



ANNUAL 2019
REPORT





2019

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A YEAR OF INCREASED URGENCY FOR ACTION AND AMBITION

In 2019, the UNEP DTU Partnership started implementing its new strategy to support developing countries in their efforts to make progress towards a climate-resilient low-carbon future. This report provides an overview of results and activities and shows how interest from countries is increasing and how our engagement is growing through both public and private partnerships.

A number of recent developments with the Partnership's members support this growing engagement. Climate change has become a top priority for the UN Secretary General. Accordingly the new Executive Director of UNEP, the Danish Government and Parliament have approved a very ambitious climate law focusing both on domestic and international action. In its new strategy, the DTU is placing a strong focus on technologies for sustainable development.

The year 2019 marked the ten-year anniversary of the UNEP Emissions Gap Report. For a decade, the UNEP DTU Partnership has coordinated this UNEP flagship report, each year comparing where current country commitments will take us with where the sciences tells us we need to be to reach the global climate goals and the commitment to limit rises in temperatures.

When we look back at the last ten years, it seems that not much has happened in terms of climate action. Despite the warnings in each year's gap report, emissions are now almost exactly what earlier gap reports projected they would be in 2020 if the world did nothing to change its high-emissions growth trajectory.

Even though the latest gap report's findings continue to paint a bleak picture of a world heading for a 3.2°C increase in temperature by the end of this century, last year also showed us that things are changing.

The climate crisis is attracting more and more global attention, as more and more people around the world are feeling the consequences of a changing climate. From bushfires to droughts and violent storms, 2019 has given us a sobering glimpse of what lies ahead if we do not act.

Now is the time for implementation, and the next decade will be crucial for our common future. Each year of delayed action means the required cuts in emissions become larger, more expensive and more difficult. We are committed to help accelerate public and private investment in the implementation of NDCs and to raise climate ambitions.

Building on our previous work, throughout 2019 the UNEP DTU Partnership has focused on assisting countries to step up their climate actions and ambitions.

In 2019, we increased our engagement in the implementation of countries' Nationally Determined Contributions (NDCs), working closely with key stakeholders and partners in the UN system, governments, municipalities and the private sector. Through the new NDC Action project, UNEP and UNEP DTU Partnership have jointly started support to ten countries to translate their NDCs into concrete strategies and actions.

With the Enhanced Transparency Framework of the Paris Agreement in place, 2019 was also a year in which the UNEP DTU Partnership increased its engagement with transparency. Working with our partners in the Initiative for Climate Action Transparency (ICAT), the Capacity Building Initiative for Transparency (CBIT) and our other transparency-related projects, we aim to become a leader in global expertise and advisory provider to countries on national transparency frameworks, future reporting under the UNFCCC, and knowledge management and sharing.

Transparency is key to the credibility of the Paris Agreement and a crucial aspect of increasing climate-related implementation and ambition globally.

Another important aspect of implementation is prioritising the most efficient actions. Over the last decade, with support from the Global Environment Facility and UNEP, UNEP DTU Partnership has helped 85 countries develop national technology action plans in key mitigation and adaptation sectors. This work is currently in its third phase and will be followed by a new program starting in mid-2020 involving an additional seventeen countries.

Through the work of the Copenhagen Centre on Energy Efficiency, we have demonstrated that energy efficiency is a low-hanging fruit when it comes to climate action. On all levels and in all sectors, using energy more smartly and more effectively is not only an accessible way of cutting emissions, it is also good for business and development.

Together with other international partners, the Copenhagen Centre on Energy Efficiency has helped establish the so-called Three Percent Club with the involvement of a number of governments, culminating in the launch of the Club as a key energy initiative at the UN Secretary General's Climate Action Summit in New York in September 2019.

The Club brings together government, the private sector and international institutions in a joint effort to put the world on a path to

achieving annual efficiency improvements of three percent. This rate is what is required to deliver on the goals of the Paris Agreement and meet the efficiency commitment under SDG 7.

2019 was also a year when we implemented a new organisational structure at the UNEP DTU Partnership to strengthen our internal expertise and ensure that our resources are deployed even more strategically and effectively. Through a focus on three strategic areas, Climate Policy and Planning, Climate Transparency and Accountability, and Business Models and Markets, we will develop our expertise further and continue to provide high-quality support to countries.



1.68

John Christensen Director

This report was prepared before the global Covid19 pandemic. As such, the content does not reflect current considerations on post-Covid19 economic and climate restructuring.

In 1990, The Danish Ministry of Foreign Affairs, UN Environment and the Technical University of Denmark (DTU) came together to establish UNEP DTU Partnership. The partnership has since grown to become a leading international research and advisory institution on energy, climate and sustainable

development.

The UNEP-DTU Partnership is a vital part of our mission to deliver compelling science in support of environmental decision making across the world. In holding up a mirror to policymakers, by way of science, data and best practice, we support member states in stepping up ambitious climate action which is critical to ensure our continued survival on this planet.

- Inger Andersen, UN Under-Secretary-General and Executive Director of the UN Environment Programme.

DTU offers scientific advice to public sector authorities, industries, and international institutions and governments. UNEP DTU Partnership's focus on climate technology and the business-oriented approach to sustainability and development represents an important contribution to solve the global challenges formulated in the UN's 17 Sustainable Development Goals.

- Anders Overgaard Bjarklev, President, DTU



- Rasmus Prehn, Minister for Development Cooperation, Denmark



EMISSIONS GAP IN FOCUS

In 2019, the UNEP flagship Emissions Gap Report, coordinated by UNEP DTU Partnership, received more attention than ever, breaking all the records of previous downloads.

Within the first two weeks of its release, the report was mentioned in 3787 news articles in 2198 media outlets across 96 countries and in 27 languages.

The report itself was downloaded almost 80,000 times in the same two weeks from the UNEP and UNEP DTU Partnership websites.

During the Climate Action Summit in New York in September, a pre-released chapter on how to enhance the climate actions of G20 countries and a special edition marking the tenth anniversary of the Emissions Gap report was published.

In the special edition, UNEP DTU Partnership's lead authors looked back at a what was labelled 'A lost decade' of climate action showing that current emissions follow the dire Business As Usual predictions of the first Emissions Gap Reports.

PROVIDING THE FACTS ON CLIMATE ADAPTATION

In 2019, the UNEP DTU Partnership developed the Initiative for Climate Action Transparency (ICAT) Adaptation factsheets. Each factsheet provides a snapshot of the overall context, challenges, progress and outputs in four pilot countries and describes their national efforts to address the transparency of adaptation actions. The factsheets also cover the challenges being faced, the way forward and how the ICAT Adaptation project can provide assistance.

