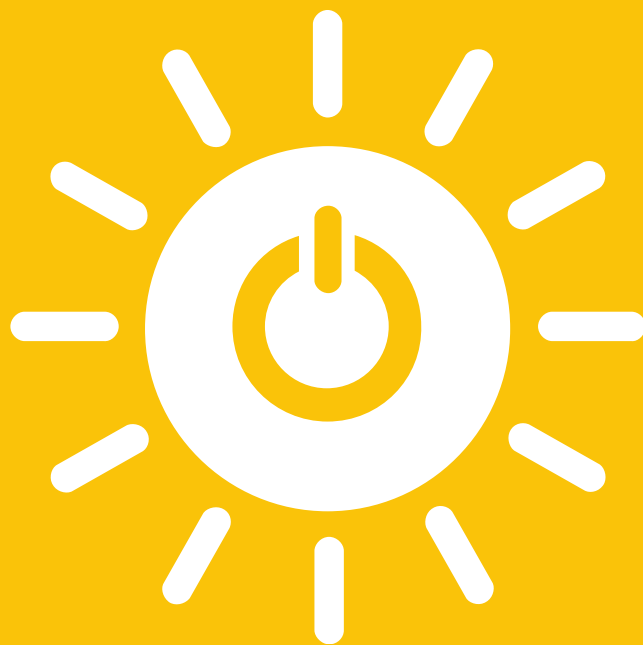




SDG 7

AFFORDABLE AND CLEAN ENERGY



After water and food, energy is one of the key enablers of human life. Energy is central to nearly every major challenge and opportunity the world faces today and access to energy for all is essential. But energy needs to be available and affordable to all to allow future development, and it needs to be clean in order to ensure that the development can be sustainable. Universities play a critical role in promoting and supporting clean energy, both through research, outreach, and also in their own behaviour and usage.

7.2 University Measures towards affordable and clean energy

7.2.1 Indicator: Energy-efficient renovations and building policy

The AUS Policies and Procedures Manual clearly states that “The university recognizes its responsibility to the environment and aims to continuously reduce the impact of its activities. By implementing proper practices, AUS aspires to attain sustainable use of natural resources, and to prevent any wasteful or polluting exercises.” (Policy created: 2021; Policy reviewed: 2024) In line with Strategic Pillar 5. “Effective Stewardship of Our Resources”, the university has established a policy to ensure all renovations or new builds are following energy efficiency standards in line with the “Pearl Rating System” of the Abu Dhabi Urban Planning Council. AUS received a “2 Pearl” rating for its recently constructed Engineering & Science Building (ESB), and was the first to achieve the “2 Pearl” rating outside of the Emirate of Abu Dhabi. The Pearl Rating System is the green building rating system developed by the Abu Dhabi Urban Planning Council as part of their sustainable development initiative, Estidama. Similar to LEED, the Pearl Rating System has various levels of certification, ranging from one to three pearls, and is based on four criteria: environmental, economic, social and cultural. More information about the UAE’s Estidama Pearl Green Building Rating system can be found here: <https://www.dmt.gov.ae/adm/Media-Centre/News/08Jan2025>

7.2.2 Indicator: Upgrade buildings to higher energy efficiency

AUS recognizes the crucial need for building energy efficiency to meet its net zero emission targets. Since the launch of the AUS Climate Action Plan, the AUS Campus Development team has upgraded existing buildings to higher energy efficiency by improving building thermal efficiency, upgrading cooling and water systems and implementing efficient air distribution controls. In addition, all major renovation projects in the last five years followed ESTIDAMA guidelines, a green building rating system used to evaluate sustainable building development practices across the UAE. In 2024, energy consumption decreased, specifically in academic buildings. AUS plans to upgrade the entire campus infrastructure to higher energy efficiency standards through a phased approach in support of its net zero by 2050 goal.

