for H&S. From requisitions to deliverables, Supply Chain management takes the same methodology as H&S management in terms of quality and standards.

Injuries have been classified as Major or Minor by corporate health and safety. A major injury is described as a nonfatal injury that results in more than 7 missed workdays but does not result in permanent total or partial disability. The following are the different forms of injuries:



In 2020, DEWA had 28 major employee-related injuries and 14 contractor-related injuries. In 2020, DEWA recorded no employee- or contractor-related fatalities.

The processes to investigate work related incidents is covered under IMSP-11 procedure of DEWA that identifies process to report and investigate any work-related injuries and illnesses, property or equipment damage, near misses and environmental impacts.

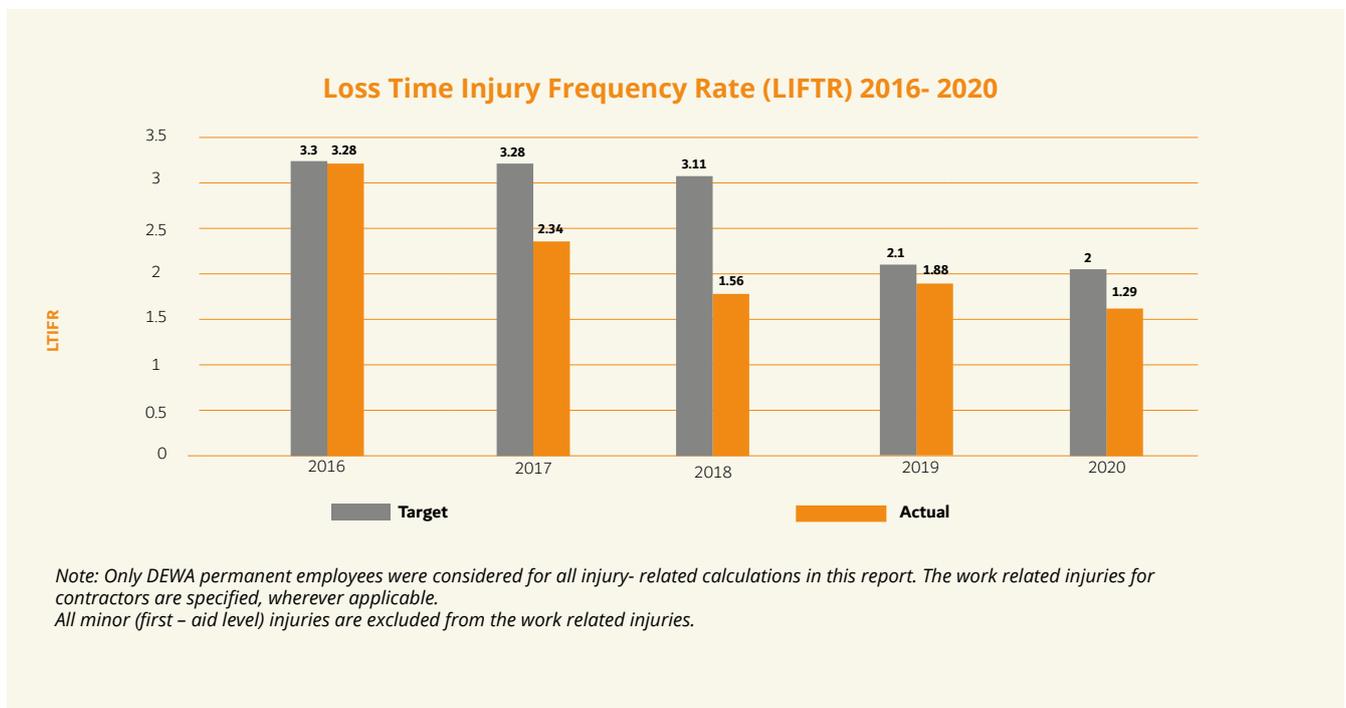
DEWA monitors and reports its Accident Incident Rate (AIR). According to international best practices, DEWA defines Lost Time Injuries (LTI) as an injury sustained by an employee that results in a loss of productive work, either in the form of absenteeism or delays.

The DEWA accident ratio improved by 60.67% from 2016 to 2020, recording a 1.29 LTIFR in 2020 compared to 3.28 LTIFR in 2016.



Lost Time Injury – 28 numbers in 2020
Lost Time Injury Frequency Rate (LTIFR) – 1.29
LTIFR = LTI x 1,000,000 / Working man-hours
28 X 1,000,000/ 21,583,125

Note: The 28 LTIs are injuries that resulted in claimed sick leaves or lost workdays by DEWA's permanent staff.



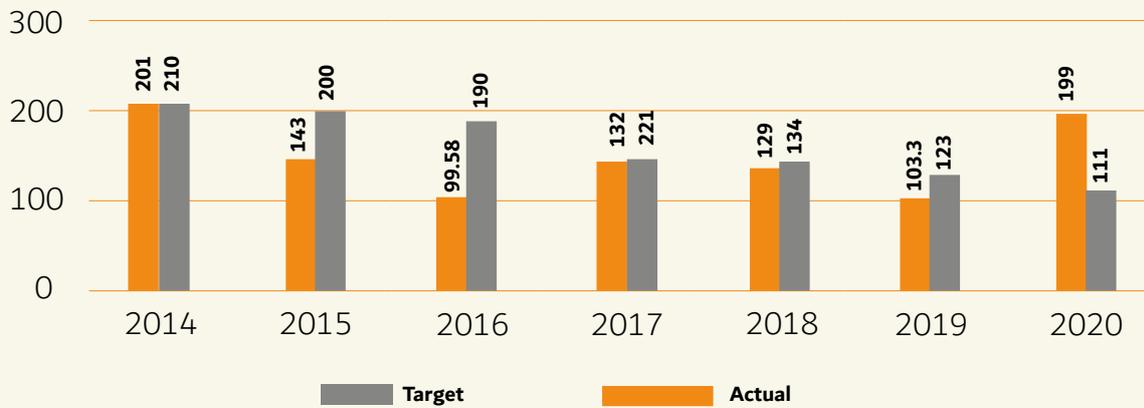
Man Days Lost: 489 man days
Total hours worked by DEWA employee: 21,583,125 Man Hours
Total number of staff x 7.5 (average working hours in a day) x 250 (average number of days in a year)
11,511 X 7.5 X 250 = 21,583,125

Note: H&S Department works on the average number per quarter, not the actual at the end of the year.



Accident Incident Rate (AIR) – 199
Number of RIDDOR incidents x 100000/ Total number of staff =
23 x 100,000 / 11,511= 199

Accident incident Rate - AIR



Site inspections, risk analyses, and historical performance data analysis are used by DEWA to identify hazards. As per DEWA's IMSP03 Procedure, it takes steps to minimise and monitor them, or eliminate any risks. Slips, trips, and falls, road traffic accidents (mostly caused by a third party), a foreign body penetrating the eye, sprains, and fractures are only a few of the hazards that cause or lead to high-consequence injuries. In 2020, no major injury or fatality occurred.

The hierarchy of control is determined based on the IMSP03 procedure for 'Elimination, substitution, engineering controls, administrative controls and Personal Protective Equipment (PPE).' Corrective actions are recommended and, once the actions taken in an agreed period, the corrections recorded and shared.

DEWA has taken many measures to eradicate other work-related hazards and reduce risks by using the hierarchy of controls, which primarily include elimination, administrative controls, and the controlled use of personal protective equipment (PPE). DEWA's policies, rules, and acts apply to all permanent, contractual, temporary, and outsourced employees.



Case Study

Spotlight on Women Leaders at DEWA

Dr Aesha Alnuaimi, Director of the Innovation Centre at DEWA, won the International Solar Alliance Award and the Women in Renewables Asia of the Year Award 2020 for her outstanding contributions and important achievements in solar power, making her an inspiration for future generations of researchers. This high global accolade reflects the great leaps the UAE has made in empowering women across various vital sectors, including the energy sector; allowing women to work side by side with their male colleagues to further the UAE's development.

This supports DEWA's efforts to support, encourage and highlight the role of Emirati women in solar power. At DEWA, we acknowledge that the energy sector is no longer dominated by men, and we are working to mobilise all our resources and capabilities to realise unique achievements to support Emirati women as a key partner in sustainable development. DEWA is one of the largest government organisations to employ women in technical positions within the energy sector in Dubai, and adopts a fair policy and inclusive environment for both women and men alike.

DEWA has 1,947 women in its workforce, 81.1% of them are Emirati. This includes 695 female engineers and technicians at DEWA. 34.6% of the Innovation Centre's employees are Emirati women, with most of them highly educated with scientific and engineering degrees.



