



2019 Sustainability Report



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ABOUT THIS REPORT

About this Report

This Report aims to provide stakeholders with a comprehensive and transparent update on the Emirates Nuclear Energy Corporation's (ENEC) sustainability strategy and performance for the year 2019. The Report covers the activities of ENEC including its subsidiaries (Nawah Energy Company and Barakah One Company), as well as ENEC's Joint Venture (JV) partner and Prime Contractor for the Barakah Nuclear Energy Plant (BNEP) the Korea Electric Power Corporation (KEPCO), and other subcontractor activities, where relevant. Full details on the Report's scope and boundaries can be found in Appendix A, as well as in data tables and graphs throughout the Report.

This report has been prepared in accordance with the GRI Standards: Core option. It has successfully completed the GRI's Materiality Disclosure Service. To view the GRI content index, please refer to Appendix C.

For questions or comments regarding this Report and ENEC's sustainability program, please visit www.enec.gov.ae or contact HSESTeam@enec.gov.ae

Disclaimer:

The report contains forward-looking statements, reflecting management's reasonable and current expectations. No assurance can be given that such expectations will prove correct and such statements are subject to risks and uncertainties and should not be relied upon due to ever-changing future events that could materially change the outcome. This document has not been subject to review by an independent third-party assurance provider.

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MESSAGE FROM THE CEO

Message from the CEO



Since our establishment in 2009, ENEC has continued to grow and develop from an energy start-up with a handful of employees into a world-class nuclear energy organization with a workforce of more than 3,000 people. Our large and growing team shares one clear focus – to provide abundant, clean, and reliable electricity from nuclear energy to the United Arab Emirates (UAE).

Nuclear energy has an important role to play in our Nation's future. Energy is essential to drive growth in a rapidly growing economy like ours. Nuclear energy provides the UAE with the opportunity to develop a clean, reliable, and efficient source of electricity, while diversifying our energy portfolio and helping to ensure a secure and sustainable energy future.

It is ENEC's mission to deliver this new source of energy to the UAE. Once fully operational, the Barakah plant will provide around a quarter of the Nation's electricity needs, while in parallel preventing the release of 21 million tons of Carbon Dioxide (CO₂) every year.

Construction of the Barakah Nuclear Energy Plant (BNEP) commenced in 2012 and continues to progress steadily. Every employee and contractor onsite has demonstrated commitment to maintaining the highest standards of quality and safety. In 2015, Barakah became the world's largest nuclear energy construction site with four identical reactors being built simultaneously in one location. Today, the project is successfully transitioning from construction to operations, marking a significant milestone not only in the delivery of the UAE Peaceful Nuclear Energy Program, but also for the UAE and Arab World, as we near the point at which the first nuclear plant commences fuel load and the UAE becomes a peaceful operating Nation. We continue now on our journey to nuclear operating excellence as we work to safely deliver the plant, setting the benchmark for sustainable construction and operations for other countries pursuing nuclear energy.

H.E. Eng. Mohamed Al Hammadi

Chief Executive Officer (CEO)

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ABOUT ENEC

About ENEC

ENEC was established by decree in December 2009 by His Highness Sheikh Khalifa bin Zayed Al Nahyan, President of the United Arab Emirates (UAE), to implement a peaceful nuclear energy program in the UAE in order to address the country's growing demand for electricity while reducing its carbon footprint and diversifying its energy portfolio. ENEC is wholly owned by the Government of Abu Dhabi with the mandate to develop, build, finance, operate, maintain, manage, and own nuclear reactors for the purposes of electricity generation and potentially for desalination.

Under its mandate, ENEC is constructing the UAE's first nuclear energy plant at Barakah, in the Al Dhafra Region of Abu Dhabi – the Barakah Nuclear Energy Plant (BNEP). The BNEP consists of four third-generation Advanced Power Reactor (APR)-1400 nuclear energy generating units, and their associated facilities, with a combined capacity of approximately 5,600 Megawatts (MW), which is expected to meet up to 25% of the UAE's electricity demand once fully operational.



Nuclear Energy Technology

<https://www.enec.gov.ae/barakah-plant/technology/>



VISION

Powering the growth of the UAE.



MISSION

Ensure a safe and sustainable peaceful nuclear energy program.



OUR VALUES

Our mission and vision are guided by our commitment to our six corporate values of Accountability, Teamwork, Safety, Integrity, Trust and Excellence (AT SITE). All our meetings start with a safety moment and conclude with an AT SITE moment based on our corporate values.



ENEC's Values



Accountability

Responsibility and authority are well-defined and clearly understood, and people take ownership for their work, delivering high quality results in a timely manner as efficiently as possible.

Teamwork

Individuals and teams communicate and coordinate their activities within and across organizational boundaries, demonstrating a strong sense of collaboration and cooperation in connection with projects and operational activities.

Safety

Safety is the overriding priority at ENEC. We design and execute world-class safety and security processes and systems that ensure the safety of the public, ENEC employees and the environment.

Integrity

We listen to and respect the opinions, expertise and traditions of others. We are accountable for our work, our business and our actions. We do not tolerate discrimination or harassment.

Trust

We build trust through adhering to nuclear standards, living our values, fulfilling our commitments and promoting open and fact-based communications with our colleagues, our stakeholders and the general public.

Excellence

We actively pursue excellence through the continuous performance improvement of our projects, programs and processes, which drives greater effectiveness and efficiency, in pursuit of outstanding and sustainable results.

3.1 Timeline and Group Structure

مؤسسة الإمارات للطاقة النووية
Emirates Nuclear Energy Corporation



ENEC

Following inception in 2009, ENEC was mandated by the UAE Government to deliver the UAE Peaceful Nuclear Energy Program and develop the cornerstone of the UAE Program; the BNEP – the first nuclear new build project in the Arab World.

In late 2009, KEPCO, South Korea's single largest public power electric utility, was awarded the Prime Contract for the design, construction, and operation of the four reactors at the BNEP. The contract also covers extensive training, human resource development and education programs as the UAE builds the capacity to staff a thriving nuclear energy industry. KEPCO was chosen following an exhaustive year-long evaluation conducted by a team of 75 international experts who evaluated a variety of factors, including safety, deliverability, and commitment to human resource development.

The Barakah plant is more than just an energy plant, it is an engine of growth for the Nation. Through the development of the BNEP, we are supporting the diversification of the UAE's energy portfolio by providing clean electricity to meet the country's domestic energy demand, creating high value careers for UAE Nationals, and developing a new high-tech local nuclear industry. The BNEP supports the Nation's efforts towards sustainable economic growth and environmental protection.

In October 2016, we entered into a JV with KEPCO, launching Nawah and Barakah One Company. Through the JV, KEPCO became a minority shareholder of Nawah and Barakah One Company, holding 18% in each subsidiary, while ENEC maintains a majority share of 82% in the two subsidiaries.

In 2019, Nawah signed a Long-Term Maintenance Services Agreement (LTMSA) with Korea Hydro & Nuclear Power (KHNP), supported by KEPCO Plant Service & Engineering (KPS). Under the scope of the signed LTMSA contract, KHNP and KPS provide maintenance services to support routine and outage maintenance activities of the four APR1400 Units at the BNEP, under the leadership of Nawah and in strict accordance with the UAE's nuclear energy regulator's quality and safety standards.

Nawah also signed a Maintenance Service Agreement (MSA) with Doosan Heavy Industries & Construction (DHIC), a subsidiary of Doosan Group. Under the agreement, DHIC provides Nawah with a range of maintenance services and qualified manpower to support routine and outage maintenance activities across the four 1400 MW APR1400 Units at the BNEP, located in the Al Dhafra region of Abu Dhabi Emirate.

In 2019, the first batch of Senior Reactor Operators (SROs) and Reactor Operators (ROs) attained the Federal Authority for Nuclear Regulation (FANR) certification in preparation to operate Unit 1 of the BNEP.



ENEC Prime Contractor
<https://www.enec.gov.ae/barakah-plant/prime-contractor/>

شركة نواة للطاقة
Nawah Energy Company



Nawah Energy Company

Established in 2016, Nawah is mandated to operate and maintain Units 1 to 4 at the BNEP. As the world's newest nuclear operator, Nawah will harness the power of nuclear energy to provide a safe, reliable, clean and sustainable supply of low-carbon electricity to contribute to the UAE's social and economic development and enhance the quality of life for generations to come.



Nawah Energy Company:
www.nawah.ae/en/

شركة براكاة الأولى ش.م.خ
Barakah One Company PJSC



Barakah One Company

Barakah One Company was established in 2016 and is responsible for managing the commercial interests of the BNEP, securing project financing from institutional and commercial lenders, and receiving funds for the electricity generated from Units 1 to 4 in Barakah. In November 2016, Barakah One Company signed the first nuclear energy power purchase agreement with the Emirates Water and Electricity Company (EWEC; formerly the Abu Dhabi Water and Electricity Company) for the purchase of electricity generated at the BNEP. The agreement establishes the contractual framework between the two entities for nuclear-generated clean, efficient, and reliable electricity.



3.2 Enterprise Strategy 2020-2024

In 2019, we launched the Enterprise Strategy 2020-2024 to deliver the UAE Peaceful Nuclear Energy Program in a strategic, systematic manner.



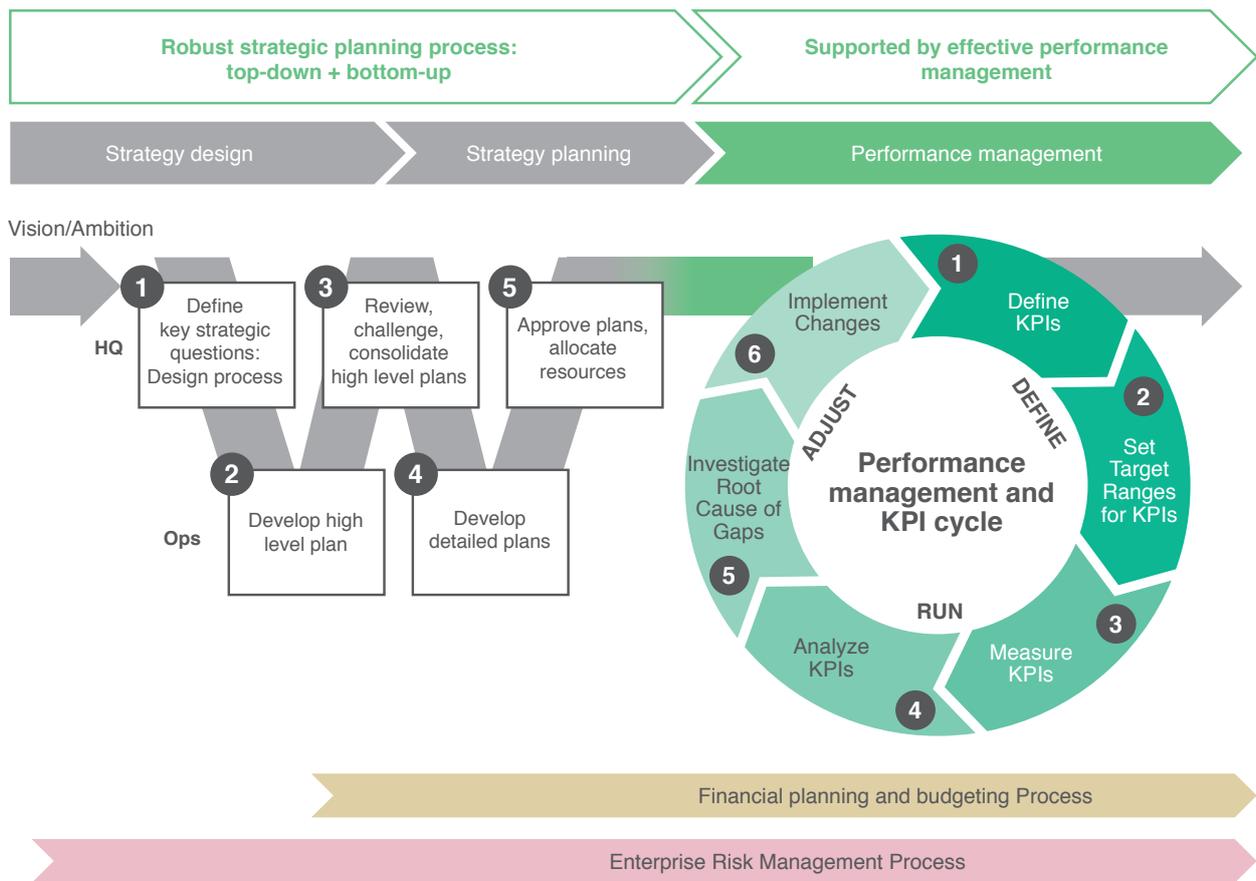
Strategic Themes have been developed that encapsulate leadership consensus on four key priorities of focus:

1. Ensure Safe Delivery of the BNEP – Efficient generation of safe, reliable, and clean energy from all Units by 2024 and deliver to the UAE power grid
2. Security of Supply – Fit-for-purpose value chain for UAE nuclear sector that secures timely, cost efficient and high-quality products and services
3. Our People – Timely acquisition, development and retention of nuclear professionals whilst supporting the Emiratization program
4. Our Operating Culture – Embed a unique operating culture that enables a high performing multi-cultural team, living our AT SITE values



ENEC Enterprise Performance Management Framework

The ENEC Enterprise Performance Management Framework was developed to promote a clear governance structure that links to the broader strategic design and planning process. It provides a robust strategic planning process that is supported by effective performance management. The framework is aligned with the financial planning and budgeting process as well as the Enterprise Risk Management (ERM) process. For more information on the ENEC ERM, refer to Section 3.3 as per index Governance Management.



UAE Nuclear Energy Program

By the end of 2019, we celebrated the achievement of a historic milestone in the development of the BNEP, with the completion of all main concrete works and heavy equipment lifting for the four nuclear reactor units being built in the Al Dhafra Region of Abu Dhabi. Unit 1 is now 100% complete, while overall progress of the four Units was over 90.4% as of year-end. Final operational readiness preparations and assessments for Unit 1 were underway in alignment with all standards and requirements, prior to receipt of the Operating License to Nawah from FANR, the UAE's independent nuclear regulator, in order to begin production and supply of electricity to the UAE grid.

Unit	% Completion 2019		2019 Progress Update
	Planned	Actual	
Unit 1	99.25%	Construction Complete	<ul style="list-style-type: none"> Completed the FANR Integrated Demonstration of Organizational Readiness (IDOR) Inspections Underwent the World Association of Nuclear Operators (WANO) Pre-start Up Review (PSUR) assessment First batch of SRO and RO became certified and licensed by FANR for Unit 1 operations.
Unit 2	97.52%	95.77%	<ul style="list-style-type: none"> Completion of the Structural Integrity Test (SIT) and Integrated Leak Rate Test (ILRT).
Unit 3	93.46%	92%	<ul style="list-style-type: none"> Energization of the Main Power Transformer and Gas Insulated Bus (GIB).
Unit 4	82.02%	83%	-



Construction Updates:

<https://www.enec.gov.ae/barakah-plant/construction-program/>

Operating and Regulatory Licenses

We are working to ensure the highest standards of quality and transparency are implemented throughout the construction and operation of the BNEP. All of our activities are conducted under the strict regulation of FANR with oversight from the National Safety Review Board (NSRB). In addition, senior nuclear experts from the International Atomic Energy Agency (IAEA) and the WANO continue to conduct voluntary and independent assessments of the robustness of the UAE Peaceful Nuclear Energy Program. Our activities, both construction and operation, are aligned with the Environment Agency – Abu Dhabi (EAD) requirements and conditions which are regularly audited and reevaluated.

In March 2015, we submitted the Operating License Application (OLA) for Units 1 and 2 on behalf of Nawah. The FANR review is in progress. In March 2017, Nawah successfully submitted the OLA for Units 3 and 4. It was anticipated as of year-end that the receipt of the Operating License for Unit 1 would take place in early 2020.



Regulatory filings

<https://www.enec.gov.ae/regulation/regulation-and-review/regulatory-licensing/>

3.3 Governance and Management

Robust governance and management structures are essential to ENEC's ability to manage risk and maintain accountability. Led by the ENEC Board of Directors, ENEC continues to strive for excellence in governance by aligning its processes, procedures and performance with the requirements of the World Association of Nuclear Operators (WANO) and the Institute of Nuclear Power Operations (INPO).



Excellence in Governance:

www.enec.gov.ae/about-us/leadership-and-governance/governance/

Board of Directors

The Board of Directors of ENEC is the supreme authority of the corporation entrusted by Law No. 21 of 2009, with full authority to govern and oversee ENEC's activities, and otherwise has the powers, objectives and responsibilities set forth in Law No. 21 of 2009.

The Abu Dhabi Executive Council Resolution No. 2 of 2018 has appointed H.E. Khaldoon Khalifa Al Mubarak as Chairman of the Board along with seven board members .

Board members are appointed based on their expertise including their understanding of the unique safety and security responsibilities that come with being a Board Member of ENEC. The Board is a collegial body, but members can act critically and independently of one another when necessary, especially when such independence serves to enhance nuclear safety, security, and reliability.

In March 2019, following the Executive Council Resolution No. 73 of 2019, His Excellency Mohamed Hassan Al Suwaidi was appointed as the ninth Board Member.

As of 2019, the total number of ENEC board members were nine, with 67% aged between 30 and 50 years, and the remainder over the age of 50. In terms of nationality, the board constitutes of 78% UAE Nationals and 22% non-UAE Nationals.



ENEC Board of Directors

www.enec.gov.ae/about-us/leadership-and-governance/board-of-directors/

As per the Executive Council Resolution No. 190 of 2017 issued on 27th December of 2017, the Board of Directors of the joint venture companies (Barakah One Company – Private Joint Stock Company, and Nawah Energy Company – Private Joint Stock Company) were unified with the Board of Directors of ENEC.

Board of Directors



His Excellency
Khaldoon Khalifa Al Mubarak
Chairman, Board of Directors



His Excellency
Eng. Suhail Mohamed Faraj Al Mazrouei
UAE Minister of Energy and Industry
Vice-Chairman, Board of Directors



Khaled Abdulla Al Qubaisi
Member, Board of Directors



Saeed Fadhel Al Mazrouei
Member, Board of Directors



Mohammed Hamdan Al Falahi
Member, Board of Directors



Mohamed Hassan Al Suwaidi
Member, Board of Directors



Eng. Awaidha Murshed Al Marar
Member, Board of Directors



David V. Scott
Member, Board of Directors



Michael J. Wallace
Member, Board of Directors

The Board has three standing committees that oversee the corporation's activities and give clear direction. Each committee has a written charter detailing its responsibilities, which is approved by the whole Board.

Board committee	Description	Sustainability Issues Addressed
Committee on Nuclear Power (CNP)	CNP oversees and advises the Board of Directors on issues of nuclear safety, security, reliability, regulation, and environmental matters that relate to the construction and eventual operation of ENEC's nuclear units. The CNP consists of three members of the Board along with external members who have extensive prior nuclear industry experience.	<ul style="list-style-type: none"> • Health and safety • Security • Quality and reliability • Environmental management
Audit, Risk and Compliance Committee (ARCC)	ARCC assists the Board in the discharge of its responsibilities overseeing Audit, Governance, Risk Management and Compliance functions. The ARCC is composed of four members and is chaired by the Board Member Mohammed Hamdan Al Falahi. One member of the committee is independent from the ENEC Board of Directors (not an ENEC Board of Directors member).	<ul style="list-style-type: none"> • Health and safety • Governance and accountability • Risk management • Ethics • Regulatory compliance
Human Capital Committee (HCC)	HCC, comprised of at least two Board members, reviews and advises the Board of Directors on issues regarding human resources and staffing, compensation and senior executive succession planning.	<ul style="list-style-type: none"> • Resourcing and succession • Emiratization • Training and development

Auditing and Accountability

We regularly report our financial performance, and the performance of our subsidiaries, to the General Secretariat of the Executive Council (GSEC), the Department of Finance (DoF), Abu Dhabi Development Holding Company (ADDH; now known as ADQ) and the Department of Energy (DoE). To ensure timely, meaningful, and reliable disclosures of our financial performance, the following mechanisms are in place:

- **Statutory Audit:** conducted by the Abu Dhabi Accountability Authority (ADAA), which audits the activities of our internal auditors to ensure compliance.
- **Internal Audit:** regular reviews and audits of our financial and non-financial systems, processes, and results.
- **External Audit:** carried out annually by an independent third-party auditor, with the findings reported directly to the ENEC Board of Directors.
- **Occupational Safety and Health Audit:** carried out in accordance with the regulatory requirement of Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) as well as external third parties.

