

2026 ENVIRONMENTAL GOOD PRACTICES

Annual Case Studies Collected from
Field Missions in 2025





ENERGY

MONUSCO FACILITATES ENERGY ACCESS FOR LOCAL COMMUNITIES



Since 2008, MONUSCO has connected mission sites to locally available hydropower grid networks (e.g., in Kinshasa, Goma, Beni, and Bunia). More recently, the mission set out to extend the hydro grid from Beni-Boikene to Mavivi. This grid extension of more than 10 km will help the mission meet its electricity demand in a sustainable manner, while accruing annual fuel savings of 1.2 million litres. MONUSCO's connections to the regional grid accelerate and facilitate electricity access for local neighbouring communities (e.g., estimated impact of the Beni-Mavivi project: 30,000 beneficiaries) while expanding the capacity of local Energy Service Providers, laying a sound foundation for long-lasting benefits to the local communities. In the context of the withdrawal from South Kivu, infrastructure installed to support mission operations (e.g., transformers and cables) has been left in place for the benefit of the respective communities in all closing locations connected to the hydro grid, e.g., Bukavu, Uvira, Kalemie, and Kisangani.

EXPANDING SOLAR PV- HYBRID SYSTEMS THROUGHOUT MINURSO



The majority of MINURSO team sites lay in the Sahara Desert, far away from primary roads and accessible only by long trips on desert tracks or by helicopter. Historically, all team sites relied on diesel generators for primary power, resulting in high fuel consumption, significant logistical burdens for resupply, and a considerable carbon footprint. To date, the mission has successfully installed and commissioned solar photovoltaic (PV) hybrid systems in six out of nine team sites, plus one isolated Communications Relay Site. This deployment has been complemented by the simultaneous installation of solar streetlights. The solar lights now effectively address security lighting requirements without drawing power from the main system or requiring dedicated fuel. This strategic shift has led to increased energy efficiency in power delivery, ensuring a more stable and reliable electricity supply for critical camp operations, while significantly reducing the mission's overall air emissions.

RENEWABLES AS THE PRIMARY ENERGY SOURCE IN UNISFA



UNISFA is a UN mission that faces ongoing, and sometimes overwhelming operational challenges. The mission is affected by severe logistical issues, a poorly developed road network often hampered by heavy rains, as well as security risks and workforce shortages. Tajalei, a mission site where 65 to 70 people live and work, is located far from the only main road that crosses the protected area from North to South. Supply of equipment, fuel, and life support is typically difficult, if not impossible, for many months of the year. In this context, a renewable energy transition project is being implemented through generous extra-budgetary resources provided by Germany. Part of a larger initiative aimed at demonstrating the various benefits of the transition to renewable energy in the field, the project is expected to significantly strengthen the site's energy autonomy and operational resilience while reducing fuel transport-related safety and security risks for peacekeepers. Project implementation is progressing steadily. The vendor selected to implement the project,

Solon Company Limited (India), has completed the design phase and initiated the implementation of Phase II, which includes procurement and inspection, soil testing, and an Environmental Impact Assessment. Installation of the 400 kWp solar PV system (including storage capacity) is scheduled to commence in February 2026, pending successful delivery of materials and completion of all prerequisite tests. Once the project is completed, it is expected to reduce generator fuel consumption and energy costs by approximately 75%, and significantly, reduce the environmental footprint of the team site. Based on fuel savings alone, it is expected that the investment in renewable energy will be paid back within three years.

ENERGY EFFICIENCY PROGRAMME IN UNVMC



UNVMC launched a mission-wide Energy Efficiency Program, enabled by the implementation of the FRIM system. Electricity consumption data is collected and processed through custom-built automated programming, enabling tailored analysis and reporting. The analysis established a baseline of optimal energy use, identifying peak hours and deviations, especially during non-working

periods. An automated reporting system with dashboards and alarms was developed for regional administrative officers, complemented by briefings on consumption patterns and energy saving measures. Since its launch in March 2025, the programme has led to a 10.9% reduction in electricity consumption, from 94,134 kWh in March to 83,877 kWh in June 2025. To mobilize staff, the Mission launched an awareness campaign supported by Mr. E, a mascot inspired by a capybara rescued in the field, who shares practical energy-saving tips. The initiative has reduced the Mission's carbon footprint while fostering a culture of sustainability under the motto, "every action counts".