Dr Alnuaimi is grateful to DEWA's top management for providing equal opportunities for men and women by empowering women throughout DEWA in managerial and technical positions and providing a positive and stimulating environment that encourages women to fully participate at various levels.

Dr Alnuaimi has eight years of professional experience in solar power. Her duties focus on anticipating the future of solar power and improving the efficiency of its technologies; contributing to building a knowledge-based competitive economy in the UAE. Alnuaimi holds a PhD and Masters of Science in Microsystems Engineering with honours from the Masdar Institute of Science and Technology in Abu Dhabi, in cooperation with the Massachusetts Institute of Technology (MIT), USA. Additionally, Alnuaimi is the first Emirati lady to specialise in nanotechnology for solar cell applications. She also worked on 30 peer-reviewed applied research papers in several international journals and conferences on solar power.

Previously, she received numerous awards and recognitions, such as the Middle East Solar Industry Association's Woman of the Year 2019; the Sheikh Rashid Award for Outstanding Science; the UAE Student Awards for the Advancement of Post-Graduate Education; the Young Emirati Researchers Prize by the National Research Foundation, and the DEWA Distinguished Specialised Employee.

Chapter 7

Customers



DEWA achieved the highest government score of 97.49% for Smart Adoption in 2020



DEWA received the Flag for the Hamdan Bin Mohammed Programme for Government Services for its Smart Living initiative



DEWA achieved the highest score worldwide in the International Customer Experience Standard (ICXS 2019) for the second time in a row with a score of 99.7% in 2020



DEWA achieved the highest score in Smart Dubai Instant Customer Happiness meter by 96.3% in 2020

Management Approach

DEWA aligned its strategy to the Dubai Plan 2021 and the UAE Vision 2021, by adopting Happiness as a key pillar and adding the strategic objective (SO2: Engaged & Happy Stakeholders) and (IP03: Leading Seamless Customer Experience) to its corporate strategy map. DEWA's strategy focuses on the happiness of its stakeholders, especially customers, and its objective of supplying the people of Dubai with an adequate and reliable supply of electricity and water. DEWA has monitored the happiness of its customers to create and adopt a work mechanism that ensure a positive customer experience and improve their quality of life, positivity, and the well-being, as well as exceeding the needs and expectations of the community.

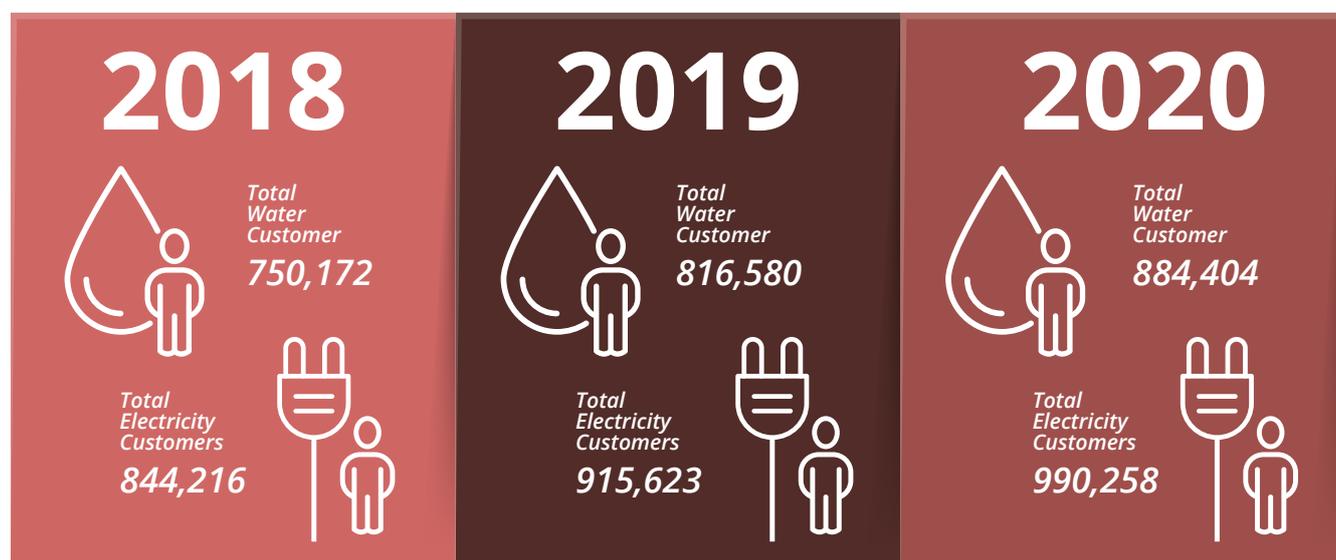
There are main key areas to achieve customer happiness, which are:

1- Excellence in customer service	2- Digital Services for effective customer service	3- Access to electricity and water services
<ul style="list-style-type: none"> Committed towards following precautionary instructions and procedures during pandemic and crisis situations and providing a safe and healthy environment for all customers Engage with customers among different categories to identify their needs Designing, listening, and responding to customer feedback, needs, expectations, and suggestions Providing multiple channels for services applications and bill payment 	<ul style="list-style-type: none"> Ensure providing the best user experience and interface for DEWA's digital services Powering DEWA's operations with AI through Rammas at Work, Powered by Rammas, and Rammas for You Providing customers with accurate, reliable, comparable, and timely information and services online 24/7 	<ul style="list-style-type: none"> Providing access to services for all customer segments including people of determination The UAE, represented by DEWA, has maintained its 1st global ranking, for the 3rd consecutive year, with scores of 100% in all for getting electricity, indicators

DEWA'S Customers

DEWA maintains high standards to exceed customer satisfaction. Its customer base has been continuously growing to meet the demands of the expanding population and economy of Dubai.

Historical Trend (Number of Customer Accounts) (GRI EU3)



Number of Customers Accounts as of 31 December 2020

(GRI-103-6)

Description	Electricity		Water	
	No. of Customer Accounts	Percentage	No. of Customer Accounts	Percentage
UAE National	63,705	6.43%	59,598	6.74%
Expatriates	704,273	71.12%	681,417	77.05%
Commercial	208,967	21.10%	138,957	15.71%
Government organizations	6,657	0.67%	2,035	0.23%
Industrial	2,996	0.30%	1,509	0.17%
Exempted	1,160	0.12%	464	0.05%
EV	2,500	0.25%		
Port sales			424	0.05%
TOTAL	990,258	100.00%	884,404	100.00%

Operational Excellence (EU10, EU28, EU29, EU30)

Over the years, DEWA worked hard to enhance its services and operations to be one of the first government organisations to provide all its services through various smart channels, using the latest technologies with the highest level of reliability, quality, and efficiency. In 2020, DEWA achieved the highest score of 99.7% in the latest International Customer Experience standard (ICXS2019) for 2020 provided by the International Customer Experience Institute. The UAE, represented by DEWA, ranked first for the third consecutive year in Getting Electricity in the World Bank's Doing Business 2020 report. The report measures the ease of doing business in 190 economies around the world. DEWA achieved 100% in all Getting Electricity indicators, which are procedures required to obtain an electricity connection; the time needed to complete each procedure; costs associated and reliability and transparency of tariffs.

DEWA adopted several international standards to ensure performance excellence. The System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) are two such well known reliability indices (IEEE Std 1366TM – 2012) in the distribution network and are used by leading utilities from around the world. These indices help maintain high network reliability with minimum down time to maximise customer happiness and achieve strategic goals. The definition and calculation methodology based on IEEE Std 1366TM – 2012 is as follows:

SAIFI (Forced +Planned)

The System Average Interruption Frequency Index (SAIFI) indicates how often the average customer experiences a sustained interruption over a predefined period. (Its unit is in numbers). SAIFI is a prominent index to monitor the frequency of customer interruptions. In 2020 DEWA's Forced SAIFI was approximately 0.064 against the target of 0.064, while Planned SAIFI contribution was 0.070 against the target of 0.128.

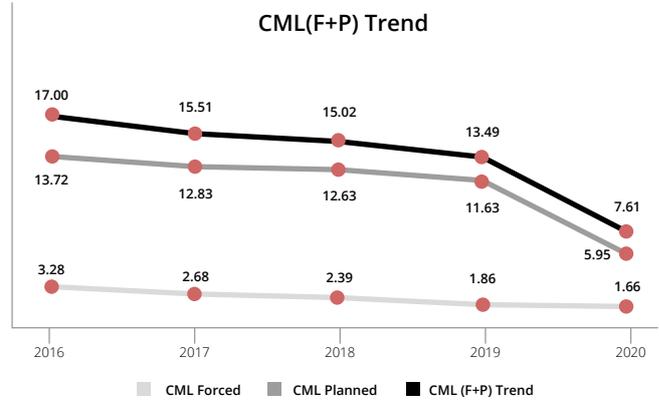
SAIFI Forced from the years 2017-2020		
YEAR	TARGET	ACTUAL
2020	0.064	0.064
2019	0.087	0.071
2018	0.095	0.092
2017	0.105	0.100

SAIFI = Sum of Customer interrupted in the period (Forced & Planned)* / Total number of connected customers served**

SAIDI (CML) - (Forced + Planned)

The SAIDI (Customer Minutes Lost) index indicates the total duration of interruption due to forced and planned outages for the average customer during a predefined period of time. SAIDI (CML) is a prominent index monitored and calculated separately for forced and planned cases in DEWA. In 2020, DEWA achieved 1.66 minutes against the target of 1.66 minutes for the Forced SAIDI, while contributed 5.95 minutes for the Planned SAIDI against the target 11.05 minutes.