Internal Audit

Our internal audit function is well established and acts as an assurance provider to the Board of Directors, reporting directly to the Board via the ARCC. It conducts annual risk assessments covering all activities including projects, schedule, performance, finance, Information and Communications Technology (ICT), human resources and any audit-related issues that arise on an annual basis. The ENEC internal audit function adheres to the standards of The Institute of Internal Auditors (IIA) and the requirements set by ADAA and is subject to periodic assessments by ADAA.

This year, we launched the Combined Assurance Framework (CAF) to provide a means for the internal audit function and other assurance providers to work together to align their assurance processes such that the audit committee and senior management are given insights on governance, risk management and control arrangement from a comprehensive holistic perspective. CAF provides a common view of risks and delivers oversight that is more effective.

Business Principles, Ethics and Compliance

We strive to continuously uphold the highest standards of ethical conduct and integrity, to ensure the safety and long-term success of the UAE Peaceful Nuclear Energy Program.

To achieve this, we established and implemented a robust set of standards, principles and model behaviors, with the goal of creating and sustaining a corporate environment in which the affairs of ENEC and our subsidiaries are conducted in a fair and transparent manner, free from any acts of fraud or misconduct. We require all employees, contractors, business partners and representatives to act in accordance with the highest standards of personal and professional integrity in all aspects of their activities, and to comply with all applicable laws, rules, regulations, and ENEC standards, policies and procedures.

The ENEC Code of General Business Principles and Ethics (The Code), updated in 2019 (Revision 4), frames the ethical and legal practices that we require all employees and contractors to uphold. The Code covers a wide range of topics including fraud, anti-corruption, and misconduct. All staff are required to read and acknowledge The Code on an annual basis, and it is a mandatory reading for all new hires. Throughout the year, compliance and anti-fraud training and awareness sessions are provided to employees with the support of senior management. These sessions continue monthly, across all functions. This year, The Code was revised to incorporate the Nawah Disclosure Management System, which automates the process of Code-related declaration submissions.

Nawah follows its own Code of General Business Principles Ethics and has established its own Business Ethics and Compliance Foundation policies, emphasizing the legal obligation to comply with relevant UAE and international anti-corruption laws. It covers anti-fraud, bribery and corruption, conflict of interest, non-retaliation, and business courtesy.

We have a zero-tolerance approach to all forms of fraud or misconduct. No incidents of bribery or corruption were detected or reported in 2019.

This year, we launched two compliance and ethics campaigns, using quizzes, posters, and newsletters. The campaigns covered topics regarding anti-bribery, code of ethics awareness, conflict of interest, retaliation, fraud, respecting others, and harassment.

Whistleblowing

We are committed to creating and sustaining a corporate environment by adopting the highest standards of professionalism, honesty and integrity, to ensure that our business is conducted in a fair and transparent manner and that it is free from any acts of fraud or misconduct.

We established an Anti-Fraud and Misconduct Program (AFMP) that supports prevention, detection, investigation and response towards fraud or misconduct incidents, and to instill honesty and ethical behavior in ENEC's culture and environment. The AFMP procedure provides a framework to promote responsible and secure whistleblowing. It serves to receive and address any concern or complaint regarding fraud and/ or misconduct.

The AFMP comprises of four global reporting channels for reporting suspected incidents of fraud, fraudulent activity, or misconduct. Whistle-blowers can choose to stay anonymous through reporting via the following channels:

- i. Toll free hotline available in multiple languages 24/7 across several countries.
- ii. Dedicated email address for reporting concerns.
- iii. Dedicated Web Portal – Internal and External.
- iv. Provision to submit verbal/ written complaints using AFMP Reporting Forms.

The AFMP highlights the significance associated with protection of whistle-blowers. It condemns and addresses any acts of retaliation against whistle-blowers for reporting complaints in good faith.

In 2019, we conducted multiple awareness sessions to create AFMP awareness and to instill honesty and ethical behavior in our culture and environment.



Online Whistleblowing Mechanism:

www.enec.gov.ae/about-us/leadership-and-governance/reporting/

Compliance

We uphold the highest standards of business compliance and require our employees and contractors to comply with ethical business practices as per The Code. In 2019, we received no monetary or non-monetary fines or sanctions for non-compliance.



Risk Management Approach

The ENEC ERM Integrated Framework is designed to ensure that risks are proactively identified, assessed, and managed in a prioritized, consistent, effective, and efficient manner at all levels to support the safe, effective, and efficient delivery of the BNEP project.

To ensure we adhere to industry best practices in risk management, our ERM is aligned with the International Organization for Standardization (ISO) 31000 Risk Management principles, the Committee of Sponsoring Organizations (COSO) ERM standards and frameworks as well as the FANR requirements and the ADAA.

The ERM covers elements of environment and sustainability, through a threat and opportunity assessment with clearly defined environmental assessment for land-based and aquatic ecosystems, as well as atmospheric and waste emissions. All environmental-related risks are highlighted in an Environmental Social Action Plan status update report, which is shared with financial lenders to demonstrate ENEC's commitment to environment and sustainability. For more information, refer to Section 6.5 on Environmental Management.

Currently, we are in the process of updating the ERM to cover a wider range of impact assessments as we are moving away from the construction phase and entering the operation stage at Barakah.



Risk Management:

www.enec.gov.ae/about-us/leadership-and-governance/risk-management/

Business Excellence

Since the inception of ENEC, our Board of Directors have focused on achieving the highest level of business excellence. To meet this goal, we established a Corporate Excellence program, which integrates the highest standards of business excellence throughout the organization. The program fosters success by creating a transparent, friendly environment for employees, maintaining up to date policies, procedures and processes that are aligned with industry best-practices, conducting regular benchmarking, sharing lessons learned and facilitating communication both internally and externally to nurture mutually beneficial working relationships.



Business Excellence:

www.enec.gov.ae/about-us/leadership-and-governance/business-excellence/

To reinforce a culture of performance excellence, we confer our own internal excellence awards – the Barakah Excellence Awards. This motivates departments, project teams, and individuals to continuously strive for the highest standards in everything they do. The third edition of the award was held in early 2019.

Barakah Excellence Awards

The Barakah Excellence Awards is an internal recognition program inspired by Abu Dhabi Awards for Excellence in Government Performance (ADAEP), which was launched in 2014. The Awards form a part of our continuous efforts to inspire excellence in performance at all levels and across all our divisions and show appreciation for outstanding employees. Winners of the third edition of the Barakah Excellence Awards were announced during a special ceremony.



“The Barakah Excellence Awards exist to recognize our employees’ hard work and dedication to meeting the highest international standards for operational efficiency, management, quality, and performance.

We are promoting and applying excellence concepts according to national and international best practices as we strive to generate clean, efficient, and reliable energy to power the future growth and prosperity of the UAE.”

H.E. Eng. Mohamed Al Hammadi, Chief Executive Officer of ENEC

Memberships

ENEC is a member of the following organizations:



WANO

World Association of Nuclear Operators (WANO)

EPRI | ELECTRIC POWER
RESEARCH INSTITUTE

Electric Power Research Institute (EPRI)



IAEA

International Atomic Energy Agency

International Atomic Energy Agency (IAEA)

INPO[®]

Institute of Nuclear Power Operations (INPO)



مجموعة أبو ظبي للاستدامة
ABU DHABI SUSTAINABILITY GROUP

Abu Dhabi Sustainability Group (ADSG)



Women in Nuclear (WiN)

3.4 Awards and Recognition

ENEC received the following awards and recognitions in 2019:



Gold Winner for Best Energy or Natural Resources Campaign, Middle East Public Relations Association (MEPRA) Awards

Silver Winner for Best Corporate Reputation Campaign, MEPR Awards

4

EMBEDDING SUSTAINABILITY

4.1 Sustainability Management

Our sustainability strategy is to deliver safe, clean, efficient, and reliable energy to the UAE while supporting economic growth by maximizing our economic footprint and creating value for citizens by empowering our people.

All sustainability aspects that were identified as material are addressed from the construction phase through to plant operations, until the ultimate decommissioning of the nuclear energy plant.



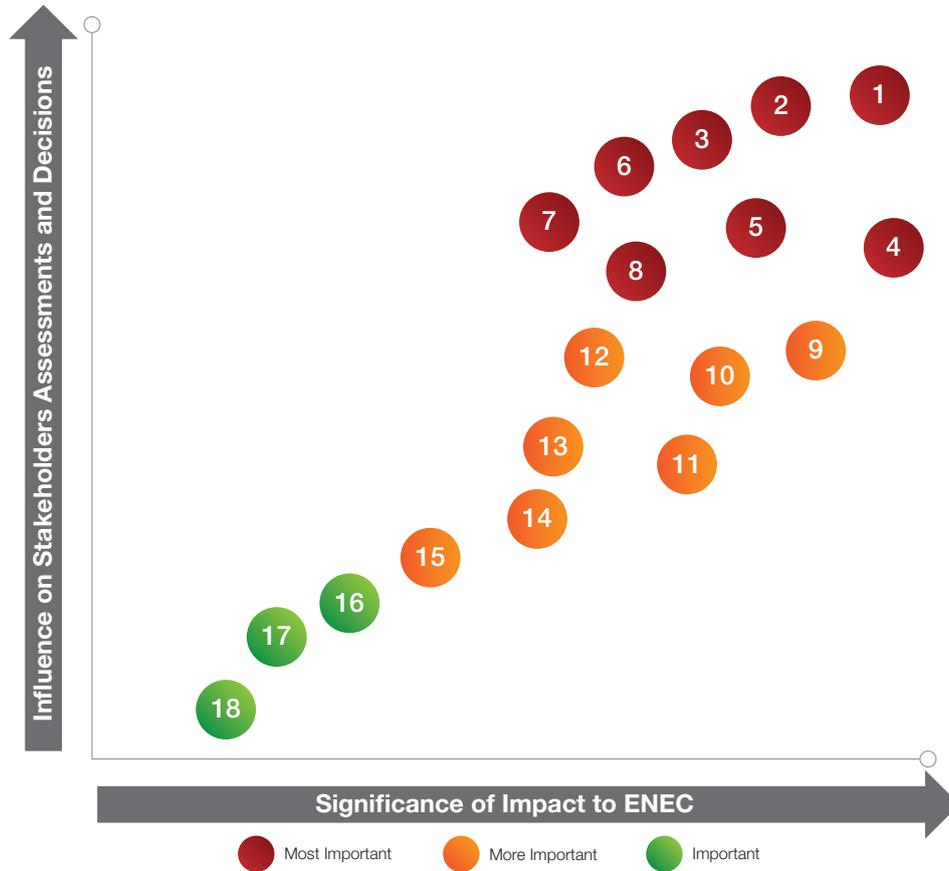
Our Sustainability Performance Management Procedure is guiding the implementation of the sustainability program and defining the roles and responsibilities to:

- Establish sustainability objectives, targets, and programs in alignment with our mission, vision, and strategic objectives.
- Regularly monitor and measure whether our activities, products and services have a potentially significant impact on sustainability and stakeholders.
- Monitor the performance of our sustainability initiatives.
- Ensure compliance with the Abu Dhabi Sustainability Group (ADSG) membership commitments.

Our Sustainability and Corporate Social Responsibility (CSR) Working Group, which is comprised of members from all major functions within ENEC, is leading the implementation of sustainability across the organization. The CSR Working Group meets quarterly to review progress, set targets, identify initiatives and KPIs, and oversee the sustainability reporting process.

Materiality

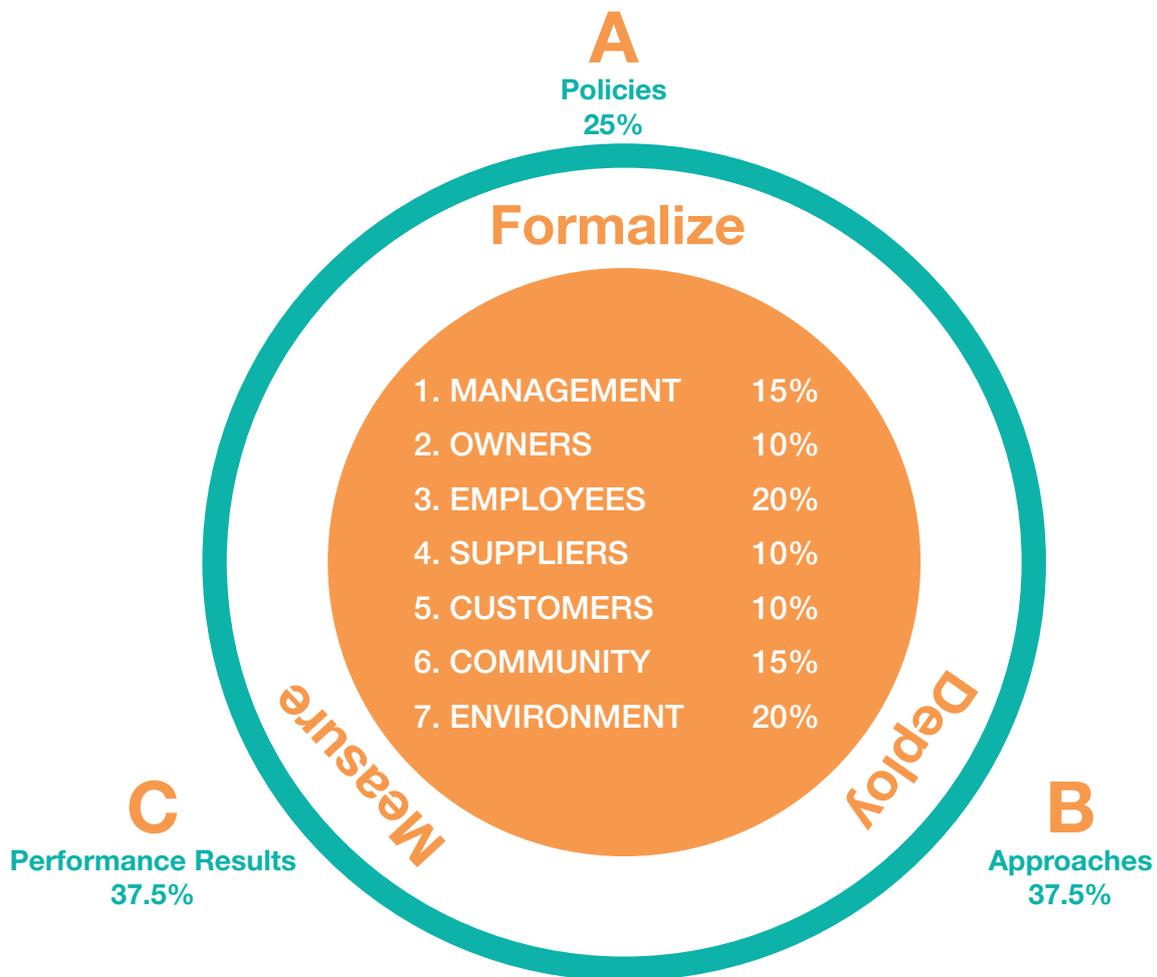
We are committed to prioritizing the management of issues that are most relevant to the creation of long-term value for all of our stakeholders. We have identified and prioritized these issues through a materiality assessment process aligned with the UAE Vision 2021, Abu Dhabi Economic Vision 2030, the United Nations Sustainable Development Goals (UN SDGs), Sustainability Accounting Standards Board (SASB), and the GRI standards.



#	Material Issues	Boundaries	Priority
1	Health and safety of employees, contractors, and community	ENEC & Community	Most important
2	Environment management & compliance	ENEC, KEPCO and subcontractors	Most important
3	Exposure to nuclear radiation (employees, contractors, and the community)	ENEC & Community	Most important
4	Emergency preparedness	ENEC & Community	Most important
5	Operational efficiency	ENEC, KEPCO and subcontractors	Most important
6	Security of fuel supply	ENEC	Most important
7	Localization and security of the supply chain	ENEC	Most important
8	Waste management	ENEC	Most important
9	Engagement, employment, and development of the local community	ENEC	More important
10	Cybersecurity and data protection	ENEC	More important
11	Talent acquisition, training, and growth	ENEC	More important
12	Anti-corruption and ethical business practices	ENEC	More important
13	Workforce and contractor grievances	ENEC, KEPCO and subcontractors	More important
14	Direct and indirect economic contribution	ENEC	More important
15	Responsible supply chain	ENEC	More important
16	Female representation and non-discrimination	ENEC	Important
17	Future financial planning	ENEC	Important
18	Research and development	ENEC	Important

Alignment with National and International Sustainability Standards

We are committed to implementing sustainability management according to international best practice and aligning our activities with local and global initiatives, such as the AD SG and the UN SDGs.



“The development of peaceful nuclear energy is supporting the diversification of the UAE’s economy and energy mix, while also helping our Nation meet its commitments under the Paris Climate Change Agreement. Supplying the UAE with clean and reliable electricity, developing a local industrial supply chain and ensuring the sustainability of the Barakah Plant are three of our key goals for the future. It is of paramount importance to ENEC that we operate safely and in an environmentally conscious manner.”

H.E. Eng. Mohamed Al Hammadi, Chief Executive Officer of ENEC

Sustainability Maturity

To objectively assess our implementation of sustainability management, our CSR Working Group uses the Sustainability Maturity Assessment Tool (SMAT) deployed by the AD SG under the leadership of the EAD.

The tool has over 150 criteria that assess sustainability policies, approaches and performance across seven areas, including management, owners, employees, suppliers, customers, community, and environment. We complete the responses to the criteria and then verify them by external third-party sustainability experts.

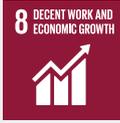
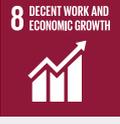
The results of the SMAT show that our sustainability program has continued to mature year-on-year, rising over 10% since last year.

Sustainability Maturity Index (%)	2017	2018	2019
	67.9	70.4	77.8

Contribution to the UN Sustainable Development Goals (SDGs)

Our sustainability strategy helps us track our contribution to the UN SDGs. We hold a very special role in the UAE's contribution to the SDGs, specifically in support of 'Affordable and Clean Energy' (SDG 7) by 'instituting a comprehensive civil nuclear energy program which includes building four new nuclear reactors with an estimated capacity to provide up to 25% of the UAE's electricity needs'.

Our sustainability pillars are aligned with the UN SDGs. More information on our contribution to the specific targets of each SDG is provided within the relevant chapters of this report.

Sustainability Value Pillar	Sustainability Aspect	UN SDG Addressed
Our Economic Footprint	Financial Responsibility Supply Chain Management Economic Development	  
Safe, Clean, Efficient and Reliable Energy	Health, Safety, Environment and Sustainability Management System (HSEMS) Health, Safety and Security, Quality, Efficiency and Reliability Environmental Management	     
Empowering our People	Our Workforce National Talent Development Knowledge Creation	  



4.2 Stakeholder Engagement

Effective engagement with all internal and external stakeholders is fundamental to the successful implementation of the UAE Peaceful Nuclear Energy Program. We focus on achieving four objectives as part of our approach to stakeholder engagement:

1. Ensure ongoing education about nuclear energy as a source of reliable, clean, and efficient electricity.
2. Increase awareness and understanding about the UAE Peaceful Nuclear Energy Program at every stage of its development.
3. Ensure our stakeholders have the opportunity to provide input on their needs and expectations of the program.
4. Continue to listen and respond to stakeholder feedback, issues, and concerns through genuine two-way communication.

We have a large and diverse stakeholder base, which includes a wide variety of organizations and individuals. Appendix B of this report outlines our stakeholder groups in detail and provides more information about how we interact with them.

The External Stakeholders Working Group (ESWG)

The External Stakeholders Working Group (ESWG) is established and led by our Communications Division. We developed a stakeholder map that incorporates and categorizes key external stakeholders, based on their influences on ENEC and our subsidiaries' operations and business. We have also identified a specific group of strategically important stakeholders who are vital to the success of the UAE Peaceful Nuclear Energy Program.

The ESWG was established to enhance and build on relationships, and to assign clear organizational responsibilities and focal points for direct liaison to streamline communications.

The key objectives of the ESWG are to:

1. Increase the executive team's awareness regarding key updates, issues, and support interactions with the strategic external stakeholders in order to enable effective decision-making.