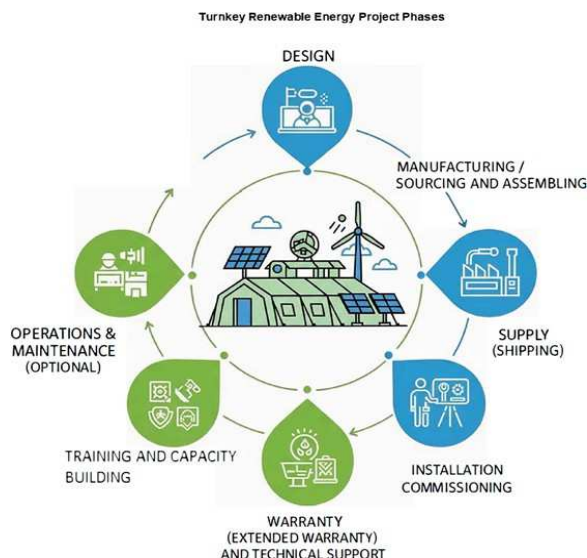
MINUSCA's SOLAR PV PROJECT IN BIRAO



MINUSCA has taken a significant step toward the transition to sustainable energy by commissioning a 2 x 82 kWp off-grid solar PV system in Birao, one of its most remote operational locations. This installation is part of a wider energy strategy to reduce fuel consumption in areas where fuel delivery is

logistically complex and costly. Previously, the camp depended entirely on diesel generators to meet an estimated core power demand of 180 kW for its accommodation, office facilities, and essential services. In June 2025, MINUSCA's Engineering and Facilities Management Section successfully completed a solar power solution in two phases: Phase 1 introduced an 82 kilowatt-peak (kWp) rooftop solar system on prefabricated accommodations and offices; and Phase 2 added an 82 kWp ground-mounted system. Due to area constraints, the total installed capacity achieved was 120 kWp, fully optimized for the space available. The Birao project exemplifies MINUSCA's commitment to integrating green technologies into its operations, enhancing site energy autonomy and operational resilience. The thirteen (13) solar PV systems already deployed across various Mission sites are expected to improve energy security by providing a stable and independent power supply, while also lowering operational costs associated with the transportation of fuel and generator maintenance.

LAUNCH OF GLOBAL TURNKEY RENEWABLE ENERGY CONTRACTS



In 2024, the UN Department of Operational Support (DOS) launched six (6) global turnkey renewable energy contracts to accelerate renewable energy integration across UN Secretariat entities, including UN Peace Operations and Special Political Missions. Previously, most projects relied on system contract-procurement and in-house installation, often leading to technical complexities related to the design and integration with existing energy infrastructure. The turnkey approach shifts responsibility for energy scoping studies, design, manufacture, transport, installation, commissioning, and training to specialized vendors, enabling field missions & entities to overcome technical capacity challenges. These contracts can support partial or full camp solutions, making them valuable beyond peace operations and creating opportunities to leave a positive legacy. The new contracts were developed through a collaboration between DOS' Logistics Division, Procurement Division, UNGSC, REACT, and Environment Section. They provide a scalable solution for missions,

offering operation and maintenance service options for UN-owned systems, in addition to installation services. Several missions, including UNMISS, UNISFA, MINUSCA, and UNIFIL, are already utilizing these turnkey contracts, with projects at different stages of implementation.



WATER AND WASTEWATER

A BUSINESS CASE FOR A BUILT-IN-PLACE WASTEWATER TREATMENT PLANT

In close collaboration with MINUSCA, and using Mpoko camp as a pilot study site, UNGSC ETSU and REACT developed a decision-support tool and business case template to evaluate the feasibility of various wastewater treatment solutions. The analysis compared the commonly used membrane-based (MBR) containerized systems with a built-in-place (BiP) alternative that integrates Upflow Anaerobic Sludge Blanket (UASB) technology, followed by the innovative Downflow Hanging Sponge (DHS) system and tertiary filtration. This configuration enables the safe reuse of treated wastewater and reduces freshwater abstraction. The findings revealed that the BiP system is not only simpler and more energy-efficient, but also significantly more cost-effective to operate and maintain over time. With a projected lifespan of 50 years - five times longer than containerized systems - the BiP approach offers substantial medium-term

savings and facilitates a sustainable handover to local authorities. “The developed business case provided a complete and comprehensive analysis of long-term, viable solutions to manage MINUSCA wastewater. The case also demonstrated the financial viability of the potential capital investment, operational costs, and associated risks, empowering MINUSCA to make informed decisions and present robust budget justifications to our senior management”. – MINUSCA Engineering team.