CML Unplanned, Target and Actual from the years 2017-2020		
YEAR	TARGET	ACTUAL
2020	1.66	1.66
2019	2.35	1.86
2018	2.55	2.39
2017	3.00	2.68



SAIDI (CML) = Sum of Total Customer interruption duration (Forced & planned)* / Total number of connected customers served.**

Availability Factor (AF)

The availability Factor measures the percentage of time that DEWA plants are available to produce power. AF is important, especially during summer because of the greater demand for electricity. DEWA's availability factor was 99.73% in the summer of 2020 with an annual availability factor of 92.28 % due to maintenance conducted in winter.

RESPONSE TO COVID-19

In line with DEWA's commitment to the vision of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to turn challenges into opportunities, DEWA worked with the public and private sectors to support efforts to overcome the COVID-19 pandemic by accelerating its digital transformation. In 2020, DEWA received the highest government score of 97.49% for smart adoption.

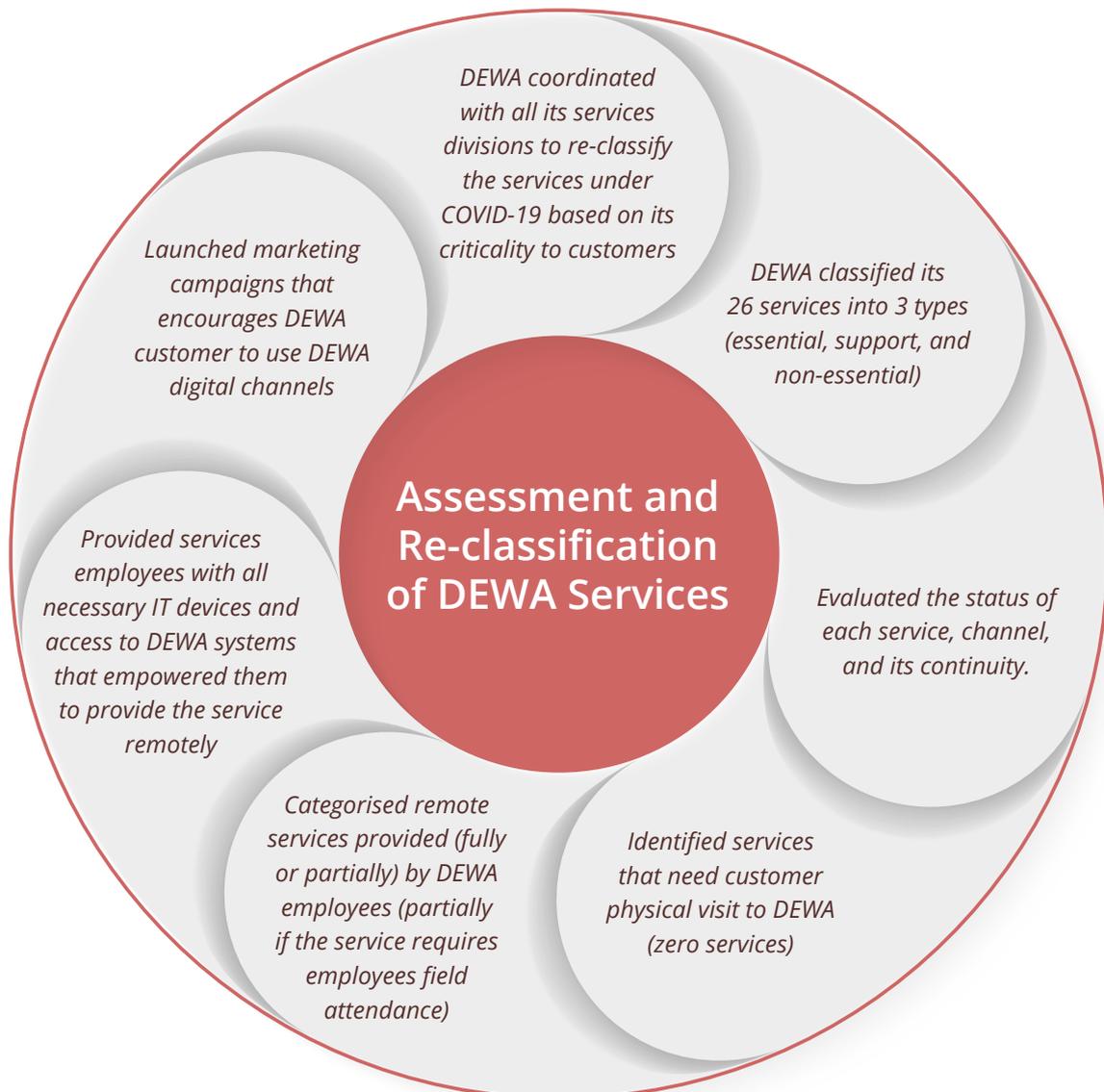
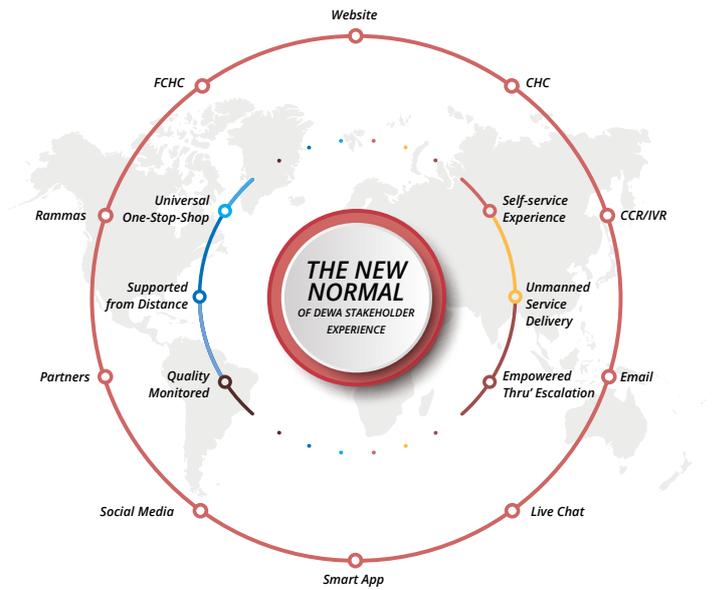
Customer Basic Needs of Connections & Supply

Customer Conversion to Digital Services
Customer Sustainable Consumption Behavior



DEWA's framework to combat COVID-19

To manage the coronavirus pandemic, DEWA continued all its operations, to fulfil its objectives and meet set KPIs. This has been accomplished through weekly virtual meetings by the MD & CEO with top management to discuss all related matters, specially the projects progress. Since 2008, DEWA has formed a high-level crisis management and planning committee, in charge of providing strategic direction when dealing with critical risks, incidents, and crises, in alignment with the Supreme Committee of Crisis and Disaster Management in Dubai. The MD & CEO, as Chairman of DEWA's Crisis Management Committee, actively participated in federal and local government meetings about the COVID-19 pandemic. DEWA has an approved plan to handle different emergencies and, since the outbreak of the coronavirus, immediately responded to the pandemic by reclassifying its services and responded to ensure service continuity with the highest standards of customers' and employees' safety.





Customer Happiness Employees started working from distance gradually from 17 March and by 26 March all were working from distance.