7.2.3 Indicator: Carbon reduction and emission reduction process

As part of the AUS Climate Action Plan launched in 2022, carbon management and continuous refinement of carbon emissions measurement and tracking has been a key priority for AUS to align with the UAE's Net Zero by 2050 objectives. After initially working with an external service provider ([Southpole Climate Solutions](#)), the AUS Office of Sustainability has progressively enhanced its process and methodologies to ensure precise and reliable data on carbon emissions, enabling effective monitoring and informed decision making on reducing carbon dioxide emissions. Alongside this, the sustainability team has led impactful awareness and engagement initiatives both on campus and in the wider community.

AUS employs a structured approach to carbon management and CO₂ reduction, which includes three core phases: measurement, reduction, and engagement & innovation.

1. **Measurement** – With the support of Southpole we established a baseline of greenhouse-gas (GHG) emissions by using the Greenhouse Gas Protocol, categorizing emissions into direct (Scope 1), indirect (Scope 2) and other indirect (Scope 3).
2. **Reduction** – Based on the baseline, AUS has set specific mid-term and long-term targets (aligned with the Science Based Targets initiative) and implemented interventions such as: improving building energy efficiency, shifting to greener energy sources, sustainable construction/renovation practices, reducing material and energy waste, and promoting low-carbon transportation.
3. **Engagement & Innovation** – AUS continuously embeds sustainability and climate action into campus culture, teaching and research: engaging students and staff in awareness and behavior-change programs, integrating sustainability into curriculum and operations, and developing solutions (for example, a blockchain-based carbon-credit system) to support broader decarbonization.

Together, these phases form AUS's Climate Action Plan, aligned with the UAE's Net Zero by 2050 strategic initiative.

7.2.4 Indicator: Plan to reduce energy consumption

AUS recognizes that the university's major emission sources are scope 2 purchased electricity and scope 3 fuel- and energy-related activities. To minimize the negative environmental impacts of its energy needs, AUS put an energy efficiency plan in place to reduce the institution's overall energy consumption. The AUS Energy Efficiency Plan outlines AUS' commitment to reducing its energy consumption through comprehensive sustainability initiatives, including the adoption of energy-efficient systems, optimization of building operations, and increased awareness among students and staff about responsible energy use.

In line with the plan, the following energy efficiency measures have already been deployed successfully across campus:

- The University has deployed LED lighting retrofits throughout the majority of campus buildings and outside lightings. The University's first priority was the academic buildings as the lights were on around-the-clock. The university has completed the vast majority of the LED retrofit, there are only a couple of projects that are still pending.
- Occupancy sensors for lighting control are utilized in hallways and classrooms for the majority of campus buildings. Thermostats throughout campus buildings range from 22-24 degree Celsius, and we encourage our students and employees living on campus to follow these standards.
- The University utilized solar water heaters in new buildings within the last five years and residential halls. Street warning signs for speed bumps and other similar alerts are all solar based.
- The Engineering and Sciences Building was built to the local Green Building Council standards, Estidama, which utilized energy efficient appliances, lab equipment, and exhaust systems. Additionally, the new Chemistry and Humanities and Social Science buildings have incorporated high efficiency appliances and lab equipment.

7.2.5 Indicator: Energy wastage identification

At AUS, energy management is an integral component of the university's broader sustainability strategy. AUS undertakes comprehensive energy reviews to systematically identify, evaluate, and address areas where energy consumption can be optimized and wastage reduced across campus operations.

The process begins with the collection and analysis of detailed energy-use data from all major campus facilities, including academic buildings, laboratories, student and faculty housing, and administrative areas. The university tracks patterns in electricity and water consumption, temperature regulation, and equipment performance to establish accurate consumption baselines.

Following data collection, technical audits and benchmarking studies are carried out by the Facilities Department and the Office of Sustainability. These assessments compare AUS's energy performance against internal historical records and other higher education institutions through the AASHE STARS Energy benchmarking process, which compares total energy consumption per gross square meter/foot of floor area. AUS also assesses its annual energy consumption with regards to the minimum performance threshold of 389 Btu (0.000389 MMBtu) per gross square meter per Celsius degree day (0.000065 MMBtu per gross square foot per Fahrenheit degree day). This benchmarking process helps identify inefficiencies such as over-conditioned indoor spaces, outdated HVAC systems, unnecessary lighting usage, and energy-intensive operations during non-peak hours.