2. Ensure smooth coordination between ENEC, subsidiaries, and stakeholders. Support the effective management of the stakeholders in order to ensure that their expectations and interests are considered in the planning and implementation of policies and processes, with the aim of enhancing stakeholder satisfaction and engagement, while ensuring that our safety, security, quality, environmental and business objectives are not compromised.
3. Align ENEC and subsidiaries' plans and staff in engaging and communicating with stakeholders.

We evaluate stakeholder satisfaction through annual surveys. Results of our Stakeholders Satisfaction Survey conducted in 2019 showed 87% satisfaction level while dealing with the UAE Peaceful Nuclear Energy Program, with an increase of 4.3% in comparison with 2018 results.



Stakeholder Networking Forum

This year, we hosted a Stakeholder Networking Forum, bringing together representatives from more than 30 Governmental entities from across the UAE. Stakeholders learned about the latest developments of the UAE Peaceful Nuclear Energy Program, as well as the latest progress updates on operational readiness preparations by Nawah for Unit 1 of the BNEP. This event was in line with our commitment to developing the BNEP in accordance with the highest international standards of quality and safety, while maintaining a high level of stakeholder cooperation and alignment.

UAE-Korea High-level Consultation on Nuclear Cooperation Committee:

In March 2018, the UAE, and the Republic of Korea (ROK) leaders agreed to establish a consultation body to expand and deepen cooperation in the peaceful uses of nuclear energy. Allowing the consultation to be strategic and comprehensive, the two countries decided to name it as the ROK-UAE High-level Consultation on Nuclear Cooperation. The consultation body's aim is to strengthen ties and build stronger relationships between the two nations to create platform for bonding, communication, and alignment within the nuclear field.

The first meeting for the consultation body was held in November 2018 in South Korea. During this meeting, it was agreed that both parties will focus strengthening cooperation in research and development.

In November 2019, the second plenary meeting was held for the consultation body. At the meeting, the two sides agreed that cooperation in nuclear energy will evolve and develop into a core pillar, thereby promoting a special strategic partnership between the two countries.

Public Engagement and Perceptions

We have made it a priority to regularly host public forums as part of our ongoing commitment to engage with the local community and increase awareness and understanding of the UAE Peaceful Nuclear Energy Program and its benefits. Since 2010, we held a total of 35 public forums in the Al Dhafra region and across the UAE, attracting more than 8,000 attendees. Led by the CEO, the forums are open to all members of the community. They provide a transparent and interactive platform to ask questions about the program as well as to gain a deeper insight into different aspects such as the economic and social benefits the plant is already bringing to the UAE. They also provide updates on the progress being made at the BNEP.

This year, we hosted a public forum in the Al Dhafra region, attended by stakeholders such as schools, universities, and corporate attendees. The forum highlighted the strategic nature and national significance of the UAE Peaceful Nuclear Energy Program. Engineers provided updates on the progress being made at the BNEP, where preparations are underway to safely commence Unit 1 fuel load in early 2020 pending regulatory approval. More than 300 residents, students and stakeholders attended the public forum, which was held at the Baynounah Educational Complex in Madinat Zayed, Abu Dhabi.

Each month, we highlight the progress of the BNEP to stakeholders via an e-newsletter called “Nashra”, which provides the latest news, events, and construction updates.

We also continue to measure general public perceptions towards nuclear energy through an independent national poll. This year, we undertook face-to-face engagements with 1,063 residents (433 UAE Nationals and 630 expatriates) across the UAE.

Results show the UAE public strongly supports the use of peaceful nuclear energy, with the following key findings:

- 91% of residents are in favor of using nuclear energy for generating electricity.
- 91% of residents stated that peaceful nuclear energy is important for the UAE to meet its future energy requirements.
- 90% residents agreed that safety and security is the over-riding priority of the UAE Peaceful Nuclear Energy Program.
- 82% of residents believe that the benefits of nuclear energy outweigh the risks.
- 87% of residents believe that the UAE Peaceful Nuclear Energy Program will serve as a model to other countries.
- 82% of residents believe the UAE Peaceful Nuclear Energy Program has strong international support.
- 91% of the respondents agree that the UAE Peaceful Nuclear Energy Program is using the latest technology and will create jobs and boost the country’s economy.

Global figures from similar polls conducted in other countries demonstrate that the UAE Peaceful Nuclear Energy Program enjoys the highest acceptance levels in the world.

International Engagement

We work closely with industry bodies and attend both local and international events, to update international stakeholders on progress at Barakah. Key engagements during 2019 include:

- In September 2019, we attended the 63rd Annual IAEA General Conference in Vienna, Austria. During the conference, ENEC signed a MoU with the French National Radioactive Waste Management Agency (Andra); a governmental agency specialized in providing management solutions for radioactive waste. This new collaboration comes as part of our efforts to develop a long-term strategy for waste management that is aligned with the best international practices.
- In September 2019, we participated in the 24th edition of the World Energy Congress to showcase the positive impact that nuclear energy has economically, socially, and environmentally. We highlighted the environmental benefits that nuclear energy will bring, as only widespread source of base load electricity that is almost carbon emissions free.
- We renewed our MoU on exploring potential opportunities for collaboration in the field of nuclear fuel cycle management, with TENEX, a global supplier of uranium products with 60 years of experience in innovative nuclear fuel cycle solutions. The new MoU was signed in September 2019 during the 24th World Energy Congress at ADNEC in Abu Dhabi
- We participated (along with subsidiaries Nawah and Barakah One Company) in the 12th World Future Energy Summit (WFES) 2019, which was held during the Abu Dhabi Sustainability Week at the Abu Dhabi National Exhibition Center (ADNEC). This event marked our 7th participation in WFES and was an opportunity to demonstrate our commitment to sustainability and emphasize the importance to operate in a in an environmentally responsible manner.



International Engagements:
<https://www.enec.gov.ae/news/latest-news/2019/>



4.3 The Year of Tolerance

During the World Tolerance Summit 2018, His Highness Sheikh Khalifa bin Zayed Al Nahyan, the President of the UAE, has declared 2019 as the Year of Tolerance. This underlines the importance of tolerance and promotes values of tolerance, dialogue, coexistence, and openness to different cultures to positively reflect on society as a whole.

At ENEC, marking the Year of Tolerance was reflected through our approach, which contributes to women empowerment in the work environment and promotes diversity by developing a multi-cultural workforce from diverse nationalities and backgrounds.

The Ghaf tree was the selected symbol for the Year of Tolerance due to the significance of the tree as an indigenous tree which is protected under the UAE laws and regulations. This year, the Nawah Environmental and Sustainability team and with the Women in Nuclear (WIN) team collaborated to plant 74 Ghaf trees alongside the road leading to the Guesthouse in Barakah. This year, we also rescued an endangered Green Turtle from the beach at the BNEP and named it Tasamuh – Arabic for tolerance. Tasamuh was checked, treated, and released back into its natural habitat.



5

OUR ECONOMIC FOOTPRINT



We are supporting the Nation's economic growth and diversification by investing responsibly in a local peaceful nuclear energy industry that can contribute to national, regional, and international nuclear supply chains.

5.1 Overview

The UAE needs electricity to maintain its rapid economic growth. As the Nation's economy grows, the UAE requires more electricity to power and meet the rising energy demand of continuously increasing population. The UAE Peaceful Nuclear Energy Program is a multibillion-dollar investment in economic and industrial growth and diversification. This strategic and responsible deployment of government funds will deliver large amounts of reliable energy for the future growth of the country and it is already delivering highly skilled jobs, new business opportunities for companies of all types and sizes, and investment in the Al Dhafra region of Abu Dhabi. As the first nuclear energy plant in the region, and with other countries now looking to follow the UAE's lead, the BNEP will continue to deliver value well into the future as UAE companies and talent compete for business in the regional and international nuclear energy sector.

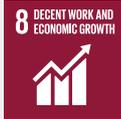
Sustainability Objectives

Our economic development sustainability objectives include:

- 1 Financial responsibility – deliver cost-effective power through a combination of financial responsibility and effective operational execution.
- 2 Supply chain management – develop a supply chain that is increasingly locally based and meets the environmental, social, and sustainability standards of the nuclear industry.
- 3 Economic development – become a driving force behind the UAE's investment plan, providing business development opportunities and contributing to the UAE's Gross Domestic Product (GDP).

SDG Targets Addressed

By delivering on these sustainability objectives, we are contributing to the achievement of the following SDG targets:

Sustainability Value Pillar	Sustainability Aspect	UN SDG Addressed
Our Economic Footprint	Financial Responsibility Supply Chain Management Economic Development	  

UN SDGs Addressed	
	<p>Diversify, innovate, and upgrade for economic productivity Achieve higher levels of economic productivity through diversification, technological upgrading, and innovation, including through a focus on high value added and labor-intensive sectors.</p>
	<p>Promote policies to support job creation and growing enterprises Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, and innovation, and encourage the formalization and growth of micro, small- and medium-sized enterprises, including through access to financial services.</p>
	<p>Promote inclusive and sustainable industrialization Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.</p>
	<p>Promote sustainable public procurement practices Promote public procurement practices that are sustainable, in accordance with national policies and priorities.</p>

5.2 Financial Responsibility

We have developed the necessary policies and procedures to conduct business in an accountable and efficient manner to ensure the UAE Peaceful Nuclear Energy Program makes optimal use of government resources.

Measures are in place to ensure funds are spent efficiently and within budget. Expenditures are monitored closely, and all expenses are approved by authorized personnel per the appropriate Delegation of Authority (DOA) before being committed.

Payments are approved based on the limit authorized in the respective Board-approved DOA, which is reviewed and updated periodically.

Project Financing

We established a comprehensive, sound financial structure that has allowed for the construction of the UAE's first nuclear energy plant and infrastructure to progress towards the delivery of Units 1 to 4. The overall project financing requirements are estimated at United States Dollar (USD) 27.75 billion:

- USD 18.2 billion comes from a direct loan by the Government of Abu Dhabi.
- USD 2.5 billion has been provided as a direct loan from the Export–Import Bank of Korea (KEXIM).
- USD 250 million was generated through loan agreements with five local and international commercial banks.
- A total of USD 6.8 billion in equity commitments were made for the establishment of the Barakah One Company in exchange for equity interest in the company, shared between ENEC (82%) and KEPCO (18%).

Budgeting and Spending

The BNEP's relatively short construction period, in comparison to most nuclear energy plants, makes it economically competitive and sustainable. At ENEC, we manage the overall project expenditure, including both subsidiaries, Nawah and Barakah One Company.

Project Expenditure			
Year	2017	2018*	2019*
Total capital expenditure (USD millions)	2,710	2,299	1,951
Total operating expenditure (USD millions)	659	913	1,199

*Values have been restated

Capital Expenditure (CAPEX) represents payments made towards our USD 20 billion contractual agreement with the Prime Contractor (KEPCO). Between 2018 and 2019, our CAPEX decreased by 15% as a reflection of the winding down of construction activities as we are nearing overall completion.

Operating Expenditure (OPEX) covers the costs of our employees and service contractors' communication, administration, and capacity building, including the ENEC Energy Pioneers scholarship program. Between 2018 and 2019, OPEX increased by 31%, mainly a reflection of the rapid growth of Nawah as we are entering the operational phase for Unit 1.

5.3 Supply Chain Management

Our supply chain is responsible for the Governance, Oversight, Support and Perform (GOSP) Strategic Procurement, Strategic Contract Management, Operational Procurement, Inventory Management, and Warehouse & Logistics. Supply Chain is managed and assessed on four required key elements - qualified staff (People), Process (i.e. SAP systems), Procedures, and Warehouse (Plant) to plan, source, procure, receive, store, transport, and issue required materials and services for the BNEP's safe and secure operation.

We have over 5,300 registered suppliers. These suppliers range from locally owned Small and Medium-sized Enterprises (SMEs) to large-scale Multinational Companies (MNCs).

The ENEC Procurement and Supply Chain (PSC) function provides a central procurement and contracting service ensuring that goods and services are procured on the best contractual terms and conditions, in compliance with legal and regulatory requirements, and support our sustainability objectives.

Similarly, Nawah Supply Chain is responsible for plant-related procurement including expert / engineering / manpower services. Nawah Supply Chain function provides a central procurement and contracting service ensuring that Nawah's materials and services are procured on the best contractual terms and conditions that ensure nuclear safety and quality requirements are met.

The Prime Contractor (KEPCO) has many suppliers and subcontractors of its own. We oversee these arrangements and provide guidance and track performance to ensure our standards and UAE specific requirements are implemented and followed.

Supply Chain Overview			
Year	2017	2018*	2019*
Number of registered suppliers (Cumulative)	3,393	4,314	5,350
Total procurement spending (USD millions)	340	772	419

*Values have been restated

Scope: ENEC, Nawah and Barakah One Company

Procurement and Supply Chain Governance

We have a comprehensive PSC Governance Framework that includes a procurement process situations matrix, a register of reported situations, a process for verification and reporting of identified situations, and the identification of opportunities for improvement. The framework helps to ensure that our procurement practices align with the highest ethical and governance standards.

Supply Chain Localization

To bring maximum economic benefit to the UAE from the BNEP, and to improve the security of supply, we strive to procure goods and services from locally based suppliers whenever possible. Overall, 76% of the suppliers registered with us are locally based which represent 74% of our 2019 procurement spending (excluding the Prime Contract with KEPCO). In 2019, a total of USD 308 million was spent on locally based suppliers.

We are active supporters of the Khalifa Fund for Enterprise Development (KFED) – a dynamic organization that promotes and supports entrepreneurial ventures in Abu Dhabi. To date, 103 KFED companies have registered with us as suppliers. They are being actively encouraged to bid for future contracts.

Local Procurement			
Year	2017	2018*	2019*
Total procurement spending on suppliers based in the UAE (USD millions)	278	489	308
Percentage of registered suppliers that are locally based (%)	85%	83%	76%
Percentage of procurement spending on locally based suppliers (%)	82%	63%	74%
Number of Khalifa Fund suppliers registered (Locally owned SME companies funded by Sheikh Khalifa) (Cumulative)	20	68	103

*Values have been restated

Scope: ENEC, Nawah and Barakah One Company

Supply Chain Sustainability Impacts

To safeguard from potential risk and satisfy internal Health, Safety, Environment and Sustainability (HSES) requirements, we take an active role in ensuring that our supply chain meets high ethical standards and that relevant suppliers implement the environmental, social, and labor-related policies and procedures required to operate responsibly.

Selected suppliers go through our prequalification process, which helps to identify levels of compliance with necessary standards and regulations. It evaluates factors such as experience, financial ability, managerial ability, reputation, work history, environmental protection, labor practices and human rights protection, etc. to ultimately develop a list of qualified bidders for tenders. We conduct risk-driven prequalification exercises to ensure that potential suppliers meet the specified standards for quality and safety. In addition, prequalification exercises gather business continuity information from the supplier to help gauge the maturity of the supplier's business continuity planning capability. At the award stage, our contracts include specific provisions on environmental protection, labor practices and human rights issues.

Code of Conduct

All suppliers registered through our supplier portal must agree to our 'Supplier Code of Conduct', which sets out the principles and standards of conduct expected of every supplier. The document covers topics such as HSES, fraud, ethical behavior, conflicts of interest, whistleblowing, compliance with the UAE law and our environmental and sustainability leadership.



Supplier Code of Conduct

<https://www.enec.gov.ae/doc/supplier-code-of-conduct-pri-version-211120191-5e04bff053da3.pdf>

We have not received reports of any breaches in supplier compliance with the Supplier Code of Conduct in 2019.

Health, Safety, Environment and Sustainability (HSES)

HSES criteria are screened at the prequalification stage for selected suppliers. In addition, for products and services being procured that are classified as significant HSES risks, bidders will be assessed against a range of project specific HSES requirements. Should a bidder fail to achieve the necessary HSES score, they will automatically fail and be removed from the selection pool.

All contracts require HSES considerations to be incorporated, depending on the level of risk.



Contractor HSES Management Procedure

<https://www.enec.gov.ae/doc/enec-standard-hse-requirements-for-contractors-5ef0d02d4e603.pdf>

Labor Practices

Compliance with all labor laws and worker welfare good practices is a prerequisite for being registered as a supplier or being awarded a contract with us. To verify this, we request suppliers to sign a statement of compliance regarding worker welfare. In 2019, 100% of our new suppliers signed this statement.

Supply Chain Worker Welfare			
Year	2017	2018*	2019
Number of registered suppliers that have signed a statement of compliance regarding worker welfare (Cumulative)	1,544**	1,707**	3,223

Scope: ENEC, Nawah and Barakah One Company

*Values have been restated

**Values are based on ENEC and Barakah One Company, only.

Due to the nature of our procurement requirements, no significant human rights-related risks have been identified within the supply chain. We have conducted contractor camp inspections in 2019 to ensure HSES and welfare arrangements are met, and no suppliers have been identified as having a risk related to forced, compulsory or child labor.



5.4 Economic Development

The development of the BNEP is a major driver of short-term and long-term economic development for the Al Dhafra region and the UAE overall. The project has created thousands of jobs and has led to significant investment in local infrastructure that will benefit the region for decades to come. Most significantly, the project has provided an opportunity for local businesses to meet the necessary quality standards required to join a global nuclear supply chain.

Industrial Development

We play a significant role in developing the capabilities of UAE companies to achieve the necessary nuclear-grade quality assurance standards for supplying materials used in the construction and operation of nuclear energy producing facilities.

To maximize the benefit of the BNEP for the national economy in the long term, we support UAE businesses in reaching the necessary standards required to provide their products and services to the nuclear supply chain. This gives UAE companies a competitive edge, as once achieved, companies can exploit export opportunities to supply nuclear energy projects in other Gulf Cooperation Council (GCC) countries looking to invest in their own nuclear energy projects and globally.

In 2019, our Business and Industrial Development team has focused on working with Nawah Procurement team to create a successful and sustainable nuclear supply chain by using existing local suppliers. A road map for localization of operational spare parts and services was implemented to support the plant operations and maintenance. Our Business and Industrial Development team will continue to develop the UAE nuclear infrastructure by encouraging key international nuclear companies to create partnerships with local partners and by developing local supplier capabilities in order to have UAE become one of the main players in the industry.

Investment in Local Infrastructure

The Al Gharbia Investment Roadmap, developed by the Western Region Development Council, found that the nuclear energy industry would contribute USD 16 billion to the economy of the Al Dhafra Region over the lifetime of the BNEP. As such, public services and infrastructure are being developed including new housing communities and the upgrade of communications systems and highways, which all contribute to an improved quality of life for residents of the region. It is expected that real estate values will also rise as a result of our initiatives.

“The UAE Peaceful Nuclear Energy Program will power the growth of the Nation with clean, efficient and reliable nuclear energy, and its development is already supporting many strategic sectors through the enhancement of local businesses, the development of new industries and the creation of high-value jobs.”

H.E. Eng. Mohamed Al Hammadi, Chief Executive Officer of ENEC

6

**SAFE, CLEAN,
EFFICIENT AND
RELIABLE ENERGY**



Our primary contribution to national sustainable development is the creation of significant volumes of safe and clean electricity for the UAE. This will help reduce the UAE’s greenhouse gas (GHG) emissions and provide long-term energy security for a rapidly growing population.

6.1 Overview

ENEC was established in 2009 to deliver safe, clean, efficient, and reliable electricity to the UAE grid and contribute to the sustainable energy future of the UAE. The core principles of ‘safe, clean, efficient and reliable’ have been rigorously applied to both the construction and operation of the Barakah plant.

Sustainability Objectives

Our Health, Safety and Environment (HSE) and sustainability objectives include:

- 1 HSEMS – safeguard the health and wellbeing of all employees, contractors, and the local community.
- 2 Health, Safety and Security – ensure the safety and security of the public, our employees, and contractors, through the design and execution of world-class safety and security processes and systems, and the development of a robust culture of safety and security.
- 3 Quality, Efficiency and Reliability – achieve operational excellence and the implementation of industry best practices.
- 4 Environmental Management – adhere to the highest available standards and regulations while working to prevent pollution, preserve biodiversity, conserve water and energy resources, and handle waste effectively.