Facts About DEWA's Smart Services and Channels

- 100% of DEWA services are provided on digital channels
- 100% transforming customer happiness centres into self-service centres
- Achieved more than AED 285 Million time and effort savings

Environmental Impacts of the Smart Services and Channels

- Over 7 million online transactions equivalent to planting more than 27,000 trees
- Over 24,000 tons of CO2 emissions prevented equivalent to 52 number of football fields distance

Conversion of customer experience

- All customer centres converted to self-service
- Digital screens to support customers remotely
- Intensive monitoring of digital channels
- Frontline staff assigned to support customer care agents remotely
- Intensive communications to convert customers to digital channels

Converting to self-service

DEWA converted all its customer happiness centres into smart digital self-service ones. This was supported by its state-of-the-art digital infrastructure:



01

Website and smart application fully enabled since 2014

07

Emirates NBD Cheque Deposit Machines

02

Virtual assistance and interaction

08

Etisalat machines for bill payment

03

High security

09

Integrated network with all major banks for bill payment

04

Virtual screen with live videos and audio

10

Integration with Dubai Land Department (Real Estate Regulatory Agency – RERA) for Activation of Supply service – Move-in (Offering pro-active Move-in service to customers via DEWA's welcome email, upon issuance of Ejari certificate from RERA)

05

Tablets with different platforms for customer convenience

11

Integration with ICA (Federal Authority for Identity & Citizenship) for retrieval customers' details via Emirates ID number

06

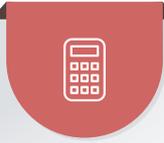
Rammas Artificial Intelligence virtual employee

12

DEWA's Green Bill (sending e-bill via email to all customers)

13

Future Happiness Centres since 2017, enabling customers to perform all their transactions using Smart devices available in these centres and supported by beam (Call Center employee remotely assisting customers, if required)

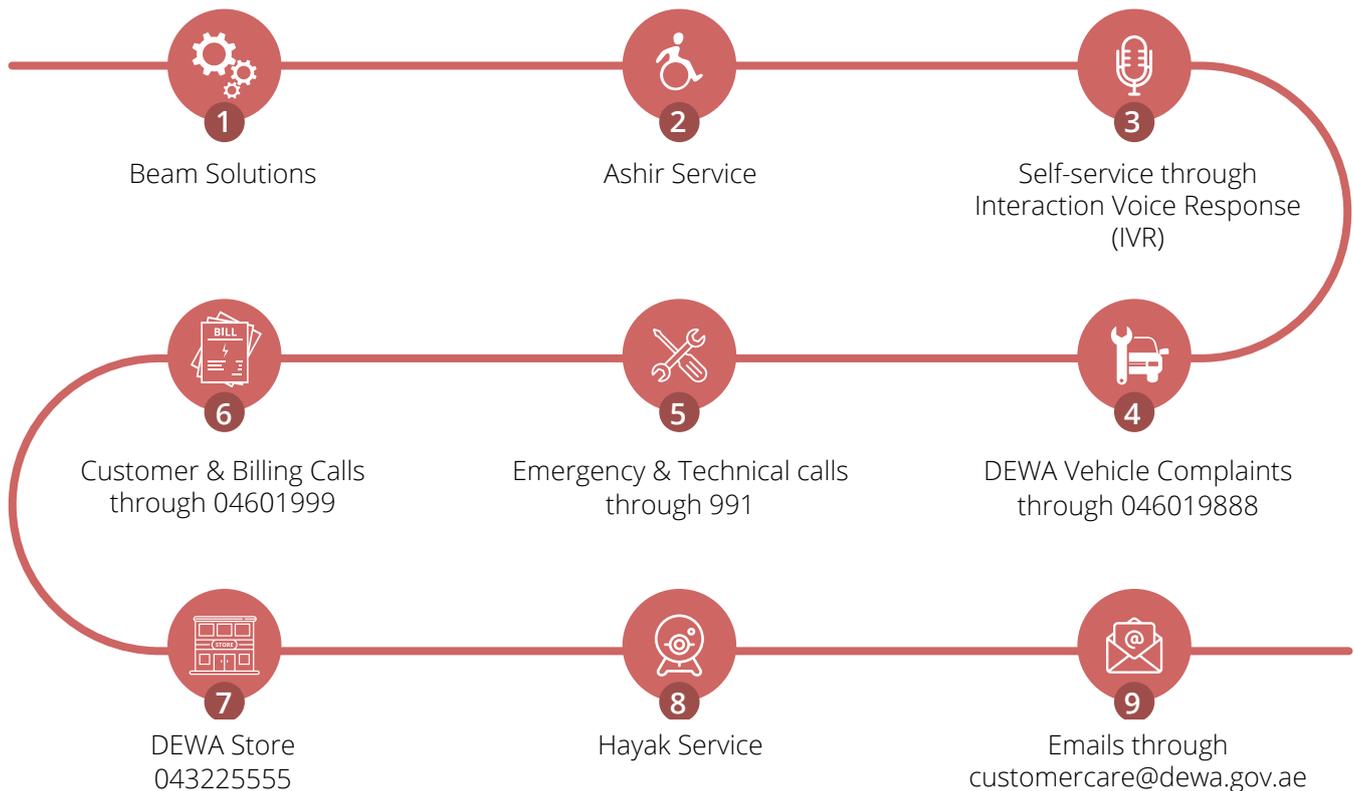
 <p>All DEWA services under one roof</p>	 <p>Open 6 days a week</p>	 <p>Employee through virtual screen with live video and audio</p>	 <p>Simple and usable technology</p>
 <p>Smart ambassadors available to guide, educate & assist customers</p>	 <p>Serving through different means of technologies including artificial intelligence</p>	 <p>Enriching service development and enhancements through customer engagement</p>	 <p>Opportunities for customers to pilot and review emerging Technologies</p>

Customer Care Centre

DEWA's Customer Care Centre, its call centre, has always available to answer customer enquiries. In 2020, it scored 95.29% for service quality. It received over 1.57 million calls; 31.86% of which were handled by its Interactive Voice System (IVR), enabling customers to make use of its services quickly and efficiently. It handled 1,066,665 calls and replied to 216,379 emails from different customers

with varying requests and requirements. The call centre also received 30,560 online chats through its Hayak service, which is an online text, video and audio chat system for customers. The Customer Care Centre received ISO18295-2017 certification for Customer Contact Centre Management to improve its operations, enrich customers' experiences, and make them happy.

The Customer Care Centre has a variety of touch points that meets customers' needs, which include:



In 2020, the service feedback section resolved 99% of customers' complaints within 3 working days, and 100% within 7 working days. Additionally, 96% of customers' suggestions were responded to within 3 working days, and 100% within 15 working days.



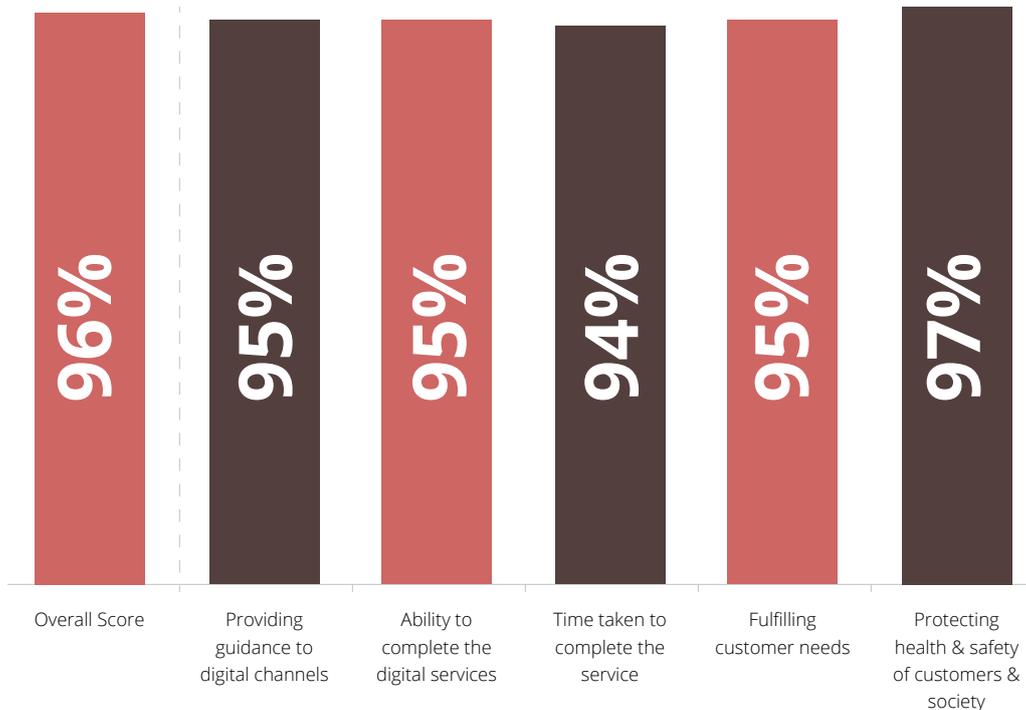
Customer Happiness Employees resumed gradually on-site duties from 31 May to 1 September to reach 50% working from distance.