Parallel to this, the UNEP DTU Partnership also developed several ICAT methodologies, assisting countries to implement transparency measures and align their efforts with the Paris Agreement's Enhanced Transparency Framework.

NDC ACTION START

To assist more countries in achieving full transformative potential in their NDCs, UNEP and the UNEP DTU Partnership launched the NDC Action project with the financial support of the IKI programme, the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety in 2019.

The project supports ten countries in increasing the level of ambition of their NDCs and translating them into concrete sector strategies and actions ready for financing and implementation.

The aim is to foster accelerated public and private investment in the implementation of NDCs, which actively contributes to low-carbon and climate-resilient development.

A DEEP DIVE INTO TECHNOLOGY TRANSFER

The UNEP DTU Partnership is piloting a new analytical approach to the investigation of technology, converting this into actionable recommendations.

Through the new Technology, Markets and Investment for Low Carbon and Climate Resilient Development (TEMARIN) project being implemented in Kenya and Uganda, the UNEP DTU Partnership is building on previous and current work through the Technology Needs Assessments, as well as on insights gathered from our research in the areas of climate technologies and systems innovation, in order to provide recommendations on climate technology.



FIRST PLACE AT BLOCKCHAIN HACKATHON

The UNEP DTU Partnership was part of a team that developed "real-world fuel and energy consumption monitoring" based on blockchain technology to accelerate the reduction of CO2 emissions from road vehicles.

Combining blockchain research with its practical applications resulted in the team achieving first place in a blockchain hackathon at the European Blockchain Center in September.

Blockchain technology enables decentralized governance of Article 6 of the Paris Agreement and enhances the integrity of mitigation outcomes through increased transparency and automation.

CLIMATE COMMUNITY CHAMPION

Red Argentina de Municipios frente al Cambio Climatico, a network of Argentinian municipalities working to limit the effects of climate change, was named Climate Community Champion in the first ever Green Climate Fund, Green Champions Awards ceremony during COP 25.

Accepting the award, Executive Secretary Ricardo Bertolino thanked the UNEP DTU Partnership and the Copenhagen Centre on Energy Efficiency for its valuable support in establishing the Municipality Networks for Energy Efficiency Investments in the process leading up to the nomination and winning of the award.



INVESTMENTS ALIGNED WITH THE PARIS AGREEMENT

The UNEP DTU Partnership delivered technical support to the Danish Investment Fund for Developing Countries (IFU), one of Denmark's largest investors in developing countries, in order to develop a new climate policy, thus ensuring alignment with the Paris Agreement.

The climate policy was approved at the end of 2019 with the aim of increasing the fund's positive impact on limiting the increase in global temperatures.

IFU is an independent fund owned by the Danish government. Currently, the IFU and IFU-managed funds have co-invested in nearly 1300 companies, with committed investments totalling USD 29.7 billion.





We are very pleased with the work carried out by the UNEP DTU Partnership, which has provided important knowledge and valuable input in the process of developing our new climate policy. We look forward to the continued cooperation with UNEP DTU Partnership assisting IFU in reaching our targets and to document our achievements.

Torben Huss, CEO, IFU



UNFCCC TECHNOLOGY MECHANISM COLLABORATION

The UNEP DTU Partnership provided inputs into the UNFCCC Technology Mechanism, in its efforts to implement the Paris Agreement throughout 2019, and to the COP25 technology negotiations in Madrid in December.

This work is part of the Partnership's close collaboration with the UNFCCC Secretariat and the Climate Technology Center and Network (CTCN), of which it is a Consortium Partner.

The cooperation on technology and climate action will continue to increase opportunities related to technical assistance, knowledge-sharing and networking activities, specifically but not limited to activities linked to the more than eighty countries that were previously or are currently participating in the global Technology Needs Assessment project.



GACMO TRAINING

During 2019, the UNEP DTU Partnership assisted four countries in using the Greenhouse gas Abatement Cost Model (GACMO) to increase the transparency of their actions to reduce greenhouse gas emissions.

For more than two decades, the UNEP DTU Partnership has run the GACMO model and made continuous improvements to it, providing countries with a go-to tool for emissions calculations and reporting.

In 2019, this work also included scaling up the use to regional levels by proposing zero-carbon pathways for the Latin American transport and energy sectors.

DIRECTOR APPOINTED SUSTAINABLE DEVELOPMENT PROFESSOR

In February 2019, John Christensen, Director of the UNEP DTU Partnership, together with Helen Clark (former administrator of UNDP), were appointed the first Honorary Sustainable Development Professors at Yonsei University, in Korea.



The professorships were presented by former UN General Secretary Ban Ki-moon. They are part of a long-term project at the Institute for Global Engagement & Empowerment to increase educational value in relation to sustainable development.

Over the next few years, eight global leaders and experts will be appointed as Sustainable Development Professors. John Christensen's appointment was in recognition of his long career and expertise within the field of climate, energy and sustainable development research.

OFFICIAL PLATFORM FOR THE GLOBAL CLIMATE ACTION PORTAL

The UNEP DTU Partnership Climate Initiatives Platform is now the official gateway for registering cooperative actions for the Global Climate Action portal.

The aim of the portal is to present a clear, comprehensive view of global climate actions, recognizing actors and inspiring still greater levels of ambition.

The Climate Initiatives Platform provides important data on international cooperative climate initiatives driven by non-state actors such as businesses and cities.



NEW PODCASTS

In the summer of 2019, two new UNEP DTU Partnership podcasts series were aired for the first time.

The ClimateTech Podcast invites experts and practitioners to present their views and insights on specific technologies or sectors, which can help us address the climate crisis and decide how we can speed up its implementation.

In addition, the Scaling-up Energy Efficiency podcast presents ongoing work and new research on energy efficiency through discussions with experts from various sectors, such as buildings, district energy and datacentres.

LEVERAGING FINANCE FOR TRANSPARENCY

In 2019, the UNEP DTU Partnership directly assisted nine countries in preparing Project Preparation Grant requests for funding Climate Transparency Projects through the Global Environment Facility.

Technical support from the Partnership, working with UNEP through the Capacity Building Initiative for Transparency (CBIT), will help countries build capacity and leverage finance to achieve increased transparency regarding climate action under the Paris Agreement in accordance with the Enhanced Transparency Framework.

A total of 24 countries received support in applying for CBIT funding, enhancing local capacity with total finance of more than USD 28 mio. A further eight countries asked the Partnership for technical assistance to project implementation in 2019.

NEW WEBSITES FOR THE UNEP DTU PARTNERSHIP

During the summer, the UNEP DTU Partnership launched a brand new web platform.