Once areas of high energy wastage are identified, the university develops targeted intervention strategies. These include upgrading mechanical and electrical systems, implementing energy-efficient lighting and insulation solutions, and introducing smart controls to optimize cooling and lighting schedules. In parallel, behavioral and awareness campaigns are launched to encourage responsible energy use among students, faculty, and staff.

The results of each review are closely monitored and documented to ensure measurable improvement over time. Continuous tracking through key performance indicators (KPIs) allows AUS to assess the effectiveness of each intervention and refine its approach for future reviews. Regular reporting of these outcomes also reinforces transparency and accountability in AUS's sustainability practices.

Through these ongoing energy reviews, AUS not only reduces operational costs and environmental impact but also reinforces its role as a regional leader in sustainable campus management, aligning its efforts with the UAE's Net Zero by 2050 initiative and global best practices in higher education sustainability.

7.2.6 Indicator: Divestment policy

At AUS, we believe that how we invest reflects who we are. As a university deeply committed to sustainability, integrity, and social impact, we recognize the growing responsibility of higher education institutions to align their financial practices with global priorities—especially as they relate to climate action, ethical governance, and human well-being. While AUS is not currently a large-scale institutional investor, we are taking active steps to ensure that any current or future investment decisions are guided by clear sustainability principles. These are rooted in both our educational mission and our support for the United Nations Sustainable Development Goals (SDGs).

Our approach includes the following commitments:

- **Negative Screening:** AUS is committed to avoiding investments—whether direct or indirect—that contradict our institutional values or contribute to environmental or social harm. This includes sectors such as tobacco production, arms manufacturing, carbon-intensive industries, and companies with a record of human rights abuses or serious environmental violations.
- **Investing in Solutions:** Where feasible, we aim to support investments that contribute positively to society. This includes renewable energy, sustainable technologies, affordable healthcare, and innovations that address global challenges such as climate change and public health.
- **Responsible Stewardship:** As our financial and endowment strategies evolve, we will seek to integrate Environmental, Social, and Governance (ESG) factors into investment evaluations—balancing financial responsibility with long-term impact and ethical integrity.
- **Transparency and Dialogue:** We are committed to transparency in our financial governance and welcome continued dialogue with our community on responsible investment. Our progress in this area will be reflected in future sustainability reporting and institutional disclosures.

Policy Created: 2024

7.3 Energy use density

7.3.1 Indicator: Energy usage per sqm

This metric looks into energy used per floor space of university buildings. Specifically, this indicator looks at units of energy used by an individual, event, organisation or product at the university and focuses on all that is owned, controlled or consumed by the university. The metric relates to the UN Targets 7.3.

Data Collected	Data 2024 (Jan to Dec)
Total energy used in Gigajoule (GJ)	196,197 GJ

7.4 Energy and the Community

Universities need to directly outreach to help the community to return to renewable energy sources and to reduce environmental impacts.

7.4.1 Indicator: Local community outreach for energy efficiency

AUS is committed to promoting sustainability beyond its campus by engaging the wider community in learning about energy efficiency and clean energy. Through public seminars, workshops, and collaborative partnerships, AUS provides accessible learning opportunities that highlight practical ways to reduce energy use and adopt cleaner technologies. Working alongside organizations such as the Sharjah Electricity, Water and Gas Authority (SEWA), Petrofac and Sharjah Sustainable City, the university offers hands-on training sessions, expert talks, and community events focused on energy conservation and renewable energy solutions.

AUS also empowers students to serve as ambassadors for sustainability through initiatives like the EcoRep Program and various student-led clubs, which extends awareness campaigns and energy-saving practices into the community. Meanwhile, research centers such as the Energy, Water and Sustainable Environment Research Center and the Petrofac Research Chair for Renewable Energy contribute innovative solutions and share findings that benefit the region’s transition toward a low-carbon future.