DEWA support for customers during the COVID-19 pandemic

To manage the overall impact of the coronavirus on the public in Dubai, DEWA implemented a set of billing privileges to support customers including:

- *Providing ease to customers by 10% discount on monthly consumption, considering the financial difficulty of the customers for settling their bills during pandemic*
- *Reducing 50% of customer security deposit for Activation of Supply Service (Move-in)*
- *Providing easy payment plans (through instalment) through multiple banks, without any processing fee and 0% interest*
- *Increasing the limit on IBAN for refunds from 5,000 AED to 200,000 AED for all banks in the UAE for all customers*
- *Keeping the supply active despite non-payment and delays in payment during pandemic*
- *Reduction in the fuel surcharge cost in customers' bills starting December 2020*

DEWA Customers' satisfaction with DEWA Measures during COVID-19

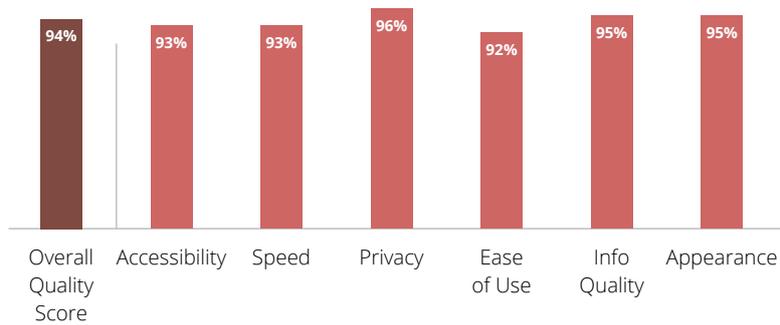


Customer Experience Results for 2020

2020 Customer Experience Results - Website



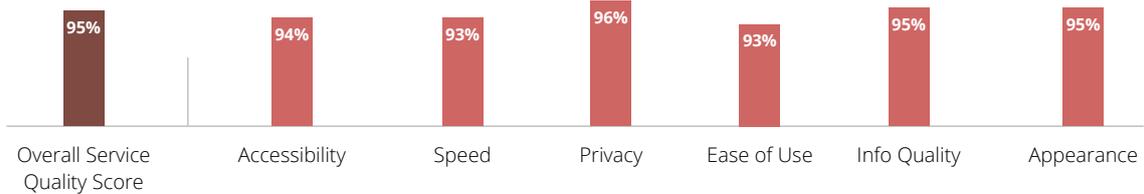
2020 Service Quality Score Vs. Attributes - Website



2020 Customer Experience Results - Smart Application



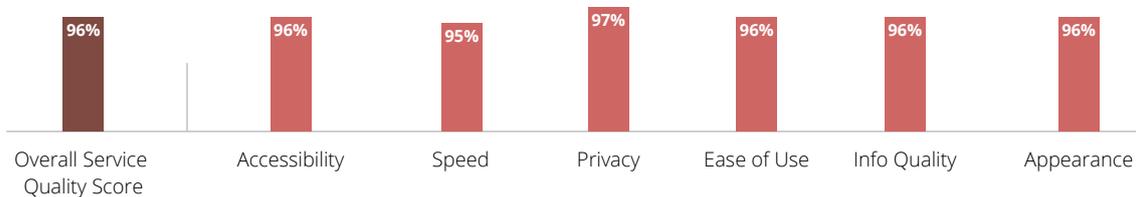
2020 Service Quality Score Vs. Attributes - Smart Application



2020 Customer Experience Results - Self-service Customer Happiness Centers

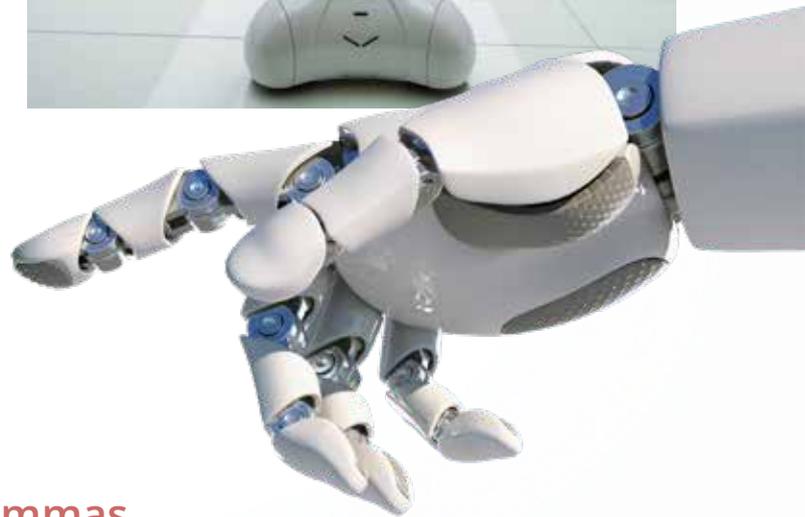


2020 Service Quality Score Vs. Attributes - Self-service Customer Happiness Centers



Rammas (AI)

DEWA's virtual employee Rammas launched in 2017. It uses Artificial Intelligence (AI) to provide services around the clock on DEWA's smart channels and platforms to the highest standards of availability, reliability, and efficiency. DEWA was the first government organisation to provide an online chatbot service in English and Arabic. It communicates with customers and responds to their enquiries on DEWA's smart app, website (www.dewa.gov.ae), Facebook page, Amazon's Alexa, Google Home, robots, and DEWA's verified account on WhatsApp Business on (04 601 9999). DEWA was the 1st government organisation in the UAE to get a verified WhatsApp account to communicate with customers. Rammas answered about 4 million enquiries from January 2017 to December 2020.



The Environmental impact of Rammas



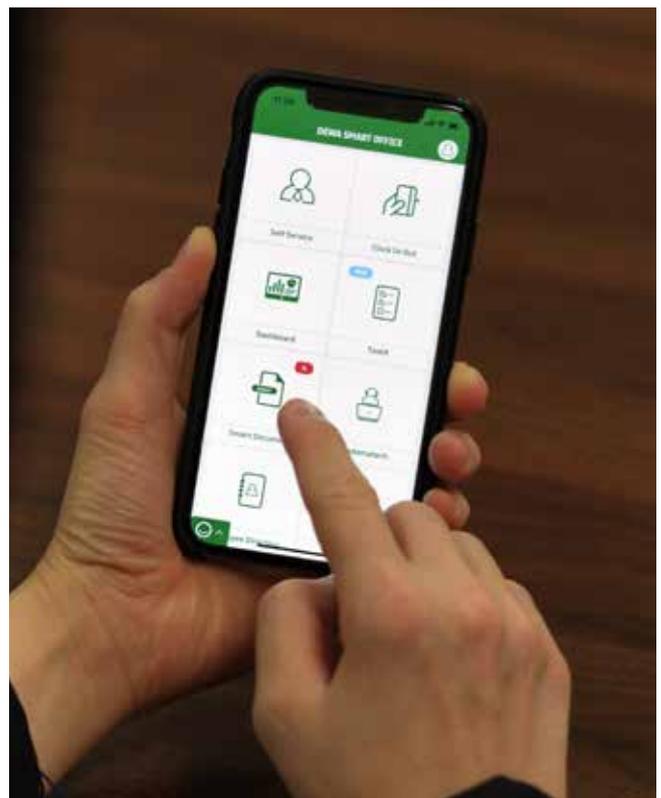
Converting Customer Happiness Centres

DEWA converted all its customer happiness centres into self-service centres. DEWA has become the first government organisation to allow customers to conduct all their transactions by themselves using smart devices at customer happiness centres. Customers can also communicate with DEWA staff by video. These were all done because DEWA uses the latest technologies of the Fourth Generation Revolution. In 2020, DEWA customer centres conducted 30,560 live chats with its customers. In 2020, DEWA maintained its highest score in the International Customer Experience standard (ICXS2019) BY 99.7% for 2020 provided by the International Customer Experience Institute.



Smart Response

The Smart Response is an innovative initiative to improve DEWA's 'Attending Technical Notifications' service for electricity and water inspections. This is available on DEWA's smart app and website, and provides customers with several features such as self-diagnosis of interruptions, reducing steps to deal with complaints from 10 to 6 steps by DEWA and only 1 step for customers if they can diagnose the problem themselves. This service cuts down the time needed to fix problems and also identifies the best solutions to deal with, follow up and resolve technical issues in a simpler and easier manner. It also provides value-added service such as high-water-usage alerts. This enabled 1.8% of DEWA's customers using this service to solve the issues they are facing independently, and reduced the time required to fix the problems by 92% from an average of 25 days to 48 hours. This resulted in saving 2.46 billion gallons of water during the Year 2020, and AED 135.26 million for customers. DEWA always encourages customers to have specialist technicians regularly inspect the plumbing in their premises to look for and fix any leaks. This helps them prevent waste and reduce costs.