It is now easier than ever to explore our projects, publications and main areas of expertise and to get in touch with us to find out how our research and advisory services can be of assistance to partners in delivering on the Paris Agreement and the Sustainable Development Goals.





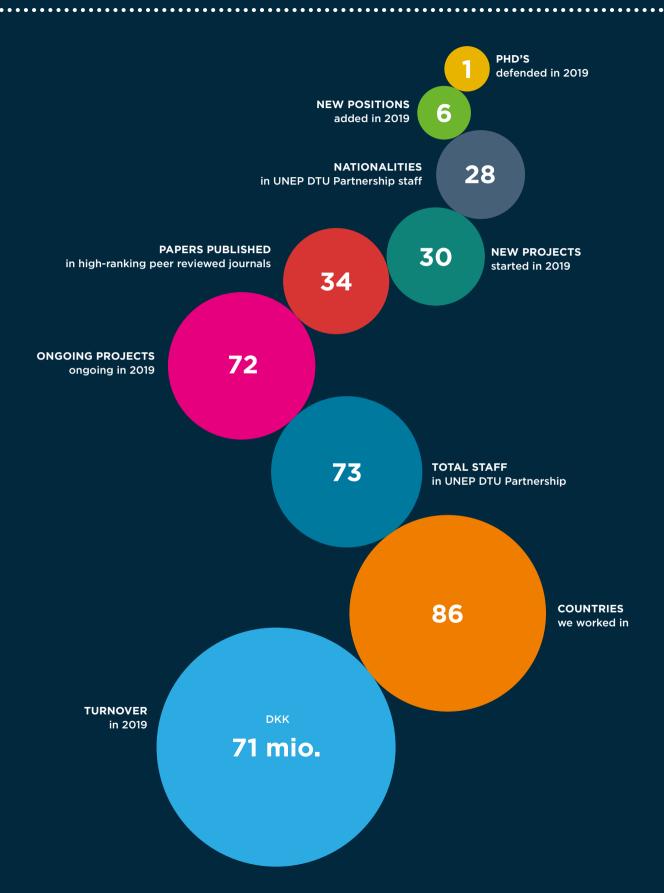
CONFERENCE ON SYNERGIES FOR CLIMATE AND SUSTAINABLE DEVELOPMENT

In April, nearly four hundred participants came together for the first "Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development".

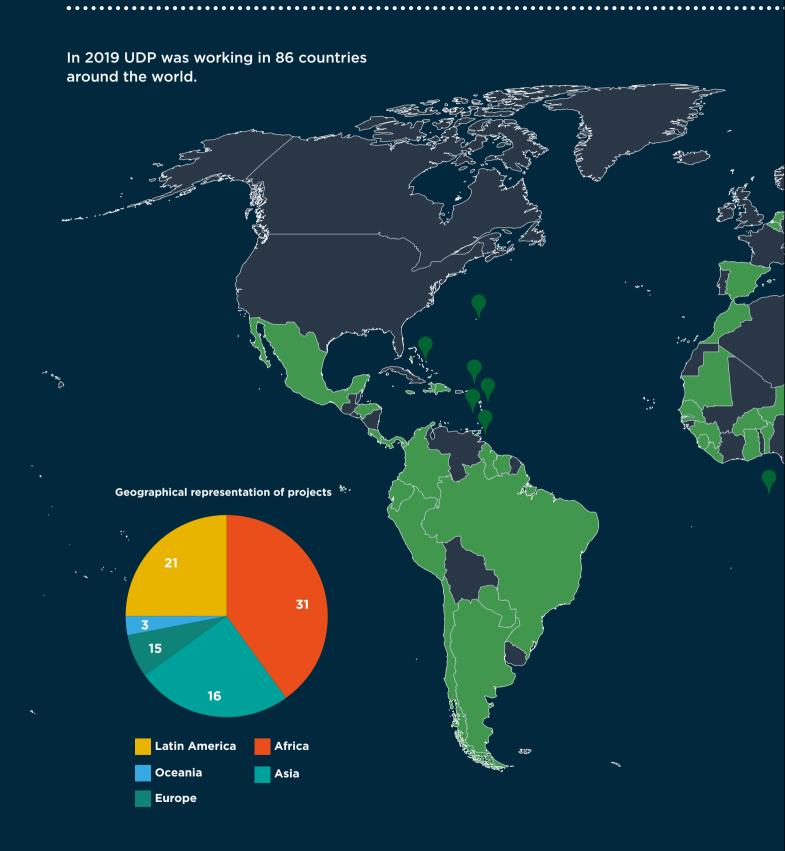
Global experts and leaders meeting in UN City Copenhagen identified key areas for immediate action to boost the world's efforts to achieve the goals of the Paris Agreement and the Sustainable Development Goals, with specific attention to SDG 7.

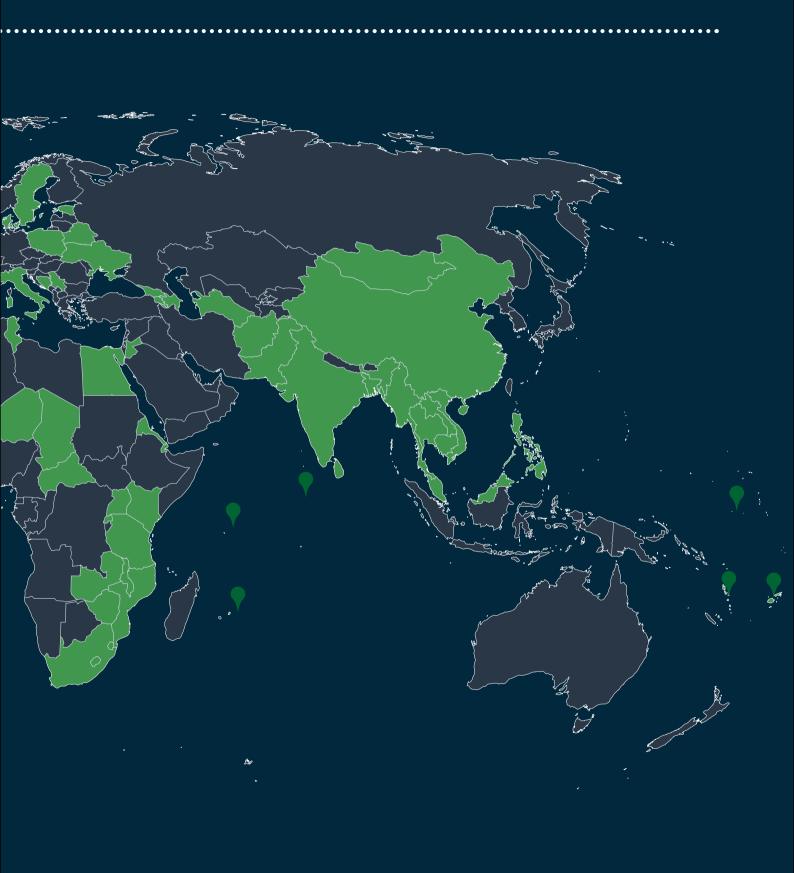
The conference was organized by UN DESA, UNFCCC, the Danish Ministry of Foreign Affairs and the Danish Ministry of Energy, Utilities and Climate in collaboration with the UNEP DTU Partnership and UNOPS.