By combining education, research, and community collaboration, AUS plays a leading role in building a culture of clean energy awareness and innovation across Sharjah and the UAE. Highlights during the academic year 2023–24 include:

- In March 2024, AUS hosted a community workshop on **“Future Proofing University Campuses: Energy Efficient, Smart and Microgrid Powered”** led by Schneider Electric, where students, faculty and members of the wider community explored how smart energy systems, microgrids and efficiency measures help to reduce campus energy consumption and minimize universities’ environmental impacts.

- AUS launched the **“Energy, Water and Sustainable Environment Research Center”** to facilitate innovative and interdisciplinary research addressing challenges related to energy, water resources and the sustainable environment. The center partners with the wider UAE community to address regional issues such as energy demand management and engage the public in clean energy innovation.
- The **Petrofac Research Chair in Renewable Energy** advances interdisciplinary research in clean energy technologies. Bringing together experts from physics, chemistry and engineering, the chair fosters innovation in solar energy efficiency, energy storage solutions, green hydrogen production and AI-driven energy management systems. The initiative supports the UAE’s ambition to become a hub for sustainable energy innovation.
- The **2024 SEWA and AUS Workshop** titled “Current and Future Challenges and Research Directions at American University of Sharjah”, organized by the Energy, Water and Sustainable Environment Research Center in collaboration with the Sharjah Electricity and Water Authority (SEWA), delved into advanced technologies and innovations in renewable energy, smart grids, energy efficiency and corporate sustainability. The event included expert presentations from industry leaders and faculty, provided a platform for academia and government to engage in discussions on the UAE’s energy transition, grid integration and the role of policy in shaping the future of sustainable energy in Sharjah.
- **AUS’ annual “Environmental Day”** brings hundreds of high school students from the region onto the AUS campus for workshops, lab tours and interactive activities designed to raise awareness of sustainability, energy-use reduction and future careers in environmental sciences. Themed "Climate Action and Future Careers in Biology, Chemistry and Environmental Sciences," Environmental Day 2024 featured a diverse range of activities and provided high school students and teachers with opportunities for hands-on learning and interaction with environmental professionals. Community outreach events like the AUS Environmental Day help foster knowledge and enhance competencies for young students, creating positive change from the ground up. The event’s focus on climate action and future careers was especially productive for students with ambitions to pursue careers in sustainability, which is a field that is critical to the prosperity of people and planet.

- The IEEE SIGHT AUS Chapter, a student club at AUS, has independently delivered the **Guardians of Our Green upskilling program** to a group of orphaned youth between the ages of 12 and 20 from the Sharjah Social Empowerment Foundation. The fully student-led renewable energy education program engaged underserved youth in Sharjah and empowered them to become advocates for sustainability and renewable energy. Through hands-on learning, interactive discussions and community-based projects, the program provided participants with a comprehensive understanding of renewable energy sources and their pivotal role in shaping a sustainable future. It offered students five weekly sessions, each focused on a specific form of renewable energy, from solar and wind to hydro, geothermal and biomass. Students also got hands-on experience through a series of demonstrations and experiments using technologies such as solar panels and wind turbines.

7.4.2 Indicator: 100% renewable energy pledge

In alignment with Sustainable Development Goal 7 (Affordable and Clean Energy), AUS has actively promoted a public commitment to achieving 100 % renewable energy beyond its own campus, extending its reach into the broader community and collaborating institutions. Through formal alliances, public events and documented pledges, AUS has engaged regional partners, local government, industry and civil society in supporting the transition to full renewable energy use. This promotion is supported by published evidence—made accessible to the public—that demonstrates AUS's leadership role and invites others to adopt similar commitments.

Formal public commitment and alliances

- AUS publicly aligned its sustainability strategy with the UAE's national goal of achieving net-zero by 2050 and released a campus-level Climate Action Plan.
- In June 2023, AUS became the first university in the UAE to join the UAE Alliance for Climate Action (UACA), committing to collaborate with national and institutional stakeholders on decarbonisation and renewable-energy deployment.
- AUS commits publicly to supporting clean-energy transitions through its sustainability web presence and annual sustainability reporting.