MINURSO UPGRADES ITS WASTEWATER MANAGEMENT SYSTEMS AND SOLAR-POWERED WATER TREATMENT PLANTS



In the past year, two remote MINURSO team sites successfully upgraded their wastewater management systems, transitioning from previous, less efficient systems to improved infrastructure. At the Tifariti and Birlahlou team sites, obsolete underground simple septic modules (Peak Type 1 Modules SS01 and SS02) were replaced with the upgraded Peak Type 1.5 wastewater systems (Modules

SS01 and SS02). This upgrade will significantly improve sanitation standards, increase processing efficiency, and minimize the environmental risk associated with wastewater disposal in these sensitive remote locations. In addition, the mission deployed new, solar-powered freshwater treatment plants at the team sites Awsard, Smara, Mahbas and Oumdreyga. The plants utilize an 18 kWp solar PV system to power the entire water purification process and ensure a steady supply of potable water without drawing power from the main solar grid or relying on fuel generators. This best practice demonstrates the effective integration of renewable energy with essential life support systems in remote operations.

WATER QUALITY MONITORING IN UNMISS



Access to clean and safe water remains one of the key priorities of the Engineering Section. In this regard, water quality across the mission is regularly measured to provide valuable information about chemical, physical, and biological characteristics of water. This helps ensure compliance with the DOS Water and Wastewater Manual and World Health Organization (WHO) guidelines,

thereby ensuring that water is suitable for its designated use. There are established Mission laboratories at field office level and a central laboratory equipped with essential equipment to perform water tests. Levels of turbidity, pH, and residual free chlorine are monitored daily whereas other measurements for electrical conductivity, total dissolved solids, faecal coliform and E. coli are tested weekly. Both drinking and domestic water in UNMISS must meet recommended standards. Continuous monitoring ensures early detection of potential contaminants in drinking water, promoting public health and safety by preventing exposure to harmful substances.

SOLID WASTE

NEW SLUDGE DRYING BEDS IN MINUSCA



MINUSCA has constructed new sludge drying beds in Bangui to improve the management of wastewater generated from its camps. These beds are designed to treat septage collected from wastewater treatment plants and septic tanks, providing a more effective and environmentally responsible method of handling sludge. By allowing the sludge to

dewater and stabilize before disposal, the drying beds reduce the volume and potential hazards of untreated sludge. This infrastructure helps minimize the risk of environmental contamination and health issues that could arise from improper wastewater disposal.

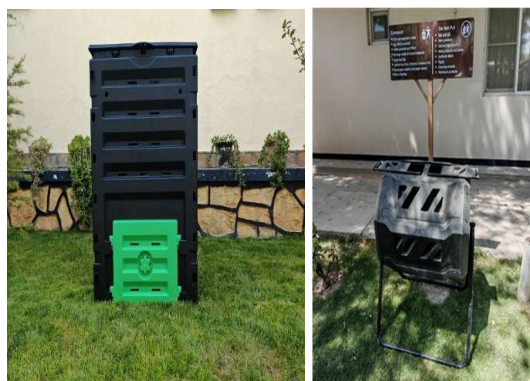
GLASS RECYCLING TO IMPROVE WASTE MANAGEMENT IN UNSOS



UN peace operations frequently encounter difficulties when disposing of waste off-site, primarily due to security concerns and the inability of local facilities to meet UN Environment Policy standards. Consequently, most of the solid waste is incinerated, composted, or recycled within the camps. UNSOS faces these challenges particularly at airport locations, necessitating robust on-site waste management to uphold aviation safety standards (e.g. reducing risk of collision with birds, attracted by waste material). Glass waste, which cannot be incinerated, has accumulated and reduced available storage space. To address this issue, UNSOS acquired one large and six small glass crushers for use at multiple sites. The large glass crusher located in Mogadishu can process 300 kilograms of glass bottles per hour. With a daily operation of 2 hours, around 600 kilograms of pulverized glass are

produced. The resulting crushed glass is repurposed in construction projects such as flowerpots and walkways, providing both decorative surfaces and increased capacity in waste management yards. These measures have contributed to lowering environmental impact by reducing glass litter and sand extraction, thereby preventing soil erosion and minimizing potential reputational risk.