2019 IN NUMBERS



WHERE WE WORK





The UNEP DTU Partnership is a leading research institution within the fields of climate change and sustainability transitions in developing countries. Throughout 2019 the partnership worked to support the achievement of SDGs 7 and 13, and enhance developing countries' access to scientifically based solutions.













- In 2019 UNEP DTU Partnership researchers conducted in-depth fieldwork in South Africa. With partners from local universities, they explored renewable energy procurement programmes, which has been a game-changer in stimulating the deployment of large-scale RE and unlocking possible pathways towards more sustainable economic, industrial, environmental and social development.
- In 2019 the Partnership finalised the "Trade in Environmentally Sound Technologies: Implications for Developing Countries" project, aimed at understanding the implications, capacity needs and enabling conditions for trade liberalization of environmentally sound technologies in developing countries. The project produced two regional assessments on trade in Southeast Asia and East Africa.
- Along with colleagues from Curtin University, Perth, Western Australia, UNEP DTU Partnership experts contributed to the DTU International Energy Report 2019 with a chapter on Mobility in Cities in Emerging Economies: Trends and Drivers. The chapter stresses that, because of increasing urbanization, the demand for cars and two-wheelers will continue to grow unless better options are provided in terms of time and cost. Without a substantial surge

- in electrification, this also means increased pollution and emissions and reduced air quality and health.
- In 2019 the UNEP DTU Partnership's Copenhagen Centre on Energy Efficiency became a partner in the SMARTER project, acting as expert advisor. Backed by the European Union's Horizon 2020 research and innovation programme, the SMARTER project brings together seventeen organisations from fourteen countries to develop a world-class Green Home Mortgage programme, aligned with the EU's standards and taxonomy for sustainable finance.
- As part of the Deep Decarbonization Pathways network, the UNEP DTU Partnership co-authored an article on decarbonization pathways for the March 2019 edition of the Nature Climate Change journal. The article proposes a handbook to build strategies for long-term climate actions and encourages debates on how we can set targets and policies aligned with the science of climate change.
- UNEP DTU Partnership experts coauthored a background paper on adaptation metrics for the Global Commission on Adaptation report published ahead of the UN SG Climate Action Summit in New York in September 2019.

UNITED IN SCIENCE

Providing the latest science on climate change impacts policy that can affect all 17 SDGs.



In September heads of state and other world leaders gathered in New York for the UN SG Climate Action Summit to set the stage for global action to save the world from rising sea levels, increasing weather extremes and global warming, action based on the latest climate data and science.

Along with other leading science institutions, the UNEP DTU Partnership provided the Summit with the very latest authoritative science-based information in the form of a new landmark report: the United in Science report.

In being presented to world leaders attending the Climate Action Summit, the United in Science report was launched at a high-level science event.

It underlined the growing and increasingly glaring gap between agreed targets to tackle global warming and the actual reality, as well as highlighting the urgency of achieving fundamental socio-economic transformation.

The report was a synthesis of longer, individual reports, UNEP's flagship Emissions Gap Report being one of them. The Emissions Gap Report, coordinated by the UNEP DTU Partnership, was a crucial part of the overall United in Science report and described the latest scientific studies on greenhouse gas emissions. The report shows the gap between current emissions and where

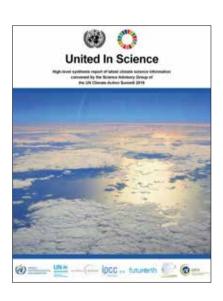
we need to be if we are to achieve the goals of the Paris Agreement.

At the UN SG Climate Action Summit, the UNEP DTU Partnership also took part in publishing several other reports.

"Lessons from a decade of emission gap assessments" marked the ten-year anniversary of the Emissions Gap Report and was written by UNEP DTU Partnership Director John Christensen and Head of Climate Planning and Policy Strategy Anne Olhoff.

It showed that current emissions are almost exactly what earlier gap reports projected they would be in 2020. The effects of climate policies have therefore been too small to offset the impact of key drivers of emissions such as economic growth and population growth.

As coordinator of the Emissions Gap Report, the UNEP DTU Partnership also collaborated in publishing an advance chapter of the report focusing on the climate efforts of the G20 countries. It also provided an assessment of the most immediate options for climate action that would bring countries in line with the goals of the Paris Agreement.



SHARING THE NORDIC COUNTRIES' EXPERIENCES

This work is directly impacting the following SDGs: 7.9.11.13.17











Being located in Denmark, the UNEP DTU Partnership is able to draw on the advanced experience, research and expertise of the Nordic countries in the fields of renewable energy, energy-efficient solutions, sustainable agriculture and district energy.

This includes taking advantage of the DTU's extensive research and expertise, as well as its links and partnerships with other leading research institutions and with industry.

By participating in cross-regional collaboration on climate challenges such as global warming, air pollution and the pressure on natural resources, the UNEP DTU Partnership is responding to political objectives locally, nationally, regionally and globally.

Through research into knowledge and technology transfers, replication and scalability, the Partnership is playing an active part in ensuring that the Nordic countries' experiences and research on climate mitigation and adaptation are shared and adapted by developing countries.

In the field of district energy systems, research institutions and industry in both Denmark and the other Nordic countries have significant expertise and a vast fund of hands-on experience of developing and implementing systems at different levels and scales. Several UNEP DTU Partnership projects work with the replication of this expertise.

- The FlexSUS project is developing a decisionmaking tool to support smart urban energy systems based on digital solutions in Denmark, Sweden and the Netherlands. The tool will enable municipalities and city planners to optimize their energy systems while implementing climate-change mitigation efforts.
- Through the Smart Cities Accelerator (SCA), the UNEP DTU Partnership works on developing and sharing knowledge of demonstration projects to create more sustainable solutions in district energy-supply systems, from energy production to energy consumption.

Anchored in strong research environments in Denmark and Sweden, the SCA will develop greener solutions with an impact that reaches beyond the Scandinavian region.