SDG Targets Addressed

By delivering on these sustainability objectives, we are contributing to the achievement of the following SDG targets:

Sustainability Value Pillar	Sustainability Aspect	UN SDG Addressed
Safe, Clean, Efficient and Reliable Energy	HSEMS Health, Safety and Security, Quality, Efficiency and Reliability Environmental Management	     

UN SDGs Addressed	
<p>TARGET 3-4</p> 	<p>Reduce mortality from non-communicable diseases and promote mental health By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment, and promote mental health and wellbeing.</p>
<p>TARGET 3-6</p> 	<p>Reduce Road Injuries and Death By 2020, halve the number of global deaths and injuries from road traffic accidents</p>
<p>TARGET 3-9</p> 	<p>Reduce Illness and Death from Hazardous Chemicals and Pollution By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.</p>
<p>TARGET 6-3</p> 	<p>Improve water quality, wastewater treatment and safe reuse By 2030, improve water quality by reducing pollution, eliminating dumping, and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and substantially increasing recycling and safe reuse globally.</p>
<p>TARGET 7-1</p> 	<p>Universal access to modern energy By 2030, ensure universal access to affordable, reliable, and modern energy services</p>
<p>TARGET 8-8</p> 	<p>Protect labor rights and promote safe working environments Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.</p>
<p>TARGET 9-1</p> 	<p>Develop sustainable, resilient, and inclusive infrastructures Develop quality, reliable, sustainable, and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human wellbeing, with a focus on affordable and equitable access for all.</p>
<p>TARGET 12-5</p> 	<p>Substantially reduce waste generation By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse.</p>

6.2 HSEMS

To coordinate the management of all aspects of HSES, we developed a comprehensive HSEMS. The HSEMS defines the principles by which we conduct business. The HSEMS contains HSE policies, procedures and codes of practice that ensure a systematic approach to HSE. The key elements include:

- HSE Legal Compliance
- HSE Communication and Consultation
- HSE Risk Management
- Contractor HSE Management
- HSE Performance Management
- HSE Incident Management
- HSE Training and Competency Programs
- Incidents and Emergency Preparedness and Response Programs
- HSE Review and Inspection

The HSEMS has been in place since 2010 and is being continually updated to ensure alignment with regulatory requirements, international standards and the identification of new and emerging risks and opportunities. The HSEMS is certified against ISO 14001:2015, Occupational Health and Safety Assessment Series (OHSAS) 18001:2007 and has obtained the OSHAD Certificate of Approval. To manage and monitor the HSEMS, we have several teams, including a Corporate HSES team, a Construction HSES Oversight Team (Chief Program Office – CPO), Nawah Health and Safety team, Nawah Environment team, Nawah Emergency Preparedness team, and ENEC’s BCM team.

There were zero findings during the annual regulatory audit undertaken by OSHAD during 2019. We also held external HSE audits against ISO 14001 and OHSAS 18001 requirements, which were with zero findings during 2019.

Working with Contractors

We work closely with our contractors, regulators, and the international nuclear community to develop and maintain a world-class nuclear safety culture, policies, and procedures. Throughout the construction phase at Barakah, ENEC oversees the HSES performance of KEPCO including contractors and subcontractors. We developed a comprehensive approach to the management of contractor procedures for dealing with HSES topics. Through the oversight activities, ENEC monitors the effectiveness of implementation of contractors and subcontractors’ HSES programs. Daily, weekly, and monthly inspections are performed at the construction site along with weekly and monthly cross-organizational meetings. During 2019, 165 cross organizational HSES meetings, 72 HSES inspections, 438 HSES construction joint inspections and 52 camp inspections were conducted.

6.3 Health, Safety and Security

Safety is the overriding priority for UAE's Peaceful Nuclear Energy Program. We are committed to achieving the highest standards of safety and quality as we work to deliver clean and sustainable nuclear energy to the Nation.

The construction and operation of the Barakah plant is regulated by FANR, who also license Nawah's nuclear operators. We continually adopt global best practices from global nuclear energy industry leaders and industry organizations including the IAEA and the INPO.

Our Sustainability Policy (CEO-POL-7) and our Occupational Safety and Health (OSH) Policy (CEO-POL-8) outline our commitment to conduct work in a sustainable manner and effectively control environmental, health, safety and security risks through all phases of the nuclear energy plant lifecycle. Our internal culture enshrines safety as the collective responsibility of everyone involved in the project, from the Board of Directors, to employees, contractors, subcontractors and even visitors.

We have a social responsibility to ensure a safe community and safeguard our employees' health and safety. Extensive effort is made to ensure the occupational safety and security of our people both at HQ and onsite. The existing measures not only cover prevention of workplace incidents, but also cover emergency preparedness should an emergency situation arise, and Business Continuity Management (BCM) in the event of a crisis.

The HSES Department's priority is to facilitate proactive HSE initiatives, ensure regulatory compliance and enable a safe working environment for all. We aspire to achieve zero incidents and are determined to continuously improve health and safety levels across all activities.



Safety at ENEC:

<https://www.enec.gov.ae/regulation/safety-at-enec/culture-of-safety/>

Health

Across ENEC, all job categories have been assessed for potential occupational health risks as part of a thorough Occupational Health Risk Assessment. This allows us to quantify the effects of unmanaged occupational health risks on employees and take appropriate actions to control risks.

We maintain an annual Health Program that facilitates the ongoing development of health-related codes of practice. Our contractors and subcontractors are expected to deploy similar systems to ensure risks are identified, evaluated, and mitigated as low as reasonably practicable (ALARP). In 2019, there were no occupational health illnesses reported among our employees, contractors, and subcontractors.

Occupational Illness			
Year	2017	2018*	2019
Reportable occupational illnesses (employees)	0	0	0
Reportable occupational illnesses (contractors and subcontractors)	0	0	0

Scope: ENEC, Nawah, Barakah One Company and KEPCO

Heat Stress

Heat stress has been identified as one of the region's highest occupational health risks, primarily for personnel working outdoors in the summer months. Our focus is to avoid heat stress incidents by implementing control measures that ensure employees, contractors, and subcontractors are never over-exposed to the sun and remain hydrated. In line with the local UAE ruling by the Ministry of Human Resources and Emiratization, a mid-day break for all outdoor workers was introduced for the duration starting 15 June 2019 to 15 September 2019, from 12:30pm until 3pm each day. In addition, several campaigns were implemented during 2019 to prepare for the hot weather season, including health and safety demonstrations, practical tips on staying hydrated during construction activities, as well as measures to help identify early heat stress symptoms.

In 2019, we initiated a Thermal Work Limit (TWL) Sweep as part of our ongoing heat stress campaign that aims to ensure that we maintain zero heat stress incidents. Because of our efforts, we did not experience any heat stress incidents. Reaching zero heat stress incidents resulted in a 100% reduction down from 11 incidents in 2018. This achievement has motivated us to maintain zero heat stress incidents across the entire workforce for future years to come.

We also undertook heat stress awareness talks where multi-lingual campaign pamphlets were distributed amongst workers at BNEP, along with heat stress campaign banners and oral rehydration salts with bottled water.

Heat Stress			
Year	2017	2018*	2019
Heat stress incidents (employees)	0	0	0
Heat stress incidents (contractors and subcontractors)	14	11	0

Scope: ENEC, Nawah, Barakah One Company and KEPCO

Medical Services and First Aid

At the Barakah offices, first aid boxes and automated external defibrillators are available on each floor and are clearly identified on the emergency evacuation maps located at each exit. Lists of first aiders, both male and female, with their contact details, are posted next to Units 1-4. The contact details and physical office locations of the first aiders are confirmed and amended quarterly. The contents of the first aid units are fully inspected every month and replenished immediately to conform to OSHAD and ENEC First Aid requirements.

This year, we undertook nine certified first aid training sessions for all our employees and extended to employees' family members to raise their awareness levels and response process in the case of medical emergencies. A total of 82 participants attended the sessions.

Due to its large number of contractors and subcontractors, KEPCO has an in-house first aid and medical services provider at the BNEP. We regularly inspect their services, and assess it on a monthly basis, to ensure conformance to all Department of Health (DoH) standards and registration requirements.

Food Safety

Food safety has consistently been identified as a high health risk, especially within the large population of contractors and subcontractors living at the BNEP. We undertake regular food safety and accommodation inspections. This year, we expanded the scope to address any health and safety related concerns. All concerns were raised to the respective service providers to ensure that adequate corrective measures were taken.

Nawah Industrial Hygiene

As the BNEP moves closer to the operations phase, various industrial hygiene procedures and programs are in place, such as identification and monitoring of oxygen deficient areas, control of confined spaces, calibration of industrial hygiene equipment, industrial hygiene stress factor monitoring and related hygiene assessments, including air quality surveys, noise control areas and management of hazardous substances. Respirator and self-contained breathing apparatus (SCBA) training and fit testing equipment are available, and all breathing apparatus is tested and inspected.

Health Screening

Health screening and medical surveillance is mandatory for all employees and consists of visiting an occupational health physician and completing a health history questionnaire to determine current medical issues and identify previous occupational incidents that may have resulted in a medical issue. All results and recommendations from the screening are confidentially processed to manage the individual's occupational health. Each employee will undergo this assessment periodically based on the risks associated with their job category, in conformance with OSHAD and FANR statutory requirements.

Stress Management

Stress has been identified as an important health risk to our employees. Therefore, we launched a Stress Management Program, which aims to evaluate and study current levels of stress among our employees and take action to reduce stress and improve productivity. Stress management workshops are held to help employees develop the skills they need to lead a stress-free lifestyle, including teaching them to identify different types of stress and how to protect themselves from negative influences, empowering them to respond effectively to 'high stakes' situations as well as boosting their confidence to deal with difficult relationships.

Health Grievances

The Condition Reporting (CR) program facilitates proactive reporting of safety concerns and near-miss incidents. The program assigns responsibility for the implementation of corrective actions to the relevant party. In addition, all employees have a responsibility to stop work activities where an existing or potential threat to safety is observed.

All employees can raise health-related concerns through the CR program. Contractors and subcontractors can raise grievances through the HSES Observation Reporting Channel, where workers can drop a card on any wellbeing grievance related issue in boxes spread across the plant. There were no wellbeing related grievances raised in 2019.

To ensure the welfare of workers, we initiated a Welfare Facility Survey during 2019. The results of the survey, which covered 206 respondents from 18 subcontractors, showed that the overall response was at a satisfactory level, with minor maintenance concerns which were assessed, and corrective actions were taken to ensure worker wellbeing.

In response to grievances around the level of quality of catering services and accommodation, the Corporate Health Team established a regular inspection program that conducts assessments to ensure the highest standards of quality and hygiene are maintained along the food supply chain (e.g. during preparation, transportation and serving) and that accommodations are safe, hygienic and comfortable. In 2019, we carried out two health and safety assessments of the labor accommodations.

The Corporate Health Team provides targeted awareness campaigns based on issues raised such as health and wellbeing programs that assess the eating habits of employees. Other targeted initiatives include tips around healthy eating during the Holy Month of Ramadan and raising awareness around staying hydrated and using cool shelters during the hot summer.

Safety

All our employees receive annual training on ENEC's safety principles and procedures. Our leadership encourages employees to voice any queries and concerns. Meetings begin with a Safety Moment, to ensure safety remains at the forefront.

We work closely with our contractors, regulators, and the international nuclear community to develop and maintain a world-class safety culture, and safety-related policies and procedures. The Executive Management Safety Charter serves as a guide to support and enable operation of our businesses safely.

We undertake regular safety and quality audits, seeking to drive continual improvement in all areas of management and operation.

Employee Occupational Safety

Employees of ENEC and our subsidiaries work at our Headquarters (HQ) in Abu Dhabi and onsite in Barakah, regularly travelling between the two locations. This means that safety risks ranging from transportation, construction, operation, and nuclear safety onsite are all material issues that are incorporated into the management of safety. During 2019, we maintained our record of zero employee fatalities.

At ENEC, we strive to improve the HSES awareness of all employees through HSES eLearning modules, and HSES communications and training sessions. In 2019, we developed a Health and Safety Maturity Roadmap action plan to raise awareness and improve understanding of safety as well as to maintain and enhance our health and safety performance. We also launched a safety campaign to enable employees to share views on safety at the workplace.

Each year, we hold mandatory health and safety awareness sessions for all our employees. As we shift from the construction to the operation stage, we focused the 2019 'STRONG' Health and Safety sessions on introducing Nawah's nuclear health and safety programs, processes, and procedures to expand the Nawah nuclear industrial safety culture across ENEC. The sessions included renowned motivational speakers that delivered engaging messages on the importance of health and safety in the nuclear industry.

Employee Occupational Safety			
Year	2017	2018*	2019
Number of employee hours worked	1,350,012	3,838,912	7,387,735
Fatalities (employees)	0	0	0
Lost Time Injury Frequency Rate (LTIFR; employees)	0	0.7	0.96 **
Total Recordable Case Frequency Rate (TRCFR; employees)	1.5	1.6	2.48 ***

Scope: ENEC, Barakah One Company and Nawah.

*2017 and 2018 scope covered ENEC and Barakah One Company, only.

**Data is representative of Nawah, only.

***Data is the average of ENEC, Barakah One Company and Nawah.

LTIFR and TRCFR are calculated per million man-hours.

In 2019, to raise awareness and improve understanding of the importance of safety, Nawah H&S department developed the Markaz Safety Incident Reporting Module, which has transformed the incident reporting process to a user-friendly electronic database. Nawah also developed a self-assessment tool based on the WANO pre-start-up reviews for industrial safety readiness and scheduled quarterly meetings to review and improve industrial safety indicators. Nawah also continued to undertake quality assurance audits on the electrical safety process to actively enhance the safety of processes. This year, Nawah carried out over 700 health and safety checks at the BNEP.

As we move from construction to operations, we have developed industrial safety procedures for Unit 1 to be implemented by all personnel, including training courses, and the setup of a health and safety help desk at the entrance of Units 1 and 2 to assist with the dissemination of key health and safety information.

We performed a trend analysis on 2019 incidents to determine the most common causes and develop corrective actions to reduce the frequency of these incidents. The three top causes of road traffic incidents include situational awareness, fatigue, and environmental conditions. We actively seek to develop solutions in these areas to limit incidents and improve our safety performance.



Contractor Occupational Safety

We closely monitor the safety performance of the Prime Contractor (KEPCO) and its subcontractors, working closely with them to ensure that the same rigorous safety systems and culture exists throughout the construction site. We regularly undertake audits to ensure that our contractors and subcontractors follow all relevant UAE laws and regulations. This starts with the review of KEPCO's HSEMS and its procedures and stretches to onsite inspections for all construction areas and disciplines. Observed deficiencies, if not corrected on the spot, are reported through a deficiency notification program, which is the formal communication channel with the Prime Contractor, and then addressed through corrective action plans. Performance indicators and deficiency notifications are followed-up and tracked on a monthly basis until complete implementation and effective closure is reached.

Over the past years, contractor LTIFR as well as TRCFR continuously improved. This is mainly due to the rigorous training and inspections performed jointly by ENEC, the Prime Contractor and subcontractors. When incident causes are identified, commensurate corrective actions are developed and implemented in a timely manner to ensure they do not reoccur.

Contractor Occupational Safety			
Year	2017*	2018	2019
Number of contractors and subcontractors	15,031	11,922	9,497
Contractor and subcontractor hours delivered (millions)	52.9	32.2	40.74
Fatalities (contractors and subcontractors)	0	0	0
Lost Time Injury Frequency Rate (LTIFR; contractors and subcontractors)	0.05	0.00	0.04
Total Recordable Case Frequency Rate (TRCFR; contractors and subcontractors)	1.16	1.00	0.37

Scope: KEPCO

*2017 LTIFR and TRCFR values were restated

LTIFR and TRCFR are calculated per million man-hours

Nuclear Safety

Nawah is developing the necessary procedures and management systems to achieve the highest standards of nuclear safety and quality during operation of the BNEP. All procedures and systems are built on the expertise and operational experience of the global nuclear energy industry, adopting best practices from operators around the world and from industry organizations, including the IAEA and Institute of Nuclear power Operations (INPO).

The design, siting, construction, operation, and decommissioning of nuclear energy plants as well as the use of all radioactive material and radiation sources is regulated by FANR. All activities across ENEC comply with the FANR's core values of safety awareness and responsibility, competency, independence, and transparency. All procedures and programs in place are aligned with FANR requirements.

Health and Safety Engagement and Awareness

To improve the levels of health and safety within our organization and achieve zero incidents, it is crucial to directly engage with all employees, contractors and subcontractors and raise their awareness about health and safety matters. A wide range of health and wellbeing engagement and awareness sessions are conducted for our employees every year, both onsite and at the HQ. In 2019, the following health and safety related activities were executed:

Workplace and Wellness Programs

- Office Ergonomics Campaign: employees participated in a campaign, which included feedback sessions and training centered around office ergonomics for all staff at the HQ and at the BNEP. In 2019, we held two sessions with a total of eight staff participating.
- Food Safety and Accommodation Inspections: As part of the regular food and accommodation inspections that we undertake at the BNEP, we expanded the scope to address any health and safety related concerns. All concerns were raised to the respective service providers to ensure that adequate corrective measures are undertaken.
- Hand washing campaign: on Global Hand Washing Day, a campaign was launched to prevent workers from being contaminated, educating them on best practice to continuously ensure hand hygiene.

Medical Screening and Assessments:

- BNEP Health Day: employees participated in a variety of health-related activities, which involved Abu Dhabi Health Services Company (SEHA) as well as other external stakeholders who provide healthcare services to ENEC.
- Medical Awareness Sessions: employees participated in medical and health awareness sessions that were held by external healthcare providers at the BNEP to raise awareness on several World Health Organization (WHO) topics such as World No Tobacco Day.
- Provision of additional 16 blood pressure monitors that were distributed across the BNEP.
- Improvements to medical isolation facilities (negative pressure rooms) to use in case of communicable / contagious diseases.

Health and Safety Campaigns and Programs:

- A Road Safety Campaign including vehicle and driver safety assessments were implemented with pedestrian and driver awareness videos released to promote safe road behaviors and improve the road safety culture within the BNEP premises. Road safety inspections and speed gun monitoring was implemented to capture road safety offences for corrective action. The campaign also covered topics concerning the enforcement of one-way traffic management, promoting the use of crosswalks, and preventing employees from leaving their vehicles with idle engines.

- Physical Health and Safety Campaigns, covering the following topics:
 - Dynamic learning activities covering the topics of coaching and housekeeping, ladder safety and electrical safety.
 - Health and Safety fair including hearing protection awareness sessions, fire door safety campaigns, communicable diseases awareness campaign and safety video workshops.
 - Weekly safety messages distributed to all personnel supported by educational videos with examples of acceptable and unacceptable behaviors.
 - HSE Booklet was developed as a small pocket-size tool to be carried by all personnel. This was undertaken in an effort to further improve effective safety communication and awareness including environmental guidelines that all employees should be aware of.
 - Leadership workshops are regularly held that highlight the roles of safety leaders in construction and emphasize the need to perform safety observation checklist inspections.
 - HSE workshops are also regularly held to discuss relevant upcoming activities including their associated health and safety concerns. The most recent workshop was held during the last quarter of 2019 and covered HSE issues related to demobilization, decommissioning, and demolition activities. This was intended to highlight the roles and responsibilities of all personnel as part of the decommissioning activities that will be undertaken during 2020.
- Cat Capture Program initiated across the BNEP in coordination with external professionals to ethically control and manage the increased feral cat population in the area.
- E-learning modules on construction safety, HSEMS awareness training, HSES fundamental awareness, accommodation safety, hazard identification, incident reporting, road safety and safety observation program.

Security

We work closely with the Critical Infrastructure and Coastal Protection Authority (CICPA), the Abu Dhabi Government agency tasked with handling the protection and security of vital assets and infrastructure, including the BNEP. Under the regulation of FANR and with guidance from the IAEA, CICPA has developed and implemented the highest international security standards for the BNEP.

The security teams across ENEC and our subsidiaries are responsible for implementing the FANR-approved Physical Protection Plan (PPP) for construction. The PPP for construction addresses the protection of nuclear materials and the nuclear facility against malicious acts, such as the unauthorized removal of nuclear material.

An additional FANR-approved Physical Protection Plan for operation (PPP-O) addresses the organizational structure and staffing of security, the plant physical protection, including the designation of protected and vital areas, guard training and qualification, information security, cybersecurity, and responses to security contingencies including preparedness for concurrent nuclear safety-related emergencies and security threats. The PPP-O provides assurances that physical protection strategies will neutralize any threats and seeks to ensure that the nuclear facility is protected from malicious acts and radiological sabotage.