COMPOSTING AT UNAMA COMPOUNDS



As part of its commitment to sustainable waste management, UNAMA has deployed 25 composters across its compounds, strategically placed in gardens, staff accommodations, and other common areas. Two types of composters are in use: 1) Dual Rotating Compost Tumblers (160L - Compact bins with a vented design, ideal for year-round use and efficient decomposition of kitchen scraps and garden trimmings) and 2) Large Aerating Compost Boxes (250L - Heavy-duty composters designed for garden use, with the capacity to process larger volumes of organic waste). Together, these composters can process over 10 tons of compostable organic waste per cycle, with each cycle lasting two to three months

depending on weather conditions. The resulting compost is used to enrich soils, support greener landscapes, and close the loop on organic waste management. Gardeners, food handlers, and domestic cleaners have also been trained to manage the system effectively, ensuring long-term sustainability. By integrating composting into its daily operations, UNAMA is reducing landfill waste, lowering its environmental footprint, and promoting practical circular economy solutions across the mission.

TURNING WASTE INTO WEALTH: COMPOSTING AND GREENING IN UNISFA



Over 90% of food waste in UNISFA is now converted into valuable organic compost, thanks to the Mission's sustainable waste management initiative. Using rotary in-vessel composters across three team sites, with a total of 16 composters installed, UNISFA processes food scraps, paper, cardboard, grass clippings, leaves, and tree branches into nutrient-rich manure. This compost supports green gardens producing over 30,000 kg of vegetables and fruits across camps, including mangoes and bananas. The compost is used by civilian staff, T/PCCs, and

other military and police personnel contributing to the "Green Camp" initiative in both old and newly constructed smart camps. This effort reduces open burning, minimizes odour from waste accumulation, and reduces costs related to procuring fertilizers. The result is healthier, greener environments, improved waste management, and a reduced environmental footprint - showcasing how waste can be turned into a powerful tool for sustainability and resilience.

NEW ENVIRONMENTAL WASTE MANAGEMENT STANDARDS FOR MINURSO



With a commitment to improve solid and hazardous waste management in line with DOS' 'Way Forward: Environment Strategy for Peace Operations 2030', and to ensure consistency across MINURSO's areas of operation and remote team sites, MINURSO recently developed three Standard Operating Procedures (SOPs) to guide all waste management activities. These documents now serve as the mandatory foundation for a sustainable waste management system in

the mission. The first SOP on non-hazardous waste management establishes clear procedures for sorting and segregation of general waste and organics, focusing on maximizing recycling, and reducing volume of waste to be landfilled. The second one on barrel incinerator (with air induction) operations provides step-by-step guidance for the safe and sound operation of these incinerators in remote team sites in order to safely dispose of non-hazardous waste including proper ash management. The third SOP on hazardous waste management outlines precise requirements for the safe handling, transportation, storage, and final disposal options for hazardous materials like batteries, used oils, chemicals, biomedical waste, and scrap metals. The introduction of these standardized SOPs is expected to transform waste management at the mission. Team Site personnel now have clear reference documents detailing their responsibilities, which ensures clarity and compliance across the mission. To ensure these new procedures are effectively implemented and adopted, the next critical step is launching a mission-wide awareness campaign, utilizing targeted posters to reinforce the imperative for effective waste segregation and improved environmental practices at every site.

UNSMIL'S PLASTIC WASTE REDUCTION AND WATER BOTTLE REFILLING INITIATIVE

To reduce the generation of plastic waste, UNSMIL is introducing a water bottle refilling initiative for the United Nations Guard Unit (UNGU). Until now, water for 250 uniformed personnel was supplied in 1.5-liter single-use plastic bottles, generating about 3.5 tons of plastic waste each year. Under the new system, water will come in 15-liter reusable bottles, with UNGU personnel using standard military-issued metal flasks for daily needs. This shift will substantially reduce waste and promote a culture of reuse within the mission.

UNISFA'S INITIATIVE TO PROMOTE CLEAN ENERGY AND FOREST CONSERVATION



In March 2025, UNISFA, in partnership with UNFPA and local actors, launched a fuel-efficient stove initiative in Abyei. The programme introduced cleaner cooking

technologies to reduce the use of wood as cooking fuel and limit environmental degradation. Over 600 people in Abyei Municipality and Amiet Market benefited, while 20 individuals were trained as local facilitators to support sustainable stove production and use. The stoves help lower firewood consumption, directly curbing deforestation, reducing carbon and other air emissions, and improving household air quality. To raise awareness, community demonstrations were held on Earth Day, highlighting the benefits of clean energy in cooking. Further promoting environmental restoration, UNISFA donated 1,112 mature tree seedlings in September to local communities, schools, religious groups, and women's and youth organizations. This effort supports reforestation and long-term climate resilience in the region. Together, these actions strengthen environmental stewardship and reinforce the importance of sustainable practices in preserving Abyei's ecosystem.