In addition to other areas where experience from the Nordic countries can benefit climate-change mitigation and adaptation in the developing world, UNEP DTU Partnership research also focuses on how knowledge and technology are being transferred and implemented around the world.



2019 AT A GLANCE



The UNEP DTU Partnership has almost thirty years of experience in assisting developing countries reach their energy, climate and sustainable development goals.

Our experts work in three strategy areas of action on key aspects of the implementation of the Paris Agreement and towards the achievement of the Sustainable Development Goals.



The UNEP DTU Partnership align the climate and SDG agendas and stimulate action by stakeholders at the global, regional and country levels to maximize co-benefits.

By working within the framework of the SDGs, we assist developing countries in tackling the climate emergency in ways that benefit everyone.

While our work emphasises SDGs 7 and 13 on access to affordable clean energy and climate action, it covers fourteen of the seventeen SDGs.







UNEP DTU PARTNERSHIP STRUCTURE

UN Environment Programme of Work



CLIMATE PLANNING AND POLICY

Better national planning



CLIMATE TRANSPARENCY AND ACCOUNTABILITY

Greater accountability



BUSINESS MODELS AND MARKETS

Stronger market models

Capacity Building

Research and Analysis



CLIMATE PLANNING AND POLICY

UNEP DTU Partnership supports developing countries in their efforts to integrate climate change mitigation and adaptation priorities into their national development processes.

Our goal is for countries to develop and implement tangible and measurable climate actions as an integral part of their national development planning and policies, and as a result submit more ambitious and higher quality NDCs every five years.

To reach this goal, we are helping to build stronger national frameworks for NDC planning and implementation through technical assistance, decision-making support, capacity-building and the development of the relevant guidance and tools.

Supporting this work, and in close partnership with UNEP, we deliver the annual UNEP flagship reports, Emissions Gap Report and Adaptation Gap Report, which assess progress and gaps in relation to both mitigation and adaptation actions and long-term goals.

NDC ACTION

This work is directly impacting the following SDGs: $7 \cdot 13 \cdot 17$







Many countries are still in the process of defining their NDCs and deciding how to implement them, as well as developing them further. In April 2019, UNEP and the UNEP DTU Partnership jointly launched the NDC Action project to address this need.

The NDC Action Project supports ten partner countries in translating their NDCs into concrete sector strategies and actions ready for financing and implementation.

At the same time, the project also works on increasing the climate ambitions of countries' NDCs.

Working closely with UNEP, the UNEP DTU Partnership provides tailored technical assistance based on countries' needs in order to make NDC implementation more efficient and to facilitate the sharing of lessons learnt between sectors, countries and regions.

By sharing best practices among peers from partner countries and beyond, national experiences and lessons learnt will contribute to raising global climate ambitions. To this end, the NDC Action project will develop a series of tools and guidelines and a needs-based training programme for capacity development by governments, national financial institutions and private project developers.

The NDC Action project benefits from and is closely coordinated with the Climate Action Enhancement Package (CAEP). The CAEP is a new initiative by the NDC Partnership designed to deliver targeted, fast-track support to countries to enhance the quality and increase the ambition of NDCs and implement them.

In line with the NDC Action project, the CAEP aims to catalyse transformational change



in the direction of resilient, sustainable and low-emission development in order to reach the goals of the Paris Agreement. The joint UN approach, as well as close coordination with the NDC Partnership and other support initiatives, ensure that the UNEP DTU Partnership and the NDC Action project contribute to countries achieving the optimal use of resources in implementing their NDCs.

Funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the NDC project engages key NDC decision-makers and stakeholders – national and sub-national government entities, the private sector, financial institutions and civil society – to foster accelerated public and private investments.

CLIMATE TECHNOLOGY AND GENDER

This work is directly impacting the following SDGs: 1.2.3.5.6.7.9.13.15.17



Gender equality is a Sustainable Development Goal in its own right and plays a vital role in relation to climate change mitigation and adaptation. The UNEP DTU Partnership seeks to promote full, equal and meaningful participation for all and to promote the development and implementation of gender-responsive climate policies.

One of the main ways in which our work on gender and the implementation of climate



technology is carried out is through the Technology Needs Assessment (TNA) project.

The TNA Project helps developing countries determine their technology priorities for mitigating and adapting to climate change through a need-driven approach. Through three rounds, more than eighty countries have been supported by the TNA project.

Working with regional partners, the project offers support to countries in the form of national, regional and global capacity-building workshops, technical support missions and technical backstopping.

The fact that women face greater burdens from poverty-related climate-change impacts is something that needs to be addressed in prioritizing and assessing climate technologies. As a result, gender inclusiveness and the technological ability to reduce gender inequality are key areas of TNAs.

Looking back at more than ten years of the TNA project, gender has played an increasing >

CLIMATE PLANNING AND POLICY



role in both the preparation of assessments of technology needs and the development of financeable technology action plans.

In 2019, more than 90% of countries took gender aspects into account in their TNA reports when looking at climate change adaptation, and more than 80% did so when looking at mitigation actions.

A gender-sensitive approach to technology assessment and transfer includes everything from ensuring equal representation in working groups and among consultants to creating frameworks that include gender aspects in future efforts, including in evaluations and factsheets, to involving the relevant ministries in working on gender equality.

To assist countries in conducting a genderresponsive TNA, the UNEP DTU Partnership has developed a guidebook for how to ensure that new technologies benefit society at large with an emphasis on gender equality, making sure that the most vulnerable groups will benefit and that the impacts of technology are maximised.

The TNA project is being implemented by UNEP through the UNEP DTU Partnership, and the project gender guidebook are funded by the GEF.

The TNA reports and more information about the TNA project can be found at www.tech-ation.org







CLIMATE TRANSPARENCY AND ACCOUNTABILITY

Responding to Article 13 of the Paris Agreement, the UNEP DTU Partnership works with over thirty countries to help strengthen the capacity of national institutions to assess the impacts of their climate change actions. This provides the foundation for their engagement with the Enhanced Transparency Framework of the Paris Agreement as a way to build trust and foster shared understanding, greater accountability and the strengthening of ambitions.

Our goal is to support the establishment of national systems for transparency that facilitate data handling, the documentation of results and the impacts of NDCs and other national climate actions. This will facilitate countries in reporting to the UNFCCC on the implementation of their NDCs in accordance with the rules and transparency requirements of the Paris Agreement.

In order to reach this goal, we support developing countries in the process of building national systems for transparency to track and report on climate actions and their impacts, covering both government and non-state actors' actions. We provide support through technical assistance, capacity-building and the development of guidance and tools.

Our initial focus was on mitigation, but in response to demands from different countries, we are developing a toolbox for adaptation actions with local and regional partners.