Emergency Preparedness

Working with internal and external stakeholders, we developed a comprehensive Emergency Preparedness and Response program. This covers all aspects of nuclear emergency activities, emergency response organization, emergency equipment, training, and awareness.

Emergency Preparedness and Response at ENEC HQ

During 2019, we held five building emergency evacuation awareness sessions with a total of 125 participants, four fire warden training sessions with 39 participants and 6 chief warden / emergency coordination training. Additionally, we held four fire responder forums with 105 participants and four emergency preparedness trainings for 23 security guards.

During 2019, we undertook six tabletops and six drills, one emergency response rehearsal exercise and one FANR-evaluated emergency response exercise.

We have enforced mandatory annual safety and emergency evacuation induction training to all of our people. In addition, emergency evacuation awareness sessions were conducted for all of our contractors. More than 400 people successfully completed the emergency preparedness training in 2019. Additionally, we initiated quarterly forums for emergency responders to discuss their feedback, share improvements and lessons learned. Personalized emergency evacuation plans were developed for employees with special medical conditions that prevent them from evacuating the building using the emergency evacuation stairs.

The ENEC Communication Department collaborated with Emarat FM to sponsor the Ramadan radio competition program, “Cash Out”, to raise the public’s awareness on the nuclear industry including emergency preparedness.

Barakah Emergency Preparedness Program

Nawah is the custodian of the Barakah Emergency Preparedness Program, which ensures that commissioning and operations of all programs, processes, and activities are developed, implemented, and completed in accordance to their processes in a safe and efficient manner.

The comprehensive program focuses on a commitment to protect the health and safety of employees, the public, and environment from a potential radiological event, and developing and implementing functional roles and capabilities in the following areas:

- Onsite Emergency Preparedness.
- Offsite Emergency Preparedness.
- All Emergency Response Equipment and Facilities.
- Emergency Response Training.
- Drill and Exercise Programs.
- Barakah Emergency Plan and associated Implementing Procedures.

The ability of Nawah to respond to a radiological emergency at the BNEP in a timely and effective manner must

be periodically demonstrated in order to obtain, and maintain, an operating license from FANR. Emergency drills and exercises are scheduled at periodic intervals to test the effectiveness of Nawah's Emergency Response Plan, and its implementing procedures, which include; emergency communications, the timely response of the Emergency Response Facilities, the adequacy of emergency response resources, and the coordination between the various agencies involved.

As part of fuel load preparations, Nawah is working closely with FANR, local stakeholders, the IAEA and international nuclear experts to ensure that their Emergency Preparedness and Response Program adheres to the highest international standards, and is thoroughly tested, ahead of the initial Unit 1 nuclear fuel load at the BNEP. All Risk Significant Performance Standards were also successfully demonstrated. During commissioning and operations, Key Performance Indicators as described in Nawah's Business Plan, will be closely monitored to ensure all aspects of the Emergency Preparedness and Response Program are maintained to the highest levels. Additionally, the onsite emergency plan includes assessment criteria and protective actions to return the plant to a stable condition in case of radiological emergencies.

This year, Nawah supported four batches of general Offsite Response Organization (ORO) trainings to ensure that everyone is skilled and prepared for nuclear emergency scenarios. Nawah also participated in the preparation of the fourth version of the Incident Commander Plan.

Nawah participated in the IAEA Emergency Preparedness Review (EPREV) follow up mission to appraise our level of preparedness for nuclear or radiological emergencies. This year, all the recommendations and suggestions received in 2015 as part of the EPREV were satisfied and closed, and no additional recommendations or suggestions were recorded.

Business Continuity Management

As part of the Abu Dhabi government's ongoing efforts to improve government and private sector readiness for any emergency, crisis or disaster, all government entities are to comply with requirements of AE/HSC/NCEMA 7000:2015, BCM standard, as established by the National Emergency Crisis and Disasters Management Authority (NCEMA).

At ENEC, we developed a BCM program, which is designed to maintain the continuity of essential and time-sensitive business processes first and then proceed with processes which are not as time-critical. The BCM program follows a multi-phased approach, which includes alignment and integration with recovery of ICT systems and applications.

To meet the requirements of the GSEC Circular No. (4) 2014 concerning Business Continuity and NCEMA 7000:2015, we developed a variety of plans and procedures, categorized at the highest level into two types: radiological events and non-radiological events. Nawah manages the radiological events in accordance with the Onsite and Offsite Emergency Response Plan. Non-radiological events are managed in accordance with plans and procedures developed by ENEC's internal departments.

We submit quarterly reports on the implementation (including achievements, challenges, and items for consideration) of the BCM program to the GSEC of the Government of Abu Dhabi. We also provide an annual update on the BCM program to the ENEC ARCC, which is a subset of ENEC's Board of Directors.

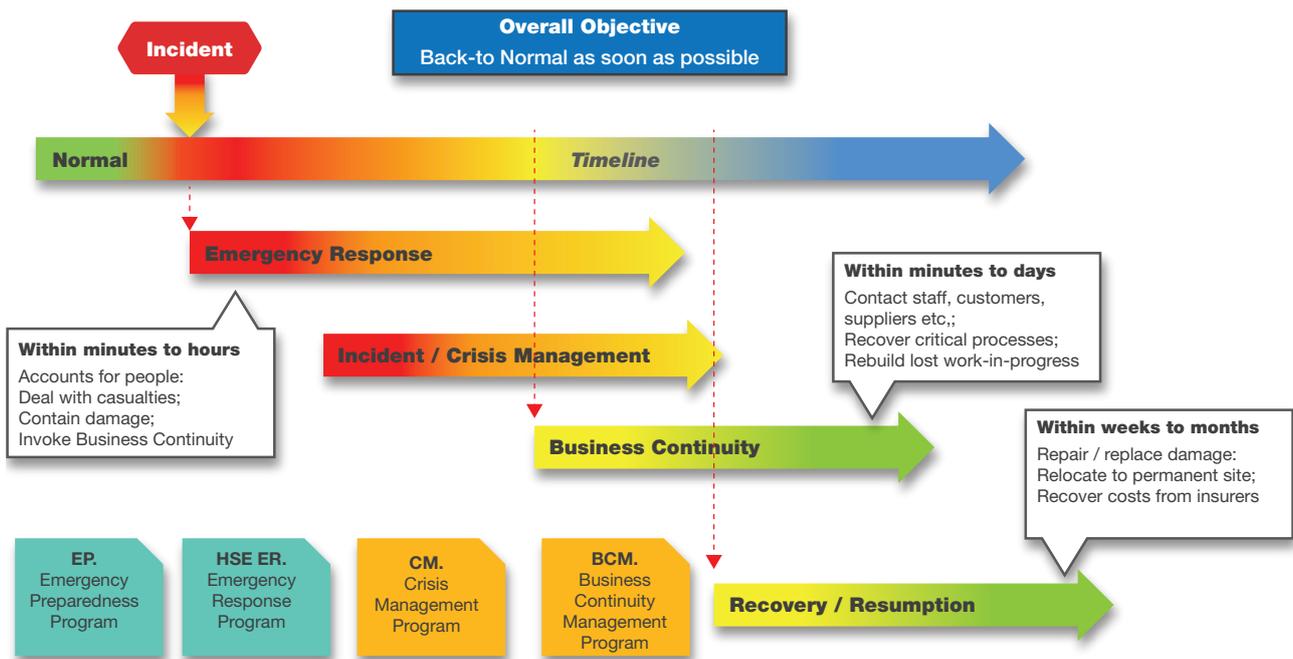
Business Continuity in the Supply Chain

We have a list of BCM requirements for inclusion in the Supplier Prequalification Checklist. This requirement dictates our suppliers to implement and maintain business continuity programs that comply with recognized standards as part of our standard terms and conditions, and surveys suppliers to monitor the implementation of those programs.

Incident Management Program

The Incident Management program describes the process and resources we developed for the response to, management of, and recovery from events which:

- Threaten profitability, legal and financial liability, asset value, stakeholder confidence, brand, reputation, or achievement of ENEC’s strategic and business goals.
- Disrupt the continuity of business operations.
- Threaten the safety and security of ENEC’s assets and staff.



2019 Initiatives and Achievements

The BCM team had a dedicated booth at an internal open week for employees to highlight key elements of the Program under the theme ‘Failing to Plan is Planning to Fail’. The event was held both in Abu Dhabi at ENEC HQ and at the BNEP Management Building.

In 2019, we hosted the BCM hosted a Knowledge Sharing Forum in Abu Dhabi. The forum convened representatives and delegates from a diverse range of UAE government entities. Attendees learned about latest best practice in BCM within the peaceful nuclear energy industry and how these best practices can be implemented across other sectors.

The forum is a result of our commitment and continued efforts to support the UAE's successful transition into a knowledge-based economy and society. Through sharing knowledge, engaging with local stakeholders, and setting new standards of industry excellence, we aim to support growth and continuous improvement throughout Abu Dhabi and the wider UAE.

Participants had the opportunity during the forum to facilitate dialogue on this critical topic and share experiences in implementing BCM systems within the context of the peaceful nuclear energy industry.

In 2019, the BCM team achieved the following objectives:

1. Completion of Rabdan Academy Business Continuity awareness courses with the delivery of one and two-day courses for employees relating to business impact analysis, developing, and implementing a business continuity plan and integrating cyber security with business continuity.
2. Benchmarking visits from other entities such as Abu Dhabi Ports Company and benchmarking BCM activities with other entities such as Abu Dhabi Airports Company (ADAC), Bruce Power in Canada and Southern California Edison (SCE) in the USA.
3. Completed training and simulation exercises for the Site Incident Management team (IMT) for each key business location as well as the teams from HR and Corporate Communications that support them.
4. Completed training and simulation exercises for the Business Recovery team for each key business location.
5. Achieved 82.7% completion in terms of the implementation of the BCM program for Barakah One Company based on the NCEMA 7000:2015 standard.
6. Completed ISO 22301 BCM System Audit and third-party surveillance audit by an independent third-party audit firm in November, which resulted with no adverse findings.
7. Completed the 2018/2019 Threat Assessment Report which highlights risks impacting critical business processes as indicated in the Business Impact Analysis (BIA) for each business process.



6.4 Quality, Efficiency and Reliability

The Integrated Management System (IMS) is a framework that helps us meet our goals and objectives while maintaining a focus on safety, security, and quality.



IMS Accreditations

<https://www.enec.gov.ae/about-us/leadership-and-governance/international-standards-and-certifications/>

As part of our commitment to safety, security and transparency, we established a rigorous Quality Assurance (QA) program to ensure that the UAE's first nuclear energy plant is designed, constructed, commissioned and operated in line with best industry practices, governing codes and standards, regulations and license requirements.

The aim of the QA program is to ensure that our overriding priority - the safety of the UAE community, our employees, the environment, and our future plants - is achieved every day. Our QA program is applied to all aspects of our work and we conduct regular training sessions, assessments, and audits. The QA program applies to all of our contractors and subcontractors across the entire supply chain.

By extending the QA program to all our activities, we aim to achieve the highest standards of safety, quality, availability, and reliability. To date, we dedicated more than 41,000 person-hours to quality audits for all aspects of the program.

Like our philosophy on safety, we believe that everyone is responsible for quality, and it is this approach that will drive continual improvement in everything we do. We conduct regular audits of the IMS framework and QA program to ensure high standards are being met and continuously improved upon. During 2019, we conducted 49 internal and external QA audits on all aspects of the IMS framework and QA program. These include 15 internal and 34 external (supplier) QA audits, as well as 19 assessments of the IMS framework. We also undertook an external audit related to maintaining ISO certifications, which include:

- ISO 9001: Quality Management Systems.
- ISO 14001: Environmental Management Systems.
- ISO 20000: Information Technical Service Management Systems.
- ISO 22301: Business Continuity Management Systems.
- ISO 27001: Information Security Management Systems.
- ISO 31000: Risk Management Systems.



Quality Assurance

<https://www.enec.gov.ae/about-us/leadership-and-governance/quality-assurance/>

“The four units that comprise the BNEP will form an integral part of the UAE’s plan to cut the carbon footprint of electricity generation by 70% over the next 30 years. Once operational, the BNEP will save up to 21 million tons of carbon emissions annually, the equivalent of taking more than three million cars off the streets every year.”

H.E. Eng. Mohamed Al Hammadi, Chief Executive Officer of ENEC

6.5 Environmental Management

We are dedicated to minimizing the environmental footprint from the construction, operation, and eventual decommissioning of the BNEP across ENEC and our subsidiaries, including our Prime Contractor.

While the current focus is still on reduction and mitigation during the construction phase, one of the key environmental advantages of a nuclear energy plant is that it produces electricity with almost zero carbon emissions. This makes the BNEP a key component in the UAE’s aspirations to increase its clean energy generation, reduce its carbon footprint and achieve international commitments made as part of the Paris Climate Change Agreement.

Environmental Management Approach

Protection of the environment has been a key consideration since day one of the project. Selection of an appropriate site for the plant factored in environmental considerations, and construction commenced once environmental studies were completed and licenses were granted by the EAD.

Throughout the construction process, monthly monitoring and reporting on the natural environment, and the environmental performance of the entire project have been completed in accordance with the EAD permit conditions, which aligns with national environmental regulations. A Barakah Environment and Sustainability Charter has also been signed between ENEC and KEPCO to demonstrate a commitment from the Prime Contractor to minimize the impact from construction on the natural environment.

To ensure our commitment to protect the environment, we have developed an EAD-approved Construction Environmental Management Plan (CEMP) and an Operational Environmental Management Plan (OEMP) for all contractors and subcontractors to abide by. This ensures that all activities adhere to the environmental permits issued by the EAD.

Our Environmental Management System (EMS) is ISO 14001:2015 certified. In 2019, we recorded zero significant or reportable environmental incidents, and zero breaches of environmental regulations or environmental permit conditions. The EAD inspections carried out at the BNEP resulted in zero findings in 2019.

We have also developed the Barakah Environment and Sustainability Charter – an agreement co-signed by ENEC and KEPCO. The Charter sets out a series of obligations to ensure that activities are carried out in an environmentally conscious manner throughout the construction and operation stage.



Site Selection and Licensing:
<https://www.enec.gov.ae/barakah-plant/site/>

Material Use

The construction of a nuclear energy plant requires significant amounts of material input, primarily nuclear-grade concrete, and steel that are vital to the safety and reliability of the plant. With overall completion beyond 90%, material use is expected to further drop as the construction phase moves towards completion.

Beyond the large amounts of material required for construction, we track the consumption of office-based materials such as paper, plastic water bottles and printer cartridges.

Material Use			
Year	2017	2018	2019
Concrete used in construction (cubic meters)	182,817	56,358	53,560
Steel used in construction (metric tons)	19,162	42,900	2,934

GHG and Air Emissions

Electricity generation has traditionally been a high GHG emitting activity arising from the combustion of fossil fuels. Nuclear energy is a near zero-emission form of electricity generation, and once the BNEP is operational, it will help the UAE meet its voluntary commitment under the Paris Climate Change Agreement.

We take a lifecycle approach to the measurement and accounting of GHG emissions. This means we track direct and indirect emissions from the construction and operation of the plant (including the sourcing of fuel) and its future decommissioning.

- Scope 1 emissions are generated from the burning of fossil fuels, e.g. petrol and diesel used for heavy machinery, generators, and light vehicles.
- Scope 2 emissions are generated from the use of electricity and are known as ‘indirect’ since energy plants elsewhere generate the actual emissions.
- Scope 3 emissions are known as ‘other indirect emissions’ since they occur outside the boundaries of the organization in the supply chain and come from the provision of products and services. At present, this is the largest source of emissions due to the procurement of large quantities of concrete and steel for which our suppliers use highly energy-intensive processes.

Overall, our total GHG emissions this year decreased by 48% compared to 2018. The significant drop in emissions is mainly attributed to the reduced Scope 3 emissions relating to material use, specifically steel, which was reduced by over 93% as the construction phase moves towards completion.

Material Use			
Year	2017*	2018	2019
Total emissions (metric tons Carbon Dioxide equivalent – MTCO2 Eq.)	168,222	154,612	80,391
Emissions intensity (MTCO2 Eq./person) **	9.56	10.41	6.38
Scope 1 emissions – vehicle fuel (MTCO2 Eq.)	4,892	3,729	3,705
Scope 2 emissions – electricity (MTCO2 Eq.)	90,522	57,188	50,559
Scope 3 emissions (MTCO2 Eq.)	77,406	93,695	26,127
Scope 3 – bus travel (MTCO2 Eq.)	229	694	694
Scope 3 – concrete (MTCO2 Eq.) **	38,316	11,812	11,225
Scope 3 – steel (MTCO2 Eq.) *	34,492	77,220	5,281
Scope 3 – air travel (MTCO2 Eq.)	4,369	3,969	8,927

Scope: ENEC, Nawah, Barakah One Company and KEPCO

* Numbers have been restated

Energy and Water Management

Energy and water resources are required in large quantities during the construction of the plant, for worker accommodation and offices. We work together with our subsidiaries and contractors to ensure the resources are used efficiently and with minimal waste, especially since water is a scarce resource in the region. An annual water and energy conservation campaign is conducted with awareness sessions and with brochures distributed to employees and contractors. In 2019, over 3,013 contractor personnel attended awareness sessions.

Energy

Most of the energy used is in the form of indirect energy, which includes electricity for lighting, equipment, and ancillary buildings, and is sourced from the national grid. Large quantities of direct energy are also used in the form of fuel for the operation of vehicles and heavy machinery for construction activities and transportation of personnel.

Total energy consumed by ENEC, our subsidiaries and the onsite contractors and subcontractors involved in constructing the plant was reduced by over 11% from 2018. This reduction is primarily the result of the construction project reaching completion. While direct energy consumption remained relatively consistent with the previous year, indirect energy consumption dropped by over 11%, as the number of contractor and subcontractor employees living and working onsite continued to decrease in 2018 due to demobilization.

Energy			
Year	2017	2018	2019
Total energy consumption (GJ)	553,451*	349,700*	309,135
Energy intensity (GJ/person) **	31.45*	23.55*	24.52
Direct energy (liters)	2,103,817	1,641,772	1,636,488
Direct energy (GJ)	80.49*	62.81*	62.61
Indirect energy (kWh)	153,714,069	97,109,882	85,853,504
Indirect energy (GJ)	553,370*	349,637*	309,072

Scope: ENEC, Nawah, Barakah One Company and KEPCO

*Numbers have been restated

** Intensities calculated using total number of employees and contractors

Water

Water is primarily used for mixing concrete, in worker accommodation, irrigation, dust suppression, and by employees based in office buildings in Barakah and Abu Dhabi. Fresh water is sourced from the Shuweihat Desalination Plant and the potable water mains network, and water used for irrigation and dust suppression is obtained from the onsite treatment of sewage to standards set by the Department of Energy and verified by monthly laboratory testing.

The amount of water used across all facilities, as well as the construction site, was reduced by 23% compared to last year and by more than 67% over the past two years. This is a result of the reduced material usage, specifically concrete, as the construction phase is nearing completion. Furthermore, the implementation of water efficiency initiatives has promoted the reduction of water usage across ENEC. We are aware that water is a precious and scarce resource in the region, and we therefore take water efficiency actions very seriously.

Water			
Year	2017	2018	2019
Total water consumed (cubic meters)	3,931,917	1,687,146	1,302,190
Water Intensity (cubic meters/person) *	223.40	113.63	103.28

Scope: ENEC, Nawah, Barakah One Company and KEPCO

* Intensities calculated using total number of employees and contractors

Wastewater

Wastewater produced on the construction site consists primarily of greywater, sewage from the housing of the large construction workforce, and other hazardous liquid waste such as oils and paint. All wastewater, both hazardous and non-hazardous, is being recycled either onsite or offsite.

In 2019, 99% of the non-hazardous wastewater was treated onsite in accordance with DoE Recycled Water Policy and then used for irrigation and dust suppression. The remaining 1% was sent offsite for treatment at a municipal sewage treatment plant. Hazardous liquid waste is 100% recycled by qualified and certified third-party contractors.