UNFICYP HOSTS DISCUSSION ON COLLABORATIVE EFFORTS TO ADDRESS WATER SCARCITY IN CYPRUS



In Cyprus, water scarcity is more than an environmental concern. Already, it poses significant challenges to various sectors, including agriculture, tourism, and biodiversity. It is a shared concern that is bringing communities together. On June 2, a conversation facilitated by UNFICYP and environment experts on water scarcity brought together 50+ Greek Cypriot and Turkish Cypriot experts in Ledra Palace Hotel inside the UN buffer zone to share insights and foster collaboration in addressing the water crisis. The discussion highlighted the need for island-wide solutions to reduce water usage (e.g., precision irrigation) and address the rising impacts of climate change, needs echoed by both communities. [Source: [link](#)]



UNMOGIP GREENS ITS COMPOUND: FROM SEA CONTAINERS TO GREEN SPACE AND BEYOND



A greening initiative by UNMOGIP's Facilities Management Unit turned a previously cluttered space at the Transport Workshop area, where several old sea containers were occupying valuable open space, into a green and welcoming space. With new grass and trees suitable for both the local climate and location, the transformation is a small but meaningful example of how teamwork and leadership support can create lasting site improvements. Similarly, when one of the spruce trees in front of UNMOGIP's HQ in Islamabad was at risk of drying out due to lack of sunlight caused by the shadow of a larger nearby tree, the mission Facilities Management team transplanted the spruce to a more suitable, sunnier location. Today, the spruce stands strong in its new location near the UNMOGIP main entrance, beside the large UN flag - a testament to proactive care, quick action, and the mission's wider commitment to lifting sustainability and morale at the compound.

UNSMIL REDUCES EMBODIED CARBON IN CONSTRUCTION



In line with its environmental commitments, UNSMIL is working to reduce embodied carbon in construction projects. Where requirements allow, materials with high embodied carbon are being replaced with alternatives that have lower or even carbon-negative impacts. Locally sourced options are prioritized when they reduce transport emissions and strengthen supply chains. Using whole-life carbon calculations, the mission considers impacts from production through to end-of-life, lowering the carbon footprint of new works while meeting resilience and security standards.



POSITIVE LEGACY

MINUSCA HANDS BACK FULL OPERATIONAL CONTROL OF THE KOLONGO LANDFILL TO

THE MUNICIPALITY OF BANGUI



In a major milestone for responsible environmental and public health management in Bangui, MINUSCA has handed full operational control of the rehabilitated Kolongo Landfill back to the Bangui Municipality on June 13, 2025. The rehabilitation of the municipal landfill was initiated to address longstanding environmental and health risks posed by the landfill to nearby communities. Through this initiative (implemented by UNOPS), the landfill infrastructure was upgraded to manage leachate effectively, preventing groundwater contamination and reducing other environmental hazards. The rehabilitation also expanded the landfill's capacity, enabling more efficient and organized waste management. To increase the durability of the handover, municipal staff received training in solid waste management and best practices for landfill operations. This handover marks a key achievement in the collaborative efforts between MINUSCA and local authorities to promote responsible environmental stewardship in the Central African Republic.

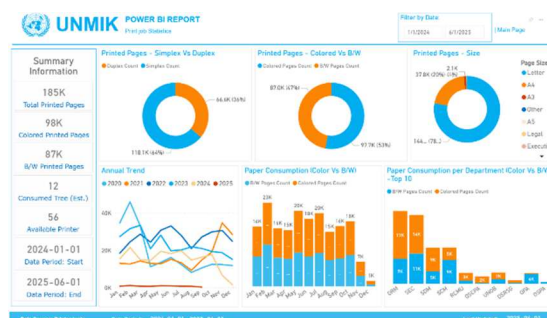


UNAMI'S POSITIVE LEGACY IN IRAQ



As UNAMI prepares to withdraw by 31 December 2025, the Mission remains committed to leaving a meaningful positive legacy for Iraq. UNAMI will hand over its facilities with valuable assets to the Iraqi Government, including 1,800 kWp of solar PV systems with battery storage, four wastewater treatment plants, two waste management yards, and waste treatment equipment such as compactors, balers, shredders, and incinerators. The UN Integrated Compound in Baghdad, which will remain with UN Country Teams, will inherit an additional 1,500 kWp solar PV system, a full-scale waste management yard, and a robust wastewater treatment plant. To ensure sustainable use in the future, UNAMI has developed operational manuals and provided practical training for national staff and local contractors. This capacity-building effort equips local stakeholders to operate and maintain the systems, ensuring that UNAMI's environmental achievements deliver long-term benefits for Iraq.

