



CLIMATE CHANGE MITIGATION

The world knows all too well the threat that climate change poses to human health, economies and the environment.

The commitment shown in the Paris Agreement proves this. But even with the Paris pledges, the planet is heading for a temperature rise of 2.9 to 3.4°C this century alone, far above the 1.5°C limit recommended by UN Environment's Emissions Gap Report 2016. Without further action to hit the 1.5°C target, we can expect climate impacts that will hamstring the world's development ambitions – from more intense storms, to longer droughts and rising sea levels. And the longer we delay, the more it will cost, and the more difficult it will be to protect future generations.

United action is needed. And it can't wait. At the UN Environment Climate Change Mitigation Unit, we are working with the Global Environment Facility (GEF) and partners around the world to make that action a reality.

With a 25-year track record of success, we are helping countries to reduce and prevent greenhouse gas emissions. Together, UN Environment and the GEF are providing the technical know-how, funding and implementation experience needed to improve energy efficiency, promote renewable energy, and encourage low-carbon technologies. From transport, to power generation, to energy efficient homes, industries and cities, we have worked together on more than 140 projects. UN Environment-led projects funded under the current GEF 6 cycle alone have mitigated CO₂-equivalent emissions of almost 7.5 million tonnes to date.

CASE STUDY

Lighting the way to a brighter future

With a population of 1.3 billion, growing at 1.2% per year, India is a heavy hitter in the world of global emissions. But while the country is the globe's third largest greenhouse gas emitter after the US and China, it also has big ambitions in terms of energy efficiency.

The energy sector accounts for some 71% of India's emissions, a fact the government is committed to changing through an aggressive rollout of energy efficiency programmes, including a plan to be the world's first country to use LEDs for all its lighting needs.

"It will be message that India acts rather than making big promises," according to Power Minister Piyush Goyal.

UN Environment and partners are backing India's green ambitions through Creating and Sustaining Markets for Energy Efficiency, a Global Environment Facility-supported project to boost the uptake of efficiency lighting and other technologies.

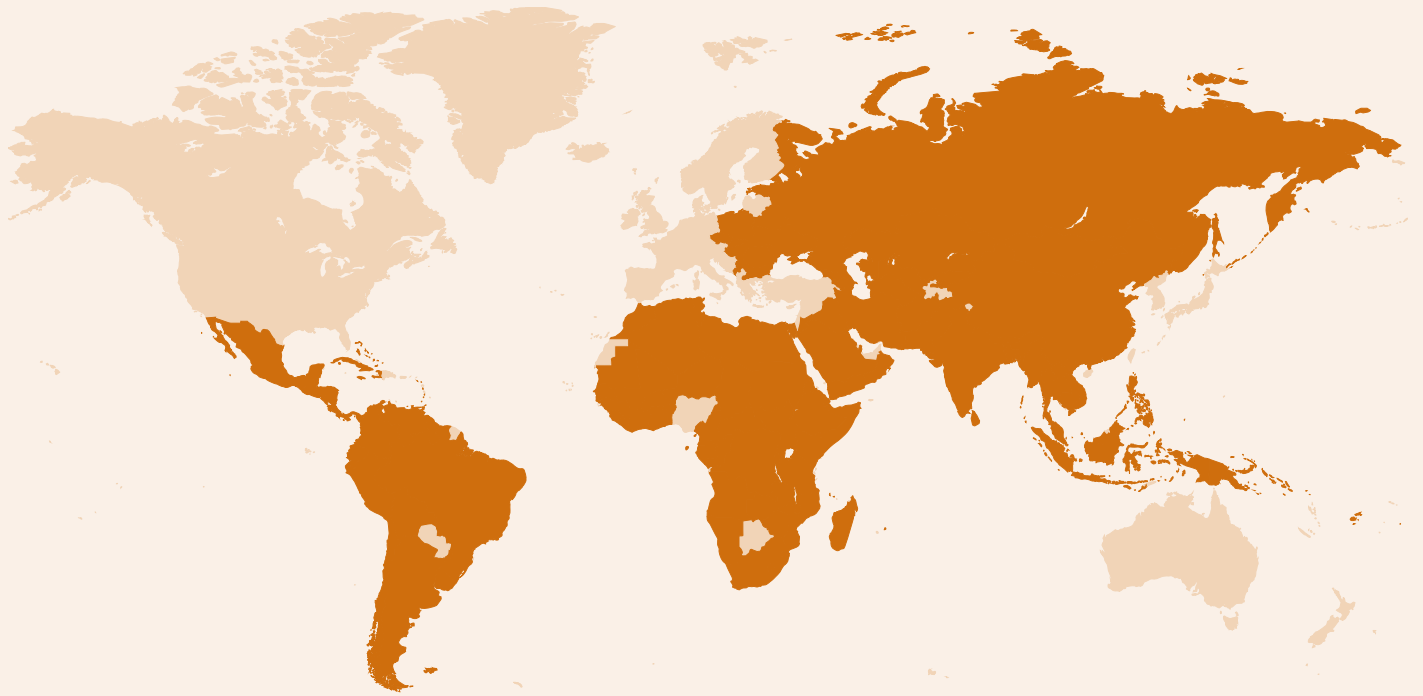
The project is supporting Indian public-private venture Energy Efficiency Services Ltd to expand the market for LED street lighting and domestic lighting, while providing the expertise necessary for the venture to test new technologies such as super-efficient ceiling fans, tri-generation technologies and smart grid-applications.