Wastewater			
Year	2017	2018	2019
Wastewater recycled offsite (million liters)	637.3	134	17
Wastewater recycled onsite (million liters)	1,595.40	1,546	1,218
Percentage of wastewater recycled onsite	71%	92%	99%
Hazardous liquid waste disposed (liters)	0	0	0
Hazardous liquid waste recycled (liters)	147,322	103,601	93,078

Scope: Nawah, KEPCO

Waste

Significant quantities of waste are an expected output from one of the largest construction projects in the world. Together, with the Prime Contractor and our subsidiaries, we developed and implemented a comprehensive waste management program. Capacity building on waste management is a key element of our strategy. In 2019, we carried out a total of 24 waste segregation inspections to ensure that subcontractors are appropriately managing their wastes.

We track all waste streams to document the chain of custody and monitor volumes against planned targets. During 2019, we recycled 3,620 kg of empty paint containers to divert waste generation from landfills. This is an ongoing practice that is continually implemented and enhanced to increase recycling of wastes generated onsite.

Non-hazardous Waste

Most of the non-hazardous waste takes the form of construction materials, with low levels of recycling due to the remoteness of the BNEP from the recycling facilities. Waste being collected from the office facilities in Abu Dhabi and at the BNEP, which is segregated, is recycled at much higher levels. This year, our non-hazardous waste generation was reduced by over 43% – of which 36% was recycled – an increase of 28% over the previous year.

Non-hazardous Waste			
Year	2017	2018	2019
Non-hazardous waste disposed (metric tons)	107,734	59,668	33,935
Non-hazardous waste recycled (metric tons)	7,910	4,930	19,339
Percentage of total non-hazardous waste recycled	7%	8%	36%

Scope: ENEC, Nawah, Barakah One Company and KEPCO

Hazardous Waste

Hazardous waste is created onsite during the construction process, the vast majority of which is currently in temporary storage until a new municipal facility equipped to handle such waste is completed. As a result, no hazardous waste was disposed to landfill in 2019.

We recycle hazardous waste through an arrangement with the Abu Dhabi Centre for Waste Management (Tadweer). Currently plastic containers for paint and other liquids are transferred to the recycling facility – a total of 10 tons in 2019.

Hazardous Waste			
Year	2017	2018	2019
Hazardous waste disposed (metric tons)	0	0	0
Hazardous waste recycled (metric tons)	5.5	75	10
Percentage of total hazardous waste recycled	100%	100%	100%

Scope: ENEC, Nawah, Barakah One Company and KEPCO

Biodiversity

While impacts on the natural environment are inevitable for a project of this size, major efforts are made to try and reduce, mitigate, or compensate biodiversity impact. Some of the most significant current and future challenges relating to impacts on biodiversity that we have identified include spills affecting seawater and soil, marine habitat loss, species displacement and marine sediment quality impacts due to cooling water intake and discharge.

Marine Wildlife Management

We collaborated with external professionals from the Emirates Marine Environmental Group (EMEG) to assist with the handling, rescue and release of fauna that are encountered within the BNEP footprint. We successfully rescued two live beaked snakes and released them back into the sea, as well as 22 Hawksbill turtles, which we handed over to the EMEG for rehabilitation. The Hawksbill turtle is critically endangered as per the International Union for the Conservation of Nature (IUCN) and are protected by the EAD as per the UAE Federal Law No. 23 and 24 of 1999.

During February 2019, an endangered female Green Turtle, weighing 89 kg was rescued from BNEP shores and transported to Dubai Turtle Rehabilitation Project (DTRP) office for treatment and rehabilitation.

In November 2019, it was named Tasamuh (Arabic for tolerance) and released back into the sea, weighing

110 kg with a satellite tag. Approximately 290 employees witnessed her return to the BNEP shores. Satellite transmission from Tasamuh showed she headed and stayed near Suweihat Island until end of 2019.

Coral Translocation and Fragmentation

Through collaboration with EMEG in April 2019, we successfully translocated 7,305 coral colonies from areas where the potential for warming events are high to the recipient site. This was undertaken as a valuable preventative measure to conserve regional coral reef communities.

A total of 22,321 coral fragments were produced and implanted to the recipient site between November 2019 and December 2019 for reef restoration. Micro-fragmentation of coral stimulates coral growth, giving local reefs the opportunity to recover from bleaching events and the potential to restore areas to their former state of existence.

Coral Propagation Study

In accordance with the Barakah Compensatory Mitigation Plan, Nawah, together with Zayed University (ZU), initiated a three-year Coral Propagation Study in 2016. During 2019, objectives on the optimization of substrates for settling of coral juveniles and assessment of mid-water nurseries were attained. The last year of the project has focused on knowledge transfer initiatives that include training UAE National ZU students as research assistants in the Coral Laboratory on techniques of coral spawning and propagation. Several staff at Nawah assisted in the spawning event during the months of April and May 2019.



Radiological Monitoring Laboratory

The Environmental Radiochemistry Laboratory was one of the first departments to begin operations at Nawah. The main goal of the Lab is to study and monitor background radiation, in and around the BNEP, and to prevent potential impact to public health and safety. The Lab sends bi-annual reports to FANR, containing the results of radiological tests performed on samples including soil, sediment, fish, invertebrates, air, drinking

water, and seawater. Test results have been reported for 2016, 2017, 2018 and 2019 and all results indicate that radiation levels are within acceptable limits.

Ghaf Tree Planting

This year, between 21 April 2019 and 27 April 2019, Nawah celebrated Environment Week. During this time, Earth Day was commemorated on 22 April 2019, where environmental awareness activities were held including the distribution of Ghaf tree seeds for planting. The event also included quizzes to increase knowledge on environmental aspects and an environmental photography competition was held. The completion received over 100 entries and three winning photographs were selected.

Barakah Beach Clean-up

As part of our commitment to protecting the environment, an Annual Beach Clean-up event was held at the Barakah Guesthouse Beach on Tuesday 19 November 2019, which collected more than one ton of waste.

Over 290 volunteers from ENEC, Nawah and KEPCO, KHNP, Hyundai Samsung Joint Venture (HSJV) demonstrated their dedication to environmental protection by collecting dozens of bags of waste washed ashore surrounding Barakah, helping to keep the coastline clean.

The event is part of ENEC's on-going commitment to environmental sustainability. Sustainability and environment are at the heart of what we do at ENEC, and the Barakah Beach Clean-up is just one of a number of proactive environmental initiatives being implemented by ENEC to do our part for the environment and ensure the long-term sustainability of the natural areas surrounding the Barakah site.



7

EMPOWERING OUR PEOPLE



The UAE Peaceful Nuclear Energy Program will provide high-value jobs, while also bringing new knowledge and expertise to the country. The Program represents an opportunity for talented and highly skilled UAE Nationals to become leaders in a rapidly growing and international sector.

7.1 Overview

Thousands of highly skilled individuals with a wide range of knowledge, expertise, and training, have come together as a team to construct and operate the BNEP. As the first project of its kind in the region, we have drawn from the best national and international talent while simultaneously investing heavily in the creation of knowledge through highly specialized nuclear energy education and training programs for UAE Nationals.

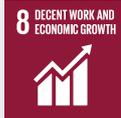
Sustainability Objectives

Our knowledge and employment sustainability objectives include:

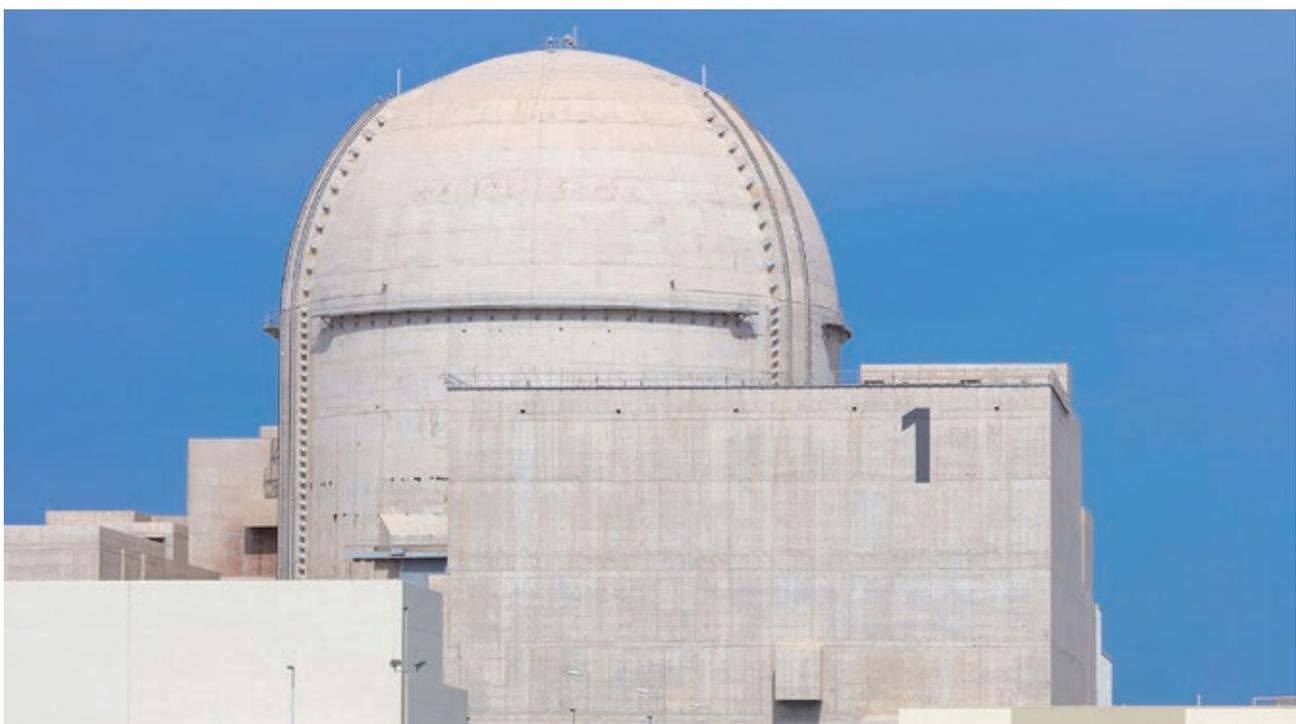
- 1 Our workforce – to generate jobs, recruit, and retain high-quality people within ENEC and the nuclear energy sector.
- 2 National talent development – to develop UAE National talent for employment at ENEC and in the nuclear energy sector.
- 3 Knowledge creation – to contribute to the development of a knowledge-based economy benefiting from international experience and the provision of world-class training and education programs.

SDG Targets Addressed

By delivering on these sustainability objectives, we are contributing to the achievement of the following SDG targets:

Sustainability Value Pillar	Sustainability Aspect	UN SDG Addressed
Empowering our People	Our Workforce National Talent Development Knowledge Creation	  

UN SDGs Addressed	
<p>TARGET 4-4</p> 	<p>Increase the number of people with relevant skills for financial success By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship.</p>
<p>TARGET 5-5</p> 	<p>Ensure full participation in leadership and decision-making Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life.</p>
<p>TARGET 8-5</p> 	<p>Full employment and decent work with equal pay By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.</p>
<p>TARGET 8-6</p> 	<p>Promote youth employment, education, and training By 2030, substantially reduce the proportion of youth not in employment, education, or training.</p>



7.2 Our Workforce

Across ENEC and our subsidiaries, we strive to be an employer of choice, recruiting and retaining highly skilled talent from the UAE and around the world, providing them with an open and engaging work environment to perform at their best. Encouraging women to join the nuclear sector is also a key priority with initiatives such as Women in Nuclear (WiN) that supports current and future female employees.

Workforce Profile

Our workforce is comprised of the highest caliber of professionals and specialists who are helping to deliver one of the largest nuclear energy projects globally, and one of the most strategically significant projects in UAE history. In total, we have a proud workforce of 3,111 employees.

Workforce Profile			
Year	2017	2018	2019
Total number of employees	2,569	2,926	3,111
By Gender			
Female	465	516	522
Male	2,104	2,410	2,589
By Age			
18-30	840	859	818
31-50	1,207	1,428	1,625
51+	522	639	668
By Nationality / Region			
Middle East and North Africa	1,383	1,498	1,538
Africa	84	93	109
Americas	374	474	539
Europe / EU / Turkey	223	253	263
Asia / Australia / New Zealand	505	608	662

Scope: ENEC, Nawah and Barakah One Company

The workforce has representation from over 37 nationalities, with most employees coming from the Middle East and North Africa. We also employ 818 young people (18-30), contributing to national goals and targets for youth employment.

Recruitment and Onboarding

Recruiting capable professionals is essential to achieving our organizational strategy; quality control measures are in place that provide for merit-based recruitment.

In 2019, we recruited 375 employees, including 150 UAE Nationals, 44 women and 93 young people (aged 18-30). All new employees undergo a rigorous induction program entitled 'Becoming a Nuclear Professional'. This training covers our regulatory requirements, safety culture, radiological restrictions, and risks, as per the corporation's policies, procedures, and internal systems.

This rapidly growing workforce directly impacts the economy through the spending of wages and benefits, which in turn indirectly supports job creation in other sectors. There is also an additional indirect impact as many internationals bring their families to the country, spurring further economic activity by either renting or buying property, and through spending on transportation, education, health, food, and goods and services within the UAE.

We continue to search for talent from all over the world to fill vacancies existing primarily within Nawah, most of which are jobs relating to the future operations of the BNEP.

Recruitment			
Year	2017	2018	2019
Number of employees hired	678	463	375
By Gender			
Female	115	79	44
Male	563	384	331
By Age			
18-30	184	121	93
31-50	328	214	199
51+	166	128	83
By Nationality / Region			
UAE Nationals	231	150	92
Other Nationals	447	313	283

Scope: ENEC, Nawah and Barakah One Company



Careers at ENEC

<https://www.enec.gov.ae/careers-and-scholarships/careers/>

Engagement and Satisfaction

Strong employee engagement helps to ensure high levels of employee satisfaction, retention, and productivity, all of which support the achievement of our vision, mission, and corporate strategy. During 2019, we initiated employee engagement surveys to measure the level of satisfaction among our people. This year, the average employee satisfaction level was 74%. The surveys are intended to identify areas of improvement and to set a target for improvement annually.

Competitive salary and benefits packages provide the foundation, while proactive employee engagement, career development, and wellbeing initiatives help employees stay committed to personal and professional goals. We strive to create a transparent and open culture across the corporation where employees can voice their opinions and contribute to the corporation's success.

This year, our employee turnover rate was 5.4%, with 168 employees leaving the company. Reasons for leaving were due to family and personal circumstances (58.8%), termination (24.5%), other opportunities (8.8%), retirement (2.9%), management decision (2.9%), and deceased (2%). Keeping attrition rates low enables us to retain knowledge and expertise. Exit interviews are undertaken to review the primary reasons for leaving to improve internal processes, where applicable. In 2019, we drafted our Employee Retention Strategy, which includes Individual Development Plans (IDPs) and is planned to be implemented in 2020.

Retention			
Year	2017	2018	2019
Total employee turnover rate	4.1%	3.7%	5.4%
Number of employees that left ENEC (forced or voluntary)	104	108	168
By Gender			
Number of male leavers	79	83	128
Number of female leavers	25	25	40
By Nationality			
Number of UAE National leavers	52	46	45
Number of expatriate leavers	52	62	123

Scope: ENEC, Nawah and Barakah One Company

CSR Activities

We engage with our people through a range of tools and initiatives including weekly alignment meetings, employee intranet, regular emails, SMS, tri-weekly “Barakah in One Minute” newsletter style emails, voluntary events such as Food for Thought (F4T), innovation programs, CSR events, the Employee Assistance Program, Talent Management Framework and through the Sa’ada (Happiness) Program.

This year, we carried out the following CSR activities:

- Al Dhafra Community Festival sponsorship.
- Barakah Beach Clean Up and Turtle Release. Refer to Section 6.5 for further details.
- Terry Fox Run – sponsored a corporate run team to participate.
- Ramadan Iftar Tent for laborers and employees including Iftar meal distribution across Madinat Zayed community in the Al Dhafra region.
- Partnership with Emirates Red Crescent to provide Iftar meals across the UAE to 200 people per day throughout the holy month of Ramadan.
- Make a Wish Foundation: partnered with Make a Wish Foundation UAE to host a group of children suffering from several chronic illnesses with dreams of becoming engineers. The event took place in recognition of Universal Children’s Day
- Elderly Center of Al Sharjah: visit by 50-senior UAE National citizens to share knowledge on the activities and progress of the UAE Peaceful Nuclear Energy Program. Our CEO presented and the guests enjoyed a luncheon together followed by an outing to key Abu Dhabi landmarks.

ENEC Employee Assistance Program

In 2019, we designed an employee assistance program to support our employees to resolve personal problems that are detrimental to their health and wellbeing, and those that may affect their performance at the workplace.

Employee Concern Program

In order to enhance a work environment that supports and encourages all employees, contractors and subcontractors can identify and disclose nuclear safety and quality concerns without fear of retaliation, Nawah has established an Industry best practice Employee Concern program (ECP).

The Employee Concerns Program is an independent system for reporting nuclear safety and quality concerns. It is designed to encourage open communication and to ensure employees can raise nuclear safety or quality issues without fearing harassment, intimidation, retaliation, or discrimination (HIRD). The ECP addresses nuclear safety and quality concerns in a timely and objective manner and acts as an alternative and anonymous system for reporting nuclear safety concerns.

The ECP is a first of its kind program in the UAE and supports a Safety Conscious Work Environment (SCWE). SCWE is a fundamental principle in maintaining a strong nuclear safety culture. The program relies on employees and contractors to identify and report nuclear safety issues as well as issues impacting plant’s

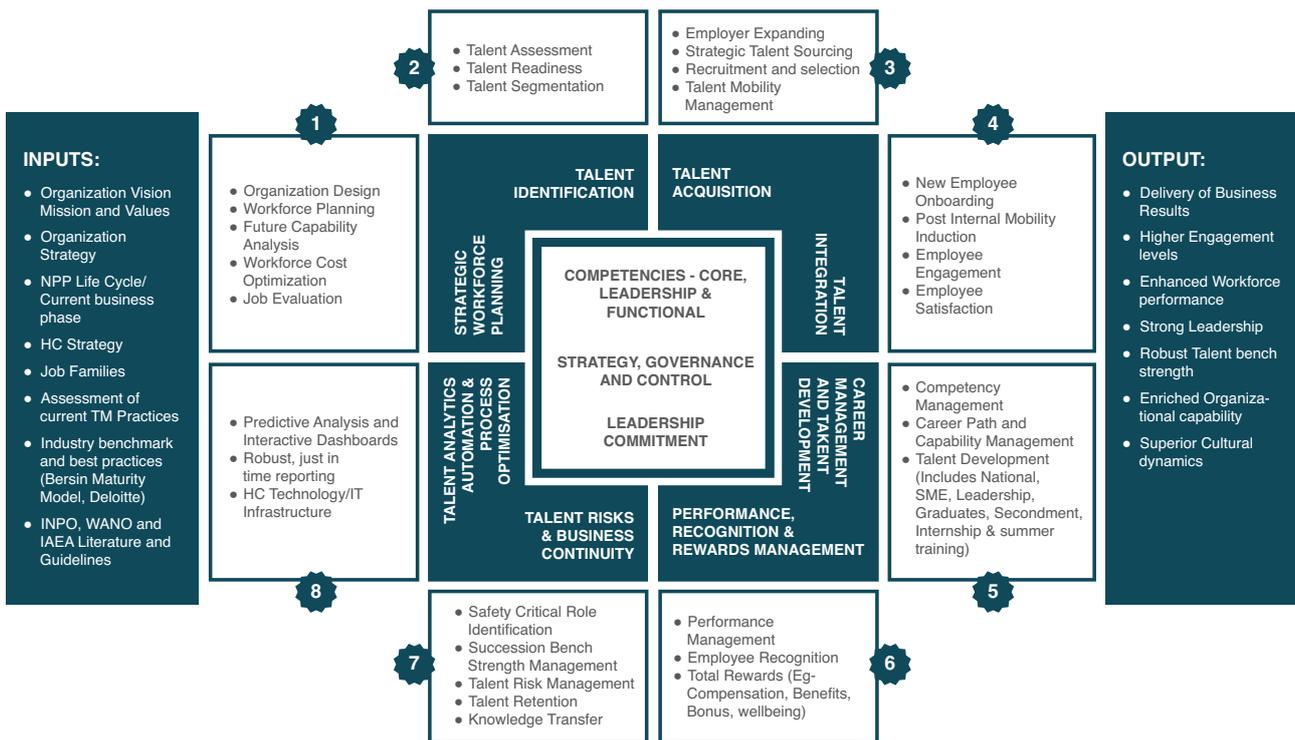
programs, processes, and performance. A strong SCWE supports the goal of adopting a strong Nuclear Safety Culture. It encourages personnel to raise any nuclear safety concern such as

- Problems with the safety, design, operation, maintenance, management, or construction of the Barakah plant,
- Treatment of individuals by their supervisor, manager, or peers

Talent Management Framework

Our employees are our most valuable assets and our competitive advantage. This year, our Enterprise Talent Management team developed the Talent Management Framework, which supports the ENEC Enterprise Strategy 2020-2024 in developing and maintaining a capable and engaged workforce.