At the global level we also provide tracking systems to increase the availability and quality of data and knowledge-sharing platforms for countries to interact with other countries in accessing the latest knowledge on their respective actions.

TRANSPARENCY IN ADAPTATION AND DEVELOPMENT OF NEW METHODOLOGIES

ICAT Adaptation covers transparency on climate actions that can affect all 17 SDGs.



Our focus on transparency and accountability responds directly to Article 13 of the Paris Agreement. Our goal is to help improve the availability and quality of data in order to set in motion an upward spiral of ambition and implementation. It provides a framework for improving transparency by tracking progress toward the implementation of national adaptation plans, NDCs mitigation goals and other provisions under the Paris Agreement and the SDGs.

The new Initiative for Climate Action

Transparency (ICAT) Adaptation project, led by the UNEP DTU Partnership, works specifically to strengthen countries' capacity to plan,

Climate Action
Transparency

implement, monitor and evaluate effective and efficient adaptation actions in a transparent manner.

2019 saw work start in four pilot countries, Bangladesh, the Dominican Republic, India and South Africa, while Kenya will join in the second phase. Our focus is on enhancing ICAT is implemented by the UNEP DTU Partnership and other international partners like ISPRA, WRI and VERRA.

pilot countries' capacities in the monitoring and evaluation of adaptation actions in the agricultural and water sectors and in tracking the implementation of early warning systems.

Throughout 2019, the UNEP DTU Partnership actively contributed to the development and testing of a toolbox and methodologies to help policy-makers and other users assess the impacts of countries' climate policies and actions.

The ICAT toolbox consists of a series of methodologies for assessing greenhouse gas emissions, sustainable development and the transformational impacts of policies and actions in implementing NDCs. It focuses on specific sectors or subsectors and crosscutting assessments, supplemented by guides for engaging stakeholders and undertaking a review or verification of the claimed impacts.

Based on previous versions, the toolbox was updated based on practical experience and feedback from countries and non-state actors, including case studies to ensure that the methodologies are fit for real-world applications.

A GROWING PLATFORM FOR CAPACITY-BUILDING

This work is directly impacting the following SDGs: $5 \cdot 7 \cdot 13 \cdot 17$









Throughout 2019 the Capacity-building Initiative for Transparency (CBIT) Global Coordination Platform was expanded with additional content, countries and information on transparency, methodologies and tools.

The platform brings together practitioners from countries and agencies working with the CBIT project, which, upon request, supports developing country parties in meeting the enhanced transparency requirements adopted under Article 13 of the Agreement.

CBIT CAPACITY-BUILDING INITIATIVE FOR TRANSPARENCY GLOBAL COORDINATION PLATFORM

Managed by the UNEP DTU Partnership and supported by UNEP, UNDP, the UN Global Support Programme and the Global Environment Facility, the platform provides an overview of CBIT projects around the world, with objectives, outcomes, stakeholders, knowledge management approaches and contacts for focal points.

As of 2019, the platform had approximately six hundred unique visits per month from more than eighty countries. These countries are using the platform to consult on information about CBIT projects, enhancing partnerships and search methodologies and tools to improve the transparency of climate action and support. Moreover, forty countries used the self-assessment tool provided by the platform to identify their capacity-building needs in respect of transparency regarding climate action and support.

Through the platform, countries also engaged in peer learning activities through webinars and are establishing partnerships and networks.



BUSINESS MODELS AND MARKETS

The UNEP DTU Partnership supports national and sub-national governments in developing countries and emerging economies in accelerating the implementation of climate actions through market mechanisms.

Our goal is to help establish well-functioning markets and business models that promote the dissemination and uptake of clean and climate-resilient technologies and practices based on local innovation and production wherever possible.

To reach this goal, we support actors at all levels by improving access to knowledge and building the capacity to enable climate action through market development

and innovative business models with an increased focus on high-impact areas and private-sector engagement.

At the global level, we develop guidance based on examples of best practice and facilitate partnerships between public and private entities, focusing on the most amenable sectors and well-proven and innovative business models for the quick implementation of sustainable energy and climate action solutions.

The majority of activities falling within the Business Models and Markets strategic area are carried out by the Copenhagen Centre on Energy Efficiency.



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THE COPENHAGEN CENTRE ON ENERGY EFFICIENCY

Established in September 2013, the UNEP DTU Partnership's Copenhagen Centre on Energy Efficiency is dedicated to accelerating the uptake of energy-efficiency policies and actions globally.

The Copenhagen Centre on Energy Efficiency is the global thematic hub for energy efficiency within the United Nations Secretary General's Sustainable Energy for All (SEforALL) initiative, its prime responsibility being to support action towards the SEforALL energy-efficiency target of doubling the global rate of improvements in energy efficiency by 2030.

As an energy-efficiency hub, the Copenhagen Centre on Energy Efficiency works to engage national and subnational governments in accelerating their implementation of energy efficiency. With a focus on the most rollout-ready energy end-use sectors, namely buildings, district heating, cooling and lighting, the Centre is assisting with project and technology procurement and investment models, and best-practice knowledge and research in developing countries throughout the world.

Using a model of standardisation, upscaling and replication, the Centre can create impacts reaching far beyond individual projects.

The Centre is also working to accelerate energyefficiency programs in cities and countries through four main activities:

Creating actionable knowledge and learning on energy efficiency

The lack of actionable information and misinformation on energy efficiency is widely considered one of the key barriers to actions on energy efficiency actions. The Copenhagen Centre on Energy Efficiency is continuously collecting and disseminating the latest knowledge and best evidence to support decision- and policymaking. This takes place through our Knowledge Management System, action-oriented analytical products focusing on learning and knowledge opportunities for governments, international networks and research collaborations.



Developing public-private implementation projects

Based on analysis of potential and opportunities for energy-efficiency projects and countries' and cities' own priorities, the Copenhagen Centre on Energy Efficiency is helping to develop business models and structuring projects for implementation. This is being done by creating partnerships and projects for implementation and replication.

This activity is being carried out on both the technical level, where the Centre's experts assist in the detailed design of projects, and on the financial level, where our expertise and experience in developing projects that can attract the necessary investments help our partners access funding.

Technical educational training

A lack of practitioner skills can often be a barrier when it comes to implementing energy-efficiency projects in developing countries. This problem is repeatedly identified in the Copenhagen Centre on Energy Efficiency's direct engagement with governments around the world.

To overcome this barrier, the Centre supports the development of local technical and vocational training for energy efficiency-related professionals to enhance their skills for the faster, higher quality and more effective implementation of energy efficiency.