UNMIK'S DASHBOARD ON RECYCLING STATISTICS



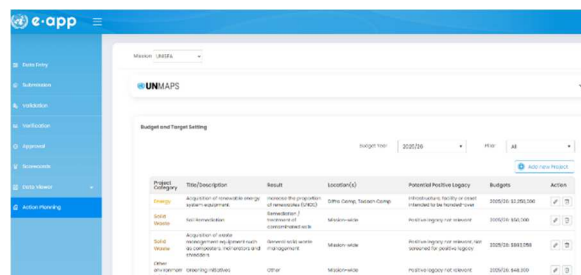
Over the past years, UNMIK has implemented several measures to reduce overall printing. These include the implementation of a physical paper collection system, the conversion of all users to grayscale and black-and-white printing by default, and printer centralization initiatives. To leverage these efforts, the UNMIK Environmental Cell, in collaboration with the UNMIK Performance Cell, developed a BI dashboard to monitor and report printing statistics. This dashboard tracks paper consumption, black-and-white and colour pages, single- and double-sided printing, as well as the most active Sections/Units and users. Its purpose is to raise awareness of printing habits and promote sustainable practices by providing insights to reduce paper use and improve efficiency. Additionally, in response to suggestions and requests from UNMIK staff to view recycling percentages, the Environmental and Performance Cells also developed a BI dashboard on waste disposal at UNMIK. This dashboard provides information on the proportions of solid waste that is composted, recycled, and sent to the landfill at all UNMIK sites. The dashboard is shown on all UNMIK common screens to raise staff awareness and encourage staff to

further recycle. Regular updates to the dashboard ensure that staff have access to the most current data on waste management.

NEW ONLINE TRAINING FOR T/PCC ENVIRONMENTAL FOCAL POINTS

In July, an interactive, self-paced online course on "Environmental Management – Best Practices for Environmental Stewardship in UN Peace Operations" became available on the CDOTS Campus. The 90-minute course, focused on how to protect the environment and limit the use of natural resources, while promoting peace and staying true to the fundamental principle of "do no harm", was developed by CDOTS together with the Environment Section in OUSG DOS, and the Triangular Partnership Program. It provides: 1) An understanding of key environmental management principles and relevant responsibilities; 2) Adaptable environmental awareness content across diverse operational contexts; and 3) Access to multilingual environmental tools and materials to promote environmental management efforts in the field. Although developed for Environmental Focal Points of troop- and police-contributing countries in response to the challenge posed by frequent troop rotation, its content is of relevance to all stakeholders in the field and across the wider UN system. [Source: [link](#)]

INTEGRATING ACTION PLANNING THROUGH EAPP



Project Category	Title/Description	Results	Location(s)	Potential Positive Legacy	Budgets	Action
Energy	Acquisition of renewable energy system components	Completed 100% of the project	Off-site Camp, Tashkent Camp	Improved energy efficiency and reduced carbon footprint	2025/26: \$1,000,000	View
Solid Waste	Acquisition of waste management equipment	Completed 100% of the project	Mission-wide	Improved waste management and reduced environmental impact	2025/26: \$500,000	View
Water	Acquisition of water management equipment	Completed 100% of the project	Mission-wide	Improved water management and reduced environmental impact	2025/26: \$500,000	View

In response to calls from member states to obtain more clarity on the benefits expected from projects proposed by missions, a new "eAPP" module was launched in 2025 for the 2024/25 performance reporting and 2026/27 budget request. Leveraging the environmental performance data collection system - the environmental Action Planning and Performance software, or "eAPP" - developed by OICT, the system was expanded to enable missions to document implemented, budgeted, and planned projects. Combined with the environmental performance data, this new module allows missions to document and analyse results from completed projects, and to provide an overview of the anticipated results of planned projects, linking budget requests to environmental benefits and cost savings. The actions planned by missions are derived from comprehensive energy infrastructure, solid waste and wastewater management plans developed by engineering and environmental teams and supported by technical analysis by ETSU and REACT.



For more information, please send an e-mail to dos-ousg-envs@un.org
or visit operationalsupport.un.org/en/environment



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