The framework comprises of eight Talent Management practices that are broad, resourceful, enabling and are spread across employee lifecycle. The practices include strategic workforce planning, talent identification, talent acquisition, talent integration, career management and talent development, performance, recognition and rewards management, talent risk management, and talent analytics, automation, and process optimization.

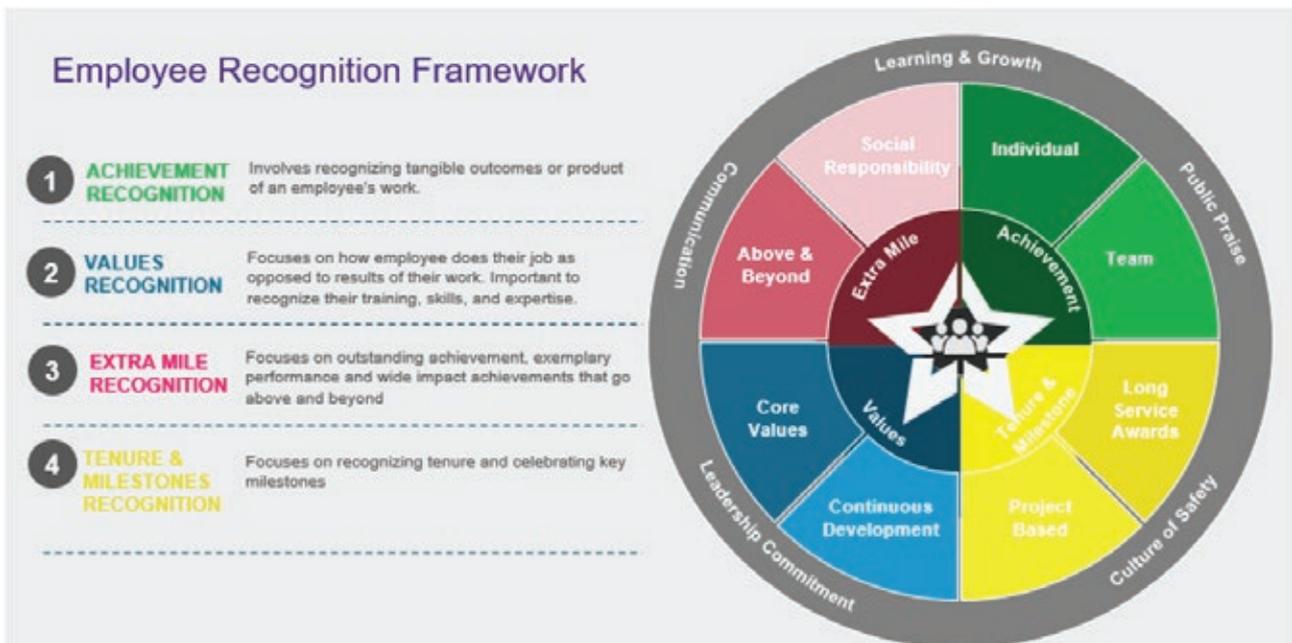


Training and Development

In 2019, two UAE National employees were sent to Ontario Power Generation (OPG) plant in Canada for a three-month work placement to receive operational training on nuclear procurement and supply chain.

Employee Recognition and Awards Framework

Our employee recognition and awards framework has been developed to build a positive recognition work environment. The framework includes four key pillars; achievement recognition, values recognition, extra mile recognition, and tenure and milestones recognition.



Sa'ada (Happiness) Program

The Sa'ada Program brings together a range of employee satisfaction initiatives under one umbrella. The initiatives include ENEC Life+, which focuses on employee health and wellbeing, majlis where employees can speak their minds, employee recognition schemes such as employee of the month, and the provision of facilities for physical and mental fitness.

Anti-discrimination

As per the ENEC Code of General Business Principles and Ethics, and Disciplinary Action Code, employees must make all employment decisions without regard to an individual's race, color, national origin, religion, gender, age, disability or other characteristics (personal traits). Such employment decisions include selection, hiring, placement, compensation, benefits, transfer, promotion, training, termination, and disciplinary action. Our employees are prohibited from undertaking any act of discrimination in the workplace against any other person based on a personal trait.

Female Participation

We are deeply committed to promoting female employment and participation in the workforce. To encourage female employees to join and remain in the nuclear sector, We developed an integrated approach to promote the inclusion of women in our workforce by supporting the new generation of women employed in the nuclear industry, developing their skills, and creating an inclusive workplace that supports work-life balance and wellbeing.

In 2019, our workforce was comprised of 522 female employees. Women made up 17% of the total workforce and 11% of senior management. Many of the women at the BNEP are employed in highly technical roles, making it one of the most gender-diverse nuclear energy plants in the world.

Despite the overall number of women increasing significantly, the overall percentage of women across ENEC and our subsidiaries decreased slightly from previous years. The drop is primarily due to a limited pool of female applicants for the large number of technical roles currently being recruited. We are seeking to reverse this trend by actively encouraging women to participate in the Energy Pioneers educational program, which will provide a strong pipeline of highly skilled women in the future.

Female Participation			
Year	2017	2018	2019
Number of female employees	465	516	522
Female employment rate	18%	18%	17%
Number of females in senior management positions	10	48	12
Percentage of females on the Board of Directors	16%	0%	0%

Scope: ENEC, Nawah and Barakah One Company

Women in Nuclear (WiN)

WiN is a global working group that supports the overall role of women in the nuclear industry, focusing on women working professionally in various fields of nuclear energy. ENEC and Nawah are active members of WiN's UAE chapter, supporting the overall understanding of women's needs within the company and ensuring that we are the number one employer of choice for females. The initiative provides an open communication channel between the working group and external technical and professional organizations, as well as education institutions and community organizations, to ultimately promote careers in engineering and nuclear technologies for females, especially UAE Nationals. Taking into consideration the UAE's culture and the significant number of women employed at the BNEP, we support female employees who are striving for professional excellence by providing formal and informal mentoring, coaching opportunities, presentations on technical topics and updates, communicating items of interest to working women, and providing guidance on continuing educational opportunities.



Women in Nuclear
[https://www.nawah.ae/about-nawah/women-in-nuclear-\(win\)](https://www.nawah.ae/about-nawah/women-in-nuclear-(win))

7.3 National Talent Development

It is vital that UAE Nationals play a central role in the national nuclear energy program, from construction, through 60 years of operations and maintenance, and the eventual decommissioning of the Barakah plant. Building a national workforce in a brand-new technical industry is a major undertaking and we have set an ambitious target to achieve 60% Emiratization.

“The launch of the Barakah Youth Council (BYC) forms a part of our commitment to developing our youth and providing them with the skills, expertise and experience to become the future leaders of our Nation and the growing local nuclear energy sector. This council operates within the framework of the UAE Centennial 2017 vision and UAE Vision 2021, which aim to ensure that the UAE has the human capital necessary to sustain a world-leading, knowledge-based economy.”

H.E. Eng. Mohamed Al Hammadi, Chief Executive Officer of ENEC

Emiratization

We have a dedicated Emiratization department, which is responsible for attracting and retaining national talent to reduce reliance on international expertise. As of 2019, we employed 1,496 UAE Nationals, a 3% increase compared to 2018. The Emiratization rate was 48% in 2019, and 61% among senior management.

Emiratization			
Year	2017	2018	2019
Number of UAE Nationals	1,257	1,453	1,496
Emiratization rate (%) *	49%	50%	48%
Number of UAE Nationals in senior management	46	126	57
Senior management Emiratization rate (%) *	51%	58%	61%

Scope: ENEC, Nawah and Barakah One Company

*Rate is the calculated average of ENEC, Nawah and Barakah One Company

Partnering with Academic Institutions

We work with local universities to promote a workforce that is qualified for jobs in the nuclear energy sector, including senior technical and management careers.



Scholarships

www.enec.gov.ae/careers-and-scholarships/scholarships/

Higher Diploma of Nuclear Technology (HDNT) program

UAE Nationals who want to become a part of the emerging nuclear energy sector can apply for scholarships in the Higher Diploma of Nuclear Technology (HDNT) program at Abu Dhabi Polytechnic, or for a variety of degrees at Khalifa University of Science and Technology (KU). We provide scholarships to students in both bachelor's and master's degree programs in chemical, nuclear, mechanical, and electrical engineering.

The HDNT program is the long-term manpower program for foundational technical positions within Nawah. The program is a joint venture between Abu Dhabi Polytechnic and Nawah. During the three-year program, students learn various subjects including: Mathematics, Physics, Chemistry, Mechanical Science, Electrical Science, Heat Transfer and Fluid Flow, Nuclear Physics, Plant Systems, Nuclear Safety, Radiation Measurement, Radiation Protection and Nuclear Materials. Courses are taught by Abu Dhabi Polytechnic faculty as well as by our capacity-building nuclear instructors. The program also includes OJT, a 23-week program designed to expose students to the various disciplines offered and introduce them to the plant and their specialized fields. A total of 17 HDNT students completed the OJT portion of the program in 2019.

ENEC Internship and Summer Program

The ENEC internship and summer programs give UAE National students and graduates the opportunity to experience the corporate structure and day to day activities to enhance their learning experiences by involving them in on-the-job training (OJT) within different departments at HQ and onsite at Barakah. The programs are delivered in cooperation with governmental and private academic institutions. During 2019, there were 115 active students at ENEC.

Student Sponsorships			
Year	2017	2018	2019
Higher Diploma	95	94	100
Bachelor	44	22	12
Master	0	0	1
PhD	2	2	2
Total Number of Students	141	118	115

Scope: ENEC, Nawah and Barakah One Company

Barakah Youth Council (BYC)

We initiated the Barakah Youth Council (BYC) to inspire, support, and empower the future UAE National leaders of the UAE Peaceful Nuclear Energy Industry. The BYC serves as a direct channel of communication between the senior leadership of ENEC, Nawah and Barakah One Company and the young UAE National employees. The council provides these young employees with a voice to champion change and drive continuous improvement while also being involved in the decision-making for the evolution of the UAE Peaceful Nuclear Energy Program.

Energy Pioneer Program

To build a pipeline of future nuclear qualified talent, we developed the Energy Pioneers Program, which brings together partners such as KEPCO, regulators, international associations, and universities to create an intensive and comprehensive program of national nuclear professional development.

The Energy Pioneer program met several milestones in 2019. This year, 214 graduates joined, bringing the total number of Energy Pioneers to 575, who have benefitted from scholarships

Qualification	SRO	RO	Local Operator	Chemistry	Radiation Protection	Maintenance	Engineering
Certified	22	4	5	15	18	56	94
Ongoing	31	90	110	33	19	8	70
Total	53	94	115	48	37	64	164

Outreach Programs

We launched an Outreach Program to raise awareness about the UAE Peaceful Nuclear Energy Program and its benefits. The program targets citizens and residents across various age groups in the UAE. The program is customized based on the following target groups:

1. Schools
2. Universities
3. Majalis (Arabic term for gatherings of common interest groups in the community)
4. UAE and International Stakeholders

University Students Internship Program

In addition, we run an internship program for UAE and Korean students in undergraduate engineering programs. We launched this program in collaboration with KEPCO and the Korea Nuclear Association (KNA). The program is designed to involve the students in activities such as plant design, plant construction, commissioning, operation, maintenance, and decommissioning.

In 2019, 29 Korean students joined the internship program learning from over 30 UAE National engineers and subject matter experts.

During the same year, 10 UAE National undergraduate engineering students from Khalifa University visited the Republic of Korea to participate in the second UAE internship program.

Education Working Group

The Education Working Group (EWG) was created to establish educational requirements for undergraduate and postgraduate disciplines for the UAE Peaceful Nuclear Energy Project. Nine of the 10 technical and leadership advisors are UAE Nationals, three of them from the UAE Youth Category. Their work also involves coordinating with the Department of Education and Knowledge (ADEK), the Ministry of Education (MoE), the Ministry of Presidential Affairs (Scholarships Office) and similar education-related entities.

7.4 Knowledge Creation

The creation of knowledge and skills, internally and externally, is important to the long-term sustainability of the UAE Peaceful Nuclear Energy Program. We collaborate with a range of academic and governmental institutions to deliver knowledge and skills training for our own employees and the employees of other sector-based companies.

Learning and Development

We are committed to learning and improvement in accordance with the global nuclear energy industry's commitment to continuous learning and development. We have embraced a lifelong learning approach; in 2019, the number of training hours delivered totaled 643,674 hours – an increase of over 51% from 2018. This increase is primarily due to the rise in the number of employees and also from a concerted effort to increase the numbers of internally delivered courses available, the number of scheduled offerings, the increase in courses that train for operational readiness and qualification as well as continuous advertising of new soft skills courses.

In addition to the foundational training program all employees complete when they join ENEC, we provide 35 core competency courses to provide ample opportunity for the continuous development of the technical and soft skills crucial for a successful workplace.

In recognition of employee time and resources, we blend traditional instructor-led courses with mobile learning in the form of eLearning, eReads, and workshops, thus providing the freedom to continue personal development at times most suitable to individual schedules.

In 2019, we initiated two operational training courses to meet employees' demand in learning and development

- **Management Certification:** 16-week course that satisfies the demands of the nuclear safety manual which requires senior leaders to acquire SRO training. The first cohort session will begin during the first quarter of 2020.
- **Accelerated Instructor Certification:** nine-week course that is undertaken following the SRO training in order to deliver the operational training.

Since 2017, Nawah has been a recognized National Registered Training Provider (RTP), authorized to issue nationally endorsed qualifications. These qualifications are obtainable by Nawah employees who can demonstrate competence in line with the national standards. Pending approval from the National Qualifications Authority (NQA), once implemented, these nationally endorsed qualifications will be recognized by other UAE institutions for credit transfer and career advancement and will also be internationally recognized.

In 2019, we shifted all training records to paperless, digital biometric iForms which hold employee training records and attendance history. The system is intended to provide real time, accurate records with automated reminders for expirations and renewals required.

2019 Nuclear Power Infrastructure Development School

The IAEA in cooperation with the Government of United Arab Emirates through KU, ENEC, Nawah and FANR organized training sessions that enable professionals from embarking countries to benefit from the know-how which the UAE has developed in building its infrastructure, licensing and constructing its first nuclear energy plant in line with the IAEA Milestones approach. A total of 46 UAE Nationals from ENEC and Nawah participated in the program in 2019. The training sessions are based on specific courses to train professionals in nuclear safety, security, safeguards, stakeholder involvement, legal and regulatory framework, and other areas.

UAE Government Programs

In 2019, two UAE National employees joined the UAE Government Leadership Programs (GLP). GLP aims to help UAE National employees grow and develop their leadership skills through tailored programs, designed to suit the specificities of the UAE, as well as its future needs and aspirations. The program embodies the UAE Government's efforts to build capacities, strengthen national leadership competencies, and empower national talent in various fields. This, in turn, serves to channel national strengths to support the UAE's sustainable development and enhance authorities' efforts to select and train the leaders of the future. By the end of 2019, a total of seven UAE National employees across ENEC completed the GLP.

Additionally, four UAE National employees were accepted to participate in the Mohammed bin Rashid Center for Government Innovation Program. This program has been developed in collaboration with Cambridge University and it seeks to enable government employees, promote their creative skills and innovative ideas, and develop national innovative calibers to lay the foundations of a diverse, innovation-led, knowledge-based economy.

Two employees participated in the UAE National Artificial Intelligence (AI) Program, which is intended to drive the use of AI to enrich, enhance and enforce government initiatives and programs in all sectors: Social & Community Development, Government Services, Global Partnerships, Information Dissemination, Insights and Analytics and National Security.

Finally, one employee completed the Government Communication Experts Diploma, which is organized by the UAE Government Communication Office in collaboration with the American University of Sharjah.



Training hours delivered does not include initial operations and technical training program that qualify operators, maintenance, engineering, radiation protection and chemistry plant personnel, or time spent on eReads and eLearning since these are untimed and completed at an employee's own pace.

Training and Development			
Year	2017	2018	2019
Total number of internal and external training hours delivered	197,227	426,770	643,674
Average hours of internal and external training per employee	77	146	207
Internal training hours delivered	134,560	402,490	567,394
UAE National employees	75,354	140,848	212,896
International employees	59,206	261,642	354,498
External training hours delivered	62,667	24,280	76,280
UAE National employees	60,318	22,256	67,360
International employees	2,349	2,024	8,920
Number of eLearning and eReads available	774	774	1,930
Number of eLearning and eReads completed	75,022	58,638	137,276

Scope: ENEC, Nawah and Barakah One Company



Knowledge Sharing

Our ongoing efforts to support the UAE's transition to a knowledge-based economy include knowledge sharing and engaging with local and international stakeholders, thereby driving growth, and setting new standards of excellence. The nuclear energy industry has some of the most stringent quality, technical and risk management standards in the world and we are committed to sharing its experiences in implementing and maintaining these standards with other national stakeholders and entities. Hence, we seek to reach out to our stakeholders to provide formal education and an overview of the program and technology.



“As a new organization within this global industry, we continuously strive to meet and exceed the highest international standards of safety, security, and efficiency. We are committed to sharing our experience and expertise with our national stakeholders so that they too may benefit from our experience. By sharing what we have learned with other entities, we hope to support the continuous improvement of standards across Abu Dhabi Emirate and the wider UAE.”

H.E. Eng. Mohamed Al Hammadi, Chief Executive Officer of ENEC

Nuclear Energy Management School

We collaborate with the IAEA, Khalifa University and FANR to offer the UAE-IAEA Nuclear Energy Management School. This school provides participants with a unique international educational experience aimed at preparing future nuclear energy leaders, while encouraging research and discussion on topics relating to the peaceful use of nuclear technology and creating a network of nuclear energy peers around the world. This program is run every two years and the latest session was initiated in early 2019.

APPENDICES

Appendix A - Report Scope and Boundaries

The scope and boundaries of this report includes operations and activities that fall under ENEC management control, including HQ and activities at leased buildings in Abu Dhabi, and construction-related activities carried out by KEPCO and its contractors at the Barakah site and ancillary venues. The performance of ENEC's two subsidiaries, Nawah and Barakah One Company, are also represented in the performance and management information provided.

This report was prepared using data and information collected in cooperation with all ENEC divisions. In addition, Health, Safety and Environmental data submitted monthly by KEPCO, ENEC's Prime Contractor on the Barakah site project has been used in combination with ENEC HQ data to produce this report.

Section of the report	Boundaries of performance reporting
Our Economic Footprint	
Financial Responsibility	ENEC, Nawah and Barakah One Company
Supply Chain Management	ENEC, Nawah and Barakah One Company
Economic Development	ENEC, Nawah and Barakah One Company
Safe, Clean, Efficient and Reliable Energy	
HSES Management System (MS)	ENEC, Nawah, Barakah One Company, KEPCO and subsidiaries
Health, Safety and Security	ENEC, Nawah, Barakah One Company, KEPCO and subsidiaries
Quality, Efficiency and Reliability	ENEC, Nawah and Barakah One Company
Environmental Management	ENEC, Nawah, Barakah One Company, KEPCO and subsidiaries
Empowering our People	
Our Workforce	ENEC, Nawah and Barakah One Company
National Talent Development	ENEC, Nawah and Barakah One Company
Knowledge Creation	ENEC, Nawah and Barakah One Company

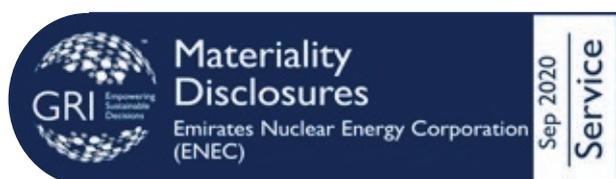
The information discussed in this report is based on performance and ENEC status as of December 31, 2019. The reporting period is 1 January 2019 to 31 December 2019. Compiling this report has helped Enterprise to better understand the impact of its operations and highlights data streams that Enterprise will continue to monitor for future reporting. No limitations for reporting on scope or boundary were identified during the preparation of this report. As the BNEP is in the construction phase, this report does not address the impacts of consumer use of products.