Replicating and communicating success

An integral part of the Copenhagen Centre on Energy Efficiency's work in creating projects ready for implementation is the replication of success stories around the world. By creating partnerships and disseminating best practices and lessons learnt from its research, knowledge, tool development and project implementation, the Centre actively works towards building movement towards bold action.













AN INNOVATIVE FINANCIAL TOOL FOR CITIES TO JOIN THE GLOBAL CLIMATE FINANCING FLOWS

This work is directly impacting the following SDGs: 7.9.11.12.13.17













In 2019, the Red Argentina de Municipios frente al Cambio Climático (RAMCC) established the first Argentinian trust fund to accelerate ambitious climate action in cities.

The RAMCC Trust is a new tool for municipalities exclusively dedicated to the implementation of local climate action plans by helping cities achieve the support and transparency necessary to synergize individual efforts and create viable green investments, that support the RAMCC's main objective of promoting concrete actions in terms of mitigation and adaptation to climate change at the municipal level.

The Copenhagen Centre on Energy Efficiency developed the first project using the RAMCC Trust in collaboration with the RAMCC. In this project, the fund acts as a Special Purpose Vehicle company for 42 municipalities and their investments in energy-efficient street lighting.

Energy-efficient street lighting is a widely available "low-hanging fruit" in terms of climate action. As key public services, many RAMCC member municipalities had similar projects for replacing conventional lighting with LED lighting in the pipeline.

Aggregating these relatively similar investment projects into a project "bundle" is the key innovation in this initiative, one developed by the Copenhagen Centre on Energy Efficiency.

By bundling projects and providing structures for prerequisite data and information collection, the approach developed by the Copenhagen Centre enables access to largerscale funding, cost savings, and the accelerated implementation of energy efficiencies.







KENYA'S FIRST NATIONAL STRATEGY FOR ENERGY EFFICIENCY AND CONSERVATION

This work is directly impacting the following SDGs: 7.9.11.12.13.17













In November 2018, the UNEP DTU Partnership and Kenya's Ministry of Energy signed a farreaching and detailed five-year agreement to accelerate energy-efficiency actions and ensure that the country achieves its ambitious targets for energy efficiency.

The first main outcome of this collaboration is the Kenya National Energy Efficiency and Conservation Strategy, which provides a framework for achieving energy-efficiency targets and goals for the next five years.

Throughout 2019, the UNEP DTU Partnership has provided technical support in the development of this national energy-efficiency strategy. While the Ministry of Energy provided policy direction, the Copenhagen Centre on Energy Efficiency delivered technical knowhow, helped revise drafts and helped finalize the Strategy.

The Strategy is expected to be put into action in early 2020, and it will help Kenya with all aspects of making improvements in energy efficiency, including a focus on buildings, lighting and industry, as well as facilitating the creation of a world-class agency for energy efficiency.

The country's authorities hope to use the Strategy to steer and pool international funding and technical support, mobilise the involvement of governments and businesses, and tap the enormous potential for energy efficiency in various sectors. Interest has already been shown by the World Bank.

The Ministry of Energy and other stakeholders have championed energy efficiency in Kenya for almost two decades. However, limited information, expertise and finances have restricted the adoption of energy efficiency and conservation technologies and innovation.

The improvements in energy efficiency from the new strategy will help reduce the demand for fossil fuels, thus decreasing emissions while enhancing the potential of renewable energy to meet a larger proportion of the country's energy needs. This will contribute towards Kenya meeting it commitments under the Paris Agreement, as well as SDG 7 on affordable and clean energy.

Energy is also considered an enabler for the realization of Kenya's Vision 2030, which seeks to transform Kenya into a newly industrialised middle-income country. Furthermore, the government's "Big 4 Agenda", addressing food and nutrition, security, manufacturing, affordable housing and health care, depends on the provision of adequate and competitively priced energy.

BUSINESS MODELS AND MARKETS



DISTRICT ENERGY SOLUTIONS: FROM INCEPTION TO IMPLEMENTATION

This work is directly impacting the following SDGs: 6.7.9.11.13.17













District energy is one of the most efficient and cleanest heating and cooling solutions for cities. As an integral partner in the UN Environment District Energy in Cities Initiative, the Copenhagen Centre on Energy Efficiency is assisting cities in over a dozen developing countries in all phases of district energy projects, from the very first assessments of demand and potential to the later stages of leveraging finance and procuring implementation.



District energy systems for heating and cooling in buildings use significantly less energy than individual boilers and chillers or air conditioners. They also have the advantage of aggregating the demand for heating and cooling, making it possible to integrate renewable sources and waste heat from industries and power plants.

A selection follows of the District Energy in Cities Initiative's achievements that benefit from the core technical support provided by the Copenhagen Centre on Energy Efficiency:

- USD 75 million of direct investments leveraged to date, mitigating 1.7 million tons of CO2 equivalent emissions over the next twenty years

- In India, the cities of Rajkot and Thane, with more than 3.2 million inhabitants between them, started the procurement phase for the construction of district energy systems
- District cooling and tri-generation has been integrated into the national cooling action plan and the national smart city mission in India.
- Seven new cities joined the initiative in 2019, committing to district energy actions: General Alvear and Ubajay in Argentina, Bayanchandmani, Kharkhorin and Khonkhor in Mongolia, Khmelnytskyi in Ukraine, Al-Alamein in Egypt and Tunis in Tunisia.
- Two new projects to be supported for investment in North Africa with an estimated total investment of 81 M US\$ and 17.2 tonnes of HFC refrigerants avoided.
- New efficiency improvements and connections in the district heating system in Belgrade, Serbia were implemented in 2019 with potential savings of more than USD 180 million over the next twenty years.

The success of the District Energy in Cities Initiative lies in the combination of the technical and policy expertise resulting from the strong collaboration between the Copenhagen Centre on Energy Efficiency and UNEP. UNEP DTU Partnership's technical support is a key component of the assistance provided by

the Initiative to countries and cities around the world to accelerate investment in district energy.

Lily Riahi, Global Lead of the District Energy in Cities Initiative





BUSINESS MODELS AND MARKETS



ESCO NETWORK

A new 'Global ESCO Network' was launched in June 2019 to unleash the potential of energy service companies (ESCOs) to deliver some of the best returns on green investments, bring down energy consumption and reduce greenhouse gas emissions.



The Global ESCO Network aims to position ESCOs as a practical implementation model that can help countries raise their ambitions for their NDCs. The Network provides

information, workshops and knowledge products to policy-makers and other stakeholders about how to benefit from ESCOs so that their national emissions reduction potentials can be released.

The Global ESCO Network is anchored in Copenhagen Centre for Energy Efficiency.