Outreach beyond campus

- AUS's 2023-24 Sustainability Report details efforts to engage communities, industry and governmental partners on sustainability matters including clean energy.
- AUS research initiatives such as the Petrofac Research Chair in Renewable Energy and partnerships with Sharjah National Oil Corporation on an "Energy, Environment & Innovation Fund" reinforce AUS's role in driving renewable-energy innovation in the region beyond its campus.

- Public availability of evidence
- AUS provides publicly accessible documentation—its Climate Action Plan, sustainability web pages and annual sustainability reports—which can be accessed by external stakeholders.
- The university lists its partnership membership (UACA) and research chairs publicly, providing transparency about its renewable-energy focus and broader commitment.

In summary, AUS actively promotes a public pledge toward the transition to 100 % renewable energy by aligning with national decarbonization goals, engaging with multi-stakeholder networks, extending its renewable-energy research and innovation into the broader community, and publishing accessible evidence of its commitments and progress. By doing so, AUS serves as a regional model for institutions seeking to advance SDG 7. Its advocacy for clean-energy awareness and renewable-energy integration demonstrates how higher-education institutions can mobilize communities and stakeholders to take a collective pledge toward achieving 100 percent renewable energy.

7.4.3 Indicator: Energy efficiency services for industry

AUS plays an active role in advancing the UAE's transition to sustainable and clean energy by providing direct services to local industry. These services include technical assessments, professional workshops, collaborative research, and innovation partnerships that enhance energy efficiency and expand the adoption of renewable-energy solutions within the region.

1. Industry-focused Energy Assessments and Consultancy

AUS provides energy efficiency assessments and advisory services through its Energy, Water and Sustainable Environment Research Center (EWSERC). These assessments are performed in partnership with government and industry bodies such as Sharjah Electricity, Water and Gas Authority (SEWA), and results are used to guide local entities toward measurable reductions in energy use.

2. Professional Development and Industry Workshops

AUS regularly hosts workshops and training programs with industry partners such as Siemens, Schneider Electric, Beeah and Sharjah Sustainable City to equip industry professionals with the knowledge and tools to adopt cleaner technologies and sustainable practices, highlighting renewable energy design, waste-to-energy technologies, and efficient building management systems. These engagements serve as a direct knowledge-transfer platform between academia and the industrial sector.

3. Research and Innovation Partnerships

AUS extends its impact through applied research collaborations designed to develop and implement clean-energy solutions. The Petrofac Research Chair in Renewable Energy supports industry-focused research in solar energy systems, hybrid grids, and hydrogen technology applications. Through its Industry Collaboration Advisory Board, AUS connects faculty researchers with local companies to test pilot renewable solutions, such as solar-assisted cooling and energy-storage optimization. AUS also provides prototype development and modeling services through its engineering laboratories to support energy-technology startups and local innovators.

Through these partnerships AUS directly supports local industry in enhancing energy efficiency and adopting renewable energy through technical consultancy, professional training, and applied research. By linking academic expertise with real-world implementation, AUS contributes to both SDG 7 (Affordable and Clean Energy) and the UAE's broader decarbonization goals—positioning the university as a regional hub for sustainable energy innovation and knowledge transfer.

7.4.4 Indicator: Policy development for clean energy technology

The American University of Sharjah (AUS) actively informs, advises, and supports government entities in the development and implementation of clean-energy and energy-efficient technology policies. Through expert consultation, joint research, and technical partnerships, AUS contributes evidence-based knowledge to help shape sustainable energy policies in the Emirate of Sharjah and the wider UAE.

Strategic Partnerships with Government Agencies

AUS collaborates closely with several UAE government bodies to align academic research and operational expertise with national sustainability goals:

- **Membership in the UAE Alliance for Climate Action (UACA) Advisory Board:** As a member of the UACA Advisory Board, AUS provides academic insights and policy recommendations that inform the Alliance's strategies for renewable energy expansion, carbon reduction, and national-level climate governance. AUS's participation ensures that research-based perspectives from higher education are integrated into the UAE's clean-energy policy discourse and decision-making frameworks.
- **Partnership with the Sharjah Electricity, Water and Gas Authority (SEWA):** AUS and SEWA jointly conduct research and training in energy conservation, renewable energy integration, and smart-grid optimization. These collaborations directly inform SEWA's strategic frameworks on sustainable energy delivery.