Appendix B - Stakeholder Mapping

ENEC Stakeholder Groups			
Stakeholder	Description	Interest/Role/Expectations	Channels of Engagement
Government Entities	Federal, regional, and local government ministries and authorities.	Safety, security, environment, emergency preparedness, shared infrastructure, and other resources.	<ul style="list-style-type: none"> • Site delegations, facility tours and inspections • Regular meetings and written correspondence • Program Executive Update • Participation in governmental initiatives and campaigns
Nuclear-Specific Organizations	Nuclear-specific industry bodies including multilateral organizations, associations, and advisory bodies.	Information sharing and knowledge transfer, industry best practices, safety and security, technology, etc.	<ul style="list-style-type: none"> • Regular meetings and workshops • Regular reports and program updates • Delegations to site • Shared initiatives • Knowledge-sharing workshops • Interactive dialogue • Reporting • International Advisory Board • Associated events, seminars, conferences and regional events
Media	Local, regional and international media.	On-going access to timely, comprehensive information about the project.	<ul style="list-style-type: none"> • Arranging interviews • Site visits • Media training
International Organizations, Government and Financial Institutions	Multilateral organizations, governments of GCC nations, governments of civilian nuclear energy programs.	On-going access to timely, comprehensive information about the project.	<ul style="list-style-type: none"> • Delegations and events • Responding to on-going requests for information
Academic Agents	Federal, regional and international academic institutions.	Involvement in human capacity development, vocational and technical training, bachelors and masters programs.	<ul style="list-style-type: none"> • Energy Pioneers Programs • Regular events and career fairs at schools and universities

ENEC Stakeholder Groups			
Stakeholder	Description	Interest/Role/Expectations	Channels of Engagement
Prime Contractor Program Related Companies	KEPCO or its subsidiaries	Initiating and developing all construction and operation works, knowledge transfer, industry best practices, safety and security, technology.	<ul style="list-style-type: none"> • Regular meetings and workshops • Regular reports and program updates • Knowledge-sharing • Interactive dialogue • Reporting • Associated events, seminars, conferences and events
Social Actors	Including but not limited to: Al Dhafra Region residents ENEC, Nawah and Barakah One staff, Senior Reactor Operators, Abu Dhabi residents	Increase awareness and knowledge, safety, security, environment, emergency preparedness, shared infrastructure and other resources.	<ul style="list-style-type: none"> • Awareness sessions • Internal engagement programs • CSR activities
Administration, Infrastructure & Utility Organizations	Energy, electricity and transmission companies	Obtaining Non-Objection Certificate Infrastructure works, essential urban planning activities, power supply	<ul style="list-style-type: none"> • Meetings • Benchmarking • Non-Objection Certificate • Regular meetings and workshops • Regular reports and program updates

Appendix C – GRI Content Index



This report has been prepared in accordance with the GRI Standards: Core option. As signified by the icon above, the report has successfully completed a Materiality Disclosure Service provided by the GRI. The table below is an index of the GRI disclosures included in this report as per the GRI Standards.

GENERAL STANDARD DISCLOSURES			
GRI 101: FOUNDATION 2016			
GRI 102: GENERAL DISCLOSURES 2016			
General Standard Disclosures	Disclosure Title	Page Number	Comment
ORGANIZATIONAL PROFILE			
GRI-102-1	Name of the organization	1	
GRI-102-2	Activities, brands, products, and services	7-10	
GRI-102-3	Location of headquarters	Abu Dhabi	
GRI-102-4	Location of operations	UAE	
GRI-102-5	Ownership and legal form	9-10	
GRI-102-6	Markets served	UAE	
GRI-102-7	Scale of the organization	9-10	
GRI-102-8	Information on employees and other workers	69-70	
GRI-102-9	Supply chain	36-38	
GRI-102-10	Significant changes to the organization and its supply chain	36-38	
GRI-102-11	Precautionary Principle or approach	14-19; 44-56	
GRI-102-12	External initiatives	4,13,20-21,63-65	
GRI-102-13	Membership of associations	20-21	
GRI-102-13	Membership of associations	20-21	
STRATEGY AND ANALYSIS			
GRI-102-14	Statement from senior decision-maker	5-6	
GRI-102-15	Key impacts, risks, and opportunities	13, 20	

ETHICS AND INTEGRITY			
GRI-102-16	Values, principles, standards, and norms of behavior	8-9, 18-19	
GOVERNANCE			
GRI-102-18	Governance structure	15-17	
STAKEHOLDER ENGAGEMENT			
GRI-102-40	List of stakeholder groups	85-86	
GRI-102-41	Collective bargaining agreements	Collective bargaining is not permitted within the UAE	
GRI-102-42	Identifying and selecting stakeholders	28-29, 85-86	
GRI-102-43	Approach to stakeholder engagement	28-31, 85-86	
GRI-102-44	Key topics and concerns raised	85-86	
REPORTING PRACTICE			
GRI-102-45	Entities included in the consolidated financial statements	Financial statements include the activities of ENEC. No other entity is included	
GRI-102-46	Defining report content and topic Boundaries	84	
GRI-102-47	List of material topics	25	
GRI-102-48	Restatements of information	36-39, 50, 60-61	
GRI-102-49	Changes in reporting	No significant changes	
GRI-102-50	Reporting period	1 January 2019 – 31 December 2019	
GRI-102-51	Date of most recent report	2018	
GRI-102-52	Reporting cycle	Annual	
GRI-102-53	Contact point for questions regarding the report	4	
GRI-102-54	Claims of reporting in accordance with the GRI Standards	4, 87	
GRI-102-55	GRI content index	87-91	
GRI-102-56	External assurance	4	

¹GRI 2016: 102-49

SPECIFIC STANDARD DISCLOSURES

GRI Standard	Disclosure Title	Page Number	Omissions	Comment
CATEGORY: ECONOMIC				
MATERIAL TOPIC: ECONOMIC PERFORMANCE				
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 34-36, 40	
	GRI-103-2	The management approach and its components	34-36, 40	
	GRI-103-3	Evaluation of the management approach	34-36, 40	
GRI 201: Economic Performance 2016	GRI-201-1	Direct economic value generated and distributed	36	
	GRI-201-4	Financial assistance received from government	36	
MATERIAL TOPIC: MARKET PRESENCE				
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	8, 25, 34, 36	
	GRI-103-2	The management approach and its components	8, 34, 36	
	GRI-103-3	Evaluation of the management approach	8, 34, 36	
GRI 202: Market Presence 2016	GRI-202-2	Proportion of senior management hired from the local community	76	
MATERIAL TOPIC: INDIRECT ECONOMIC IMPACTS				
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 34-36, 40	
	GRI-103-2	The management approach and its components	34-36, 40	
	GRI-103-3	Evaluation of the management approach	34-36, 40	
GRI 203: Indirect Economic Impacts 2016	GRI-203-2	Significant indirect economic impacts	36	
MATERIAL TOPIC: PROCUREMENT PRACTICES				
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 34-35, 37-39	
	GRI-103-2	The management approach and its components	34-35, 37-39	
	GRI-103-3	Evaluation of the management approach	34-35, 37-39	
GRI 204: Procurement Practices 2016	GRI-204-1	Proportion of spending on local suppliers	38	

MATERIAL TOPIC: ANTI-CORRUPTION					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	18, 25		
	GRI-103-2	The management approach and its components	18		
	GRI-103-3	Evaluation of the management approach	18		
GRI 205: Anti-Corruption 2016	GRI-205-2	Communication and training about anti-corruption policies and procedures	18		
CATEGORY: ENVIRONMENTAL					
MATERIAL TOPIC: MATERIALS					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 59		
	GRI-103-2	The management approach and its components	59		
	GRI-103-3	Evaluation of the management approach	59		
GRI 301: Materials 2016	GRI-301-1	Materials used by weight or volume	59		
MATERIAL TOPIC: ENERGY					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 60-61		
	GRI-103-2	The management approach and its components	60-61		
	GRI-103-3	Evaluation of the management approach	60-61		
GRI 302: Energy 2016	GRI-302-1	Energy consumption within the organization	61		
	GRI-302-2	Energy consumption outside of the organization	61		
MATERIAL TOPIC: WATER AND EFFLUENTS					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 61-62		
	GRI-103-2	The management approach and its components	61-62		
	GRI-103-3	Evaluation of the management approach	61-62		
GRI 303: Water and Effluents 2018	GRI-303-1	Water withdrawal by source	61		
	GRI-303-2	Management of water discharge-related impacts	62		
	GRI-303-3	Water recycled and reused	62		
MATERIAL TOPIC: BIODIVERSITY					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 63-65		
	GRI-103-2	The management approach and its components	63-65		
	GRI-103-3	Evaluation of the management approach	63-65		
GRI 304: Biodiversity 2016	GRI-304-3	Habitats protected or restored	63-65		

MATERIAL TOPIC: EMISSIONS					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 58-60		
	GRI-103-2	The management approach and its components	58-60		
	GRI-103-3	Evaluation of the management approach	58-60		
GRI 305: Emissions 2016	GRI-305-1	Direct (Scope 1) GHG emissions	60		
	GRI-305-2	Energy indirect (Scope 2) GHG emissions	60		
	GRI-305-3	Other indirect (Scope 3) GHG emissions	60		
MATERIAL TOPIC: EFFLUENTS AND WASTE					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 62-63		
	GRI-103-2	The management approach and its components	62-63		
	GRI-103-3	Evaluation of the management approach	62-63		
GRI 306: Effluents and Waste 2016	GRI-306-1	Water discharge by quality and destination	62		
	GRI-306-2	Waste by type and disposal method	63		
MATERIAL TOPIC: ENVIRONMENTAL COMPLIANCE					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	17-19, 24-25		
	GRI-103-2	The management approach and its components	17-19, 24		
	GRI-103-3	Evaluation of the management approach	17-19, 24		
GRI 307: Environmental Compliance 2016	GRI-307-1	Non-compliance with environmental laws and regulations	19, 42, 58		
CATEGORY: SOCIAL					
MATERIAL TOPIC: EMPLOYMENT					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 67-71		
	GRI-103-2	The management approach and its components	67-71		
	GRI-103-3	Evaluation of the management approach	67-71		
GRI 401: Employment 2016	GRI-401-1	New employee hires and employee turnover	70-71		
	GRI-401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	N/A		ENEC does not have part time employees

MATERIAL TOPIC: OCCUPATIONAL HEALTH AND SAFETY					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 39, 44-52		
	GRI-103-2	The management approach and its components	39, 44-52		
	GRI-103-3	Evaluation of the management approach	39, 44-52		
GRI 403: Occupational Health and Safety 2018	GRI-403-1	Occupational health and safety management system	44		
	GRI-403-2	Hazard identification, risk assessment, and incident investigation	44-56		
	GRI-403-3	Occupational health services	44-56		
	GRI-403-4	Worker participation, consultation, and communication on occupational health and safety	44-56		
	GRI-403-5	Worker training on occupational health and safety	46-53		
	GRI-403-6	Promotion of worker health	51-52		
	GRI-403-8	Workers covered by an occupational health and safety management system	44-56		
	GRI-403-9	Work-related injuries	50		
	GRI-403-10	Work-related ill-health	50		
	GRI-403-9	Work-related injuries	50		
	GRI-403-10	Work-related ill-health	50		
GRI-403-10	Work-related ill-health	50			
MATERIAL TOPIC: TRAINING AND EDUCATION					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 73, 77-82		
	GRI-103-2	The management approach and its components	73, 77-82		
	GRI-103-3	Evaluation of the management approach	73, 77-82		
GRI 404: Training and Education 2016	GRI-404-1	Average hours of training per year per employee	81		
MATERIAL TOPIC: DIVERSITY AND EQUAL OPPORTUNITY					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	9, 18, 25, 68, 72, 74-75		
	GRI-103-2	The management approach and its components	9, 18, 68, 72, 74-75		
	GRI-103-3	Evaluation of the management approach	9, 18, 68, 72, 74-75		
GRI 405: Diversity and Equal Opportunity 2016	GRI-405-1	Diversity of governance bodies and employees	69, 75		

MATERIAL TOPIC: NON-DISCRIMINATION					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 72, 74		
	GRI-103-2	The management approach and its components	72, 74		
	GRI-103-3	Evaluation of the management approach	72, 74		
GRI 406: Non-Discrimination 2016	GRI-406-1	Incidents of discrimination and corrective actions taken	74		No incidents recorded
MATERIAL TOPIC: FORCED OR COMPULSORY LABOR					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 39		
	GRI-103-2	The management approach and its components	39		
	GRI-103-3	Evaluation of the management approach	39		
GRI 409: Forced or Compulsory Labor 2016	GRI-409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	39		
MATERIAL TOPIC: SECURITY PRACTICES					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	9, 25, 42, 45, 52-54		
	GRI-103-2	The management approach and its components	9, 42, 45, 52-54		
	GRI-103-3	Evaluation of the management approach	9, 42, 45, 52-54		
GRI 410: Security Practices 2016	GRI-410-1	Security personnel trained in human rights policies or procedures	52-54		No training provided
MATERIAL TOPIC: LOCAL COMMUNITIES					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	24- 25, 27, 78		
	GRI-103-2	The management approach and its components	24, 27, 78		
	GRI-103-3	Evaluation of the management approach	24, 27, 78		
GRI 413: Local Communities 2016	GRI-413-1	Operations with local community engagement, impact assessments, and development programs	72, 78		

MATERIAL TOPIC: SUPPLIER SOCIAL ASSESSMENT					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	25, 38-39		
	GRI-103-2	The management approach and its components	38-39		
	GRI-103-3	Evaluation of the management approach	38-39		
GRI 414: Supplier Social Assessment 2016	GRI-414-1	New suppliers that were screened using social criteria	38-39		
MATERIAL TOPIC: SOCIOECONOMIC COMPLIANCE					
GRI 103: Management Approach 2016	GRI-103-1	Explanation of the material topic and its Boundary	17-19, 24-25		
	GRI-103-2	The management approach and its components	17-19, 24		
	GRI-103-3	Evaluation of the management approach	17-19, 24		
GRI 419: Socioeconomic Compliance 2016	GRI-419-1	Non-compliance with laws and regulations in the social and economic area	19		

Appendix D - Acronyms and Synonyms

ACRONYMS			
ADAA	Abu Dhabi Accountability Authority	HCC	Human Capital Committee
ADAEP	Abu Dhabi Award for Excellence in Government Performance	HDNT	Higher Diploma in Nuclear Technology
ADSG	Abu Dhabi Sustainability Group	HSES MS	Health, Safety, Environment & Sustainability Management System
ADWEC	Abu Dhabi Water and Electricity Company	IAEA	International Atomic Energy Agency
AED	Automated External Defibrillators	IAT	Institute of Applied Technology
APR	Advanced Power Reactor	IMS	Integrated Management System
ARCC	Audit, Risk and Compliance Committee	INPO	Institute of Nuclear Power Operations
BCM	Business Continuity Management	ISO	International Organization for Standardization
BNEP	Barakah Nuclear Energy Plant	KEPCO	Korea Electric Power Corporation
BOC	Barakah One Company	KFED	Khalifa Fund for Enterprise Development
BYC	Barakah Youth Council	KUSTAR	Khalifa University of Science, Technology, and Research
CAPEX	Capital Expenditure	LTIFR	Lost-Time Injury Frequency Rate
CICPA	Critical Infrastructure and Coastal Protection Authority	MENA	Middle East and North Africa
CIPS	Chartered Institute of Purchasing and Supply	MTCO₂ Eq	Metric tons of carbon dioxide equivalent
CR	Condition Report	Nawah	Nawah Energy Company
CSR	Corporate Social Responsibility	NQA	National Qualifications Authority
DOA	Delegation of Authority	NGO	Non-governmental organization
DUPM	Department of Urban Planning and Municipalities	O3	Ozone
EAD	Environment Agency - Abu Dhabi	OEMP	Operational Environmental Management Plan
EC	Executive Committee	OHSAS	Occupational Health and Safety Assessment Series
EFQM	European Foundation for Quality Management	OLA	Operating License Application
ENEC	Emirates Nuclear Energy Corporation	OSHAD	Abu Dhabi Occupational Safety and Health Center
EPRI	Electric Power Research Institute	PPP	Physical Protection Plan
ERM	Enterprise Risk (Threat and Opportunity) Management	PSC	Procurement and Supply Chain
ERMC	Executive Risk Management Committee	QA	Quality Assurance
FANR	Federal Authority for Nuclear Regulation	SDGs	Sustainable Development Goals
GCC	Gulf Cooperation Council	SMAT	Sustainability Maturity Assessment Tool
GDP	Gross Domestic Product	SPEX	Service and Performance Excellence Training Program
GHG	Greenhouse Gas	Tadweer	Abu Dhabi Centre for Waste Management
GIDP	Government Innovation Diploma Program	RTP	Registered Training Provider
GLP	Government Leadership Program	OJT	On-the-Job Training
GPP	Grand Program Plan	TRCFR	Total Recordable Case Frequency Rate
GRI	Global Reporting Initiative	WANO	World Association of Nuclear Operators
GSEC	General Secretariat of the Executive Council	WiN	Women in Nuclear

GLOSSARY	
Climate Change	Describes changes in the variability or average stage of the atmosphere over time scales ranging from decades to millions of years.
Emiratization	A national program initiated by the government of the United Arab Emirates to proactively increase the number of UAE nationals in the public and private sectors, so as to empower nationals and reduce dependency on foreign workers.
Environmental Management System	The management of environmental programs in a comprehensive, systematic, planned and documented manner. It includes the organizational structure and planning and resources for developing, implementing and maintaining policy for environmental protection.
GRI Reporting Guidelines	A framework for reporting on an organization's economic, environmental and social performance, aligned with the GRI Standards and managed by the GRI.
Global Reporting Initiative (GRI)	An independent international organization that has pioneered sustainability reporting since 1997, supporting businesses and governments worldwide understand and communicate their impact on critical sustainability issues such as climate change, human rights, governance and social well-being. More information about the GRI can be found online: https://www.globalreporting.org/information/about-gri/Pages/default.aspx
Greenhouse Gas Emissions	Gas emissions which contribute to the trapping of heat inside the atmosphere (resulting in the Global Warming phenomenon). These gases include carbon dioxide, methane or hydrofluorocarbon emissions.
Gulf Cooperation Council	A political and economic union involving the six Arab states of the Arabian Gulf with many economic and social objectives.
Nuclear Energy	The energy released during nuclear fission or fusion, especially when used to generate electricity.
Nuclear Fission	When the nucleus of an atom splits and releases energy, primarily in the form of heat. Nuclear Energy Plants use steam, turbines and generators to turn the heat released by fission into electricity.
Nuclear Fuel Cycle	The series of industrial processes which involve the production of electricity from uranium in nuclear energy reactors. This can include uranium discovery, conversion, enrichment, de-conversion, fuel fabrication, use of fuel in reactors, storage, reprocessing and disposal.
Occupational Health and Safety	A cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment.
Radioactive	Emitting or relating to the emission of ionizing radiation or particles.
Renewable Energy	Energy from a source that is not depleted when used.
Stakeholder Engagement	The process by which a firm's stakeholders engage in dialogue to improve a firm's decision-making and accountability toward sustainable development.
Stakeholders	A party that affects or can be affected by the actions of a business.
Sustainability	Sustainable development has been commonly defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Bruntland Report for the World Commission on Environment and Development (1992)
Sustainability Reporting	The voluntary public presentation of information about an organization's environmental, social and economic performance over a timeframe, usually released annually. International standards around reporting, such as GRI, make sustainability reporting a platform for sharing and benchmarking individual company as well as sector-wide performance. Sustainability reporting may be published as a stand-alone document, on a company website or incorporated into an annual report.

مؤسسة الإمارات للطاقة النووية
Emirates Nuclear Energy Corporation



شركة براكة الأولى ش.م.خ
Barakah One Company PJSC



شركة نواة للطاقة
Nawah Energy Company