RENEWED SUPPORT FROM THE BITTEN & MADS CLAUSEN FOUNDATION

In September, the Bitten & Mads Clausen Foundation renewed its support for the Copenhagen Centre on Energy Efficiency's work to accelerate the deployment of and investments in district energy systems.

This new grant represents a clear recognition of the Centre and UNEP DTU Partnership's work to develop, promote and implement green and efficient district-energy solutions around the world. This support will help increase and further develop the Partnership's work on the mounting challenge of cities' growing needs for energy and environmentally sustainable solutions.



UNEP DTU Partnership has since 2016 proved very successful in placing district energy on the agenda in a global context, with an approach where technical experts engaged by UNEP DTU Partnership are supporting directly with information, analysis and consulting 'on the ground'. The initiative has a strong action- and result orientation, effectively advancing new projects towards realization.

Per Have, CEO, the Bitten & Mads Clausen Foundation.

NEW PARTNERSHIP WITH ARGENTINIAN MUNICIPALITIES

In March, the UNEP DTU Partnership signed an agreement with the Red Argentina de Municipios frente al Cambio Climatico (RAMCC). The purpose of the agreement is to assist Argentinian municipalities in developing and implementing energy-efficiency projects.

OTHER
HIGHLIGHTS
FROM C2E2

The signing ceremony took place during the Danish state visit to Argentina in the presence of His Royal Highness the Crown Prince Frederik of Denmark and Mr Nicolás Dujovne, Argentinian Minister of the Treasury.

70% of greenhouse gas emissions occur in cities, and it is also in cities that we feel the greatest impact. Therefore, cities have to take a leading role in mitigating emissions and adapting to climate change. In RAMCC, we are dedicated to our work on renewable energy issues, waste management and energy efficiency, and here we have a very special partner in the Copenhagen Centre on Energy Efficiency. We have worked together for 2 years on organizing and developing projects to achieve international financing for implementation of climate action.

Ricardo Bertolino, Executive Director, RAMCC.





DATA CENTRE CONFERENCE FOCUSED ON SUSTAINABILITY

The Copenhagen Centre on Energy Efficiency, in collaboration with the Danish Data Center Industry, hosted an international conference on data-centre energy efficiency at UN City in Copenhagen in May 2019.

The conference included case studies and approaches by some of the largest operators in the world, including Microsoft, Facebook, Google and Interxion, complemented by representatives from Vattenfall, Ørsted, Dansk Energi and E.ON to discuss the integration of data centres into energy systems networks.

We are delighted to team up with UNEP DTU Partnership, not only to reinforce the message of the urgency the data centre industry needs, but also to highlight the most promising technologies and innovations as well as spark new ideas.

We need solutions and we need

Henrik Hansen, Director, Danish Data Center Industry.

action now.

ACTION THROUGH PARTNERSHIPS



With the call for climate action gaining momentum throughout 2019, exciting new partnerships have been established and coalitions been formed locally and globally. The UNEP DTU Partnership has worked with a diverse set of partners, ranging from municipalities, governments, institutions, research centres and the private sector, in more than eighty countries around the world.

In accordance with SDG 17, we are working to enhance cooperation by supporting national plans to achieve climate action targets. As a result, we are employing a demand-driven approach to our partnerships, paying respect to the context, policy space and organisational leadership in each collaboration.

In 2019, the focus was on partnering to increase the transfer and diffusion of technologies, science and innovation for sustainable solutions, as well as to mobilise investments and build market-viable models by teaming up with private-sector entities. Meanwhile, we are also responding to the growing need for monitoring and accountability tools to assess the impact of national action plans.

Through these invaluable exchanges of knowledge with our partners, and by cooperating to implement locally owned climate action targets, we are taking active steps to create and sustain positive synergies between the urgent missions of both the Paris Agreement and the SDGs.



MAIN PARTNERS

- Developing country governments
- Sub-national and city authorities
- Private sector

INTERMEDIARY PARTNERS

- UN EnvironmentUNFCCC, UNDP,
- UNFCCC, UNDP,
 UNOPS, The World
 Bank, Bilaterals

IMPLEMENTATION PARTNERS

- National institutions and regional centres
- International technical partners

PARTNERSHIP

NEW
PARTNERSHIPS
IN 2019

ENERGY EFFICIENCY SERVICES LIMITED (EESL)

Partnering closely with EESL, the world's largest public energy-service company, the Copenhagen Centre on Energy Efficiency is working to scale up energy-efficiency actions through knowledge sharing, joint international funding applications and the creation of green business models.

GREEN TECHNOLOGY CENTER

Building on the results of the TNA project, the UNEP DTU Partnership is now collaborating with the Korean Green Technology Center to further enhance understanding and action on the need for technology for climate action in developing countries.

DANISH ENERGY AGENCY

In 2019 the UNEP DTU Partnership and the Danish Energy Agency joined forces to work on energy solutions in China, taking advantage of synergies in expertise in district energy and providing Danish know-how on energy-efficient district-energy systems.

RED ARGENTINA DE MUNICIPIOS FRENTE AL CAMBIO CLIMÁTICO (RAMCC)

The Copenhagen Centre on Energy Efficiency and RAMCC entered into an official partnership to continue providing assistance to the 160 pioneering Argentinean municipalities that are working to implement energy-efficient measures in their cities. This is a flourishing partnership that is set to expand throughout 2020.

POWER FOR ALL

To boost local job creation in the renewable energy sector in Kenya, the UNEP DTU Partnership has teamed up with Power for All, a coalition of over three hundred organizations that are working to ensure access to electricity for everyone and to address the issue of creating a job-ready workforce to accompany the growth in clean energy markets, especially solar PV.

UNION FOR THE MEDITERRANEAN

In the southern Mediterranean region, the Copenhagen Centre on Energy Efficiency is working with the Union for the Mediterranean to promote capacity-building in respect of energy efficiency for local authorities and to accelerate the uptake of energy-efficiency policies.

THREE PERCENT CLUB

Launched at the UN Climate Action Summit, the Three Percent Club is a new coalition of countries, businesses and international organisations committed to driving a three percent global increase in energy efficiency each year. In its capacity as the hub for energy efficiency to the Sustainable Energy for All (SE4ALL) initiative, the Copenhagen Centre on Energy Efficiency was involved in the coalition's concept definition and coordination.

COOL COALITION

The UNEP DTU Partnership has joined the Cool Coalition, an innovative new coalition of global leaders set up to inspire ambition and accelerate action in the transition to clean and efficient cooling. It is led by UN Environment, the Climate and Clean Air Coalition, the Kigali Cooling Efficiency Program and Sustainable Energy for All (SE4ALL).

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