Case Study

The My Sustainable Living Programme

The My Sustainable Living programme, part of DEWA's Smart Living Initiative, is a behavioural efficiency programme, first of its kind in the Middle East and North Africa. The programme is incorporated in the updated Dubai DSM strategy 2030 in the initiative "6.1 Consumer Behaviour Analytics" under the programme 6 - Consumer Behaviour. The programme is a behavioural electricity and water efficiency programme to motivate residential customers to increase their electricity and water efficiency by comparing their consumption with average similar homes, as well as, efficient similar homes in their respective areas. The programme targets all residential customers in Dubai and is being communicated through monthly email reports and through monthly SMS text to encourage customers to view their performance. It is also available through DEWA's website and mobile application where the customers have access to all of the programme's key features including:

- *Neighbourhood consumption comparison dashboard of similar homes*
- *Consumption reduction tips related to electricity and water allowing customers to take a pledge to reduce their consumption*
- *An estimated monthly consumption report*

Achieved Savings in 2020:



241.4_(MIG)
Water Savings

40.0_(GWh)
Electricity Savings



Chapter 8

Community



22

humanitarian initiatives
in 2020



15,998

Volunteering hours



DEWA's CSR efforts over the last few years helped increase the community's satisfaction and happiness from 82% in 2013 to more than 93.77% by the end of 2020



During 2020, none of DEWA's large projects physically or economically displaced people within its operational boundaries



Management Approach

(GRI 103-1, 103-2, 103-3)

DEWA has focused on achieving a balance between economic, environmental, and social goals. This is in accordance with an institutional framework for community service. DEWA is committed to enhancing social responsibility and consolidating a spirit of voluntarism among our staff and community members. DEWA is on the right track to achieve its vision through ambitious initiatives, programmes, and projects. These projects consolidate the economic, social, and environmental aspects of sustainability to ensure long-term results. In terms of social projects, DEWA believes in creating sustainable impact by supporting and giving back to society and

communities both locally and globally. Right from an early stage, DEWA adopted a clear policy for CSR with an integrated framework, aligned with international best practices, regulations and laws. The framework includes social initiatives that are in line with the UAE Vision 2021, Dubai Plan 2021, DEWA Strategy 2021. This strategy is constantly updated for Society Happiness and CSR based on stakeholder and community needs, to exceed society's expectations and satisfaction. DEWA is committed to its social responsibility by allocating 8% of its revenues to social initiatives.



Our Initiatives (GRI 413-1)

2020 saw the launch of the UAE's largest strategy to prepare it for the next 50 years and its Golden Jubilee celebrations in 2021. Federal and local government coordinated with all segments of society to participate in shaping life in the UAE over the next 50 years. The '50 Years to the Nation' forum introduced the 50-Year Charter. As we bid farewell to 50 years of achievements and embark on the next 50 years of perseverance, we will increase our efforts to make a difference in our citizens' lives. This maintains our position as one of the biggest supporters of innovation in the UAE and Dubai. This will help in achieving the UAE Centennial 2071 to make the UAE the best country in the world. Those initiatives vary from community development projects

such as school's awareness programs, charitable and humanitarian programs in the UAE and abroad.

DEWA is the first government organisation to reformulate its vision based on these directives, principles, and rules, to become a globally leading, sustainable, innovative corporation, DEWA also set specific goals, clear performance indicators, and targets within our strategy to achieve these directives that we will incorporate into all relevant procedures, processes, and systems at DEWA to ensure that it implements the vision of our wise leadership to shape the government of the future and keep pace with the rapid developments in various fields.

DEWA Community Initiatives

A plan of 50 goals for Dubai



From DEWA to the Community

(EU22)

DEWA promotes inclusion and empowerment of People of Determination

As a socially responsible government organisation, DEWA contributes to achieving the vision of the wise leadership in including and empowering people of determination. This aligns with the National Policy for Empowering People of Determination, launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to create an inclusive society that ensures empowerment and a decent life for people of determination and their families. It also supports the 'My Community A City for Everyone' initiative, launched by His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of the Executive Council of Dubai, to transform Dubai into a friendly city for People of Determination.



أصحاب الهمم
People of Determination

DEWA employees support its efforts in CSR and voluntary work

DEWA has been focusing on achieving a balance between economic, environmental, and social goals. This is in accordance with an institutional framework for community service. DEWA strives to become one of the biggest supporters to the integrated and sustainable system of volunteering in the UAE and Dubai through its continuous work to promote voluntarism, social cohesion, launching and sponsoring, several pioneering humanitarian initiatives.

Empowering Our Youth

DEWA integrating and empowering People of Determination

DEWA is a socially responsible government organisation that is working to achieve the vision of the wise leadership by integrating and empowering People of Determination in society. This is done through numerous initiatives, programmes, and services based on well-defined plans and strategies aligned with the best global practices and standards. DEWA helps People of Determination to integrate and achieve their happiness by creating and providing a qualified and flexible environment that allows them to unleash their capabilities and potential and fully integrate them in society. This also helps find new ways to involve them in their social environment as capable and creative individuals. The People of Determination happiness towards DEWA's services,



initiatives and programmes has reached 93.52% in 2020 compared to 94% in 2019.

Supporting initiatives and programmes that integrate and empower People of Determination (EU22)

Each year, DEWA supports various initiatives and programmes that integrate and empower People of Determination. Between 2015 and 2020, DEWA supported 58 community-based initiatives and sponsorships with 30 sponsorships and 28 community initiatives, with over 3.5 million benefitting. DEWA sponsors the annual AccessAbilities Expo, which provides a platform for government organisations to learn about the latest technologies, solutions, and smart services, provided by international organisations.

DEWA's Youth Council Achievements during the pandemic

The Youth Council at Dubai Electricity and Water Authority (DEWA) aims to communicate with DEWA's youth and provide a nurturing environment, focusing on their ideas and talents, in addition to developing initiatives related to their interests. It also utilises their capabilities for the development of DEWA and the community. The Council's strategy is based on five main themes: National Identity and Values, Continuing Education, Professional Development, Future Accelerators and Innovation; and Sustainability. The Council also contributes to enhancing communication between employees and the Dubai Youth Council to strengthen their skills and knowledge to participate in the growth and sustainable development process.





Since October 2019, DEWA's Youth Council has launched several initiatives, with more than 10 communication platforms to further connect with DEWA's young employees. The Council has organised more than 15 virtual events with over 1,200 virtual participants, with a 94% happiness rate of the youth in the main events. Additionally, the Council organised several virtual tours of DEWA's main projects, including the Research and Development Centre. DEWA's Youth Council organised virtual brainstorming workshops to address the needs of the youth, and give them an opportunity to express their opinions and aspirations in all aspects of DEWA's work. The Council also partnered with several DEWA committees to organise

a variety of programmes, such as the collaboration with DEWA Sports Committee for the Virtual Running Tournament. The Council also implemented several initiatives and successful events including virtual Youth Debate; Virtual Youth Talks; 'Our Youth... Our Pride' virtual initiative to introduce DEWA's volunteering staff, among other pioneering initiatives to develop young people's skills. Overall, the COVID-19 pandemic supported the Youth Council to raise the innovation & creativity bar in terms of all virtual initiatives that were launched during that time period. It rather introduced the opportunities to explore alternative engagement methods with DEWA's employees and stakeholders.

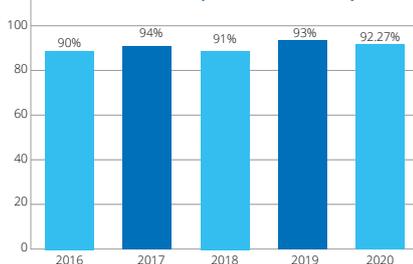
DEWA Volunteers

DEWA launches digital internal voluntary work system

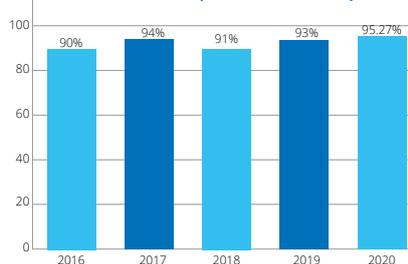
DEWA has launched its internal voluntary programme, iVolunteer, on its smart app and website in conjunction with International Volunteer Day. This is part of DEWA's efforts to increase and promote voluntarism amongst staff and in Dubai. The advanced digital system of iVolunteer enables DEWA's staff to learn about initiatives, programmes and voluntary activities as well as their results. They can also sign up for and document their voluntary hours to redeem points and receive prizes. This also meets the requirements

of Dubai Government Excellence and increases DEWA's leading position in voluntarism across the UAE. Launching the iVolunteer programme makes DEWA the first government organisation in Dubai to switch to a digital internal volunteering programme, instead of using paper. This underlines its leadership and excellence in several areas. The programme also supports digital transformation at DEWA, and its efforts to increase the cut of its paper usage reached 96.8% in Q3 of 2020.