With energy savings of 50-70% compared to other technologies, expansion of the venture's LED lighting initiatives alone is expected to save over 7.5 million tonnes in CO₂-equivalent emissions in the years to 2022.

Meanwhile, through the roll out of tri-generation, which combines simultaneous heating, cooling and electricity generation, and smart grid technology, which enables advanced load forecasting, load control, outage management and theft detection, the partnership is boosting energy efficiency while proving the value of greener technologies in the commercial market.

"All these are new technologies and business models, yet untested in India," Energy Efficiency Services Ltd Director Saurabh Kumar says, "the GEF grants will be used to open up these markets."

"Global partnerships such as these will accelerate our efforts in mitigating climate change and provide hope for a better future for the coming generations."



The UN Environment-GEF partnership in Mitigation



Why UN Environment?

As a science-based organization, with over 40 years of frontline experience guiding the international environmental agenda, advising on environmental policy and implementing projects from the national to the global level, UN Environment offers its country partners a unique breadth and depth of expertise. We convene and contribute to a range of multi-stakeholder platforms to build partnerships and develop and share knowledge and best practice on climate change issues.



Global policy



- **UN Framework Convention on Climate Change:** UN Environment played an integral part in the negotiation of the Convention, and the GEF serves as its financial mechanism. The UN Environment-GEF partnership helps countries to meet their reporting obligations by supporting the completion of key inputs, including Intended Nationally Determined Contributions, Technology Needs Assessments, National Communications and Biennial Update Reports. We recently assisted over 70 countries to report their commitments to reduce emissions, and helped more than 50 to develop their Technology Needs Assessments
- **National governments and regional trade bodies:** UN Environment, with GEF funding, works with governments and trade bodies to develop policies that promote energy-efficient products, energy investments, and clean modes of transport. Through platforms such as the Global Fuel Economy Initiative, United for Efficiency and the En.lighten Initiative, we work with regional political and economic organizations to set and lift standards collectively – enabling truly global progress on key issues

“If we don’t start taking additional action now... we will grieve over the avoidable human tragedy. The growing numbers of climate refugees hit by hunger, poverty, illness and conflict will be a constant reminder of our failure to deliver.”

Erik Solheim, Executive Director,
UN Environment

Technical expertise and resources



Recognized as a leading expert in the field of climate change mitigation, UN Environment has developed a range of tools and initiatives that are now being used internationally to advance climate change mitigation efforts:

- **Vehicle fuel efficiency, via the Global Fuel Economy Initiative:** Supported with GEF funding, this partnership brings together UN Environment, the International Energy Agency, OECD International Transport Forum, International Council on Clean Transportation, Institute for Transportation Studies at UC Davis, and the FIA Foundation, to make real improvements in fuel economy in vehicles around the world. The Initiative promotes these objectives through shared analysis, advocacy, and in-country policy support via the Cleaner, More Efficient Vehicles Tool
- **Efficient appliances, via United for Efficiency:** Led by UN Environment, with GEF funding, the United Nations Development Programme, the International Copper Association, CLASP and the Natural Resources Defense Council, this public-private partnership informs policy makers of the potential environmental, financial and economic savings of transition to high-efficiency products, identifies and promotes global best practices in transforming

markets and offers tailored assistance to governments to develop and implement strategies and projects to achieve fast and sustainable market transformation