- **Engagement with the UAE Ministry of Energy and Infrastructure:** AUS faculty and research centers contribute academic expertise to national dialogues on renewable energy and efficiency, providing recommendations aligned with the UAE Energy Strategy 2050 and the UAE Net Zero by 2050 Strategy.
- **Cooperation with the Sharjah Environment and Protected Areas Authority (EPAA):** AUS supports the development of sustainable environmental and energy management policies through shared research and technical consultancy.

These partnerships ensure that scientific research from AUS directly feeds into policy formulation and the improvement of local and federal clean-energy governance, advancing both the UAE's Net Zero by 2050 goals and SDG 7.

7.4.5 Indicator: Assistance to low-carbon innovation

AUS plays an active role in fostering a low-carbon economy by supporting entrepreneurship, innovation, and technology start-ups that address energy efficiency, renewable energy, and climate sustainability. Through its innovation ecosystem, research facilities, and external partnerships, AUS provides practical assistance and capacity building to help students, alumni, and community entrepreneurs develop scalable clean-energy solutions. AUS's innovation framework integrates academic research, incubation resources, and external collaboration to encourage the development of sustainability-oriented start-ups.

- The AUS **Sheraa Innovation and Entrepreneurship Center** serves as a hub for students and alumni developing start-ups focused on sustainability, renewable energy, and energy-efficient technologies. It provides mentorship, prototyping support, and seed funding opportunities, while connecting innovators to investors and government accelerators.
- AUS partners closely with **Sharjah Research Technology and Innovation Park (SRTIP)**, a government-affiliated innovation district adjacent to campus, which incubates and scales up AUS-led start-ups in renewable energy, clean manufacturing, and circular-economy technology. Start-ups benefit from shared laboratory facilities, pilot-testing spaces, and access to green-tech investors.
- The AUS **Innovation, Entrepreneurship and Sustainable Development (IESD) Research Center** serves as a multidisciplinary platform that connects sustainability research, innovation, and enterprise creation. The center focuses on addressing global challenges related to clean energy, climate change mitigation, and sustainable economic growth. IESD's mission is to promote entrepreneurship and applied research that directly support the transition to a low-carbon economy. Its projects bridge environmental science, engineering, business innovation, and policy to deliver market-relevant solutions for energy efficiency and renewable technologies. The center also assists student and faculty innovators in translating research outputs into start-up ventures by providing technical mentorship, interdisciplinary collaboration opportunities, and access to sustainability-focused grants.

7.5 Low-carbon energy use

7.3.1 Indicator: Energy usage per sqm

This metric is used to understand the carbon footprint of energy use at the university. The metric relates to the UN Targets 7.3 and 13.2

Data Collected	Data 2024 (Jan to Dec)
Total energy used in Gigajoule (GJ)	196,197 GJ
Total energy used from low carbon sources Gigajoule (GJ)	40,024 GJ

Narrative: The SEWA SANA 60 MW solar PV plant is estimated to have generated approximately 126 GWh in 2024, assuming a capacity factor of 0.24. The Sharjah Waste-to-Energy plant, with a capacity of about 30 MW, is estimated to have produced around 197 GWh of electricity during the year, assuming a capacity factor of 0.75. Currently, there are no verified figures for rooftop PV installations in Sharjah, so these are excluded from the estimate.

Electricity imported from EWEC includes about 46.38% non-fossil sources (nuclear and solar), corresponding to 2,506.8 GWh of clean energy. Adding SEWA's own solar generation (126 GWh) and waste-to-energy output (197 GWh), the total non-fossil electricity supplied through SEWA amounts to 2,829.8 GWh, representing roughly 20.4% of the total 13,866 GWh supply.

This clean-energy share is assumed to apply uniformly across all SEWA customers in Sharjah, including AUS.