



EFFICIENT AND CLIMATE-FRIENDLY COOLING

PROJECT AT-A-GLANCE

The United Nations Environment Programme (UNEP)'s United for Efficiency and District Energy in Cities initiatives are accelerating the global transition to energy-efficient and climate-friendly cooling. Getting the right solutions in place for refrigeration and space conditioning is essential for improving the quality of life and health of people without undue impacts on the planet.

GEOGRAPHICAL SCOPE

GLOBAL 147 COUNTRIES

Caribbean (Bahamas, Barbados, Jamaica, Dominican Republic And St Lucia), East African Community, Economic Community Of West African States, Egypt, Tunisia, Morocco



STATUS **ACTIVE**

DONOR

STARTING DATE **2018** CLOSING DATE **2021**

Kigali Cooling Efficiency Programme

PARTNERS

TOTAL PROJECT COST

 **\$ 8 million**

Banks: African Development Bank; Rwanda Development Bank; EBRD.

National and International Organizations: BASE; ECREEE; EACREEE ; RCREEE; ASHRAE; CLASP; Delegation of the European Union to the Republic of Rwanda; Environment and Climate Change Fund; DFID; Agence pour l'Economie et la Maitrise de l'énergie - Sénégal; Ministère de Pétrole des Energies - Sénégal; Energy Commission of Ghana; Rwanda Environment Management Authority; Ministry of Infrastructure - Rwanda; Ministry of Housing – Egypt; Egyptian housing & Building National Research Center (HBRC); China National Institute of Standardization ; International Energy Agency; Natural Resources Defense Council; LEED/USGBC ; Union for the Mediterranean.

Academic Institution: Danish Technical University; C2E2; Lawrence Berkeley National Laboratory.

Industry: B/S/H; Carbon Trust; Whirlpool; International Copper Association; Mabe; Arcelik; Electrolux; GREE; Sanhua; DEVCCO; Tabreed; Empower; King and Spalding.

TEAM LEADERS

Brian Holuj – United for Efficiency
Lily Riahi – District Energy in Cities

KEY ACHIEVEMENTS TO DATE

 **1** Clean Cooling Campaign launched to raise awareness and showcase action

 **147** Countries receive technology and policy capacity building


 **147** Country Savings assessments developed to help prioritise market transformation activities


 **50+** Organisations partnering with UN Environment in developing and deploying solutions


 **6** National Cooling Strategies developed


PROJECTED IMPACTS

 **\$30** million investment planned to deploy efficient and clean refrigerators and air conditioners

 **\$56** million investment planned to build and demonstrate a district cooling system using not-in-kind technologies and non-HFC refrigerants

 **1860** kilotonnes of annual CO₂ emissions avoided by 2030 via better end-use equipment

 **\$460** million in annual energy bill savings by 2030 via better end-use equipment

 **3660** GWh of annual electricity savings by 2030 via better end-use equipment

 **16** tons of refrigerant gas to be saved through use of a district cooling system

 **2** model regulations developed to address residential refrigerators and room air conditioners

 **20** countries pilot national Product Registration Systems



THE CHALLENGE

By 2050, the world is projected to be 1.5°C warmer than now and the global population will grow by 2.2 billion. Far more refrigeration and space conditioning will be needed. For example, the number of air conditioners are expected to increase 250% to 5.6 billion by 2050. If this occurs with outdated technologies, the world's air conditioners will use as much electricity as China does today and produce 82% more greenhouse gases than at present.

Such unchecked growth in electricity use and harmful refrigerants will have a disastrous impact on the climate and the environment, and will increase the long-term cost of owning and operating these products.

Policies to encourage the use of better technologies are often lacking or under-enforced in many developing and emerging economies. Consequently, outdated technologies remain common, wasting significant amounts of electricity and excessively impacting the climate. Lowering demand and addressing the efficiency of cooling are often faster and cheaper solutions than increasing electricity supply, but many countries lack robust data, capital, technical support, or experience to take action.

WHAT WE DO

United for Efficiency and District Energy in Cities provide a range of support at regional, national and local levels. Tools and information resources are offered to build interest and inform decision making, technical analysis and recommendations help guide new policies and programs, financial mechanisms are launched to address cost barriers, training ensures that local stakeholders are equipped to carry on key interventions, and so on. Technologies may include end-use equipment, such a household refrigerators and room air conditioners, to whole-building, district and city-scale solutions such as district cooling that can yield significant energy, greenhouse gas emission, air quality, and cost savings.



UNEP'S ROLE



UNEP is a leading global authority in promoting sustainable development underpinned by energy-efficient and climate-friendly cooling. With a range of top experts and projects spanning the globe, United for Efficiency and District Energy in Cities specialise in aligning partners to jointly pursue opportunities that would be unfeasible if undertaken unilaterally. Together, we can best raise awareness, build capacity, implement technical and policy solutions, and unlock investment. Countries significantly benefit from expertise in leveraging district cooling systems to replace individual end-use equipment where aggregation is practicable, while improving the performance of end-use products that are utilised beyond concentrated urban areas.



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国际研究报告

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_14000