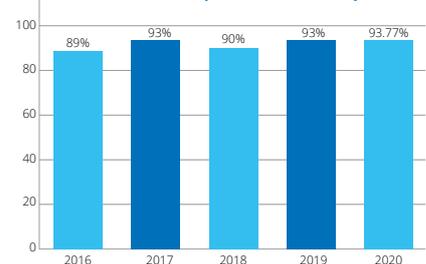
Overall Community Happiness Score
2016-2020 (2020: 93.77%)



Overall Business Happiness Score
2016-2020 (2020: 92.27%)



Overall Society Happiness Score
2016-2020 (2020: 95.27%)



Conservation Award

Dubai Electricity and Water Authority (DEWA) set up the Conservation Award in 2005 in collaboration with the UAE Ministry of Education and the Knowledge and Human Development Authority (KHDA).

The Award educates students on the rational use of resources, in addition to recognising educational institutions for their efforts to reduce waste and promote best practices in reducing their use of electricity and water consumption, in addition to honouring these educational institutions for their efforts to reduce waste.

Even during the COVID-19 pandemic, DEWA was still able to conduct and organised 150 virtual lectures targeting 30,023 students from 471 schools to promote the Interactive Conservation Programme Conservation Masterclass, which aligns with the UN Sustainable Development Goals (SDGs).

DEWA has continued to successfully spread awareness as today's students are the perfect ground to cultivate the seeds of conservation until it grows and thrives in the community.

The award contributes to the environmental challenges facing the planet, by raising awareness levels among individuals about ways to increase efficiency in energy consumption and reduce waste and conserve electricity and water.

Since the Conservation Award began, DEWA has organised 1,610 lectures, for almost 381,000 students. The Award has led to considerable results in the education sector with savings of 283 GWh of electricity, 1.7 billion gallons of water, and reducing 152,000 tonnes of carbon emissions. These savings are worth approximately AED 192 million.





Case Study

DEWA and the Community During the Pandemic



DEWA works closely with several local organisations, such as the Emirates Red Crescent (ERC); the Mohammed bin Rashid Al Maktoum Humanitarian and Charity Est., the Islamic Affairs and Charitable Activities Department; Community Development Authority; Suqia UAE; Noor Dubai, Watani Al Emarat foundation and others.

During the COVID-19 pandemic, the UAE has sent hundred tonnes of medical supplies and aid to dozens of countries around the world, regardless of religion, ethnicity, or colour. To help curb the outbreak of the

COVID-19, DEWA staff are actively helping; showing their effective participation, solidarity, and social cohesion. Nine DEWA employees volunteered for the 'Your City Needs You' campaign, launched by His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of the Executive Council, on the Day for Dubai application. Watani Al Emarat foundation oversees the campaign.

GRI

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COMMUNITY MEMBER

2021

MATERIAL TOPICS & THEIR BOUNDARIES

Material Topic	Material within the organisation or external	Relevant External Stakeholders					
		Customers	Suppliers	Partners	Society	Government	Investors
Economic							
Availability and Reliability of Electricity	Both	✓	✓	✓	✓	✓	✓
Anticorruption	Both	✓	✓	✓	✓	✓	✓
Demand Side Management	Both	✓			✓	✓	✓
Economic Performance	Both	✓	✓	✓	✓	✓	✓
Procurement Practices	Both		✓	✓	✓	✓	✓
System efficiency	Within						
Environmental							
Climate Change Mitigation	Both	✓	✓	✓	✓	✓	✓
Energy	Both	✓	✓	✓	✓	✓	✓
Emissions	Both	✓			✓	✓	✓
Environmental compliance	Both		✓	✓	✓	✓	✓
Decarbonization	Both	✓	✓		✓	✓	✓
Water and Effluents	Both	✓	✓	✓	✓	✓	✓
Social							
Access to Electricity	Both	✓	✓	✓	✓	✓	✓
Occupational health and safety	Both	✓	✓	✓		✓	✓
Employment	Both				✓	✓	
Disaster / Emergency planning and Responses	External	✓	✓	✓	✓	✓	✓
Customer Happiness	Both	✓	✓	✓	✓	✓	✓
Socioeconomic Compliance	Both				✓	✓	✓
Customer Health and Safety	Both	✓			✓	✓	✓
Local communities	Both				✓	✓	
Cybersecurity		✓	✓	✓	✓	✓	✓
Human Right assessment	within						
Provision of information	Both	✓	✓	✓	✓	✓	✓

GRI CONTENT INDEX

GRI Standard	Disclosure	Description	Page	SDGs Linkage to GRI
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	102-18	Governance structure	15	16.3
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	102-44	Key topics and concerns raised	43	
	102-45	Entities included in the consolidated financial statements	13-14	
	102-46	Defining report content and topic Boundaries	5	
	102-47	List of material topics	134-138	
	102-48	Restatements of information	5	
	102-49	Changes in reporting	No significant changes	
	102-50	Reporting period	5	
	102-51	Date of most recent report	5	
	102-52	Reporting cycle	5	12.6
	102-53	Contact point for questions regarding the report	5	
	102-54	Claims of reporting in accordance with the GRI Standards	5	
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GRI G4 Sector Disclosures 2013 Electric Utilities	EU1	Installed capacity, broken down by primary energy source and by regulatory regime	53	7.2
	EU2	Net energy output broken down by primary energy source and by regulatory regime	53	7.2; 14.3
	EU3	Number of residential, industrial, institutional and commercial customer accounts	113	
	EU4	Length of above and underground transmission and distribution lines by regulatory regime	54	
	EU5	Allocation of CO2 emissions allowances or equivalent, broken down by carbon trading framework	77	13.1; 14.3; 15.2
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GRI 201 Economic Performance 2016	201-1	Direct economic value generated and distributed	23	8.1; 8.2; 9.1; 9.5
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GRI 204 Procurement Practices 2016	204-1	Proportion of spending on local suppliers	32	8.3
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	103-3	Evaluation of the management approach	14-16	
GRI 205 Anti-corruption 2016	205-3	Confirmed incidents of corruption and actions taken	No incidents of corruption during the reporting period	16.5
Availability & Reliability of electricity				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	52	
	103-2	The management approach and its components	52	
	103-3	Evaluation of the management approach	52	
GRI G4 Sector Disclosures 2013 Electric Utilities	EU 10	Planned capacity against projected electricity demand over the long term by energy source	52	7.1

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GRI G4 Sector Disclosures 2013 Electric Utilities		Demand-side management programs including residential, commercial, institutional and industrial programs	60	7.3; 8.4; 12.2; 13.1
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GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	59	
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GRI G4 Sector Disclosures 2013 Electric Utilities	EU11	Average generation efficiency of thermal plants by energy source and by regulatory regime	59	7.3; 8.4; 12.2; 13.1; 14.3
	EU12	Transmission and distribution losses as a percentage of total energy	49, 54	7.3; 8.4; 12.2; 13.1; 14.3
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Energy				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	50	8.4
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	103-3	Evaluation of the management approach	50	8.4
GRI 302 Energy 2016	302-1	Energy consumption within the organization	79	7.2; 7.3; 8.4; 12.2; 13.1
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GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	76	
	103-2	The management approach and its components	76	
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GRI 307 Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	76	16.3
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	303-2	Management of water discharge-related impact	70-71	6.3
	303-3	Water withdrawal	66	6.4
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	305-4	GHG emissions intensity	77	13.1; 14.3; 15.2
	305-5	Reduction of GHG emissions	77	13.1; 14.3; 15.2
	305-6	Emissions of ozone-depleting substances (ODS)	78	3.9;12.4
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	78	3.9;12.4; 14.3; 15.2
Climate Change Mitigation				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	76	
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NON GRI DISCL		Mohammed bin Rashid Al Maktoum Solar Park	55-59	
NON GRI DISCL		CO2 Emission Reduction Programme	77	
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GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary		
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NON GRI DISCL		Mohammed bin Rashid Al Maktoum Solar Park	55-59	
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Social				
Employment				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	88	
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GRI 401 Employment 2016	401-1	New employee hires and employee turnover	90	5.1; 8.5; 8.6; 10.3
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	99-104	3.2; 5.4; 8.5
	401-3	Parental leave	100	5.1; 5.4; 8.5
GRI G4 Sector Disclosures 2013 Electric Utilities	EU15	Percentage of employees eligible to retire in the next 5 and 10 years broken down by job category and by region	90	8.5
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GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	105	
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GRI 403 Occupational Health & Safety	403-1	Occupational health and safety management system	105	3.3; 3.4; 3.9; 8.8; 16.1
	403-2	Hazard identification, risk assessment, and incident investigation	105	8.8
	403-3	Occupational health services	105-106	8.8
	403-4	Worker participation, consultation, and communication on occupational health and safety	106	8.8; 16.7
	403-5	Worker training on occupational health and safety	107	8.8
	403-6	Promotion of worker health Prevention and mitigation of occupational health and safety impacts directly linked by business relationship	107-108	3.3; 3.5; 3.7; 3.8
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationship	108-110	8.8
	403-9	Work-related injuries	108-110	3.6; 3.9; 8.8; 16.1
	403-10	Work-related ill health	108-110	3.3; 3.4; 3.9; 8.8; 16.1
	Socioeconomic Compliance			
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	15, 31	
	103-2	The management approach and its components	15, 31	
	103-3	Evaluation of the management approach	15, 31	
GRI 419 Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	No significant monetary or non-monetary sanctions for non-compliance with the laws and regulations in the social and economic area	16.3
Local communities				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	127	
	103-2	The management approach and its components	127	
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GRI 413 Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	127-130	1.4;9.1