- **District energy, through the Global District Energy in Cities Initiative:** This multi-stakeholder partnership is coordinated by UN Environment, with financial support from the GEF, the Danish International Development Agency, and the Italian Ministry of the Environment. It aims to accelerate the transition to low-carbon, climate-resilient cities through modern district energy systems. The partnership is comprised of 38 public and private partners, including industry associations, manufacturers, utilities, financiers, city-networks, and non-government groups. Currently, the Initiative is working with 15 cities across Bosnia and Herzegovina, Chile, China, India, Malaysia, Morocco, Serbia and Russia
- **Greener Cities Partnership:** This partnership between UN Environment and UN-Habitat aims to strengthen synergies between the two agencies and among their partners, highlighting local-global linkages in environmental issues, bringing an environmental perspective to urban policymaking and incorporating urban perspectives into environmental policy decisions

Project highlights



- **En.lighten:** En.lighten supported 48 countries in adopting national or regional efficient lighting strategies, setting the groundwork for annual electricity savings of over 25 TWh – equivalent to 8,600 MW of power generation capacity, \$2.75 billion in economic savings, and a 14-million-tonne reduction in CO₂ emissions – equivalent to taking 7.8 million passenger cars off the road
- **The Building Efficiency Accelerator:** This partnership now consists of 40 organizations and companies and 28 cities with commitments to have policies or programmes in place to advance energy efficiency in buildings. The Accelerator is supporting city partners in stakeholder engagement, identifying policy priorities, and reviewing

demonstration project options. As an example, Bogotá, Colombia, is now integrating a new local building energy performance code into the city’s master plan, opening the way to a 31% reduction in greenhouse gas emissions from energy consumption in homes to be built for an estimated 2.7 million new citizens by 2050

- **Global Fuel Economy Initiative:** This initiative is enabling countries to reduce emissions from passenger vehicles, with the overall aim of doubling the fuel efficiency of light-duty vehicles globally by 2050, from an average of 8L/100km to 4L/100km. So far, the initiative has developed national fuel economy policies for 27 countries

Towards a low-emission future

The Emissions Gap Report 2016 says the world “must urgently ramp up action to cut a further 25% from predicted 2030 emissions” to avoid global temperatures rising further. Achieving this will be a huge challenge, but it is one the world can meet if we all join forces.

At the UN Environment-GEF partnership we are bringing our combined expertise and experience to projects in the following areas:

- **Cities:** Focusing on integrated planning and resource efficiency, UN Environment will promote low-carbon transport networks (e.g. electric vehicles), low-emission zones, energy-efficient buildings, district energy and transport-oriented development in cities in Brazil and South Africa. This will also save lives by improving air quality in fast-developing urban centres
- **Energy efficiency:** The partnership will explore new technologies and apply cost-effective approaches to future initiatives. Successful projects on lighting will be extended to other appliances such as refrigerators, air-conditioning systems, transformers and electric motors. The goal is to have 100 countries commit to energy efficiency targets for lighting and appliances, and help them put in place effective policies and standards
- **Electric mobility:** UN Environment’s E-mobility programme supports the development of electric mobility strategies and roadmaps at national and regional level. With a special focus on emerging economies, we are working with strategic partners, including the International Energy Agency, International Transport Forum, International Council for Clean Transportation, FIA Foundation and University California Davis, to exchange best practices, promote clean technology options and help countries move towards electric transportation, including buses, two- and three-wheelers and light-duty vehicles
- **Innovative financing:** To fund a brighter, more-sustainable future, the world must turn to smarter, greener investments. The benefits are not just environmental – they are economic. Doubling the share of renewables in our energy mix would increase global GDP by an estimated \$1.3 trillion by 2030, while eliminating fossil fuel subsidies could save governments \$300-600 billion annually and



in sustainability to harness this potential by creating incentives, ending harmful subsidies and removing barriers to green investments. With GEF funding, UN Environment will analyze national economies and develop financial regulatory road-maps to assist countries to move towards sustainable, low carbon futures

The work of the UN Environment-GEF partnership demonstrates

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https://www.yunbaogao.cn/report/index/report?reportId=5_14654