GRI G4 Sector Disclosures 2013 Electric Utilities	EU22	Number of people physically or economically displaced and compensation, broken down by type of project	127-128	1.4; 2.3
Disaster/Emergency Planning & Response				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	24-25	
	103-2	The management approach and its components	24-25	
	103-3	Evaluation of the management approach	24-25	
GRI G4 Sector Disclosures 2013 Electric Utilities		Management Approach	24-25	1.5;11.5
Access to Electricity				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	114-115	
	103-2	The management approach and its components	114-115	
	103-3	Evaluation of the management approach	114-115	
		Management approach: programmes, including in partnership with government, to improve or maintain access to electricity and customer support services	114-115	1.4; 7.1
GRI G4 Sector Disclosures 2013 Electric Utilities	EU26	Percentage of Population unserved in licensed distribution or serviced area	0%	1.4; 7.1
	EU28	Power outage frequency	114-115	1.4; 7.1
	EU29	Average power outage duration	114-115	1.4; 7.1
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GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	119, 123	
	103-2	The management approach and its components	119, 123	
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NON GRI DISCL		Results of surveys measuring customer happiness	120, 121	
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GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	113-114, 120-121	
	103-2	The management approach and its components	113-114, 120-121	
	103-3	Evaluation of the management approach	113-114, 120-121	
GRI 416 Customer Health and Safety	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	No incidents of non-compliance reported during 2020	16.3
GRI G4 Sector Disclosures 2013 Electric Utilities	EU25	Number of injuries and fatalities to the public involving company assets, including legal judgments, settlements and pending legal cases of diseases	We Suffered no work related fatalities during 2020	

Human Right Assessment				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	16	
	103-2	The management approach and its components	16	
	103-3	Evaluation of the management approach	16	
GRI 412 Human Right Assessment	412-1	Operations that have been subject to human rights reviews or impact assessments	16	
GRI 412 Human Right Assessment	412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	16	
Provision of Information				
GRI G4 Sector Disclosures 2013 Electric Utilities		Management approach: practices to address language, cultural, low literacy and disability related barriers to accessing and safely using electricity and customer support services	113-114, 127-128	1.4;7.1
Cybersecurity				
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary	25	
	103-2	The management approach and its components	25	
	103-3	Evaluation of the management approach	25	
NON GRI DISCL		Cyber security framework	25	

ACRONYMS

4IR	Fourth Industrial Revolution
A&DC	Assessment and Development Centre
AF	Availability Factor
AFI	Areas For Improvement
AI	Artificial Intelligence
AIR	Accident Incident Rate
ASR	Aquifer Storage & Recovery
BAIR	Berkeley Artificial Intelligence Research Lab
BAU	Business As Usual
BCP	Business Continuity Planning (Planning not plans)
BeSIX	Belhasa Six Construct
BPS	British Psychological Society
BSC	Balanced Scorecard

BSC	Balanced Score Card
CAS	Dubai Carbon Abatement Strategy
CCC	Crisis Command Centre
CDM	Clean Development Mechanism
CEO	Chief Executive Officer
CER	Certified Emission Reduction
CMC	Crisis Management Committee
CO2	Carbon Dioxide
COVID	Coronavirus Disease
CSP	Concentrated Solar Power
CSR	Corporate social responsibility
DCS	District Cooling Services
DEWA	Dubai Electricity & Water Authority

DFO	Diesel Fuel Oil
DGEP	Dubai Government Excellence Programme
DSCE	Dubai Supreme Council of Energy
DSM	Demand Side Management
DUSUP	Dubai Supply Authority
ERC	Emirates Red Crescent
ERM	Enterprise Risk Management
ERRM	Enterprise Risk and Resilience Management
ETIHAD ESCO	Al Etihad Energy Services Company
EV	Electric Vehicle
GHG	Greenhouse Gas
GMTN	Global Medium Term Note
GRC	Governance, Risk & Compliance
GRRC	Group Risk & Resilience Committee
GTIC	Gas Turbine Intelligent Controller
GWH	Gigawatt Hour
H&S	Health & Safety
HACCP	Hazard Analysis Critical Control Point
HRSGs	Heat Recovery Steam Generators
HSE	Health Safety & Environmental
HVAC	Heating, Ventilation and Air Conditioning
i-RECs	International Renewable Energy Credits
IBXA-2020	International Business Excellence Award
IEA	International Energy Agency
IIP	Investor In People (People must be Capital)
IMS	Integrated Management System

IMSP	Integrated Management System Procedure
IoT	Internet of Things
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent Power Plant
ISO	International standard organization
IVR	Interactive Voice System
IWP	Independent Water Producer
K&IC	Knowledge & Intellectual Capital
KPI	Key Performance Indicator
kV	Voltage Category
kWh	Kilowatt Hour
LCOE	Lowest Livieliest Cost of Energy
LEED	Leadership in Energy and Environmental Design
Li-Ion	lithium-ion
LMS	Learning Management System
LTI	Lost Time Injuries
LTIFR	Lost Time Injury Frequency Rate
MBRSC	Mohammed Bin Rashid Space Centre
MD	Managing Director
MENA	Middle East and North Africa
MFO	Medium Fuel Oil
mg/L	Milligram per liter
MIGD	Million Imperial Gallon per day
MIT	Massachusetts Institute of Technology
MMBtu	Metric Million British Thermal Unit
Moro	Data Hub Integrated Solutions

MOU	Memorandum of Understanding
MRV	Monitoring, Reporting and Verification
MSF	multi-stage flash desalination
MSLP	My Sustainable Living Program
MtCO₂ e	metric tons of CO ₂ equivalent
MVA	megavolt-amperes
MW	Megawatts
MWh	megawatts per hour
MWp	Megawatt peak
NaS	Sodium-sulfur
NESA	National Electronic Security Authority
NG	Natural Gas
NO_x	Nitrogen Oxides
ODS	Ozone Depleting Substances
OH&S	Occupational Health & Safety
OH&S	Occupational Health and Safety
OHSMS	Occupational Health and Safety Management System
P&WP	Power and Water Planning division
PCR	Polymerase Chain Reaction
PEE	Personal Protective Equipment
PHD	Doctor of Philosophy
PIC	Plant Intelligent Controller
PM	Particulate Matters
PMO	Project Management Office
PPE	Personal Protective Equipment
ppm	parts per million
PV	Photovoltaic

QHSE	Quality, Occupational Health, Safety, and Environment Management Systems
R-22	Refrigerant 22
R&D	Research and Development
RO	reverse osmosis
RTA	Roads and Transport Authority
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SDGs	The Sustainable Development Goals
SF₆	Sulphur hexafluoride
SME	Small And Medium-Sized National Entrepreneurs
SO₂	Sulphur dioxide
SWRO	Sea Water Reverse Osmosis
T&D	Transmission and Distribution
TAL	Target Achievement Levels
TDC	Total dissolved solids
TDS	Total dissolved solids
TESTIAC	Thermal Energy Storage Turbine Inlet Air cooling
TNA	Training Needs Analysis
TSE	Treated Sewage Effluent
UAE	United Arab Emirates
UFW	Unaccounted for Water
UNFCCC	The United Nations Framework Convention on Climate Change
UNFCCC	United Nation's Framework Convention on Climate Change
WEF	World Economic Forum
WHO	World Health Organisation
WHO	World Health Organisation's



DEWAOFFICIAL

customercare@dewa.gov.ae | www.dewa.gov.ae



OFFICIAL SUSTAINABLE ENERGY PARTNER

Our Vision
A globally leading sustainable innovative corporation
P.O. Box 564, Dubai, United Arab Emirates
T: +971 4 601 9999